PC CPU Module
Compatible with MELSEC-Q Series

PPC-CPU852(MS)-512

Bus Interface Driver

User's Manual

CONTEC CO.,LTD.

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SAFETY PRECAUTIONS

(Always read these instructions before using this equipment)

Before using this product, please read this manual and the relevant manuals introduced in this manual carefully and pay full attention to safety to handle the product correctly.

The instructions given in this manual are concerned with this product. For the safety instructions of the programmable controller system, please read the PLC CPU module user's manual. In this manual, the safety instructions are ranked as "DANGER" and "CAUTION".

⚠ DANGER	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
⚠ CAUTION	Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage.

Note that the ! CAUTION level may lead to a serious consequence according to the circumstances.

Always follow the instructions of both levels because they are important to personal safety.

Please save this manual to make it accessible when required and always forward it to the end user.

[Design Instructions]

⚠ DANGER

- When changing data and controlling status upon an operating sequencer from the PC CPU module, safety operation of the total system must always be maintained. For that purpose, configure an interlock circuit externally to the sequencer system.
  Countermeasures against communication errors caused by cable connection failure, etc. must be specified by means of on- line operation of PLC CPU from the PC CPU module.

⚠ CAUTION

- Read the manual thoroughly and carefully, and verify safety before running the online operations with connected PC CPU module, and with an operating PLC CPU (especially when performing forcible output and changing operation status). Operation error may result in damaging the system or an accident.

[Notes on installation]

⚠ CAUTION

- Be sure to disconnect power supply in all phases externally before mounting or removing modules. Failing in disconnecting power supply in all phases may lead to damaging the product or out- of-control PC CPU module.

Notes on operations

(1) Notes on operation on Microsoft Windows XP Professional Operating System, Microsoft Windows XP Embedded Operating System, Microsoft Windows 2000 Professional Operating System

(a) Installation and uninstallation of PPC-DRV-02 and usage of utilities are available only by the administrator's authority.

(b) When Windows XP Professional or Windows XP Embedded is used, the following new functions cannot be used.
If any of the following new functions is used, this product may not operate properly.
- Start of application in Windows-compatible mode
- Fast user switching
- Remote desk top
- Big fonts (Detailed setting of Windows properties)

(c) Disable the function to restart Windows (such as “Automatic Updates” preinstalled to Windows as standard) or set it to manual mode.
Otherwise, Windows may restart while the system is running.

(d) Under Windows XP Professional, Windows XP Embedded or Windows 2000 Professional, user programms may be executed with a delay due to scheduling by the operating system. In particular, Windows XP Professional or Windows XP Embedded takes a longer user program execution delay than that taken under Windows 2000 Professional. You should not use Windows XP Professional or Windows XP Embedded as the platform for applications which require constant periodicity or faster response.

(2) Notes on multiple CPU system configuration

(a) In a multiple CPU system using personal computer CPU modules, the sequencer CPU to be used must be the QCPU (Q mode) of function version B or later for the basic model or that of function version B or later and a serial No. of “03051” or later in the first five digits for the high performance model.

(b) When a multiple CPU system is configured, a PC CPU module cannot be mounted to the left of the sequencer CPU and the motion CPU.
Mount a PC CPU module to the right of the sequencer CPU and the motion CPU.

(c) The multiple CPU parameters set in the PC CPU module cannot be applied to the QCPU (Q mode) within the same system. Apply the multiple CPU parameters set in the QCPU (Q mode).

(d) When an attempt is made to access a CPU module from MELSEC-Q series software (e.g. GX Developer) by specifying its CPU module No., the following message appears : "Communication was executed through a path which is not supported in the multiple CPU configuration." If this message appears, reexamine the specified CPU using the MELSEC-Q series software.

(e) For the reset specifications when a multiple CPU system is configured, refer to “PPC-CPU852(MS)-512 User’s Manual”.

(3) Notes on using MELSEC- Q series compatible intelligent functional module

The MELSEC- Q series compatible intelligent functional modules shown below are not compatible with PC CPU module.
Specifying management CPU of the following MELSEC-Q series compatible intelligent function modules on PC CPU module results in intelligent functional module assignment error.

Type	Model name
MES interface module	QJ71MES96
Web server module	QJ71WS96
Ethernet module	QJ71E71, QJ71E71-B2, QJ71E71-B5, QJ71E71-100
MELSECNET/H unit	QJ72LP25-25, QJ72LP25G, QJ72BR15
Intelligent communication module	QD51, QD51-R24

(4) Notes on using MELSECNET/H unit

Note that MELSECNET/H unit controlled by PC CPU module has the following limitations on functions.

(a) Not operational on remote I/O network. The system is operational only on inter- PC network.

(b) Can not using the system as a relay station for inter-data-link transfer or routing data transfer. Use MELSECNET/H unit controlled by PLC CPU as relay station for inter-data-link transfer or routing data transfer.

(c) MELSECNET/H-specific instructions are not available.

(d) SEND/RECV function is not available.

(e) Activation of interrupt ladder program is not allowed.

(5) Notes on using CC-Link utility

Note that CC- Link utility controlled by PC CPU module has the following limitations on functions.

(a) CC-Link parameters specified on SWnD5C-J61P-E (n is 0 or later) are not available. Specify parameters with CC-Link utility provided by PPC-DRV-02.

(b) CC-Link specific instructions are not available.

(c) Activation of interrupt ladder program is not available.

(d) Automatic activation of CC-Link is not allowed.

(e) Does not support Remote I/O NET Mode.

(f) Cannot be set to the master station. (dual-redundancy supported).

(g) Cannot use the standby master function.

(6) Notes on using positioning module

Parameters specified on GX Configurator-QP are not available on positioning module controlled by PC CPU module.
Using bus interface function (QBF_ToBuf), write parameters on the buffer memory of the positioning module.

(7) Notes on accessing remote station from PC CPU module
Simultaneous remote access to 9 or more station from PC CPU module using utilities, user program provided by PPC-DRV-02, and Mitsubishi- product software package may result in degraded communication performances.
Limit the No. of station to 8 or less for simultaneous remote station access from PC CPU module.
When accessing a remote station from the PC CPU module via a bus interface, MELSECNET/H unit, or CC-Link utility, second and subsequent communication operations must wait until any previous communication operation completes. Accordingly, a time-out on one communication operation may cause a time-out error on other communication operations also.

(8) Notes when using serial communication modules.

(a) Data communication only through the nonprocedural protocol can be used.

(b) Dedicated commands cannot be used.

(c) Parameters set through GX Configurator-SC cannot be used.

(9) Notes when migrating from PPC-CPU686(MS).

When user programs used in PPC-CPU686(MS) are used As Is in PPC-CPU852(MS), their access timing, etc. may be changed due to the improvement of the CPU's performance.
Use such programs after carefully checking their behavior.

Table of Contents

About Generic Terms and Abbreviations

Unless otherwise specified, this manual uses the following generic terms and abbreviations to describe the system.

Generic term/Abbreviation	Description
PPC-DRV-02	Abbreviation for bus interface driver software package of MELSEC- Q series compatible PC CPU module
PC CPU module	Abbreviation for MELSEC- Q series compatible PC CPU module
AnNCPU	Generic term for A0J2HCPU, A1SCPU, A1SCPU-S1, A1SCPUC24-R2, A1SHCPU, A1SJCPU, A1SJCPU-S3, A1SJHCPU, A1SJHCPU-S8, A1NCPU, A2CCPU, A2CCPUC24, A2CCPUC24-PRF, A2CJCPU, A2NCPU, A2NCPU-S1, A2SCPU, A2SCPU-S1, A2SHCPU, A2SHCPU-S1, A3NCPU, A1FXCPU
AnACPU	Generic term for A2ACPU, A2ACPU-S1, A2ACPUP21/R21, A2ACPUP21/R21-S1, A3ACPUP21/R21, A3ACPU
AnUCPU	Generic term for A2UCPU, A2UCPU-S1, A2USCPU, A2USCPU-S1, A2ASCPU, A2ASCPU-S1, A2ASCPU-S30, A2USHCPU-S1, A3UCPU, A4UCPU
ACPU	Generic term for AnNCPU, AnACPU, AnUCPU
QnACPU	Generic term for Q2ACPU, Q2ACPU-S1, Q2ASCPU, Q2ASCPU-S1, Q2ASHCPU, Q2ASHCPU-S1, Q3ACPU, Q4ACPU, Q4ARCPU
QCPU (A mode)	Generic term for Q02CPU-A, Q02HCPU-A, Q06HCPU-A
QCPU (Q mode)	Generic term for Q00CPU, Q01CPU, Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU, Q12PHCPU, Q25PHCPU
Basic model QCPU	Generic term for Q00CPU, Q01CPU
High performance model QCPU	Generic term for Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU
Process CPU	Generic term for Q12PHCPU, Q25PHCPU
PLC CPU	Generic term for ACPU, QnACPU, QCPU (A mode) or QCPU (Q mode)
Motion CPU	Generic term for Q172CPUN, Q173CPUN, Q172CPUN-T, Q173CPUN-T, Q172HCPU, Q173HCPU, Q172HCPU-TQ173HCPU-T
MELSECNET/H unit	Generic term for QJ71LP21, QJ71LP21-25, QJ71LP21S-25, QJ71LP21G, QJ71LP21GE or QJ71BR11
MELSECNET/H	Abbreviation for Q-compatible MELSECNET/H network system
MELSECNET/H board	Generic term for Q80BD-J71LP21-25/Q80BD-J71LP21G/Q80BD-J71LP21GE/ Q80BD-J71BR11 type MELSECNET/H interface boards
MELSECNET/10	Abbreviation for AnU-compatible and QnA/Q4AR-compatible MELSECNET/10 network systems

Generic term/Abbreviation	Description
MELSECNET/H mode	Abbreviation for MELSECNET/H unit used on MELSECNET/H
MELSECNET/10 mode	Abbreviation for MELSECNET/H unit used on MELSECNET/10
CC-Link	Abbreviation for Control & Communication Link system
CC-Link utility	Abbreviation for QJ61BT11N / QJ61BT11 type CC- Link system master/local module
CC-Link board	Generic term for A80BDE-J61BT11 type CC-Link system master/local interface board and A80BDE-J61BT13 type CC-Link local interface board
Serial communication module	QJ71C24N, QJ71C24N-R2, QJ71C24N-R4, QJ71C24, QJ71C24-R2
Input module	Generic term for input module that PC CPU module supports *1
Output module	Generic term for output module that PC CPU module supports *1
I/O composite module	Generic term for I/O composite module that PC CPU module supports *1
I/O module	Generic term for input module, output module and I/O composite module
Interrupt module	Generic term for Interrupt module that PC CPU module supports *1
Intelligent functional module	Generic term for Intelligent functional module that PC CPU module supports *1

*1 ： For the supporting modules, refer to “2.2.2 I/O module and intelligent functional module”.

1. Outline

Thank you for purchasing the MELSEC-Q series compatible PC CPU module bus interface driver software package.

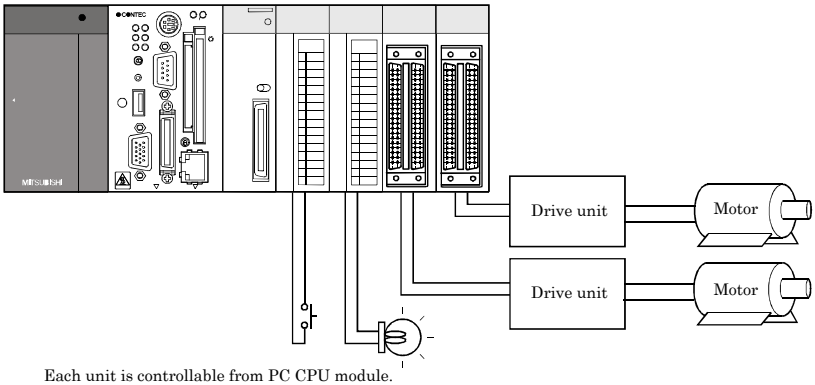
Before use, please read this document carefully to understand functions and performances of the MELSEC-Q series compatible PC CPU module bus interface driver software package thoroughly.

1.1 Features

The features of the MELSEC-Q series compatible PC CPU module bus interface driver software package (it is abbreviated as PPC-DRV-02 in this manual.) are summarized below.

(1) I/O modules and intelligent functional modules are controlled from PC CPU module.

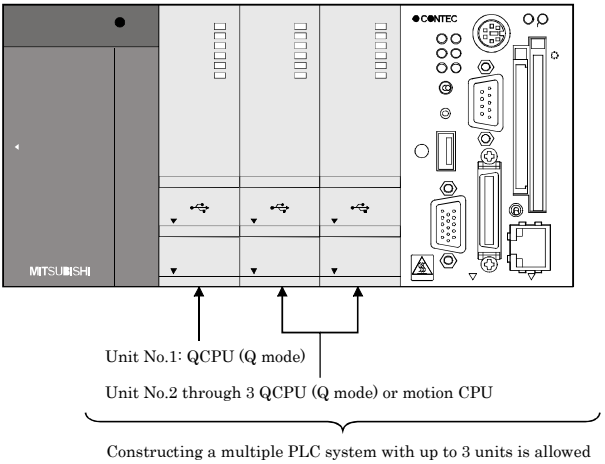
A user program created with bus interface function is capable of controlling I/O modules and intelligent functional modules that are managed on PC CPU module.



Each unit is controllable from PC CPU module.

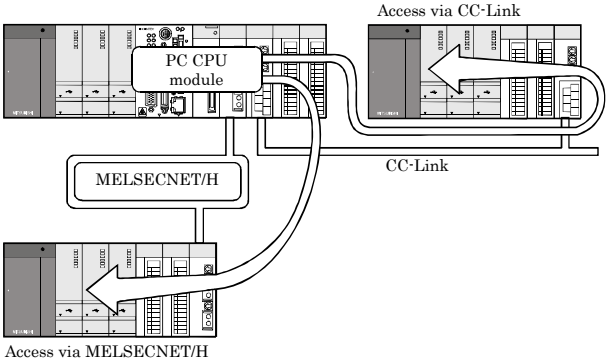
(2) Building multiple PLC system is allowed.

Construction of a multiple PLC system configured of QCPU (Q mode), motion CPU and PC CPU module is allowed.



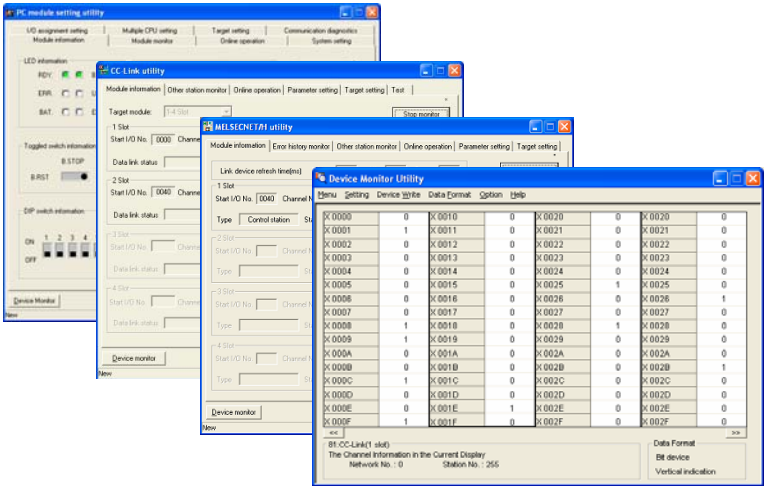
(3) Access from PC CPU module is allowed via CC- Link and MELSECNET/H.

A user program created with MELSEC data link function is capable of accessing to PLC CPU of other station via CC- Link and MELSECNET/H.



(4) Various settings are specified on utilities.

PC CPU setting utilities allows easily specifying I/O assignment and multiple PLC settings, etc. The utilities also allow specifying and executing parameters of CC-Link utility and MELSECNET/H units and device monitoring of accessing target system.



Performs the settings and monitoring by using each utility.

(5) The system is compatible with various OS products.

PPC-DRV-02 is compatible with the following OSs.

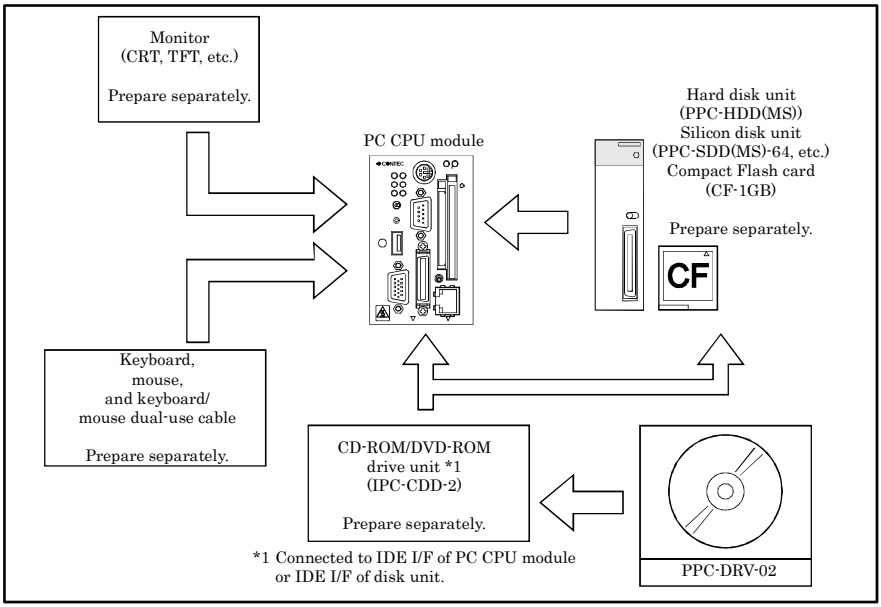
Compatible OS : Microsoft Windows XP Professional (Japanese and English editions)
Microsoft Windows XP Embedded (Japanese and English editions)
Microsoft Windows 2000 Professional (Japanese and English editions)

2. System Configuration

This section describes system configuration, accessible modules and operating environment.

2.1 System Configuration

The following summarizes system configuration required for installation of PPC-DRV-02.



2.2 Accessible Modules

This section describes the modules accessible from PC CPU module.

2.2.1 CPU module

The following summarizes CPU modules that are accessible when configuration of multiple PLC module with PC CPU module is allowed.

Type		Model name
PLC CPU	Basic model QCPU *1	Q01CPU, Q00CPU
	High performance model QCPU *2	Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU
	Process CPU	Q12PHCPU, Q25PHCPU
Motion CPU		Q172CPUN, Q173CPUN, Q172CPUN-T, Q173CPUN-T, Q172HCPU, Q173HCPU, Q172HCPU-T, Q173HCPU-T

*1 : When configuring multiple CPU system with PC CPU module, use products of function version B or later.

*2 : When configuring multiple CPU system with PC CPU module, use products of function version B and of a serial No. having “03051” or later in first 5 digits.
For checking function version and serial No, refer to manual of QCPU (Q mode) to be used.

2.2.2 I/O module and intelligent functional module

The following summarizes the modules accessible from PC CPU module to I/O control or buffer memory. On the module, PC CPU module must be specified as control CPU.

Type	Model name
Input module	QX10, QX28, QX40, QX40-S1, QX41, QX41-S1, QX42, QX42-S1, QX70, QX71, QX72, QX80, QX81, QX82, QX82-S1
Output module	QY10, QY18A, QY22, QY40P, QY41P, QY42P, QY50, QY68A, QY70, QY71, QY80, QY81P
I/O composite module	QH42P, QX48Y57
Analog- digital converter module	Q64AD *1, Q68ADV *1, Q68ADI *1, Q64AD-GH, Q62AD-DGH
Digital- analog converter module	Q62DA *1, Q64DA *1, Q68DAV *1, Q68DAI *1, Q62DA-FG
High- speed counter module	QD62, QD62D, QD62E
Positioning module	QD75P1 *1, QD75P2 *1, QD75P4 *1, QD75D1 *1, QD75D2 *1, QD75D4 *1, QD70P4 *1, QD70P8 *1, QD75M1, QD75M2, QD75M4, QD75MH1, QD75MH2, QD75MH4
Temperature control module *1	Q64TCTT, Q64TCRT, Q64TCTTBW, Q64TCRTBW
Thermerature-digital converter module	Q64TD *1, Q64TDV-GH, Q64RD *1, Q64RD-G
Isolated pulse input module between channels	QD60P8-G
Isolated analog-digital converter module between channels	Q68AD-G
Isolated digital-analog converter module between channels	Q66DA-G
Isolated distributer between channels	Q66AD-DG
Interrupt module	QI60
DeviceNet module *1	QJ71DN91
MELSECNET/H unit	QJ71LP21, QJ71LP21-25 *1, QJ71LP21S-25, QJ71LP21G *1, QJ71LP21GE *1, QJ71BR11 *1
CC-Link utility	QJ61BT11 *1, QJ61BT11N *2
CC-Link/LT module	QJ61CL12 *1
FL-net(OPCN-2) module	QJ71FL71-T, QJ71FL71-B5, QJ71FL71-B2 *1, QJ71FL71-T-F01, QJ71FL71-B5-F01, QJ71FL71-B2-F01 *1
AS-I master module *1	QJ71AS92
ID interface module	QD35ID1, QD35ID2
Serial communication module	QJ71C24N, QJ71C24N-R2, QJ71C24N-R4, QJ71C24, QJ71C24-R2
MODBUS Interface Module, MODBUS/TCP Interface Module	QJ71MB91, QJ71MT91

*1 : Use products of function version B or later.

*2 : Use product with the first five (5) digits of its serial No. greater than “08102”.
Use products of a serial No. having “08102” or later in first 5 digits.

2.3 Operating Environment

The following summarizes operating environment of PPC-DRV-02.

Item	Description
Applicable models	MELSEC-Q series compatible PC CPU module
Applicable OS	Microsoft Windows XP Professional Operating System (Japanese and English editions) *1, Microsoft Windows XP Embedded Operating System (Japanese and English editions) *1, Microsoft Windows 2000 Professional Operating System (Japanese and English editions) *2
Programming language *3	Microsoft Visual Basic 6.0 (Japanese and English editions) Microsoft Visual C++ 6.0 (Japanese and English editions) Microsoft Visual Basic .NET 2003 (Japanese and English editions) Microsoft Visual C++ .NET 2003 (Japanese and English editions)
Display	Resolution ： 800 x 600 dots or higher (Recommended ： 1024 x 768 dots)
Required memory	256MB or more
Free hard disk space	20MB or more
Disk drive	CD-ROM disk drive

*1 ： Service Pack2 or higher is required when using Windows XP Professional or Windows XP Embedded.

*2 ： Service Pack4 or higher is required when using Windows 2000 Professional.

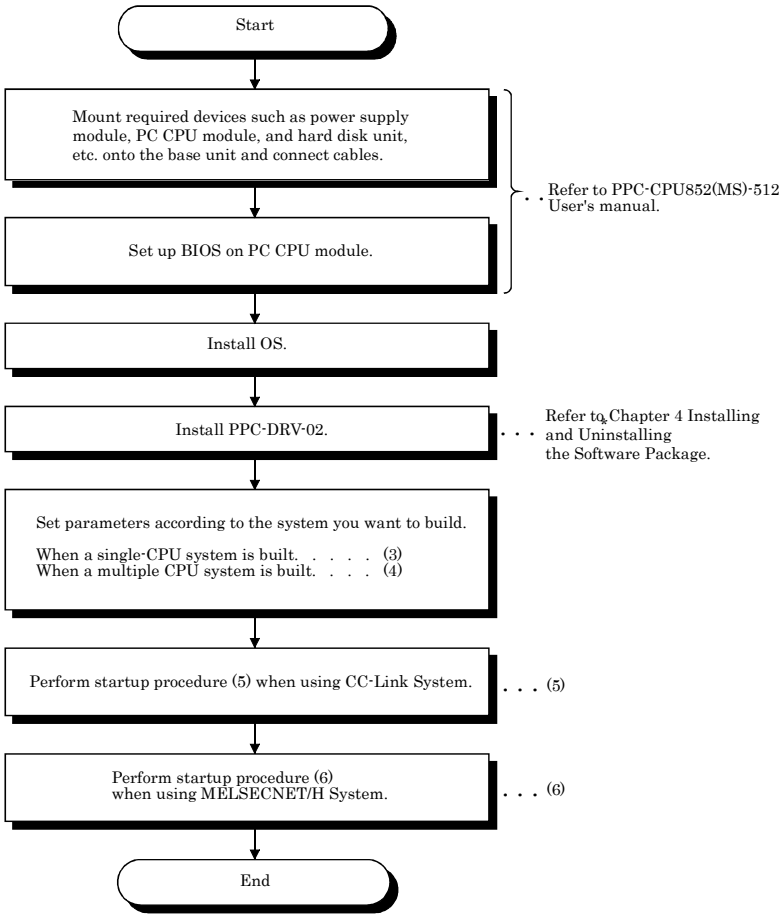
*3 ： User program created in Japanese environment is not executable in English environment.
User program created in English environment is not executable in Japanese environment.

3. Procedures before Starting and Settings

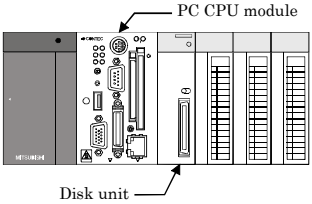
This chapter describes procedures and settings for operating PC CPU module.

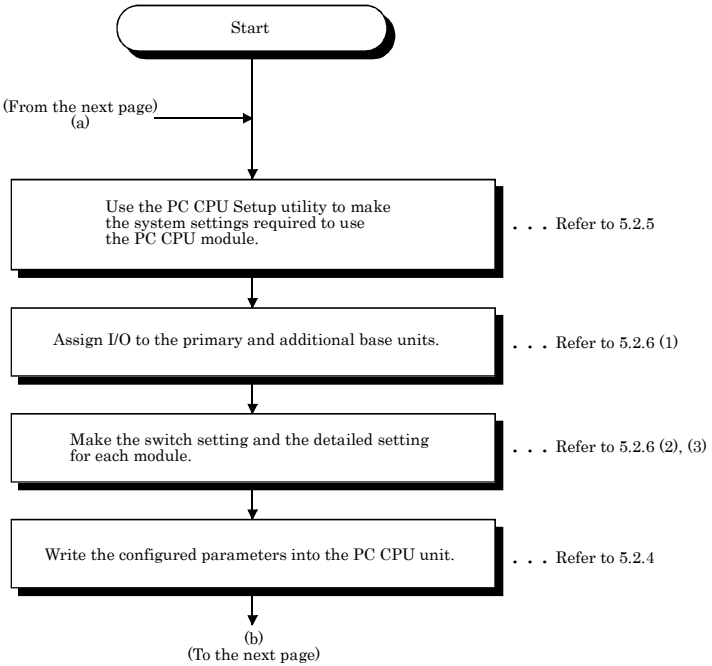
(1) Caution on use
For how to handle a PC CPU module as standalone, refer to “PPC-CPU852(MS)-512 User’s Manual”.

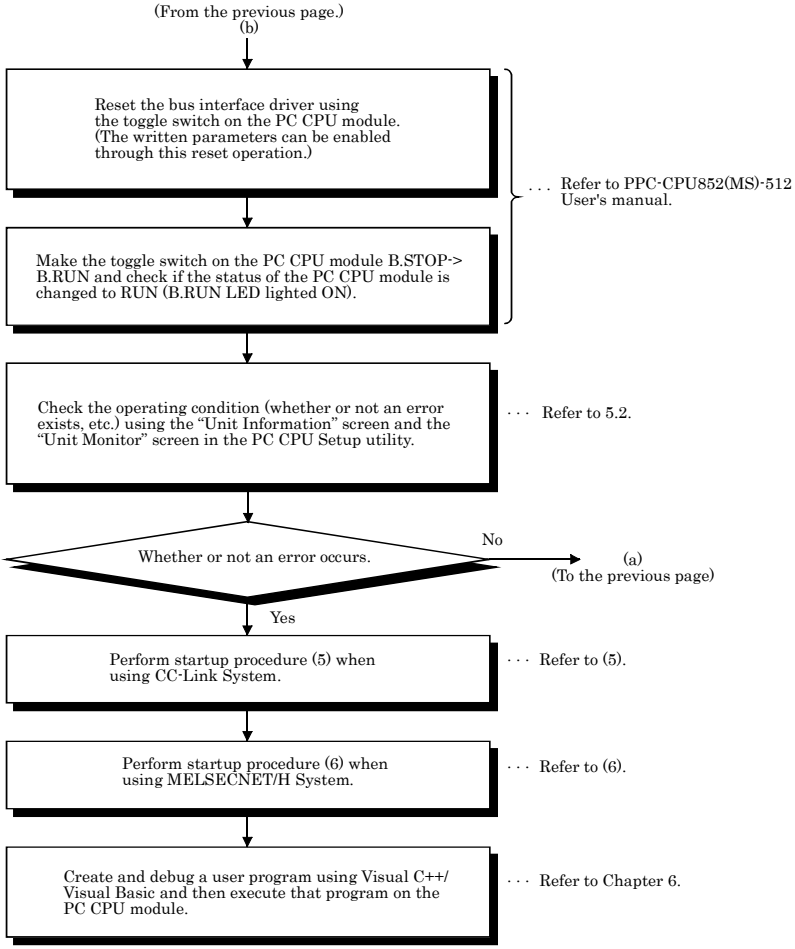
(2) PC CPU module startup procedure



(3) Startup procedure when a single-CPU system is built.
Perform startup procedure (2) before the following procedure.



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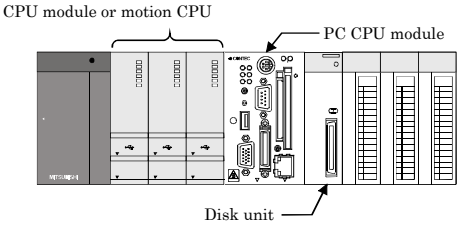
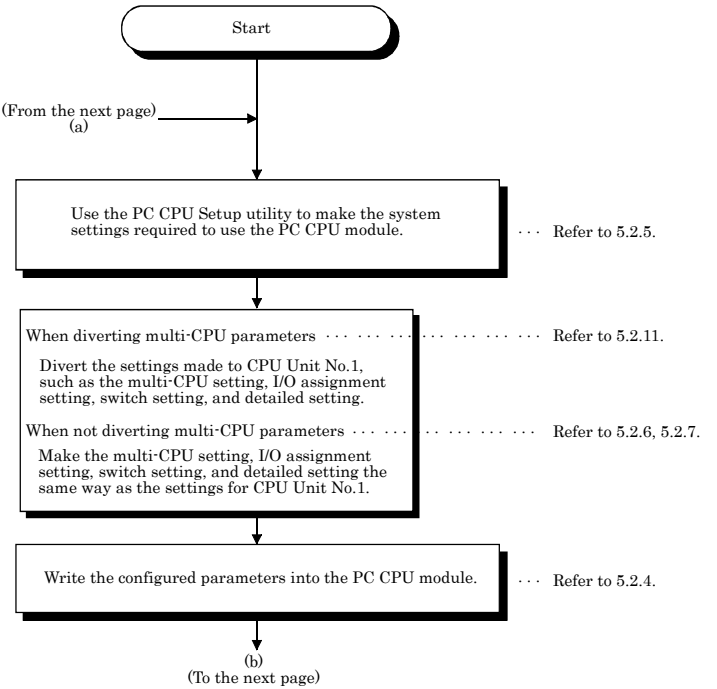
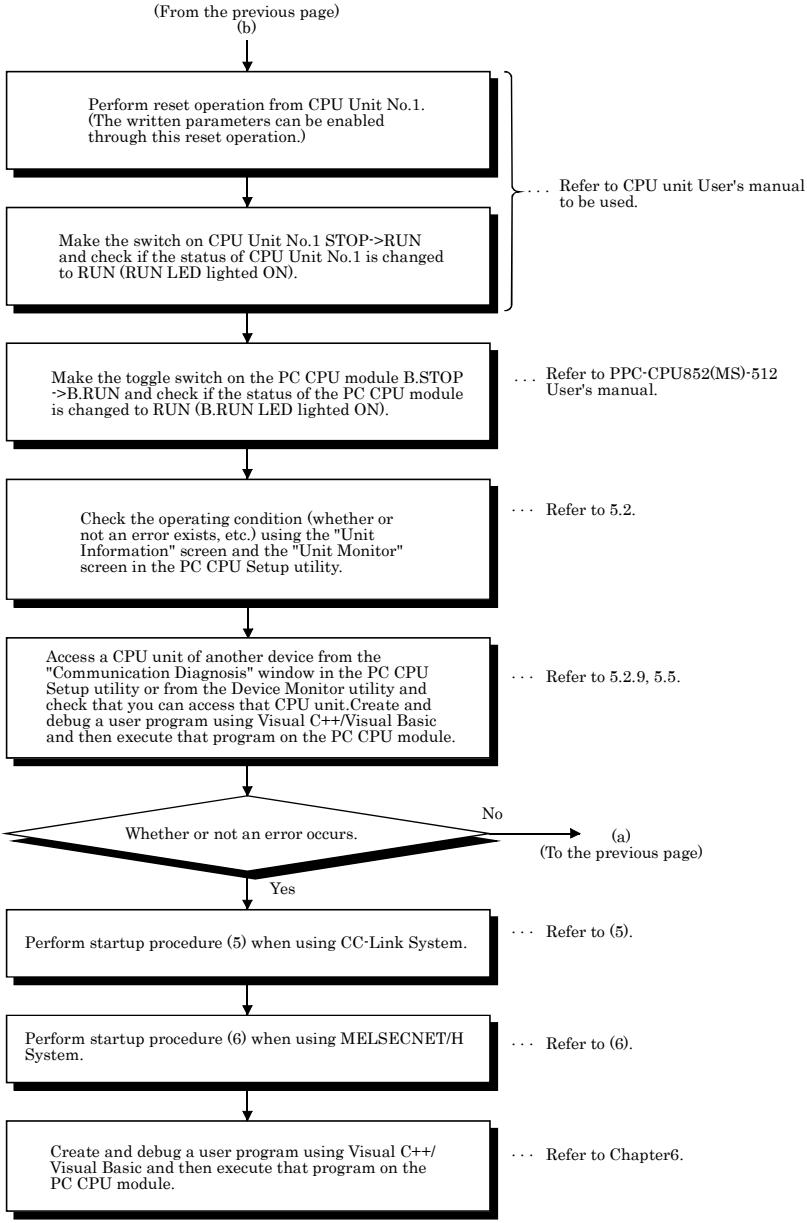
(b)
Reset the bus interface driver using the toggle switch on the PC CPU module. (The written parameters can be enabled through this reset operation.)
Make the toggle switch on the PC CPU module B.STOP-> B.RUN and check if the status of the PC CPU module is changed to RUN (B.RUN LED lighted ON).
. . . Refer to PPC-CPU852(MS)-512 User's manual.
Check the operating condition (whether or not an error exists, etc.) using the "Unit Information" screen and the "Unit Monitor" screen in the PC CPU Setup utility.
. . . Refer to 5.2.
Whether or not an error occurs.
No
(a)
(To the previous page)
Yes
Perform startup procedure (5) when using CC-Link System.
. . . Refer to (5).
Perform startup procedure (6) when using MELSECNET/H System.
. . . Refer to (6).
Create and debug a user program using Visual C++/ Visual Basic and then execute that program on the PC CPU module.
. . . Refer to Chapter 6.

(4) Startup procedure when a multiple CPU system is built.
Before the following startup procedure, perform the parameter setup for CPU module of a different ID device and perform setup procedure (2).



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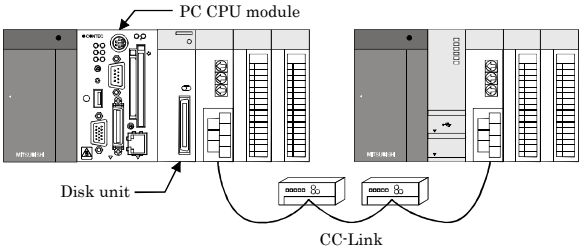
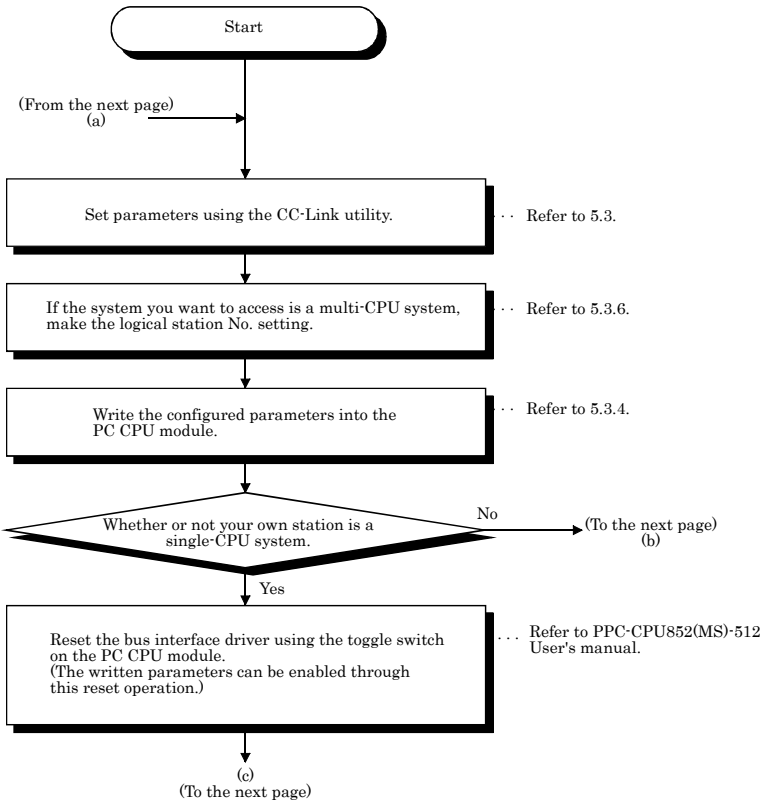
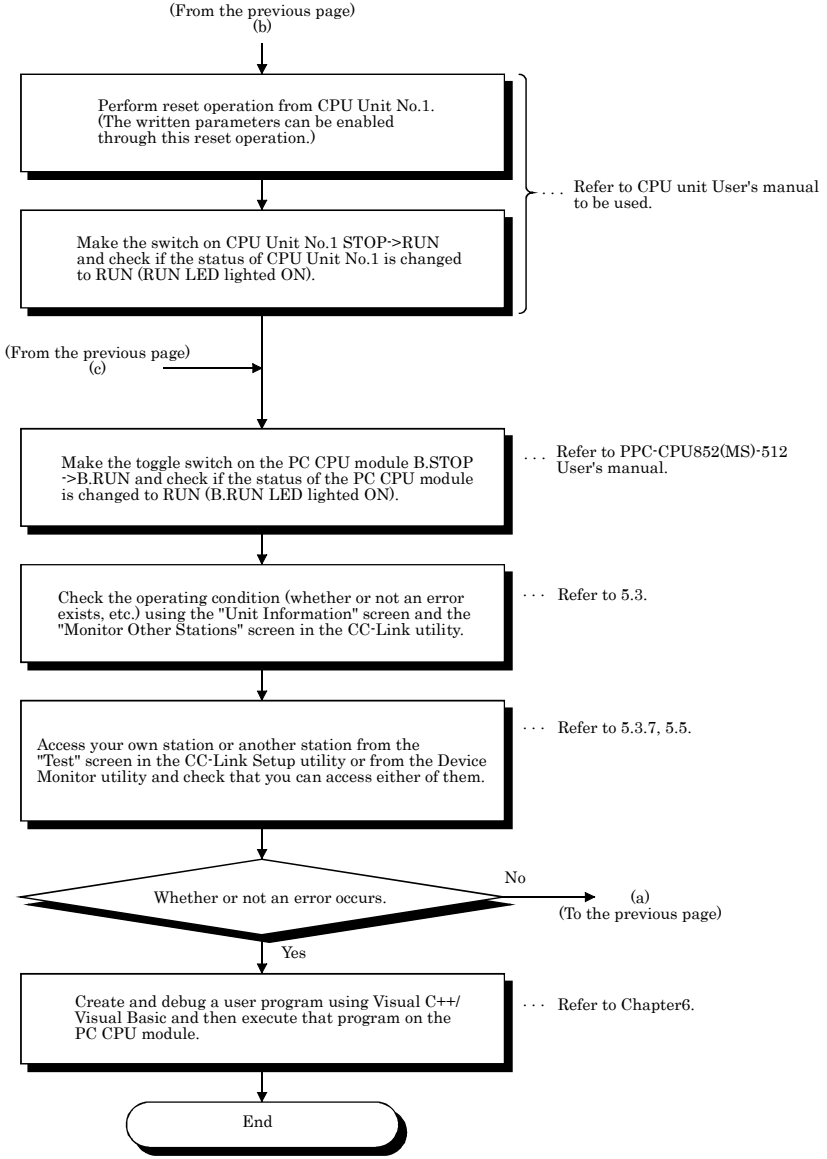
(b)
Perform reset operation from CPU Unit No.1. (The written parameters can be enabled through this reset operation.)
Make the switch on CPU Unit No.1 STOP->RUN and check if the status of CPU Unit No.1 is changed to RUN (RUN LED lighted ON).
. . . Refer to CPU unit User's manual to be used.
Make the toggle switch on the PC CPU module B.STOP ->B.RUN and check if the status of the PC CPU module is changed to RUN (B.RUN LED lighted ON).
. . . Refer to PPC-CPU852(MS)-512 User's manual.
Check the operating condition (whether or not an error exists, etc.) using the "Unit Information" screen and the "Unit Monitor" screen in the PC CPU Setup utility.
. . . Refer to 5.2.
Access a CPU unit of another device from the "Communication Diagnosis" window in the PC CPU Setup utility or from the Device Monitor utility and check that you can access that CPU unit.Create and debug a user program using Visual C++/Visual Basic and then execute that program on the PC CPU module.
. . . Refer to 5.2.9, 5.5.
Whether or not an error occurs.
No
(a)
(To the previous page)
Yes
Perform startup procedure (5) when using CC-Link System.
. . . Refer to (5).
Perform startup procedure (6) when using MELSECNET/H System.
. . . Refer to (6).
Create and debug a user program using Visual C++/ Visual Basic and then execute that program on the PC CPU module.
. . . Refer to Chapter6.

(5) Startup procedure when a CC-Link network system is built.
Before the following startup procedure, perform setup procedure (2).



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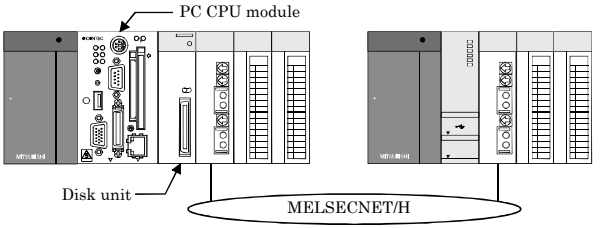
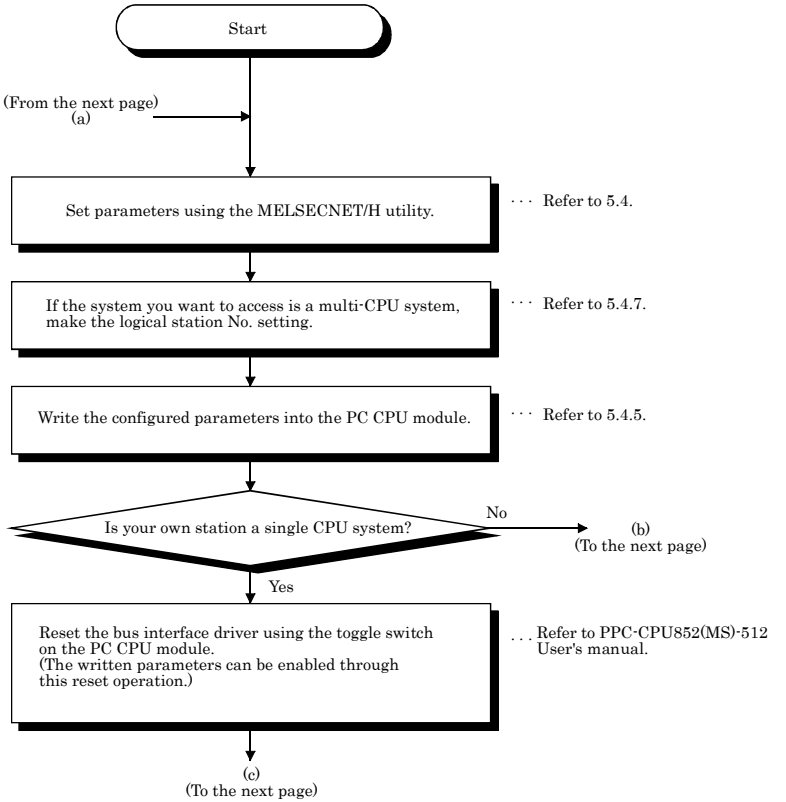
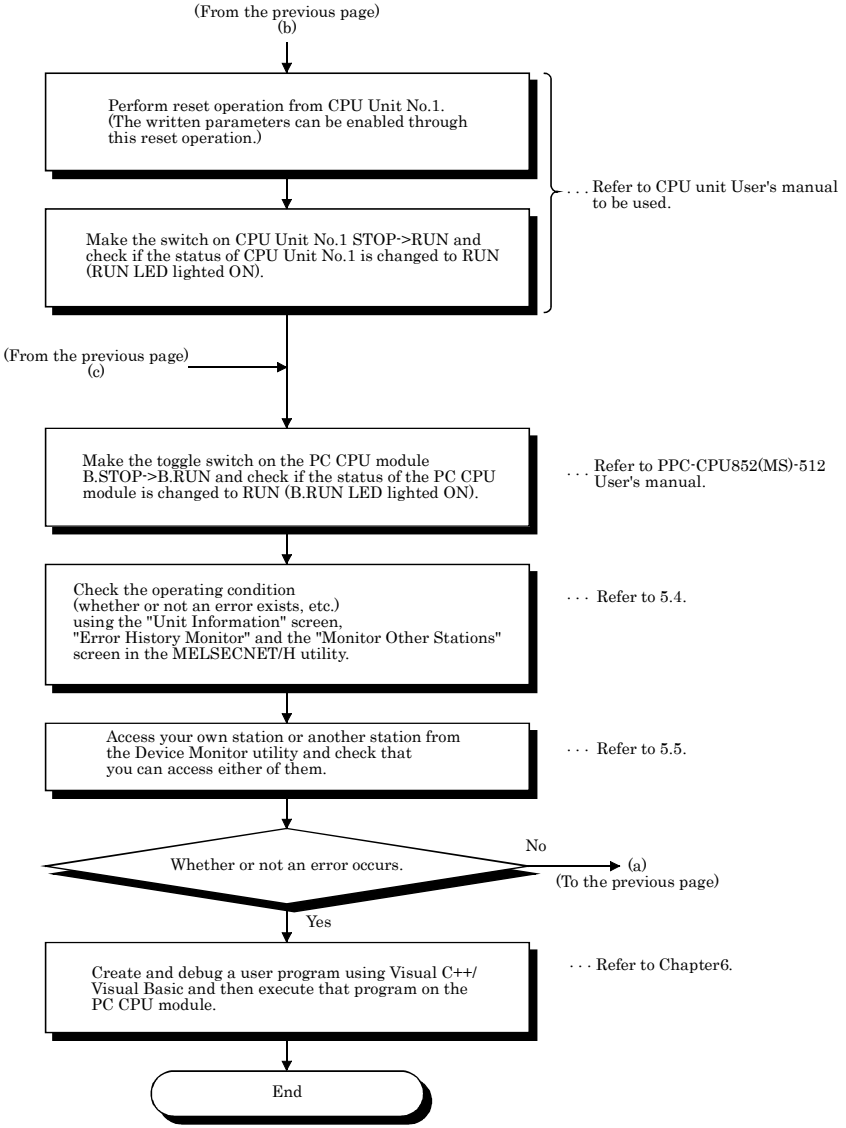
(b)
Perform reset operation from CPU Unit No.1.
(The written parameters can be enabled
through this reset operation.)
Make the switch on CPU Unit No.1 STOP->RUN
and check if the status of CPU Unit No.1 is changed
to RUN (RUN LED lighted ON).
. . . Refer to CPU unit User's manual
to be used.
(From the previous page)
(c)
Make the toggle switch on the PC CPU module B.STOP
->B.RUN and check if the status of the PC CPU module
is changed to RUN (B.RUN LED lighted ON).
. . . Refer to PPC-CPU852(MS)-512
User's manual.
Check the operating condition (whether or not an error
exists, etc.) using the "Unit Information" screen and the
"Monitor Other Stations" screen in the CC-Link utility.
. . . Refer to 5.3.
Access your own station or another station from the
"Test" screen in the CC-Link Setup utility or from the Device
Monitor utility and check that you can access either of them.
. . . Refer to 5.3.7, 5.5.
Whether or not an error occurs.
No
(a)
(To the previous page)
Yes
Create and debug a user program using Visual C++/
Visual Basic and then execute that program on the
PC CPU module.
. . . Refer to Chapter6.
End

(6) Startup procedure when a MELSECNET/H network system is built.
Perform startup procedure (2) before the following procedure.






(From the previous page)
(b)
Perform reset operation from CPU Unit No.1.
(The written parameters can be enabled through this reset operation.)
Make the switch on CPU Unit No.1 STOP->RUN and check if the status of CPU Unit No.1 is changed to RUN (RUN LED lighted ON).
. . . Refer to CPU unit User's manual to be used.
(From the previous page)
(c)
Make the toggle switch on the PC CPU module B.STOP->B.RUN and check if the status of the PC CPU module is changed to RUN (B.RUN LED lighted ON).
. . . Refer to PPC-CPU852(MS)-512 User's manual.
Check the operating condition (whether or not an error exists, etc.) using the "Unit Information" screen, "Error History Monitor" and the "Monitor Other Stations" screen in the MELSECNET/H utility.
. . . Refer to 5.4.
Access your own station or another station from the Device Monitor utility and check that you can access either of them.
. . . Refer to 5.5.
Whether or not an error occurs.
No
(a)
(To the previous page)
Yes
Create and debug a user program using Visual C++/ Visual Basic and then execute that program on the PC CPU module.
. . . Refer to Chapter6.
End

4. Installing and Uninstalling the Software Package

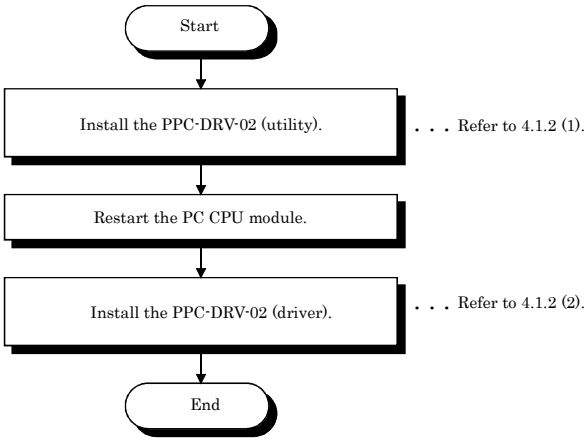
This chapter describes procedures of installing and uninstalling PPC- DRV- 02.

4.1 Installing the software package

This section describes installation of PPC- DRV- 02.

4.1.1 Installing Procedures

This section describes installation procedures of PPC- DRV- 02.



4.1.2 Installing

This section describes installation of PPC-DRV-02.

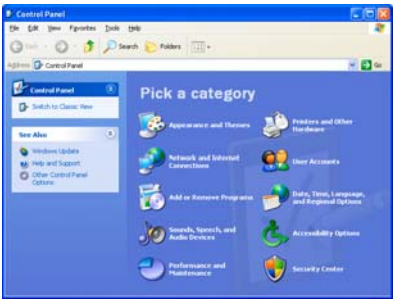
Microsoft Windows XP Professional Operating System is used for description in this section.

Note that the screen is different from that of Microsoft Windows 2000 Professional Operating System. Perform the installation with reference to “Remark”.

POINT
(1) When installing the PPC-DRV-02 in the PC CPU module, log in as a user who has the administrator privilege. (2) Remove all the applications that are included in the startup, then restart Windows before installing PPC-DRV-02. (3) To install PPC-DRV-02, use "Add/Remove Application" in "Control Panel". As an alternative method, you can execute "Setup.exe". Double- click "Setup.exe" in CD- ROM, then start the installation from item [6.] below.

(1) Installing utilities

1). Turn on the power to the PC CPU module and start Windows.



2). Open [Start] - [Control Panel].

Remarks

When Windows 2000 is used, to open : [Start] - [Settings] - [Control Panel].

↓

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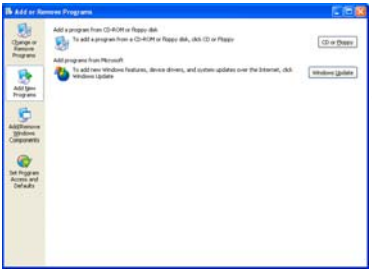
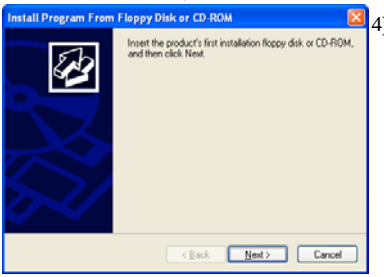
(From the previous page)

↓



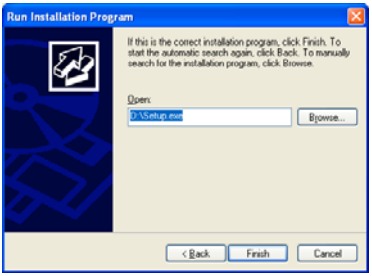
3). Open "Add or Remove Programs" and select "Add New Programs".
When the screen shown at the left is displayed, click the [CD or Floppy] button.

↓



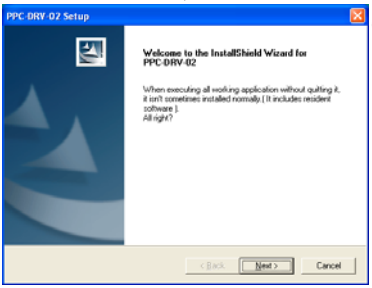
4). When the screen shown at the left is displayed, insert CD- ROM into the CD- ROM drive and click the [Next>] button.

↓



5). When the screen shown at the left is displayed, "Setup.exe" has been found. Click the [Finish] button and start the installation.
If "Setup.exe" was not found, click the [Browse...] button and change to the location where "Setup.exe" exists.

↓



6). When the screen shown at the left is displayed, click the [Next>] button.

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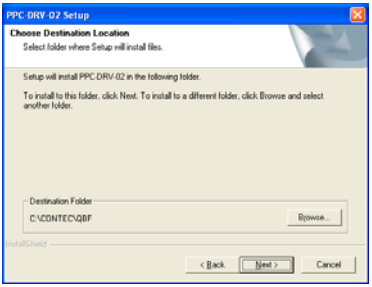
(From the previous page)

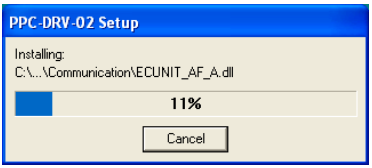
↓



7). Specify the installation destination folder.
The default installation destination folder of PPC-DRV-02 is "C : \CONTEC\QBF."
To accept the default, click the [Next>] button.

To change the installation destination folder, click the [Browse...] button.

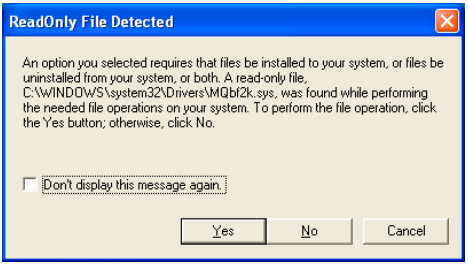
↓



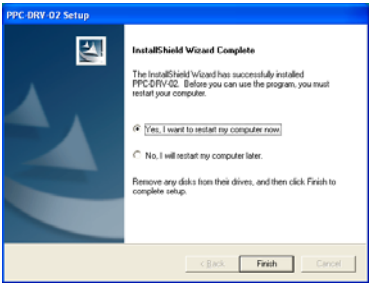
8). The installation will start.

Remarks

If the following screen is displayed during installation, click the [Yes] button and continue with the installation.



↓



9). The installation is complete when the screen shown at the left is displayed.
To restart, verify that "Yes, I want to restart my computer now" is checked, then click the [Finish] button.
To restart later, check "No, I will restart my computer later, " then click the [Finish] button.

↓

(Complete)

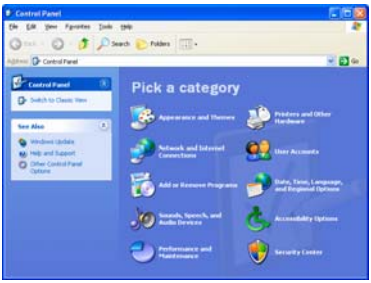
Point

(1) To reinstall the PPC-DRV-02 after an installation failure in the middle of the installation process, first uninstall the PPC-DRV-02 before trying to reinstall it.

(2) When reinstalling the software package, first uninstall it, restart the PC CPU module, and then reinstall the package.

(2) Installing driver

This section describes installation method of PC CPU module drivers.

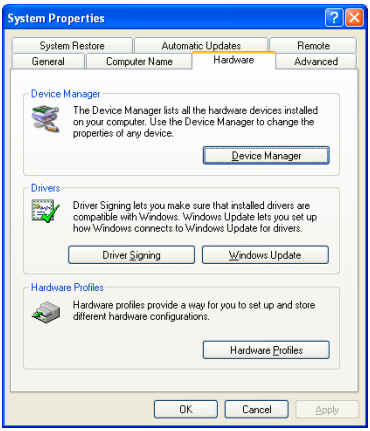


1). Open [Start] - [Control Panel].

Remarks

When Windows 2000 is used, open [Start] - [Settings] - [Control Panel].

↓



2). Open [Performance and Maintenance] – [System] and then select [Hardware], click [Device Manager] button.

Remarks

When Windows 2000 is used, open [System] and then select [Hardware], click [Device Manager] button.

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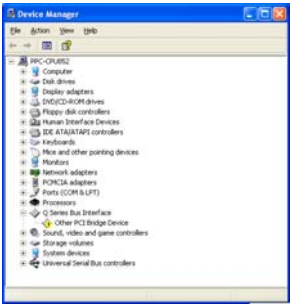
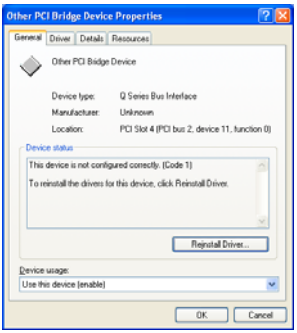
(From the previous page)

↓



3). When the screen shown at the left is displayed, select [Othe PCI Bridge Device] and click (Property) on the tool bar.

↓

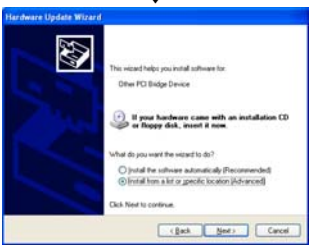


4). When the screen shown at the left is displayed, select [General] and click [Reinstall Driver] button.

↓

5). When the screen shown at the left is displayed, select “Yes, now and every time I connect a device” and click [Next] button.

↓



6). When the screen shown at the left is displayed, select “Install from a list or specific location [Advanced]” and click [Next>] button.

↓

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(From the previous page)

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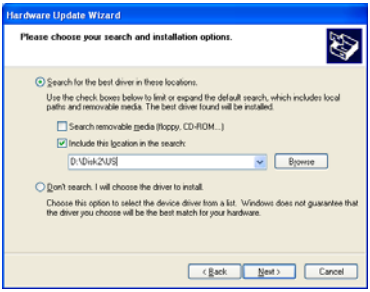
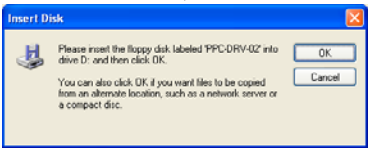


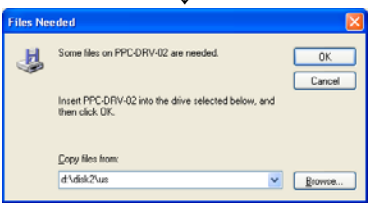
7). When the screen shown at the left is displayed, select "Search for the best driver in these locations.", "Include this location in the search." and enter "D : \Driver\JP" and then click [Next] button.
("D : " described in the above means the drive name of a CD-ROM drive. Enter the drive name of a CD-ROM drive you want to use.)

↓



8). When the screen shown at the left is displayed, click [OK] button.

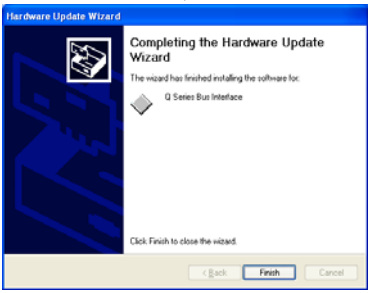
↓



9). When the screen shown at the left is displayed, enter "D : \Driver\JP" in "Copy files from :" and then click [OK] button.

If installation does not start even after [OK] button is clicked, click [Browse] button, specify "D : \Driver\JP\MQbf2k.sys" directly, and then click [OK] button.
("D :" above represents the CD-ROM drive name. Enter the name of the CD-ROM drive to be used.

↓



10). The installation is complete when the screen shown at the left is displayed.
Click the [Finish] button.

↓

(Complete)

4.2 Icons to be Registered

Upon installation of PPC-DRV-02, the following icons are registered in [Start] - [Program] - [PC CPU module]. *1

*1 : When Windows 2000 is used, the following icon is registered to : [Start] - [Programs] - [PC CPU].

Icon	Utility name	Description
	MELSEC Communication Function HELP	Starts MELSEC Communication Function HELP.
	Device Monitor Utility	Starts device monitor utility.
	Bus Interface Function HELP	Start Bus Interface Function HELP.
	CC-Link Utility	Start CC-Link Utility.
	MELSECNET_H Utility	Start MELSECNET/H utility.
	PC Module Setting Utility	Start PC Module Setting Utility.

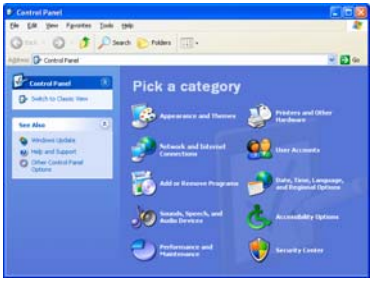
4.3 Uninstalling

This section describes uninstallation of PPC-DRV-02.

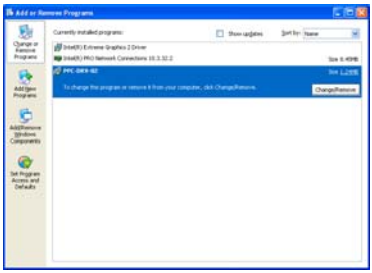
Windows XP Professional is used for description in this section.

Note that the screen is different from that of Windows 2000 Professional. Perform the uninstallation with reference to “Remarks”.

Point
(1) Always uninstall from Control Panel.
(2) To reinstall the software package, uninstall it first, restart the PC CPU module, and then reinstall.



↓



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1). Open [Start] - [Control Panel].

Remarks

When Windows 2000 is used, open [Start] - [Settings] - [Control Panel].

2). Open "Add or Remove Programs" and select "Change or Remove Programs".
When the screen shown at the left is displayed, select PPC- DRV- 02 and click the [Change/Remove] button.

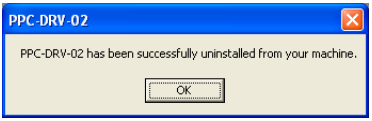
Remark

When Windows 2000 Professional is used, select PPC- DRV- 02 and click the [Change/Remove] button.

3). When the screen shown at the left is displayed, click [Yes] button and start unsinstalling.

(From the previous page)

↓



4). When uninstalling is finished, click [OK] button.

↓

(Complete)

5. Utility Operations

The following shows a list of utilities included in PPC-DRV-02.

Utility name	Description	Referring paragraph
PC module setting utility	The PC module setting utility has the following features. - Displays module information of the PC CPU module (LED status, switch status, error information, etc.). - Monitors the statuses (input, output, buffer memory) of mounted modules. - Sets parameters. - Performs online operation directed to the PC CPU module.	5.2
CC-Link utility	Sets parameters for the CC-Link utilities managed by the PC CPU module and monitors the network.	5.3
MELSECNET/H utility	Sets parameters for the MELSECNET/H unit managed by the PC CPU module and monitors the network.	5.4
Device Monitor Utility	Monitors and tests the sequencer CPU's device data.	5.5

Remarks

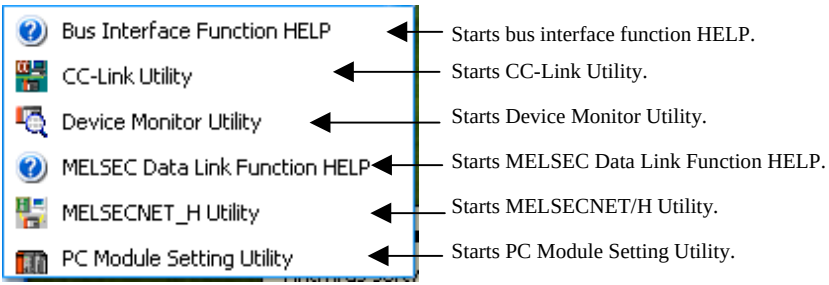
If the error dialog box appears while operating any of the utilities, handle the error by referring to “Section 8.4.3 Actions upon the error message.”

5.1 Utility Common Operations

This section explains the common operations for each utility.

5.1.1 Starting an utility

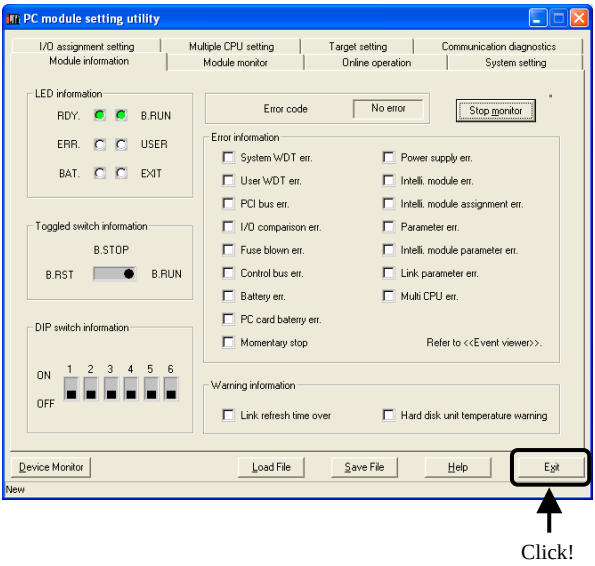
Start an utility by clicking one of the following menus inside [Start] - [Programs] - [PC CPU module] menu.



5.1.2 Ending an utility

The following explains how to end a utility.

(1) To end the PC Module Setting Utility, CC-Link Utility and MELSECNET/H Utility, click the [Close] button at the lower right- hand corner of the utility screen.



(2) To end the Device Monitor Utility, click [Menu] - [Exit] from the menu bar.
When a dialog box is displayed, click the [Yes] button.

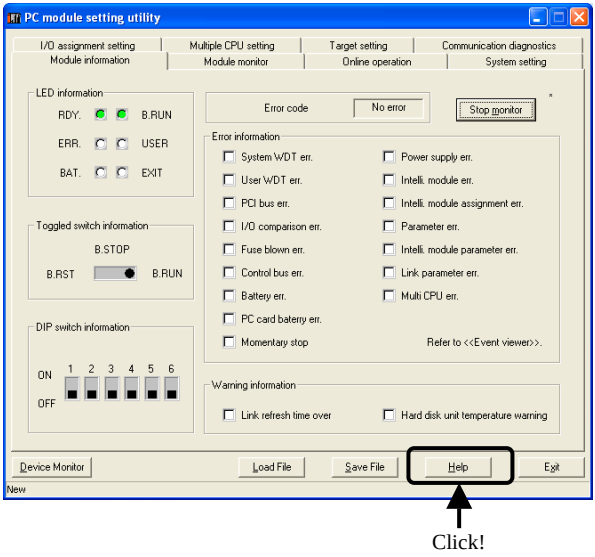
5.1.3 Displaying the help screen

The following explains how to display the utility's help screen.

(1) For the PC Module Setting Utility, CC-Link Utility, and MELSECNET/H Utility.

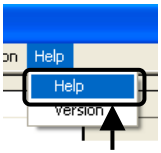
To display the help screen of the PC Module Setting Utility, CC-Link Utility and MELSECNET/H Utility, click the [Help] button at the lower right- hand corner of the utility screen.

Or click on the [F1] key while the utility is still active.



(2) Device Monitor Utility

To display the help screen for the Device Monitor Utility, click [Help] - [Help] from the menu bar.
Or click on the [F1] key while the utility is still active.



Remarks

For the help windows of utilities included in PPC-DRV-02, more than one window cannot be displayed at the same time.

Only one help window can be displayed.

While a help window is displayed, if another help window is started, the one started first shall be closed, so that the one started later can be displayed.

5.1.4 Verifying the version

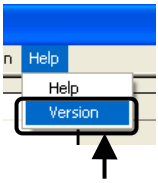
The following explains how to verify the utility version.

(1) PC Module Setting Utility
To verify the version information for the PC Module Setting Utility, select [Version] from system menu.
For more details on this, please refer to “5.2.10 Operating the System Menu”.

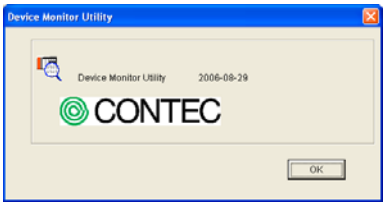
(2) CC-Link Utility and MELSECNET/H Utility
To verify the version information for the CC-Link Utility and MELSECNET/H Utility, select [Version] from system menu.
For more details on this, please refer to “5.4.8 Operating the System Menu”.

(3) Device Monitor Utility
To check the Device Monitor utility's version.

(a) Operation
Click on [Version] in [Help] on the menu bar to open the “Device Monitor Utility” window.



(b) Device Monitor Utility



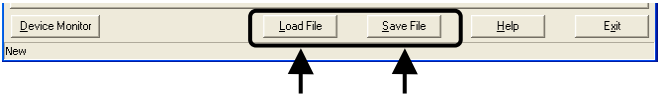
Item	Description
Device Monitor Utility	Displays the date of the Device Monitor Utility.
[OK] button	Closes the “Version Information” window.

5.1.5 About the Parameter Setup File

The following explains about the parameter setup files for the PC Module Setting Utility, CC-Link Utility and MELSECNET/H Utility.

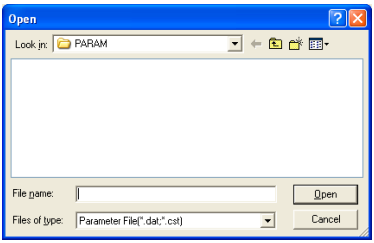
(1) Reading/saving a parameter setup file.
The following describes how to read/save a parameter setup file.

1). Click on the [Load File] button to read a parameter setup file.
Click on the [Save File] button to save a parameter setup file.



Click!

2). Read/save the settings.



Item	Description
Look in (Place to be saved)	Select where to read (or save) a parameter setup file to.
File name	Enter the name of a file you want to read (or save).
[Open] button ([Save] button)	Read (or saves) the file whose name has been entered.
[Cancel] button	Close without reading (or saving).

Remarks

(a) On the status bar of the parameter setup file for the PC Module Setting Utility, CC-Link Utility or MELSECNET/H Utility, the name of the currently used parameter file is displayed.

(b) The following shows the filename extensions of parameter setup files for the PC Module Setting Utility, CC-Link Utility, and MELSECNET/H Utility.

Utility name	Parameter setup file filename extensions
PC Module Setting Utility	Cst (PPC-DRV-02 setting data) Dat (Reading PPC-DRV-01 setting data only)
CC-Link Utility	ccl
MELSECNET/H Utility	mnh

(c) "C : \CONTEC\QBF\PARAM" is the default directory to save the parameter setup files by the PC module setting utility, CC-Link utility, and MELSECNET/H utility.
(When PPC-DRV-02 is installed in "C : \CONTEC\QBF".)

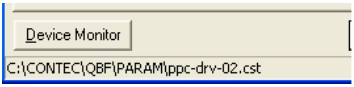
(2) Diverting parameters using a parameter setup file
You can use multiple modules with the same parameter setting by reading a parameter file into multiple PC CPU modules.

5.1.6 Status Bar Display Details

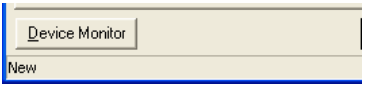
The status bar for each utility is explained as follows.

The following shows the status bars for the PC Module Setting Utility, CC-Link Utility and MELSECNET/H Utility.

(1) When a parameter setup file has been read/saved.
The filename is displayed on the status bar.



(2) When a parameter setup file has not been read/saved.
“New…” is displayed on the status bar.



5.2 PC Module Setting Utility

The following explains how to operate the PC Module Setting Utility.

Notes on the PC Module Setting Utility are described as follows.

(1) No. of utilities that can be used at the same time
Multiple PC CPU Setup utilities cannot run at the same time.
Only one PC module setting utility can be launched.

(2) Notes when parameters have been written.
The parameters written into a PC CPU module are enabled when that PC CPU module has been reset.

5.2.1 PC Module Setting Utility Function List

The following describes the PC module setting utility 's features.

Name	Description	Reference paragraph
Reading/saving a parameter setup file.	Reads from or saves into a file the parameters that have been set using the PC Module Setting Utility.	5.1.5
Module information	Displays information of the PC CPU module such as LED status, statuses of switches, error information, and alert information.	5.2.2
Module monitor	Processes the following for the modules mounted on the slots. - Monitors the input (X) status, the output (Y) status, and the buffer memory status. - Can forcibly output the output (Y) and forcibly write to buffer memory.	5.2.3
Online operation	Reads/writes/verifies parameters for the PC CPU module.	5.2.4
System setup	Sets parameters (system setup) for a PC CPU module.	5.2.5
I/O assignment setting	Sets parameters (I/O assignment setting) for a PC CPU module.	5.2.6
Multiple CPU setting	Sets parameters (Multiple CPU setting) for a PC CPU module.	5.2.7
Target setting	At the time a multiple CPU system is configured, sets a Logical Sta. No. to access a CPU of a different ID device.	5.2.8
Communication diagnostics	When the PC CPU module is in a multiple CPU configuration, diagnoses the possibility of communication with a CPU of a different ID device.	5.2.9

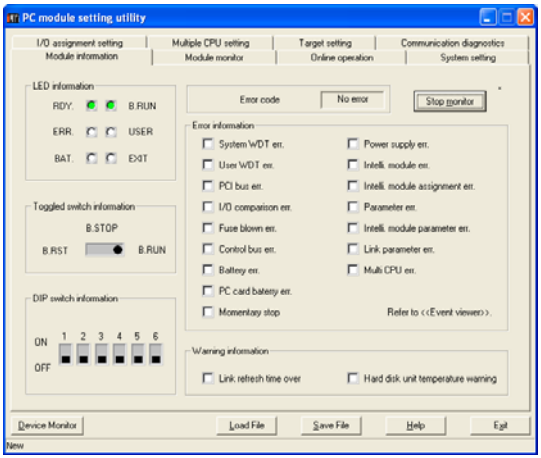
5.2.2 Operating the Module Information Window

Displays information of the PC CPU module such as LED status, statuses of switches, error information, and alert information.

Point

(1) Monitoring stops when the screen switches to another window during monitoring operation. Monitoring resumes the next time the “Module Information” window is opened.

(2) Monitoring is not possible while the bus interface driver's resetting is in progress. Start monitoring after the reset operation is complete.



Item	Description
LED information	Displays the LED status of a PC CPU module. For the details of LED, refer to “PPC-CPU852(MS)-512 User’s Manual”.
Toggled switch information	Displays the Toggled switch status of PC CPU module. For the details of Toggled switch, refer to “PPC-CPU852(MS)-512 User’s Manual”.
DIP switch information	Displays the DIP switch status of PC CPU module. For the details of DIP switch, refer to “PPC-CPU852(MS)-512 User’s Manual”.
Error code	Displays the latest error code for a stop error/continue error occurring. Displays “No error” for the error code “0”.
Error information *1	When a stop error/continue error occurs in the PC CPU module, the relevant stop error/continue error item becomes : (white) -> (red). For the error details and actions to take when LEDs are lighted ON, refer to “Section 8.3 Actions upon Error LED”.

Item	Description
Warning information *1	When an alert occurs in the PC CPU module, the relevant alert item becomes : (white)->(red). For details of warning information and actions to take when LEDs are blinking, refer to "8.3 Actions upon Error LED".
[Start monitor] button	Starts monitoring. Changes to the [Stop monitor] button when monitoring, with "*" blinking in the upper right of the [Stop monitor] button. This button is disabled when in offline mode.
[Stop monitor] button	Stops monitoring. Changes to the [Start monitor] button when monitoring is stopped.

*1 : Keeps on displaying (red) in the event of an error or alert, but in the event of a "battery error" or "PC card battery error," changes to (red) or (white) depending on the error condition.

5.2.3 Operating the Module Monitor Window

Monitors the input and output statuses and the buffer memory of a module.

⚠ DANGER	To perform control (data change) on a PC CPU module that is running, configure an interlock circuit on a user program so that the entire system can constantly operate on the safety side. Also to perform other control (operation status change (status control)) on a PC CPU module that is running, configure an interlock circuit on a user program so that the entire system can constantly operate on the safety side. Note that especially when the above control is performed on a PC CPU module in a remote location from an external device, you may not immediately respond to trouble on the PC CPU module side due to a data communication error. Configure an interlock circuit on the user program, and at the same time, determine the procedure between external device and PC CPU module for troubleshooting as a system in the event of a data communication error.

(1) Notes on the Module Monitor Window

(a) Window transition when monitoring is in progress.
Monitoring stops when the screen switches to another window during monitoring operation.
Monitoring resumes the next time the "Module Monitor" window is opened.

(b) Monitoring and testing.
For the monitoring and testing of a module performed on this window (output (Y) forcible output and forcible writing to buffer memory), operation is performed on a module mounted to a "Slot No." set from this window.
Note that a test can be performed only on modules managed by the PC CPU module.

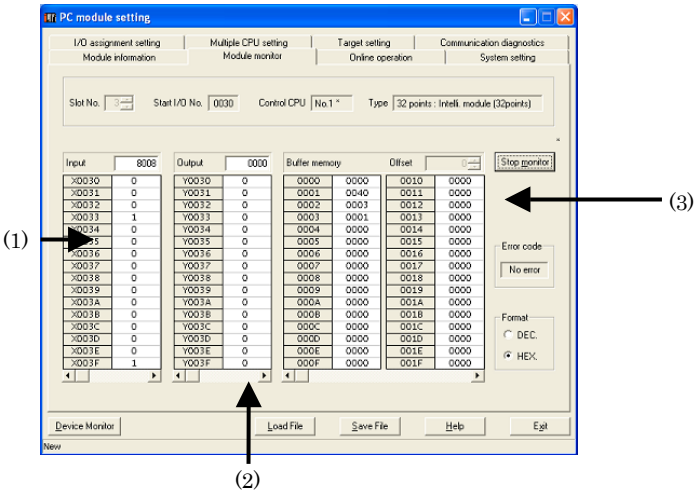
(c) Notes when the module configuration is changed.
When the module configuration is changed after the launch of the PC module setting utility, perform the following operation to update information up to the state after the module configuration change.
- Click on the [Start monitor] button.
- Open a separate window other than the "Module Monitor" window, and then open the "Module

Monitor" window again.

(2) Module monitor window

Monitors the input (X) status, the output (Y) status, and the buffer memory status for the module mounted on the selected slot.

It is possible to forcibly output the output (Y) and forcibly write to buffer memory from this window.



Item	Description
Slot No. *1	Sets Slot No. of a slot to be monitored. (Initial value : 0, setting range : 0 - 63)
Start I/O No.	Displays the start I/O No. of the slot set in the "Slot No." filed.
Control CPU	Displays the device No. of a device that manages the module mounted on the slot set in the "Slot No." filed. (If the PC CPU module that the PC Module Setting Utility is connected to is the control CPU, "*" is displayed to the right of the module No. display.)
Type	Displays the input and output points and type of the module mounted on the slot set in the "Slot No." filed. Displays the "point" value in the parameter setting (I/O assignment setting) in between brackets ().
[Start monitor] button	Starts monitor. Changes to the [Stop monitor] button when monitoring, with "*" blinking in the upper right of the [Stop monitor] button. This button is disabled when in offline mode.
[Stop monitor] button	Stops monitoring. Changes to the [Start monitor] button when monitoring is stopped.
Input *2	Displays the input (X) status of the slot specified in the "Slot No." filed, in modules of words.

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>1) X area *2*3</td><td>Displays the input (X) status of the slot specified by the slot No. in bit units.
<table><tr><th>Display</th><th>Description</th></tr><tr><td>0</td><td>OFF</td></tr><tr><td>1</td><td>ON</td></tr></table></td></tr>
<tr><td>Output *2</td><td>Displays the output (Y) status of the slot specified by the slot No. in word units.
Double-click on this item to display the “Data Input” window.
Enter a value into the “Data Input” window for forcible output. *5</td></tr>
<tr><td>2) Y area *2*3</td><td>Displays the output (Y) status of the slot specified in the “Slot No.” filed, in modules of bits.
Double-click on this item for forcible output.
<table><tr><th>Display</th><th>Description</th></tr><tr><td>0</td><td>OFF</td></tr><tr><td>1</td><td>ON</td></tr></table></td></tr>
<tr><td>Buffer memory address</td><td>Specifies the buffer memory address to be monitored for an intelligent functional module. *4
This setting is not possible for modules other than intelligent functional modules.
(Initial value ： 0, setting range ： 0 or more)</td></tr>
<tr><td>3) Buffer memory area *3</td><td>Displays the buffer memory status of the slot specified in the “Slot No.” filed.
Double-clicking this displays the "Data Change" window.
Entering a value on the "Data Change" window executes forced write. *5</td></tr>
<tr><td>Format</td><td>Selects display formats for the input (X) status, output (Y) status, and buffer memory status (“decimal No.” or “hexadecimal No.”).
The selected formats are reflected in the formats of forcible output of words in the output (Y) state and No. value input at the time of buffer memory forcible writing.
(Initial value ： “hexadecimal”, setting range ： “decimal” or “hexadecimal”)</td></tr>
<tr><td>Latest error code</td><td>If an intelligent functional module is mounted on the slot set in the “Slot No.” filed, the latest error code of the intelligent functional module is displayed. *6
If any module other than intelligent functional modules is mounted on the slot set in the “Slot No.” filed, “-” is displayed.</td></tr>
</table>

*1 ： Slot No. cannot be changed when monitoring is in progress.
Change Slot No. after monitoring has been stopped.

*2 ： The range displaying input data and output data covers just the points assigned by the parameter setting (I/O assignment setting) for the module mounted on the slot of the specified Slot No.

*3 ： When a multiple CPU system is configured, this item is enabled if the control CPU for the module to be monitored is a PC CPU module.

*4 ： For the buffer memory addresses of intelligent functional modules, refer to the manual for each module.

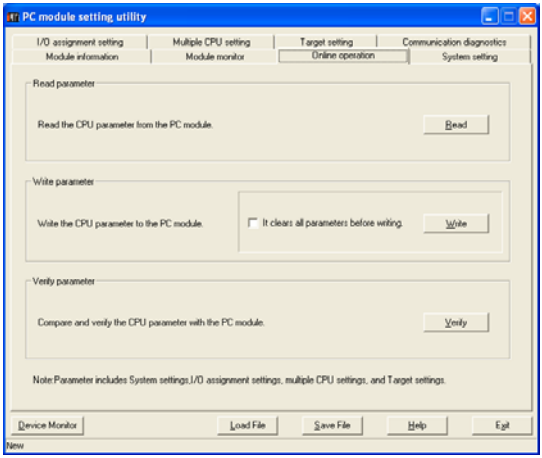
*5 ： The No. input formats for forcible output and forcible writing shall follow the formats selected in “Display Format”.

*6 ： Displays “No error” for the error code “0”.

5.2.4 Operating the Online Operation Window

Reads/writes/verifies parameters for the PC CPU module.

Point
Operation on this window is not possible while the bus interface driver's resetting is in progress. Perform operation after the reset operation is complete.



Item		Description
Read parameter [Read] button		Reads the parameters out of the PC CPU module.
Write parameter *1	[Write] button	Writes the parameters that have been set using the PC Module Setting Utility into a PC CPU module. The parameters written are enabled when that PC CPU module has been reset.
	"It clears all parameters before writing." checkbox	When the above [Write] button is clicked on with this checkbox being marked, clears, before writing new parameters, all the parameters (including CC-Link utility parameters, MELSECNET/H unit parameters, and intelligent functional module parameters).
Verify parameter [Verify] button		Verify the parameters set to the PC CPU module against those set to the PC Module Setting Utility. The verification result is displayed in the message box.

*1 : To write parameters, log on as a user with the Administrator attribute.

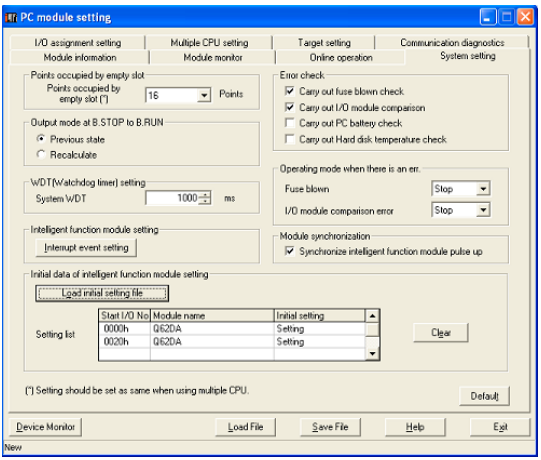
5.2.5 Operating the System Setup Window

Makes the parameter setting (system setup) of PC CPU module.

Sets system-related parameters.

Point
(1) When a multiple CPU system is configured, divert the multiple CPU parameters set in QCPU (Q mode). Diverting the multiple CPU parameters can prevent inconsistency between the PC CPU module settings and the settings of each sequencer CPU. (2) When a multiple CPU system is configured, set up the system after finishing the "Multiple CPU Setup" window setting. (3) To reflect the settings in a PC CPU module, write the parameters using the “Online Operation” window and reset the PC CPU module.

(1) System setup window



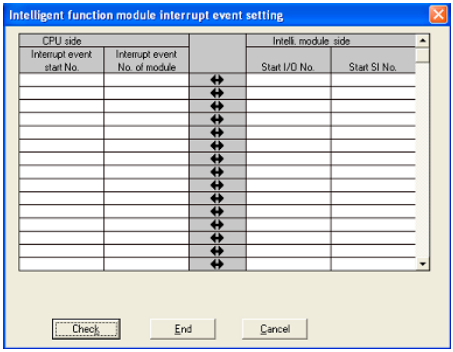
Item	Description
Points occupied by empty slot [*]	Sets points per slot for vacant slots of the primary and additional base modules. (Initial value ： 16 points, setting range ： 0, 16, 32, 64, 128, 256, 512, 1024 points)
Output mode at B.STOP to B.RUN	For the output (Y) when the operation status of the PC CPU module is changed from STOP to RUN, select between “Previous state” and “Recalculate”. (Initial value ： “Previous state”)

Item		Description
WDT [Watchdog timer] setting		Sets the time of WDT [Watchdog timer]. (Initial value : 1000, setting range : 20 - 2000)
Intelligent function module setting		When clicking [Interrupt event setting] button, "Intelligent function module interrupt event setting" windows is opened. For details, refer to "(2) Intelligent function module interrupt event setting windows".
Error check		Sets whether or not to detect errors with respect to the following : - "Carry out fuse blown check". - "Carry out I/O module comparison". - "Carry out PC battery check". - "Carry out Hard disk temperature check". (Initial value : "Carry out fuse blown check" and "Carry out I/O module comparison" marked. (Errors to be detected.))
Operating mode when there is an err.		Selects whether to continue or stop the PC CPU module's operation if an error is detected with respect to "Fuse blown" or "I/O module comparison error". (Initial value : "Stop", setting range : "Stop", "Continue")
Module synchronization		Set whether the startup of the bus interface driver will be synchronized with that of the intelligent function module. *1 (Initial value : Check (Synchronize))
Initial data of intelligent function module setting *2	[Load initial setting file] button	Sets a value to be set to the buffer memory of an intelligent functional module when the bus interface driver starts up. Load GX Developer project file which saves the initial data of intelligent function module.
	Setting list	Displays "I/O address", "Module name", and "Initial settings" - the settings that are read using the [Load initial setting file] button for initial setup files.
	[Clear] button	Clears the information of setting list.

*1 : Set this when synchronizing the PC CPU module startup with the startup of an intelligent function module (positioning module, etc).
If "Module synchronization" is not made, the PC CPU module and intelligent function module need to be inter-locked each other.

*2 : If setting the initial values of the following devices using "Initial data of intelligent function module setting", mark "Module synchronization".
If "Module synchronization" is not marked, the device's initial values may not be set correctly.
- Intelligent function module device (U□\G□)
- Link direct device (J□\W□, J□\SW□)

(2) Intelligent function module interrupt event setting window
Sets data for intelligent function module interrupt event *1.



Item	Description
Interrupt event start No.	Sets the start No. of the interrupt notification event to be generated by an interrupt from the intelligent function module. (Initial value : None, setting range : 50 - 255)
Interrupt event No. of module	Sets the No. of the interrupt notification events to be generated by an interrupt from the intelligent function module. (Initial value : None, setting range : 1 - 16)
Start I/O No.	Sets the start I/O No. of the intelligent function module. (Initial value : None, setting range : 0000 - 0FF0, 3E00 - 3E30)
Start SI No.	Sets the start SI No. (interrupt factor No.) of the intelligent function module. (Initial value : none, setting range : 0 - 15)
[Check] button	Checks whether or not the setting is correct.
[End] button	Saves the setting and closes the “Intelligent function module interrupt event setting” window.
[Cancel] button	Closes the “Intelligent function module interrupt event setting” window without saving the settings.

*1 : An interrupt event is an interrupt notification event generated by an interrupt from the intelligent function module. The next page shows interrupt event No. and interrupt factors.

Interrupt event No.	Interrupt factor	
0	Interrupt by QI60	First point
1		Second point
2		Third point
3		Fourth point
4		Fifth point
5		Sixth point
6		Seventh point
7		Eighth point
8		Ninth point
9		Tenth point
10		11th point
11		12th point
12		13th point
13		14th point
14		15th point
15		16th point
16 - 49	Unused	
50 - 255	Intelligent function module interrupt	Use parameters to set which intelligent function module to be used.

Remarks

When multiple interrupts occur simultaneously, it is not possible to specify the order of interruption event notifications to be issued.

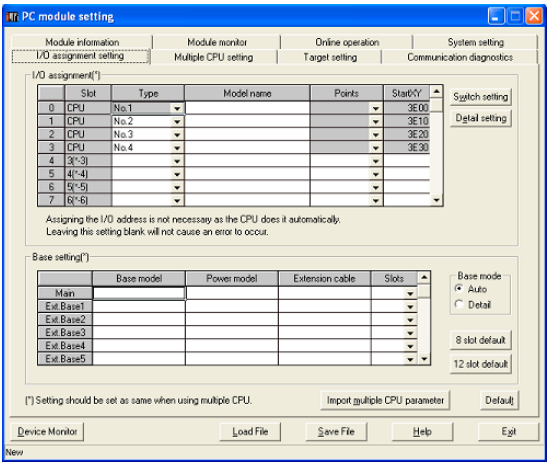
5.2.6 Operating the I/O Assignment Setting Window

Makes the parameter setting (I/O assignment setting) of PC CPU module.

Sets I/O assignment for slots, and sets parameters relating to the base modules to which modules are mounted.

Point
(1) When a multiple CPU system is configured, divert the multiple CPU parameters set in QCPU (Q mode). Diverting the multiple CPU parameters can prevent inconsistency between the PC CPU module settings and the settings of each sequencer CPU. (2) When a multiple CPU system is configured, do the I/O assignment setting after finishing the "Multiple CPU Setup" window setting. (3) To reflect the settings in a PC CPU module, write the parameters using the “Online Operation” window and reset the PC CPU module.

(1) I/O assignment setting window

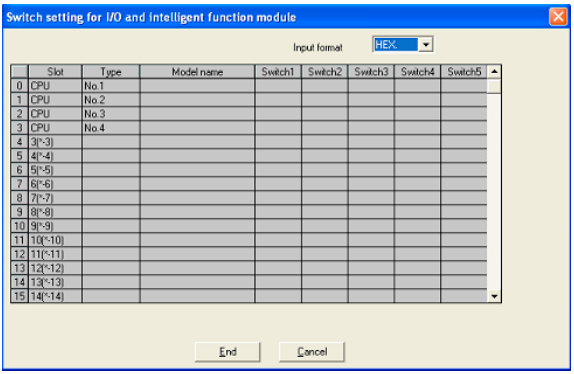


Item		Description
I/O assignment	Slot	Displays “Slot No.” of the mounted module, the module No. of the base module to which the module is mounted, and the mounted position in the base module.
	Type *1	Sets the module type of the mounted module. At the time a multiple CPU system is configured, if “CPU (vacant)” is set to positions not supported by the PC CPU module, no error is displayed. Check that the setting is correctly made. (Initial value ： “ “ (vacant), setting range ： “ “ (vacant), “empty”, “input”, “high-speed input”, “output”, “input/output mixed”, “intelligent”, “interrupt”, “module No.1” *2 - “module No.4” *2, “CPU (empty)” *2)
	Model name	Enters model name of the mounted module.
	Points *1	Specify input/output points when changing a slot’s input/output points. (Initial value ： “” (vacant), setting range ： 0, 16, 32, 48, 64, 128, 256, 512, 1024)
	Start XY *1	Specify an input/output No. when changing a slot's input/output No.
	[Switch setting] button	Opens the “I/O module, intelligent function module switch setting” window. For details, refer to “(2) I/O module, intelligent function module switch setting” window.
	[Detail setting] button	Opens the “I/O module, intelligent function module switch setting” window. For details, refer to “(3) Intelligent function module detailed setting window”.
Base setting [*]	Base model	Sets base model of the used base module.
	Power model	Sets power model of the mounted power module.
	Extension cable	Sets type of the used extension cable.
	Slots *1	Specifies “Slot No.” of the used base module. (Initial value ： None, setting range ： 2, 3, 5, 8, 10, 12)
	Base mode	Selects between “Auto” and “Detail” for the base mode. (Initial value ： “Auto”, setting range ： “Auto”, “Detail”)
	[8 slot default], [12 slot default] button	Collectively sets the specified slot No. to the base modules.
[Import multiple CPU parameter] button		Reads the multiple CPU system parameter part from a file created by “GX Developer,” software for MELSEC-Q Series. For details, refer to “5.2.11 Loading initial setting data file and using multiple PLC parameters”.
[Default] button		Changes the settings to default.

*1 ： When a multiple CPU system is configured, make the settings for the PC CPU module and the settings for each PLC CPU equal.

*2 ： Can be set only at the time a multiple CPU system is configured.

(2) Switch setting for I/O and intelligent function module window
Sets the I/O module and intelligent functional module switch.

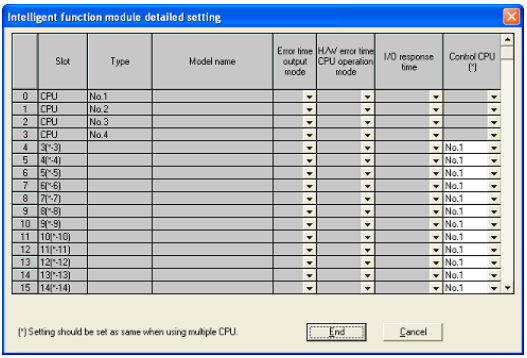


Item	Description
Input format	For the numeric input format, select among binary, decimal, and hexadecimal No. (Initial value ： “hexadecimal”, setting range ： “binary”, “decimal”, “hexadecimal”)
Slot, Type, Model name	Displays the “Slot”, “Type” and “Model name” set on “I/O assignment setting window”.
Switch 1 - Switch 5 *1	Sets the switch of intelligent function module.
[End] button	Saves the settings and closes the “Switch setting for I/O and intelligent function module” window.
[Cancel] button	Closes the “Switch setting for I/O and intelligent function module” window without saving the settings.

*1 ： In a multiple CPU system, set the same value to the PC CPU module and that of PLC CPU.

(3) Intelligent function module detailed setting window

Makes the detailed setting of the I/O modules and intelligent function modules.



Item	Description
Slot, Type, Model name	Displays “Slot,” “Type,” and “Model Name” set from the “I/O Assignment Setup” window.
Error time output mode	Seleccts the output mode at the time of error occurring. (Initial value ： “clear”, setting range ： “clear”, “retain”)
H/W error time CPU operation mode	Selects the PC CPU module operation mode at the time of hardware error occurring. (Initial value ： “stop”, setting range ： “stop”, “continue”)
I/O response time	Sets the I/O response time. Modules mounted / Initial value / Setting range High speed inputmodule, Interrupt module / 0.2 / 0.1, 0.2, 0.4, 0.6, 1 Input module, Input/output mixed module / 10 / 1, 5, 10, 20, 70 (Module ： ms)
Control CPU *1	Sets the Control CPU. (Initial value ： “Module No.1”, setting range ： “Module No.1” - “Module No.4” *2)
[End] button	Saves the sittings and closes “I/O module, Intelligent function module detailed setting” window.
[Cancel] button	Closes the “I/O module, Intelligent function module detailed setting” window without saving the settings.

*1 : In a multiple CPU system, set the same value to the PC CPU module and that of PLC CPU.

*2 : The setting range depends on the settings made in “No. of CPUs” of the “Multiple CPU Setup” window.

5.2.7 Operating the Multiple CPU Setup Window

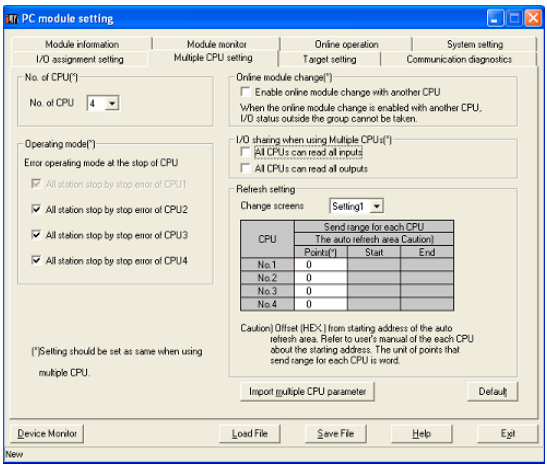
Makes the parameter setting (Multiple CPU setup) of PC CPU module.
Sets the parameters related to the multiple CPUs.

Point

(1) When a multiple CPU system is configured, divert the multiple CPU parameters set in QCPU (Q mode).
Diverting the multiple CPU parameters can prevent inconsistency between the PC CPU module settings and the settings of each sequencer CPU.

(2) At the time a multiple CPU system is configured, if the multiple CPU parameters of QCPU (Q mode) are not diverted, set I/O assignment after finishing the “Multiple CPU Setup” window setting.

(3) To reflect the settings in a PC CPU module, write the parameters using the “Online Operation” window and reset the PC CPU module.



Item		Description
No. of CPU *1		Sets the total No. of PLC CPU, PC CPU and Motion CPU modules that form the multiple CPU system. (Initial value : 1, setting range : 1 - 4)
Operating mode *1		Set the operating mode at any CPU stop error. (Initial value : Check (All stations stop by stop error of each CPU))
Online module change *1		Online module change Enable online module change with another CPU.
I/O sharing when using Multiple CPUs *1		Sets whether or not to import input and output statuses outside the group. (Initial value : Not selected. (Do not import input and output statuses.)) This item can be set when "Online module change" is not marked.
Reflesh setting *2	Change screens	Selects the registered refresh setting. (Initial value : "Setting1", setting range : "Setting1" - "Setting4")
	Send range for each CPU *1	Set the points of the shared memory used by each CPU to send data. Displayed by automatically calculating "Start" and "End". (Initial value : 0, setting range : 0 - 2048)
[Import multiple CPU parameter] button		Reads the multiple CPU system parameter part from a file created by GX Developer. For details, refer to "5.2.11 Loading initial setting data file and using multiple PLC parameters".
[Default] button		Changes the settings to default.

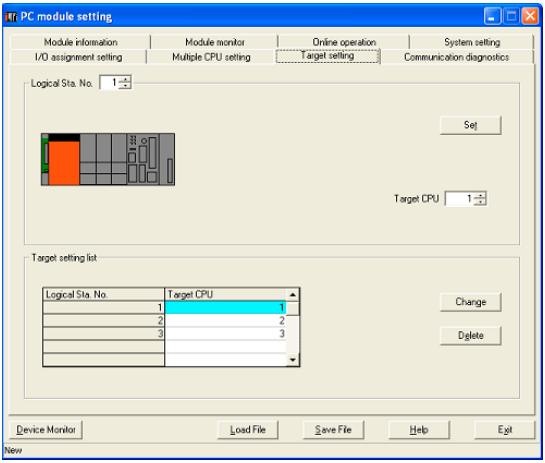
*1 : In a multiple CPU system, set the same value to the PC CPU module and that of PLC CPU.

*2 : When the screen is transitioned to another window, if nothing is set to a No. smaller than the No. to which the refresh setting has already been set, the refresh setting already set is diverted to that No.

5.2.8 Operating the Target Setting Window

Sets the logical Sta. No. for making access to any CPU module in a multiple CPU system configuration.

Point
(1) To reflect the settings in a PC CPU module, write the parameters using the “Online Operation” window and reset the PC CPU module. (2) Set a sequencer CPU as a target CPU.



Item	Description
Logical Sta. No. *1 *2	Specifies the Logical Sta. No. to be set or changeed. (Initial value : 1, setting range : 1 - 64)
[Set] button	Register the settings and changes (Logical Sta. No., target CPU) to the target setting list.
Target CPU *3	Sets CPUs (CPU module No. in a multiple CPU system) to be accessed. (Initial value : 1, setting range : 1 - 3)
Target setting list	Displays Logical Sta. No. currently set and a list of their corresponding target CPUs.
[Change] button	Displays the setting of the row (Logical Sta. No.) selected from the target setting list, in the Logical Sta. No. field. (You can change the Logical Sta. No. setting by double-clicking on the row that contains the setting you want to change.)
[Delete] button	Deletes the row (Logical Sta. No.) selected from the target setting list.

*1 : CPU #1, #2, and #3 are respectively set to Logical Sta. #1, #2, and #3 by default.
If there is no need to change Logical Sta. No., the utility can be used with the default Logical Sta. No.

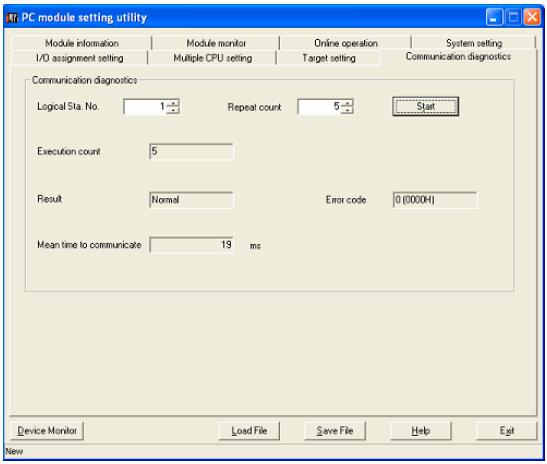
*2 : Logical Sta. No. are logical No. specified as “Sta. No.” in the Device Monitor utility and user programs (MELSEC communication function).
Use a Logical Sta. No. when the PC CPU module accesses a different Sta. CPU (a CPU of a different ID device in a multiple CPU system).

*3 : The target CPU field can be set only when, as a CPU module, the PC CPU module is capable of configuring a multiple CPU system.

5.2.9 Operating the Communication Diagnostics Window

When the PC CPU module is in a multiple CPU configuration, diagnoses the possibility of communication with a CPU of a different ID device.

Point
Specify the Logical Sta. No. of a different ID device in the Logical Sta. No. field. If your own device's Logical Sta. No. is specified, the error code “19203” is displayed. If the Logical Sta. No. of a not-mounted device is specified, the error code “19200” is displayed.



Item		Description
Communication diagnostics	Logical Sta. No.	Selects a target CPU for diagnosis by its Logical Sta. No. (Initial value : 1, setting range : 1 - 64)
	Repeat count	Specifies the No. of times communication diagnostics is performed. (Initial value : 5, setting range : 1 - 32767)
	[Start] button	Executes communication diagnostics. Changes to the [Stop] button when diagnosis is in progress.
	[Stop] button	Stops communication diagnosis. Changes to the [Start] button when diagnosis is not operative.
	Execution count	Displays the No. of times communication diagnostics has been executed.
	Result	Displays “Normal” when the communication diagnostics result is normal. Otherwise, displays “Abnormal”. Displays “Diagnosis in Progress” while communication diagnostics is being executed.
	Error code *1	Displays the error code of the communication diagnostics result.
	Mean time to communicate	Displays the average time expended for communication.

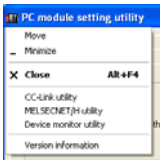
*1 : For details, refer to “8.4.1 Actions upon error codes at the time of function execution”.

5.2.10 Operating the System Menu

(1) System Menu

Use the PC Module Setting Utility by opening its system menu through any of the following operations.

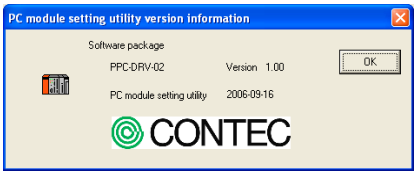
- Right-click on the title bar.
- Click on the icon ( ) on the title bar.
- Press down the [↓] key immediately after the [Alt] key is pressed down.



Item	Description
Move, Minimize, Close	Refer to Microsoft Windows manuals.
CC-Link utility	Starts up the CC-Link utility
MELSECNET/H utility	Starts up the MELSECNET/H utility
Device monitor utility	Starts up the Device Monitor utility.
Version information	Opens the “Version Information” window. For details, refer to “(2) Version Information window”.

(2) Version information window

Displays the version of the PC module setting utility.



Item	Description
Software package PPC-DRV-02	Displays the version of PPC-DRV-02.
PC module setting utility	Displays the date of the PC module setting utility.
[OK] button	Closes the “Version information” window.

5.2.11 Loading initial setting data file and using multiple PLC parameters

This section describes the procedures for loading initial setting data file and using multiple PLC parameters.

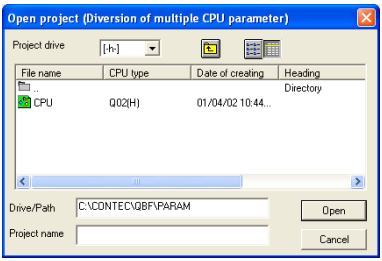
(1) How to display the window

You can open the “Open Project” window through any of the following operations.

- Click on the [Read the initial setting file] button on the “System Setup” window.
- Click on the [Diversion of multiple CPU parameter] button on the “I/O Assignment Setting” window.
- Click on the [Diversion of multiple CPU parameter] button on the “Multiple CPU Setup” window.

(2) Description of the window

You can select a setup data project.



Item	Description
Project drive	Selects a drive that contains project.
Drive/Path	Enters a drive and a path that contains project.
Project name	Enters a name of project to be loaded.
[Open] button	Loads a project.
[Cancel] button	Ends without loading a project.

(3) Notes on using specified data

(a) When moving setting data of GX Developer that has been specified on a PC other than PC CPU module to a PC CPU module, move the data to a PC CPU module with the whole project folder of GX Developer.
If files only are moved, specifying a project is disallowed.

(b) Parameters for CC-Link set through GX Configurator-CC cannot be used.
Set parameters using the CC-Link utility provided by PPC-DRV-02.

(c) Parameters set through GX Configurator-SC cannot be used.
Write parameters for a serial communication module into buffer memory using the bus interface function (QBF_ToBuf).

(d) The parameters set through GX Configurator-QP cannot be used.
Write parameters for a positioning module into buffer memory using the bus interface function (QBF_ToBuf).

(e) The following is MELSEC-Q Series software GX Configurator whose PC module setting utility makes it possible to divert initial setup parameters :
- GX Configurator-AD
- GX Configurator-DA
- GX Configurator-CT
- GX Configurator-TC
- GX Configurator-TI
- GX Configurator-PT
- GX Configurator-FL
- GX Configurator-AS

5.3 CC- Link Utility

This section describes operations of CC- Link utility.

Notes on CC- Link utility is as follows :

(1) Details of parameters
For the details of parameters, refer to CC-Link System Master and Local Module User's Manual (Detailed).

(2) Maximum No. of utilities for simultaneous use
More than one CC-Link utility cannot be started at the same time.
Only one can be started at a time.

(3) Note on written parameters
The parameters written to the PC CPU module are enabled when the module is reset.

5.3.1 CC-Link Utility Function List

This section describes functions of CC- Link utility.

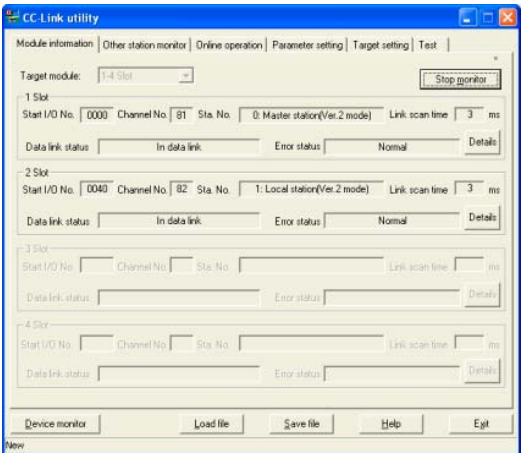
Item	Description	Referring Paragraph
Reading/saving a parameter setup file.	Saves the parameters set by the CC-Link utility into a file and reads them.	5.1.5
Module information	Displays information of the CC-Link utility (local) managed by the PC CPU module.	5.3.2
Other station monitor	Displays the line connection conditions of other station. (Station in the CC-Link network).	5.3.3
Online operation	Loads / writes / verifies CC-Link parameter.	5.3.4
Parameter setting	Sets the parameter of CC-Link utility.	5.3.5
Target setting	Sets Logical Sta. No. to access any CPU module in the multiple CPU system to which CC-Link utility are mounted.	5.3.6
Test	Performs a network test and line connection test with respect to mounted CC-Link utility.	5.3.7

5.3.2 Operating the Module Information Window

This window displays various types of information about the CC-Link unit (own Sta.) managed by the PC CPU module.

Point
It cannot be monitored while the bus interface driver is reset. Start monitoring after the reset is completed.

(1) Module information window



Item		Description
Target module		Select CC-Link utility whose module information you want to display. (Initial value : "#1 - #4", setting range : "1 - 4 Slots", "5 - 8 Slot")
n Slot *1 (n covers the range set in the "Target module" field.)	Start I/O No.	Displays the start I/O No. of a CC-Link utility.
	Channel No.	Displays Channel No. of CC-Link unit. *2
	Sta. No.	Displays "<Sta. No.> : <Station type> <Operation mode>". The display range for <Sta. No.> is "0"- "64", and the display range for <Station type> is "Master station" or "Local Station". For the details of <Operation mode>, refer to "(1)(a) Operation mode". (Example of display : "Master station (Ver.2 mode)", "1 : Local station")
	Link scan time	Displays the current link scan time of a CC-Link utility. (ms module)
	Data link status	Displays the data link activation status of a CC-Link utility. For details, refer to "(1)(b) Data link activation status details".
	Error status	Displays the error status of a CC-Link utility. For details, refer to "(1)(c) Details on error status".
	[Details] button	Opens the "Module detail information" window. For "Module detail information", refer to "(2) Module detail information window". This button cannot be clicked on when monitoring is stopped.

*1 : Module information displayed at one time is displayed in ascending order of start I/O No..

*2 : Channel No. is determined in ascending order of start I/O No. starting from 81.

(a) Operation mode

The details of operation modes are described as follows.

Item	Description
Not displayed	Cyclic point extension not applied. Remote net - Ver.1 mode
(Additional mode)	Both cyclic-point-extension supported and not supported CC-Link utility exist. Remote net - additional mode
(Ver.2 mode)	Cyclic point extension applied. Remote net - Ver. 2 mode

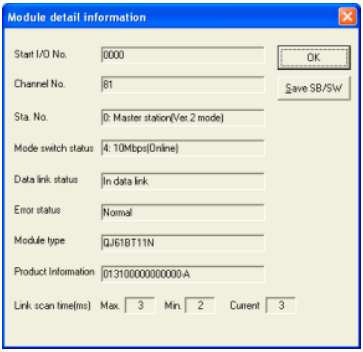
(b) Details on Data link status
Details on data link status is as follows :

Item	Description
In data link	Performs the data link.
Suspend data link	Stops the data link.
Initial states	In the initial state (before parameter update).
Waiting for receiving parameters	Parameters have not been received yet.
Disconnecting (no request polling)	Disconnected from the data link due to no request from the Master station.
Disconnecting (link error)	Disconnected from the data link due to line failure.
Disconnecting (Other)	Disconnected from the data link due to a different cause.
During line test	Line test being performed.
During parameter setting test	Performing a parameter setting test from the Master station.
During Auto-Returning	Processing underway to automatically return to the data link.
During reset	Resetting the CC-Link utility.

(c) Details on error status
Details on error status is as follows :

Item	Description
Normal	Normal status
Transport Error	An error was detected in a communication path.
Parameter Error	An error was detected in a parameter.
CRC Error	A CRC error was detected.
Timeout Error	A timeout error was detected.
Abort Error	An error was detected in the CC- Link utility.
Setting Error	A setting error was detected.
Illegal	An error arising from some other cause was detected.

(2) Module detailed information window
Displays CC-Link unit detail information.



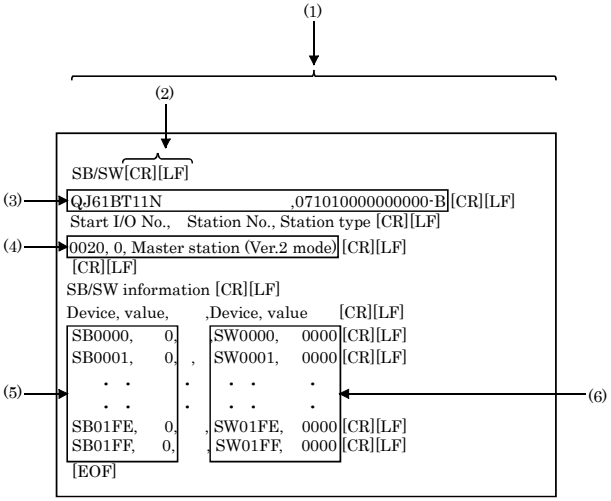
Item	Description
Start I/O No., Channel No., Sta. No.	Displays detailed information of a CC-Link unit. For display details, refer to “(1) Module Information window”.
Mode switch status	Displays the mode switch status of a CC-Link unit. For details, refer to “(2)(a) Details on mode switch status”.
Data link status	Displays the data link status of a CC-Link unit. For details, refer to “(1)(b) Details on data link status”.
Error status	Displays the error status of a CC-Link unit. For details, refer to “(1)(c) Details on error status”.
Module type	Displays the model name of a CC-Link unit.
Product information	Displays the product information of a CC-Link unit. (Serial No. and functionality version).
Link scan time	Displays the maximum/minimum/current link scan time of a CC-Link unit. (ms module)
[OK] button	Closes the “Module detailed information” window.
[Save SB/SW] button	Saves information of a CC-Link utility 's link special relay (SB) and link special register (SW) into a CSV-format file. For details, refer to “(3) Specifications for SB/SW stored files.”

(a) Details on mode switch status
Details on mode switch status is as follows :

Display	Transmission speed	Mode
0 : 156kbps (online)	156kbps	Online
1 : 625kbps (online)	625kbps	
2 : 2.5Mbps (online)	2.5Mbps	
3 : 5Mbps (online)	5Mbps	
4 : 10Mbps (online)	10Mbps	
5 : 156kbps (Line test□)	156kbps	Link test If □ is 1, Sta. No. is 0. If □ is 2, Sta. No. is 1 - 64.
6 : 625kbps (Line test□)	625kbps	
7 : 2.5Mbps (Line test□)	2.5Mbps	
8 : 5Mbps (Line test□)	5Mbps	
9 : 10Mbps (Line test□)	10Mbps	
A : 156kbps (hardware test)	156kbps	Hardware test
B : 625kbps (hardware test)	625kbps	
C : 2.5Mbps (hardware test)	2.5Mbps	
D : 5Mbps (hardware test)	5Mbps	
E : 10Mbps (hardware test)	10Mbps	
F : Setting prohibited	-	None

(3) Specifications for SB/SW stored files
The following shows a SB/SW stored file example.

(a) Link special relay (SB) and link special register (SW) saved into a CSV file.



(b) CSV format specifications
A link special relay (SB) and link special register (SW) are stored in the CSV-format shown below.

1). "," (ASCII code : 2CH) is used to separate columns.
2). CR/LF is used as linefeed code. (ASCII code : CR=0DH, LF=0AH)
3). Stores "Module model name" and "Product information", starting from the first column.
For the details of "Module model name" and "Product information", refer to "(2) Module detailed information window".
4). Stores "Start I/O No.", "Sta. No.", and "Station type" starting from the first column.
For the details of "Start I/O No.", "Sta. No.", and "Station type", refer to "(2) Module detailed information window".
5). Stores the device name and device value of a link special relay.
6). Stores the device name and device value of the link special register (SW).

Remarks

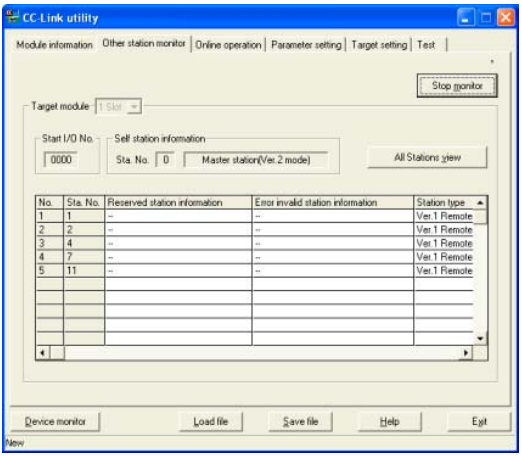
"C : \CONTEC\QBF\PARAM" is the standard directory to save SB/SW stored files.
(When PPC-DRV-02 is installed in "C : \CONTEC\QBF".)

5.3.3 Operating the Other Station Monitor Window

This window displays the line status of the other stations (CC-Link network stations).

Point
(1) At the time the CC-Link utility is launched, monitoring is not operative. Click on the [Start monitor] button to start monitoring. (2) Other local monitor starts monitoring only when the states of your own station is “In data link”. (3) It cannot be monitored while the bus interface driver is reset. Start monitoring after the reset is completed.

(1) Other station monitor window



Item	Description
Target module	Selects a target module for other station monitor. (Initial value : “Slot 1”, Selecting range : “1 Slot” - “8 Slot”.)
Start I/O No.	Displays the start I/O No. of the CC-Link unit selected in the “Target module” field.
Self Station information	Displays a Sta. No. (“0” - “64”) and station type (“Master station” or “Local station”) and operation mode. For the details of Operation mode, refer to “Section 5.3.2 (1)(a) Operation mode”.
[All Stations view] button	Opens the “All Stations view” window. For details, refer to “(2) All Stations view window”.
No.	Displays the No. of station connected.
Sta. No.	Displays Sta No.
Reserved station information	Displays reserved station information. For details, refer to “(c) Details on reserved station”.
Error invalid station information	Displays error invalid station information. For details, refer to “(d) Details on error invalid station”.
Station type	Displays station types. For details, refer to “(a) Details on station type”.
Occupied No.	Displays the No. of occupied station. (Display range : “1 Station occupied” “4 Station occupied”.
Status	Displays the conditions of a station modules. For details, refer to “(b) Details on states”.
Transient error	Displays the status of each module's transient error. For details, refer to “(e) Details on transient error”.
Extended cyclic setting *1	Displays Extended cyclic setting. (Display range : “Equimultiple setting”, “Twice setting”, “Four time setting”, “Eight time setting”)
Remote station points *1	Displays the No. of remote station points.
[Start monitor] button	Starts monitor. During monitoring, this button changes to [Stop monitor], and "*" flashes at top right of the button.
[Stop monitor] button	Stops monitor. When monitoring is stopped, this button changes to [Start monitor].

*1 : Not displayed if “Remote-net Ver.1 Mode” is selected for a target module's operation mode.

(a) Details on the station
Details on the station type is as follows :

Display	Description
Ver.1 Remote I/O station	Remote I/O station without cyclic point extension
Ver.1 Remote device station	Remote device station without cyclic point extension
Ver.1 Intelligent device station	Intelligent device station without cyclic point extension
Ver.2 Remote device station	Remote device station with cyclic point extension
Ver.2 Intelligent device station	Intelligent device station with cyclic point extension

(b) Details on states
Details on states is as follows :

Display	Description
Normal	Normal
Temporary error invalid state	In a temporary error invalid state
Data link error	A link error has occurred.
WDT error	A watchdog timer error has occurred.
Blown fuse confirmation error	There is a station in which a fuse has blown.
Repetition Sta. No.	Duplicate Sta. No. exists.
Switch changing	A switch has been changed.

(c) Details on reserved station
Details on reserved station is as follows :

Display	Description
Reserved station	An error invalid station is set.
-	No setting

(d) Details on error invalid station
Details on error invalid station is as follows :

Display	Description
Error invalid station	An error invalid station is set.
-	No setting

(e) Details on transient error

Details on transient error is as follows :

Display	Description
Transient transmission err	An error invalid station is set.
-	No setting

(2) All Stations view window

A list of the communication status of other Sta. is displayed.

Item	Description
Each station information	Displays station's communication conditions. For details, refer to "(a) Details on each station information".
[OK] button	Closes the "All Stations view" window.

(a) Details on each station information

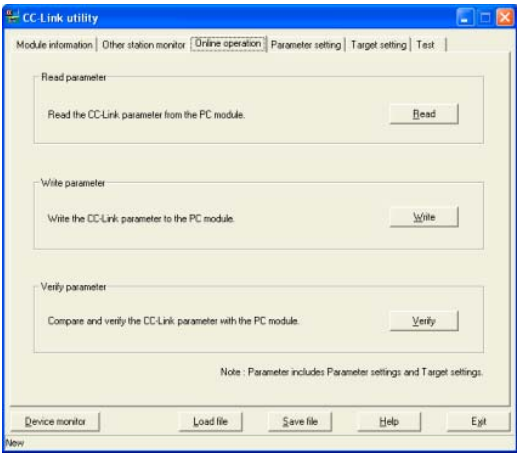
Details on each station information is as follows :

Display color	Description
White	Normal station
Red	Error station
Green	Error invalid station
Blue	Reserved station
Yellow	Temporary error invalid station

5.3.4 Operating the Online Operation Window

Reads/writes/verifies CC-Link parameters.

Point
Operation on this window is not possible while the bus interface driver's resetting is in progress. Perform operation after the reset operation is complete.



Item	Description
Read parameter [Read] button	Reads CC-Link parameters out of the PC CPU module.
Write parameter *1 [Write] button	Write the configured CC-Link parameters into the PC CPU module. The parameters written are enabled when that PC CPU module has been reset.
Verify parameter [Verify] button	Verify the CC-Link parameters set to the PC CPU module against the ones set to the CC-Link utility. The verification result is displayed in the message box.

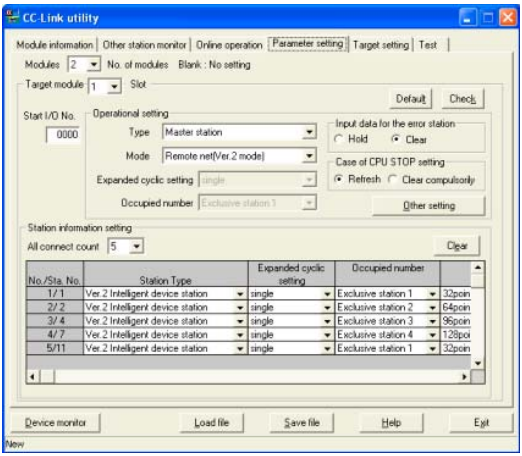
*1 : To write parameters, log on as a user with the Administrator attribute.

5.3.5 Operating on Routing Parameter Setting Window

Sets parameters for a CC-Link utility.

Point
(1) When the window switches to another window, if the entered parameters are mistaken, the warning message is displayed and the window does not switch to another window. Correct the entered parameters and then transition to another window.
(2) To reflect the settings in a PC CPU module, write the parameters using the “Online Operation” window and reset the PC CPU module.

(1) Parameter setting window



Item	Description
Modules	Sets the No. of CC-Link utility to be managed by the PC CPU module. If “ “ (vacant) is selected, none is set (the setting cleared). (Initial value ： “ “ (vacant), setting range ： 1 - 8, “ “ (vacant))
Target module	Selects a target module to be set. (Initial value ： 1, setting range ： 1 - 8) For the details of No.assigned to this item, refer to “(1)(a) No. to be assigned to target modules”.
Start I/O No.	Sets the start I/O No. of a CC-Link utility. (Setting range ： 0 - FE0H (Note that the above start I/O No. cannot overlap the ones set to other CC-Link utility.))

Item		Description
[Default] button		Sets the operation setting and station information setting parameters to default values.
[Check] button		Checks that the settings are correct.
Operational setting		
	Type	Sets a type for a CC-Link utility. (Initial value : "Master station", setting range : "Master station", "Local station")
	Mode	Sets a mode for a CC-Link utility. (Initial value : "Remote neet - Ver.1 mode", setting range : "Remote net - Ver.1 mode", "Remote net - Ver.2 mode", "Remote net additional mode", "Online")
	Extended cyclic setting	Configures the extended cyclic setting for a CC-Link utility. This item can be set only when "Local station" is set to "Type" and any mode other than "Remote-net Ver.1" is set to "Mode setting". (Initial value : "One time setting", setting range : "One time setting", "Twice setting", "Four time setting", "Eight time setting")
	Occupied number	Sets the No. of stations to be occupied by a CC-Link utility (local). This item can be set when "Local station" is set to "Type." (Initial value : "One station occupied", setting range : "One station occupied" - "Four stations occupied")
	Input data for the error station	Sets how to handle input data when a data link error occurs. (Initial value : "Retain", setting range : "Retain", "Clear")
	Case of CPU STOP setting	Sets how to handle link data at the time of CPU STOP. This setting can be set for QJ61BT11N. For QJ61BT11, this item is always "Refresh" irrespective of its setting. (Initial value : "Refresh", setting range : "Refresh", "Forced clear")
	[Other setting] button	Opens the "Other Settings" window. For details, refer to "(2) Other Settings window". This button can be clicked on only when "Master station" is set to "Type".
Station information setting		
	All connect count	Sets the No. of modules to be connected to a CC-Link utility. (Initial value : 64, setting range : 1 - 64)
	Station type	Sets a station type. For the default value and setting range, refer to "(1)(b) Initial value and its setting range by station type".
	Extended cyclic setting	Sets extended cyclic points for a CC-Link utility. *1 (Initial value : "One time setting", Setting range : "One time setting", "Twice setting", "Four time setting", "Eight time setting")

*1 : This item shall be set when "Remote-net Ver.2 Mode" or "Remote-net Additional Mode" is set to the mode setting, and "Ver.2 remote device station" or "Ver.2 intelligent device station" is set to the station type.

Item			Description
Station information setting			
	Occupied No.		Sets the No. of occupied stations. (Initial value : “One station occupied”, setting range : “No setting”, “One station occupied”, “Two stations occupied”, “Three stations occupied”, “Four stations occupied”)
	Remote station points		Sets points for a remote station. This item can be set only when “Remote-net Ver.2 mode” is set to “Mode setting”. For the default value and setting range, refer to “CC-Link System Master and Local Modules Users Manual (Detailed)”.
	Reserve/invalid station select		Sets a CC-Link utility as a reserved or invalid station. (Initial value : “Not specified”, setting range : “No setting”, “Local station”, “Invalid station”)
	Intelligent buffer select(word) *2	Send	Specifies a transmission area. (word module) (Initial value : 64, setting range : 0, 64 - 4096)
		Receive	Specifies a reception area. (word module) (Initial value : 64, setting range : 0, 64 - 4096)
		Automatic	Specifies an automatic update area. (word module) (Initial value : 128, setting range : 0, 128 - 4096)
	[Clear] button		Clears the parameters in the “Station Information Setup” field and sets initial values.

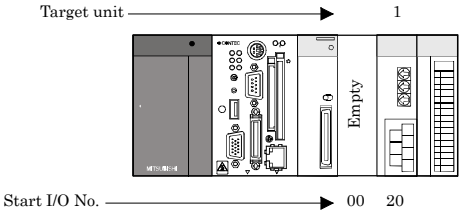
*2 : This item can be set only when “Intelligent device station”, “Ver.1 Intelligent device station” or “Ver.2 intelligent device station” is set to “Station type”.

(a) No. to be assigned to target modules

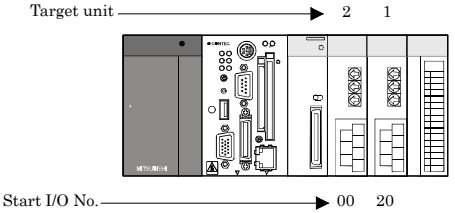
No. assigned to target modules are assigned, starting from 1, in ascending order of “start I/O No.” obtained when this window is opened or when a parameter setup file is read.

Note that when No. assigned to target modules are reassigned, their parameter settings will not be changed.

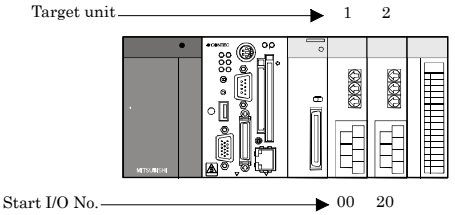
1) The “start I/O No.” “00” position is vacant.



2) Module added to the “start I/O No.” “00” position.



3) Target module reassigned when the screen transitions or when the parameter setup file is saved.



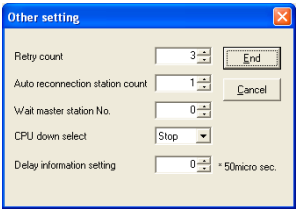
(b) Initial value and its setting range by station type

The initial value and its setting range by station type changes according to the setting in the “Mode setting” field.

Details on this is as follows :

Setting of “Mode setting”	Initial value	Setting range
“Remote net (Ver.1 mode)”	“Remote I/O station”	“No setting”, “Remote I/O station”, “Remote device station”, “Intelligent device station”
“Remote net(Ver.2 mode)”, “Remote net(Add. mode)”	“Ver.1 Remote I/O station”	“No setting”, “Ver.1 Remote I/O station”, “Ver.1 Remote device station”, “Ver.1 Intelligent device station”, “Ver.2 Remote device station”, “Ver.2 Intelligent device station”

(2) The other setting window



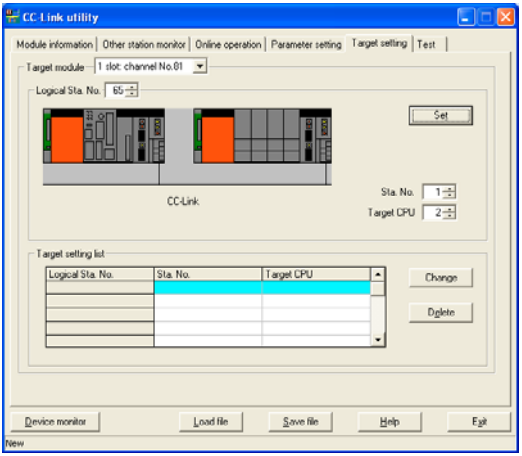
Item	Description
Retry count	Sets the No. of retries in the event of communication failure (when a transient transmission error occurs). (Initial value : 3, setting range : 1 - 7)
Auto reconnection station count	Sets the No. of stations that can automatically return for a one-link scan. (Initial value : 1, setting range : 1 - 10)
Wait master station. No.	Sets a Sta. No. to a standby Master station. (Initial value : 0 (No setting), setting range : 0 - 64)
CPU down select	Sets a data link's state when an error occurs in the PC CPU module. (Initial value : “Stop”, Setting range : Continue”, “Stop”)
Delay information setting	Set 0 for “Delay time”.
[End] button	Reflects the settings and closes the “Other Settings” window.
[Cancel] button	Closes the “Other Settings” window without reflecting the settings.

5.3.6 Operating the Target Setting Window

Set the logical Sta. No. for making access to any CPU module in a multiple CPU system where the CC-Link unit is installed.

Point
(1) To reflect the settings in a PC CPU module, write the parameters using the “Online Operation” window and reset the PC CPU module. (2) Set a PLC CPU as the Target CPU.

(1) Target window



Item	Description
Target module	Select the unit to be set. (Initial value ： “1 slot”, Setting range ： “1 slot” - “8 slot”)
Logical Sta. No. *1	Specifies a Logical Sta. No. to be set to the module selected in the “Target module” field. (Initial value ： 65, setting range ： 65 - 239)
Sta. No.	Sets Sta. No. of CC-Link utility managed by the multiple CPU system. (Initial value ： 0, setting range ： 0 - 63)
Target CPU *2	Sets target CPUs (CPU module No. in a multiple CPU system) to be accessed. (Initial value ： 1, setting range ： 1 - 4)
[Set] button	Register the settings and changes (Logical Sta. No., Sta. No., target CPU) to the target list.
Target setting list	Displays the Sta. No. that corresponds to the Logical Sta. No. set to the module selected in the “Target module” field, as well as the target CPU list.
[Change] button	Displays the data in the row (Logical Sta. No.) selected in the Target setting list in the Logical Sta. No. area. (Double-clicking the desired row can also change the Logical Sta. No. area setting.)
[Delete] button	Deletes the line (Logical Sta. No.) selected in the Target setting list.

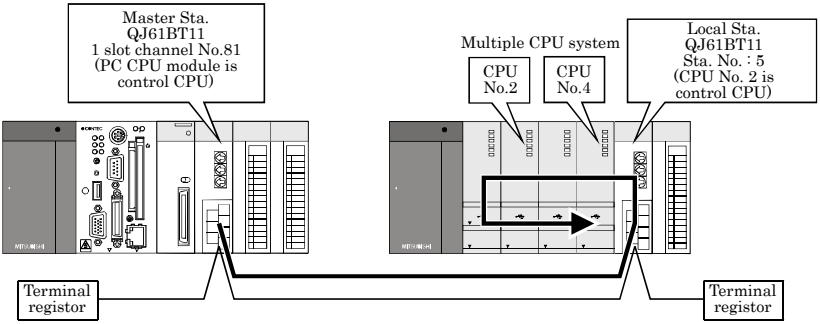
*1： The logical Sta. No. is a Logical No. specified as the "Sta. No." in the Device monitor utility or user program (MELSEC data link function).
Use the Logical Sta. No. when accessing another station CPU (another CPU No. in the multiple CPU system) from the target module (channel No.).
When directly accessing a different station (station 0 - 63) and a CPU module that manages CC-Link utility of a different station use a Sta. No. used for CC-Link, instead of a Logical Sta. No.

*2： The target CPU field can be set only when, as a CPU module, the CPU module set in the “Sta. No.” field is capable of configuring a multiple CPU system.

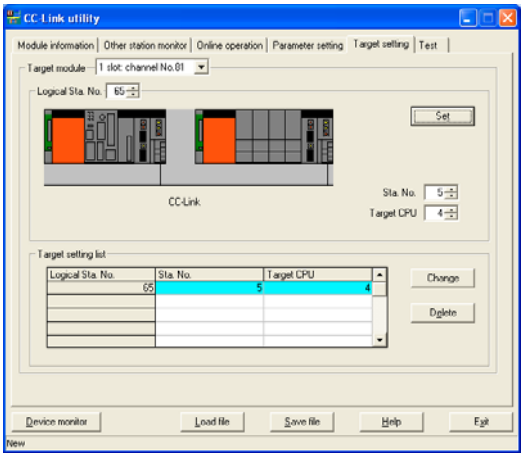
(2) Example of access

By using the Logical Sta. No. “65,” you can access CPU #4 through a CC-Link utility (managed by CPU #2) from a CC-Link utility managed by the PC CPU module.

From the Device Monitor utility or from a user program (MELSEC communication functions), you can access CPU #4 by opening channel No.81 and specifying 65 for a Sta. No.



The following window shows the setting for a target to make the above access.

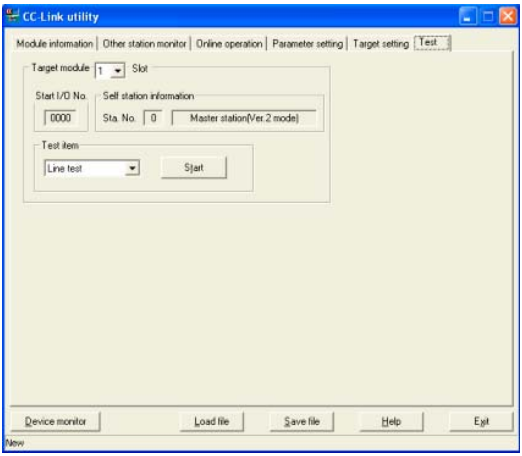


5.3.7 Operating on Network Test Window

This screen executes network test or lining on installed CC- Link utility.

Point
(1) Execute network test and line test when CC- Link is under online status. Executing network test and line test under off- line status of CC- Link utility results in an error. Network tests and line connection tests cannot be performed when in offline. (2) Line test (station specified) is executed if an error occurred in line test (all stations). If line test (all stations) results in normal status, line test (station specified) is not necessary.

(1) Test Window



Item	Description
Target module	Selects the channel to be used. (Initial value : "1 slot", setting range : "1 slot" -"8 slot")
Start I/O No.	Displays the start I/O No of CC-Link unit.
Self station information	Displays the Sta. No. and station type ("Master station" or "Local station") and operation mode of the CC-Link utility selected in the "Target module" field. For operation modes, refer to "Section 5.3.2 (1)(a) Operation mode."
Test item	Selects a test to be performed. Display / Description Network test / Test Performs a data link start and stop test. Line test / Checks whether the connected station is normal or abnormal. (Selectable only on Master station)

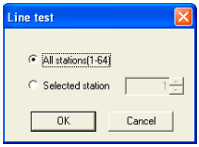
(2) Operating procedure of test

(a) Line connection test operation procedure

Line connection tests can be performed only when the activation status of a CC-Link utility (refer to "5.3.2 Operating the Module Information Window") is "Data link connected" or "Processing automatic return".

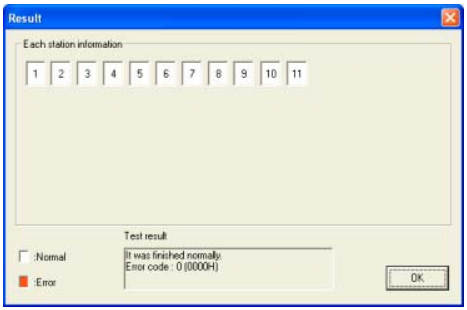
1) Setting

Select a line connection test target station and click on the OK button to start testing.



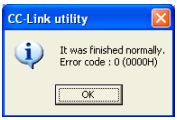
2) Test results

- In step 1) shown above, when a line connection test is performed by selecting "All stations (#1 - 64)", the test results are displayed in the following window.



For the details of error codes, refer to "Section 8.4.1 Actions upon error codes at the time of function execution".

- In step 1) shown above, when a line connection test is performed by selecting "Specified station", the test results are displayed in the following window.



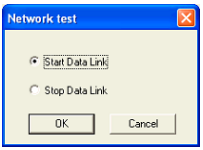
For details of error codes, refer to "8.4.1 Actions upon error codes at the time of function execution".

(b) Operating procedure of network test

A network test can be performed only when the data link status of the CC-Link unit (refer to “5.3.2 Operating the Module Information Window”) is set to “In data link”, “Suspended data link” or “Being automatically reconnected”.

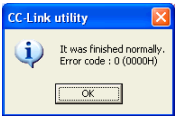
1) Setting

Select either of “Start data link” or “Stop data link” and click on the [OK] button to start a network test.



2) Test result

The test results are displayed in the following window.



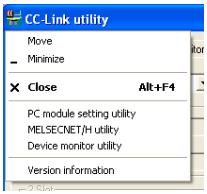
For details of error codes, refer to “8.4.1 Actions upon error codes at the time of function execution”.

5.3.8 Operating the System Menu

(1) System menu

There are three ways, listed below, to open and use the system menu for the CC-Link utility.

- Right-click on the title bar.
- Click icon ( ) on the title bar.
- Press the [↓] key after pressing [Alt] key.



Item	Description
Move, minimize, close	Refer to the Microsoft Windows's manual.
PC module setting utility	Move the PC module setting utility
MELSECNET/H utility	Starts the MELSECNET/H utility.
Device monitor utility	Starts the device monitor utility.
Version information	Opens the "Version information" window. For details on this, refer to "(2) Version information window".

(2) Version information window

Version information of CC-Link utility is as follows :

Item	Description
Software package PPC-DRV-02	Displays PPC-DRV-02 version.
CC-Link utility	Displays the date of CC-Link utility
[OK] button	Close "Version information" windows.

5.4 MELSECNET/H utility

This section describes operations for MELSECNET/H utility.

Notes on MELSECNET/H utility is as follows :

(1) Details on each parameter
For the details of parameters, refer to Q-supported MELSECNET/H Network System Reference Manual (Inter-PC Network).

(2) Maximum No. of utilities for simultaneous use
More than one MELSECNET/H utility cannot be started at the same time.
Only one can be started at a time.

(3) Note on written parameters
The parameters written to the PC CPU module are enabled when the module is reset.

5.4.1 Functional List of MELSECNET/H Utility

This section describes functions for MELSECNET/H Utility.

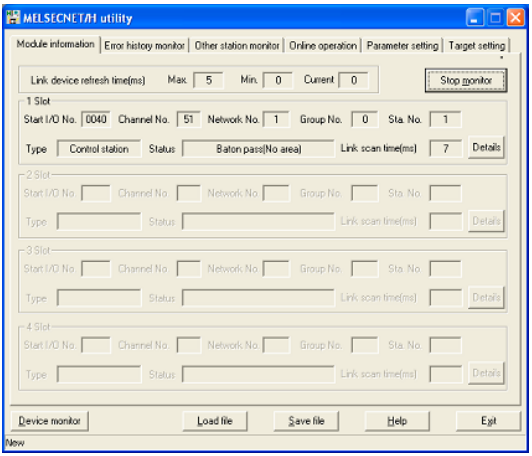
Name	Description	Referring Paragraph
Reading/saving a parameter setup file.	Saves the parameters set by MELSECNET/H utility to a file and reads them.	5.1.5
Displays module information	Displays various types of MELSECNET/H unit (own Sta.) information managed by the PC CPU module.	5.4.2
Err history monitor	Displays a record of errors that have occurred in MELSECNET/H units.	5.4.3
Other local monitor	This window displays the line status of the other Sta. (MELSECNET/H network stations).	5.4.4
Online operation	Reads, writes and compares MELSECNET/H parameters.	5.4.5
Parameter setting	Performs Parameter setting of MELSECNET/H unit	5.4.6
Target setting	Set the Logical Sta. No. for making access to any CPU module in a multiple CPU system where the MELSECNET/H unit is installed.	5.4.7

5.4.2 Operating the Module Information Window

This window displays various types of information about the MELSECNET/H unit (own Sta.) managed by the PC CPU module.

Point
It cannot be monitored while the bus interface driver is reset. Start monitoring after the reset is completed.

(1) Module information window



Item		Description	Supported SB	Supported SW
Link device refresh time	Max.	Displays the longest all link devices refresh time recorded, with respect to the MELSECNET/H units managed by the PC CPU module (your own device). When the link device refresh cycle*1 is 0ms, "-" is displayed.	-	-
	Min.	Displays the shortest all link devices refresh time recorded, with respect to the MELSECNET/H units managed by the PC CPU module (your own device). When the link device refresh cycle*1 is 0ms, "-" is displayed.	-	-
	Current	Displays the current all link devices refresh time with respect to the MELSECNET/H units managed by the PC CPU module (your own device). When the link device refresh cycle*1 is 0ms, "-" is displayed.	-	-

*1 : For link devices refresh cycle, refer to "Section 5.4.6 Operating the Parameter Setup window".

Item		Description	Supported SB	Supported SW
1 – 4 slots *2	Start I/O No.	Displays start I/O No. of MELSECNET/H unit.	-	-
	Channel No.	Displays channel No. of MELSECNET/H unit. *3	-	-
	Network No.	Displays network No. of MELSECNET/H unit.	-	SW0040
	Group No.	Displays group No. of MELSECNET/H unit.	-	SW0041
	Sta. No.	Displays Sta.No. of MELSECNET/H unit.	-	SW0042
	Type	Displays type of MELSECNET/H unit. (Display range : "Control station", "Normal station")	-	SW0044
	Status	Displays communication status of MELSECNET/H unit. For more details on this, refer to "(1)(a) Details on communication status"	-	SW0047
	Link scan time	Displays the link scan time of a MELSECNET/H unit. (by ms)	-	SW006D
	[Details] button	Opens "Module detail information" window. For details on "Module detail information", refer to "(2) Module detail information window". When stopping monitor, [Details] button cannot be clicked.	-	-
[Start monitor] button		Starts monitoring MELSECNET/H units. Changes to the [Stop monitor] button when monitoring, with "*" blinking in the upper right of the [Stop monitor] button.	-	-
[Stop monitor] button		Stops monitoring MELSECNET/H units. Changes to the [Start monitor] button when monitoring is stopped.	-	-

*2 : The module information data is displayed at once in ascending order of the start I/O No.

*3 : The channel No. is determined in the ascending order of the start I/O No., starting from 51.

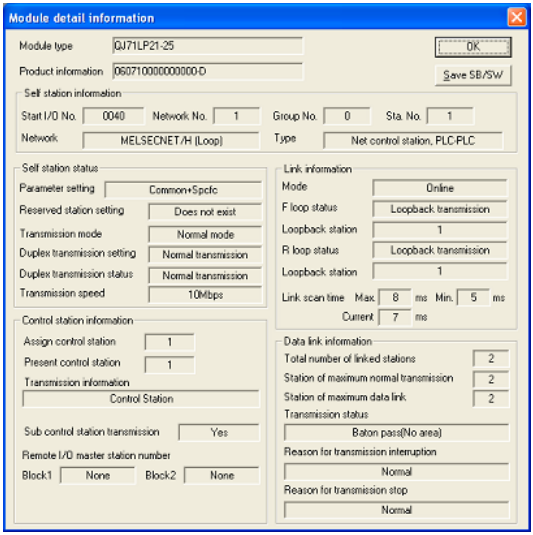
(a) Communication condition details

Details on communication status is as follows :

Display	Description
In data link	In data link.
Suspend data link (Other)	Cyclic transmission stopped by another station.
Suspend data link (Self)	Cyclic transmission stopped by your own Sta..
Baton pass (No area)	No assignment to your own Sta.'s B/W transmission.
Baton pass (Parameter Halt)	Parameters for your own Sta. abnormal.
Baton pass (No Receive)	Unable to receive common parameters.
Disconnecting (no baton)	Sta. No. overlapped, cables not connected.
Disconnecting (link error)	Cables not connected.
In test	In online testing
During reset	Hardware failure
In offline test	In offline testing

(2) Module detail information window

Displays MELSECNET/H unit detail information.



Item	Description	Supported SB	Supported SW
Module type	Displays the model name of the MELSECNET/H unit.	-	-
Product information	Displays the product information (serial No. and function version) of the MELSECNET/H unit.	-	-
[OK] button	Closes “Detailed information of unit”.	-	-
[SB/SW save] button	Saves the link special relay (SB) and link special register (SW) information of the MELSECNET/H unit into a CSV format file. For details, refer to “(3) Specification of SB/SW saving file”.	-	-
Self station information			
Start I/O No.	Displays the start I/O No. of your own Sta. (Display range ： 0000 - 0FE0)	-	-
Network No.	Displays the network No. of your own Sta. (Display range ： 1 - 239)	-	SW0040
Group No.	Displays the group No. of your own Sta. (Display range ： 0 - 32)	-	SW0041
Sta. No.	Displays the station No. of your own station. (Display range ： 1 - 64, “-”)	-	SW0042
Network	Displays the MELSECNET/H unit network. (Display range ： “MELSECNET/H extension (loop)”, “MELSECNET/H extension (bus)”, “MELSECNET/H (loop)”, “MELSECNET/H (bus)”, “MELSECNET/10 (loop)”, “MELSECNET/10 (bus)”)	SB0057, SB005A	SW0046
Type	Displays the type of your own Sta. (Display range ： “PC - PC network control station”, “PC - PC network normal station)	SB0044	-

Item		Description	Supported SB	Supported SW
Own Sta. status				
Parameter setting		Displays the parameter setting for your own Sta.. (Display range : "Common parameters only", "Common parameters + inherent parameters", "Default parameters only", and "Default parameters + inherent parameters".)	-	SW0054
Reserved station setting		Displays whether or not reserved stations exist in the network.	SB0064	-
Transmission mode		Displays the communication mode of your own Sta. (Display range : "Normal mode," "Constant link scan XXms" *1)	SB0068	SW0068
Duplex transmission setting		Displays multiplex transmission specified for your own Sta. (Display range : "Normal transmission","Multiplex transmission", "-" *2)	SB0069	-
Duplex transmission status		Displays the multiplex transmission status of for your own St.. (Display range : "Normal transmission in progress", "Multiplex transmission in progress", "-" *2)	SB006A	-
Transmission speed		Displays the transmission speed of your own Sta. (Display range : "10Mbps", "25Mbps")	-	-
Control station information				
Assign control station		Displays the specified control station in the MELSECNET/H unit network. "0" is displayed when the control station does not operate normally.	-	SW0057
Present control station		Displays the current control station in the MELSECNET/H unit network. "0" is displayed when the control station does not operate normally.	-	SW0056
Transmission information		Displays communication information of the MELSECNET/H network. (Display range : "Control station communication", "Sub control station communication")	SB0056	-
Sub control station transmission		Displays communication of the sub-control station in the MELSECNET/H network. (Display range : "Have", "None")	SB0058	-
Remote I/O master station number	Block1	Displays the Sta. No. of the remote I/O master station in block 1.	-	SW005C
	Block2	Displays the Sta. No. of the remote I/O master station. in block 2.	-	SW005D

*1 : The time set for constant link scan is displayed in XX.

*2 : "-" is displayed for a coaxial bus system.

Item		Description	Supported SB	Supported SW
Link information				
Mode		Displays the operation mode of your own Sta. (Display range : "online", "offline", "loop test")	-	SW0043
F loop status		Displays the main loop's status. (Display range : "normal", "loopback transmittion", "data link disabled", "-" *2)	SB0091, SB0099	-
Loopback station		Displays the Sta. No. of a station that performs loopback on the main loop side. (Display range : 1 - 64, Not performed, " " (vacant)*3, "-" *2)	-	SW0099
R loop status		Displays the sub-loop's status. (Display range : "normal", "loopback transmittion", "data link disabled", "-" *2)	SB0095, SB009A	-
Loopback station		Displays the Sta. No. of a station that performs loopback on the sub-loop side. (Display range : 1 - 64, Not performed, " " (vacant) *3, "-" *2)	-	SW009A
Link scan time	Max.	Displays the longest link scan time recorded. " " (vacant) is displayed if data linkage is not possible. (ms module)	-	SW006B
	Min.	Displays the shortest link scan time recorded. " " (vacant) is displayed if data linkage is not possible. (ms module)	-	SW006C
	Current	Displays the current link scan time. " " (vacant) is displayed if data linkage is not possible. (ms module)	-	SW006D
Data link information				
Total No. of linked stations		Displays the total No. of link stations in MELSECNET/H.	-	SW0059
Station of maximum normal transmission		Displays the maximum No. of normal communication stations through MELSECNET/H.	-	SW005A
Station of maximum data link		Displays the maximum No. of data link stations through MELSECNET/H.	-	SW005B
Transmission status		Displays the communication states of MELSECNET/H. For more details on this, refer to "(1)(a) Communication condition details".	-	SW0047
Reason for transmission interruption		Displays the reason for transmission interruption of MELSECNET/H. For more details on this, refer to "(2)(a) Reason for transmission interruption".	-	SW0048
Reason for transmission stop		Displays the cause of MELSECNET/H's data link stoppage. For more details on this, refer to "(2)(a) Reason for transmission interruption".	-	SW0049, SW004A

*2 : The symbol, "-" appears in the case of a coaxial bus system.

*3 : " " (vacant) appears in the case of the data link disabled status.

(a) Reason for transmission interruption
Reason for transmission interruption is as follows :

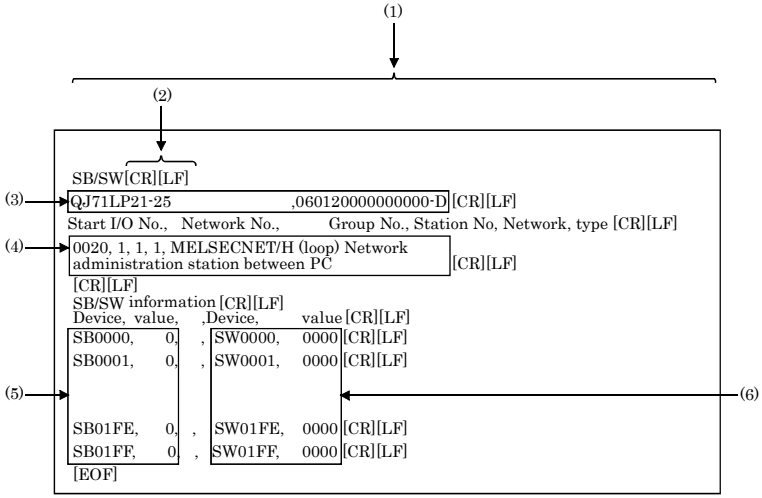
Display	Description
Normal	In normal communication
Offline	In offline
Offline test	In offline testing
Initial status	Error occurred. (Error code : F101, F102, F105)
Shift control station	Error occurred. (Error code : F104, F106)
Online testing	Error occurred. (Error code : F103, F109, F10A)
Baton disappearance	Error occurred. (Error code : F107)
Baton repetition	Error occurred. (Error code : F108)
Same station present	Error occurred. (Error code : F10B)
Control station repetition	Error occurred. (Error code : F10C)
Reception retry error	Error occurred. (Error code : F10E)
Transmission retry error	Error occurred. (Error code : F10F)
Timeout error	Error occurred. (Error code : F110)
Link Error	Error occurred. (Error code : F112)
Disconnecting	Error occurred. (Error code : F11B)
No baton to local station	Error occurred. (Error code : F11F)
Error code : XXXX	Error occurred. (refer to the displayed error code.)

(b) Details on reason for transmission stop
Reason for transmission stop is as follows :

Display	Description
Normal	In normal communication.
Stop instruction present (All)	Cyclic transmission of all stations stopped by your own Sta. or another Sta.
Stop instruction present (Own)	Cyclic transmission of your own Sta. stopped.
Stop instruction present (□station)	Cyclic transmission of your own Sta. stopped by another Sta. (Sta. No. □).
No parameter	Unable to receive parameters.
Illegal parameter	Configured parameters abnormal.
Error self CPU	A moderate/serious error occurs in the local CPU module.
Suspend communication	A data link error occurs in your own Sta.

(3) Specification of SB/SW saving file
Examples of SB/SW saving file is as follows :

(a) link special relay (SB) or link special register (SW) which has saved in CSV file



(b) Specification of CSV format
The link special relay (SB) and link special register (SW) are saved in the CSV format, as shown below.

(1) A comma "," (ASCII code: 2CH) is used between strings.

(2) Line feed code : CR/LF (ASCII code : CR=0DH, LF=0AH)

(3) Starting from the first string, the "model name of the module" and "product information" are stored in order.
For more details on “model name” and “product information”, refer to “(2) Module detail information window”.

(4) Starting from the first string, the “start I/O No.”, “network No.”, “group No.”, “Sta. No.”, “network” and “type” for “Self station information” are stored in order.
For details, refer to “(2) Module detail information window”.

(5) "Device name" and "device value" of the link special relay (SB) are stored.

(6) "Device name" and "device value" of the link special relay (SW) are stored.

Remarks

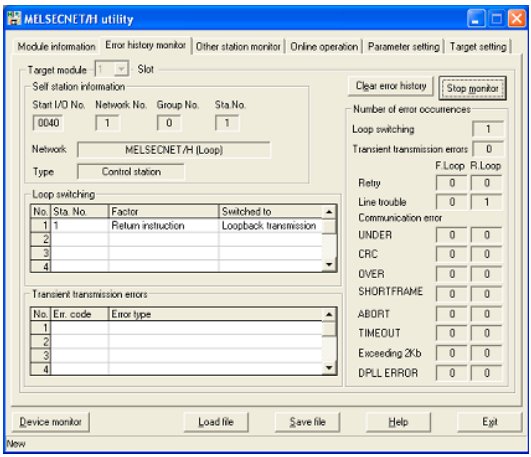
“C : \CONTEC\QBF\PARAM” is the standard directory to save SB/SW stored files.
(When PPC-DRV-02 is installed in "C : \CONTEC\QBF".)

5.4.3 Operating Err History Monitor Window

This window displays the history of loop errors, communication errors, and transient transmission errors.

Point
(1) For loop switching errors and transient transmission errors, up to 16 histories can be stored. When there are more than 16 items, items will be erased from the history, starting with the oldest one. (From old to new : No. 1 - No. 16)
(2) For error codes and error types displayed for transient transmission errors, refer to Q-supported MELSECNET/H Network System Reference Manual (Inter-PC Network).
(3) It cannot be monitored while the bus interface driver is reset. Start monitoring after the reset is completed.

(1) Err history monitor window



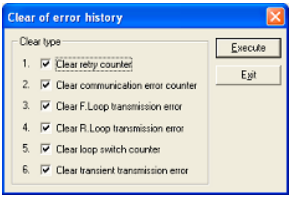
Item		Description	Supported SB	Supported SW
Target module		Selects a target MELSECNET/H unit for error history monitoring. (Initial value : 1, setting range : 1 - 4)	-	-
[Clear error history] button		Displays Clear error history window. For more details on this, refer to "(2) Clear of error history window window".	-	-
[Start Monitor] button		Starts the monitor of MELSECNET/H unit. During monitoring, this button changes to Stop monitor, and "*" flashes at top right of the button.	-	-
[Stop Monitor] button		Stops monitor of MELSECNET/H unit. When monitoring is stopped, this button changes to [Start monitor].	-	-
Self station information				
	Start I/O No.	Displays start I/O No. of your own Sta. (Display range : 0000 - 0FE0)	-	-
	Network No.	Displays network No. of your own Sta. (Display range : 1 - 239)	-	SW0040
	Group No.	Displays the group No. of your own Sta. (Display range : 0 - 32)	-	SW0041
	Sta. No.	Displays the Sta. No. of your own Sta. (Display range : 1 - 64, "-")	-	SW0042
	Network	Displays network of MELSECNET/H unit. (Display range : "MELSECNET/H extension (loop)", "MELSECNET/H extension (bus)", "MELSECNET/H (loop)", "MELSECNET/H (bus)", "MELSECNET/10 (loop)", "MELSECNET/10 (bus)")	SB0057, SB005A	SW0046
	Type	Displays type of your own Sta. (Display range : "control station", "normal station")	SB0044	-
Loop switching				
	Sta. No.	Displays the Sta. No. of a station that requested loop switching or loopback. (Only for optical fiber loops)	-	SW00E0 - SW00E7
	Factor	Displays the cause of the loop switching or loopback performed. (Only for optical fiber loops)	-	SW00D0 - SW00DF
	Switched to	Displays the data link status after loop switching. (Only for optical fiber loops)	-	SW00D0 - SW00DF
Transient transmission errors				
	Err. code	Displays the error code generated in transient transmission *1	-	SW00F0 - SW00FF
	Error type	Displays the type of an error that occurred in transient transmission	-	-

*1 : For error codes, refer to Q Corresponding MELSECNET/H Network System Reference Manual (Inter-PC Network).

Item			Description	Supported SB	Supported SW
No. of error occurrences *2					
	Loop switching		Displays the No. of loop switching occurrences. The symbol, "-" appears in the case of a coaxial bus system.	-	SW00CE
	Transient transmission errors		Displays the No. of transient transmission error occurrences.	-	SW00EE
	Retry		Displays the No. of retries (re-communication attempts in the event of communication failure).	-	SW00C8, SW00C9
	Line trouble		Displays the No. of line connection failure occurrences. "-" is displayed for a coaxial bus system.	-	SW00CC, SW00CD
	Communication error	UNDER	Displays the No. of UNDER error occurrences.	-	SW00B8, SW00C0
		CRC	Displays the No. of CRC error occurrences.	-	SW00B9, SW00C1
		OVER	Displays the No. of OVER error occurrences.	-	SW00BA, SW00C2
		SHORTFRAME	Displays the No. of short frame (data message too short) error occurrences.	-	SW00BB, SW00C3
		ABORT	Displays the No. of AB.IF error occurrences.	-	SW00BC, SW00C4
		TIMEOUT	Displays the No. of timeout error occurrences.	-	SW00BD, SW00C5
		Exceeding 2KB	Displays the No. of over-2k-byte reception error occurrences.	-	SW00BE, SW00C6
		DPLL ERROR	Displays the No. of DPLL (unable to recognize data in synchronization/modulation) error occurrences.	-	SW00BF, SW00C7

*2： For causes of errors and the details of actions, " refer to "(3) Causes of errors and actions".

(2) Clear of error history window
Clears (Zero) the No. of error occurrences



Item		Description	Supported SB	Supported SW
Clear type				
	Clear retry counter	Clears (Zero) the No. of retries error occurrences (link special registers SW00C8 and SW00C9). (Initial value : Marked (clear (zero))	SB0005	-
	Clear communication error counter	Clears (Zero) the No. of communication error occurrences (link special registers SW00B8 and SW00C7). (Initial value : Marked (clear (zero))	SB0006	-
	Clear F.Loop transmission error	Clears (Zero) the No. of line connection error occurrences on the main loop side (link special register SW00CC). (Initial value : Marked (clear (zero))	SB0007	-
	Clear R.Loop transmission error	Clears (Zero) the No. of R.Loop transmission error (link special registers SW00CD). (Initial value : Marked (clear (zero))	SB0008	-
	Clear loop switch counter	Clears (Zero) the No. of loop switch error occurrences (link special registers SW00CE and SW00E7). (Initial value : Marked (clear (zero))	SB0009	-
	Clear transient transmission error	Clears (Zero) the No. of transient transmission error (link special registers SW00EE, SW00EF). (Initial value : Not marked (do not clear (zero))	SB000A	-
[Execute] button		Clears (Zero) the history of the selected Clear item. (Turns from ON to OFF the SB that corresponds to the marked clear item.)	-	-
[Exit] button		Closes the Clear of error history window.	-	-

(3) Causes of errors and actions

The following indicates factors and corrective actions for each error.

Beside the Error History Monitor window, you can check causes from the following link special register (SW).

For the details of link special registers (SW), refer to Q-supported MELSECNET/H Network System Reference Manual (Inter-PC Network).

Item	Link special register	Factor	Treatment
Loop switching	SW00CE	ON/OFF of a station's power, cable failure, noise, etc.	*1
Transient transmission errors	SW00EE	ON/OFF of a target station's power, a target station's CPU module failure, cable failure, noise, etc.	Check the error code of a transient transmission error and take actions.
Retry	SW00C8, SW00C9	ON/OFF of a station's power, cable failure, noise, etc.	*1
Line trouble	SW00CC, SW00CD	ON/OFF of an adjacent station's power, cable failure, noise, etc.	*1
UNDER	SW00B8, SW00C0	ON/OFF of an adjacent station's power, cable failure, etc.	*1
CRC	SW00B9, SW00C1	Disconnection of a station transmitting data to the relevant station, cable failure, hardware failure, noise, etc.	*1
OVER	SW00BA, SW00C2	Cable failure, hardware failure, noise, etc.	*1
SHORTFRAME	SW00BB, SW00C3		
ABORT	SW00BC, SW00C4	Source station of data transmission was disconnected, cable fault, hardware fault, noise, etc.	*1
TIMEOUT	SW00BD, SW00C5	Data link monitoring time too short, cable failure, noise, etc.	*1
Exceeding 2KB	SW00BE, SW00C6	Cable failure, hardware failure, noise, etc.	*1
DPLL ERROR	SW00BF, SW00C7		

*1 : The frequency of occurrence of each error is not a big problem as long as the No. of occurrences does not increase frequently during operation.

If the No. of occurrences increases frequently, perform the following.

1) Check the power ON/OFF status of your own Sta. and other Sta.

2) Check the conditions of cables and connectors (connectors disconnected or loosened, cables disconnected, cable lengths, etc.)

3) Loopback test, internal loopback test, and hardware test.

4) Inter-station test, and main loop/sub-loop test.

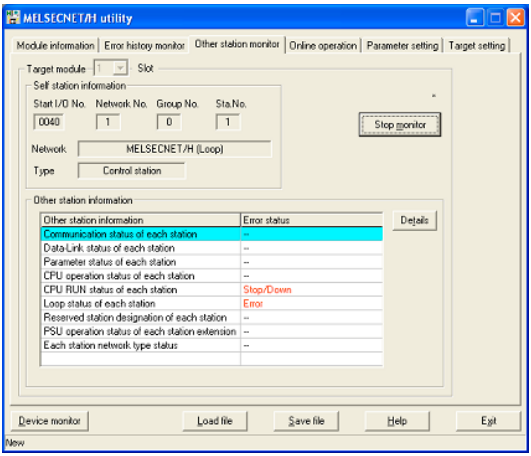
5) Perform cabling once again by referencing the manuals for your network module and MELSECNET/H board. Perform installation once again by referencing the user manuals for your CPU modules.

5.4.4 Operating the Other Station Monitor Window

This screen displays line status of other stations (each station for MELSECNET/H network).

Point
(1) When the MELSECNET/H utility is started, monitoring is in a stop status. Click the [Start monitor] button to start monitoring. (2) It cannot be monitored while the bus interface driver is reset. Start monitoring after the reset is completed.

(1) Other station monitor window



Item	Description	Supported SB	Supported SW
Target module	Selects a target MELSECNET/H unit for Other local monitor. (Initial value : 1, setting range : 1 - 4)	-	-
[Start monitor] button	Starts monitor of MELSECNET/H unit. During monitoring, this button changes to [Stop monitor], and "*" flashes at top right of the button.	-	-
[Stop monitor] button	Stops monitor of MELSECNET/H unit.. When monitoring is stopped, this button changes to [Start monitor].	-	-

Item		Description	Supported SB	Supported SW
Self station information	Start I/O No.	Displays Start I/O No. of your own Sta. (Display range : 0000 - 0FE0)	-	-
	Network No.	Displays network No. of your own Sta. (Display range : 1 - 239)	-	SW0040
	Group No.	Displays group No. of your own Sta. (Display range : 0 - 32)	-	SW0041
	Sta. No.	Displays Sta. No. of your own Sta. (Display range : 1 - 64, "-")	-	SW0042
	Network	Displays network No. of MELSECNET/H unit. (Display range : "MELSECNET/H extension (loop)", "MELSECNET/H extension (bus)", "MELSECNET/H (loop)", "MELSECNET/H (bus)", "MELSECNET/10 (loop)", "MELSECNET/10(bus)")	SB0057, SB005A	SW0046
	Type	Displays type of your own Sta. (Display range : "control station", "normal station")	SB0044	-
Other station information	[Details] button	Opens the Detail window and displays detailed information of the selected item. For more details on this, refer to "(2) Detailed window".	-	-
	Other station information	Displays the error conditions for items of "Other stations information" in the "Error condition" column. Double-click on each item to open its Detail windows and display its detailed information. For more details on this, refer to "(2) Detailed window".	-	-
	Error status			

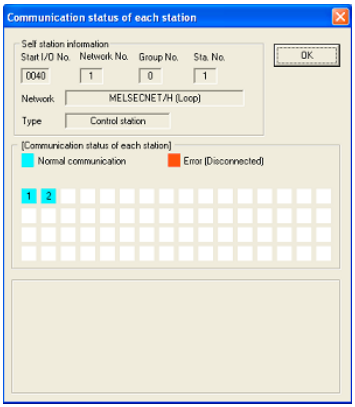
(2) Detailed window

Displays detailed information of the item selected on the "Other station monitor" window.
For the detail windows, the following types of window open depending on your choice on the "Other station monitor" window.

Choice on the other station monitor window	Detailed window type	Reference Paragraph
Communication status of each station	"Communication status of each station" window	This section (2)(a)
Data-Link status of each station	"Data Link status of each station" window	This section (2)(b)
Parameter status of each station	"Parameter status of each station" window	This section (2)(c)
CPU operation status of each station	"CPU operation status of each station" window	This section (2)(d)
CPU RUN status of each station	"CPU RUN status of each station" window	This section (2)(e)
Loop status of each station	"Loop status of each station" window	This section (2)(f)
Reserved station designation of each station	"Reserved station destination of each station extension" window	This section (2)(g)
PSU operation status of each station extension	"PSU operation status of each station extension" window	This section (2)(h)
Each station network type status	"Each station network type status" window	This section (2)(i)

(a) Communication status of each station

Displays the baton pass condition (whether transient transmission is possible or not).
The No. of stations to be displayed is the “Total No. of stations” set by the “Parameter Setup” window.

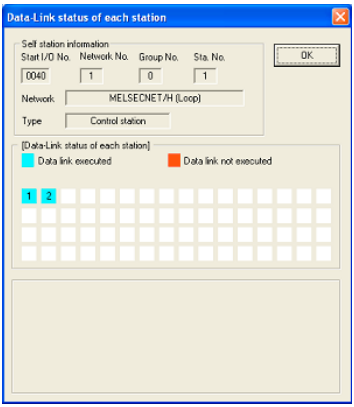


Item	Description	Supported SB	Supported SW
[OK] button	Closes “Communication status of each station”.	-	-
Self station information	Displays local information of a MELSECNET/H unit. For details, refer to “(1) Other station monitor window”.	SB0044, SB0057, SB005A	SW0040, SW0041, SW0042, SW0046
Communication status of each station	Displays the baton pass condition (whether transient transmission is possible or not) using the following colors. Light blue : Normal communication station., reserved station Red : Error [Disconnected] (Disconnecting states)	-	SW0070 - SW0073

(b) Data-Link status of each station

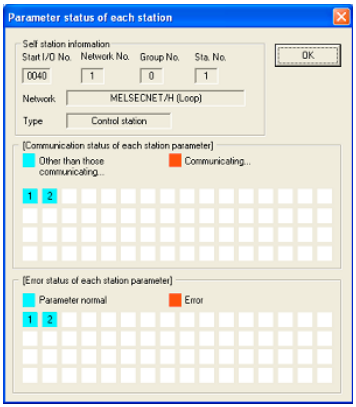
Displays the cyclic transmission status.

The No. of stations to be displayed is the “Total No. of stations” set by the “Parameter Setup” window.



Item	Description	Supported SB	Supported SW
[OK] button	Closes “Data-Link status of each station” window.	-	-
Self station information	Displays self station information of MELSECNET/H unit. For details, refer to “(1) Other station monitor window”.	SB0044, SB0057, SB005A	SW0040, SW0041, SW0042, SW0046
Data-Link status of each station	Displays the cyclic transmission status using the following colors. Light blue : Normal station., reserved station Red : Faulty station (data link not executed)	-	SW0074 - SW0077

(c) Parameter status of each station.
Displays a station's parameter communication status and abnormal parameter status.
The No. of stations to be displayed is the "Total No. of stations" set by the "Parameter Setup" window.

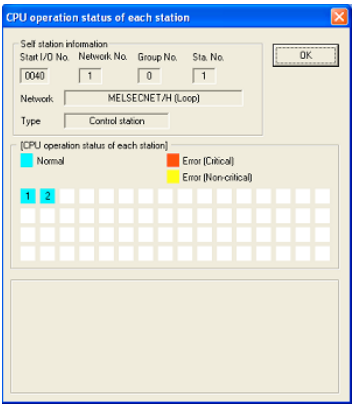


Item	Description	Supported SB	Supported SW
[OK] button	Close "Parameter status of each station".	-	-
Self station information	Displays self station information of MELSECNET/H unit. For details, refer to "(1) Other station monitor window".	SB0044, SB0057, SB005A	SW0040, SW0041, SW0042, SW0046
Communication status of each station parameter	Displays the communication status of each station parameter using the following colors. Light blue : Other than during parameter communication, reserved station, Not-connected station Red : Parameter communication in progress	-	SW0078 - SW007B
Error status of each station parameter	Displays the error status of each station. parameter using the following colors. Light blue : Parameters normal, reserved station, Not-connected station Red : Parameter error	-	SW007C - SW007F

(d) CPU operation status of each station

Displays the operation status of a CPU.

The No. of stations to be displayed is the “Total No. of stations” set by the “Parameter Setup” window.

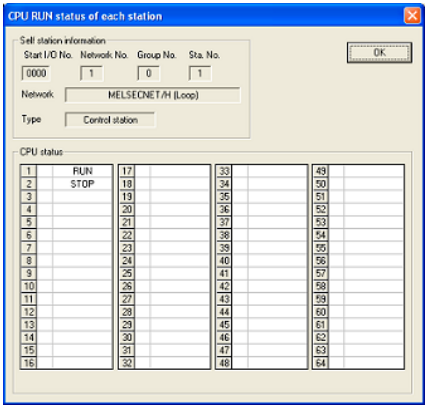


Item	Description	Supported SB	Supported SW
[OK] button	Closes “CPU operation status of each station”.	-	-
Self station information	Displays self station information of MELSECNET/H unit. For details, refer to “(1) Other station monitor window”.	SB0044, SB0057, SB005A	SW0040, SW0041, SW0042, SW0046
CPU operation status of each station	Displays the CPU operation status of each station using the following colors. Light blue : CPUnormal, reserved station, Not-connected station Red : Moderate CPU error (WDT error, etc), Serious (Hardware error, etc) Yellow : Minor CPU error	-	SW0080 - SW0083, SW0088 - SW008B

(e) CPU RUN status of each station

Displays the RUN/STOP status of CPU

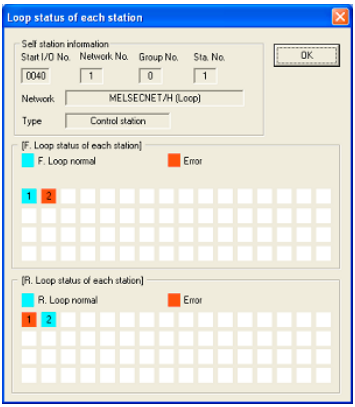
The No. of stations to be displayed is the “Total No. of stations” set by the “Parameter Setup” window.



Item	Description	Supported SB	Supported SW
[OK] button	Closes “CPU RUN status of each station” window.	-	-
Self station information	Displays self station information of MELSECNET/H unit. For details, refer to “(1) Other station monitor window”.	SB0044, SB0057, SB005A	SW0040, SW0041, SW0042, SW0046
CPU status	Displays the RUN/STOP status of CPU. RUN : RUN, STEPRUN STOP : STOP, PAUSE DOWN : ERROR, Not-connected station Reserved station : Reserved station	-	SW0084 - SW0087

(f) Loop status of each station

Displays the main/sub-loop status in the case of a fiber optical system.
The No. of stations to be displayed is the “Total No. of stations” set by the “Parameter Setup” window.

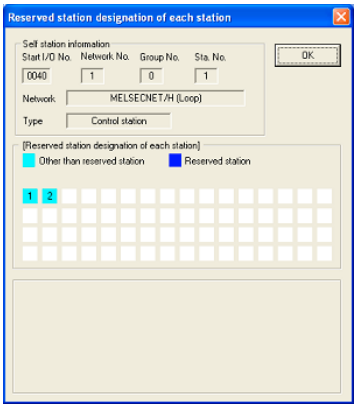


Item	Description	Supported SB	Supported SW
[OK] button	Closes “Loop status of each station” window.	-	-
Self station information	Displays self station information of MELSECNET/H unit. For details, refer to “(1) Other station monitor window”.	SB0044, SB0057, SB005A	SW0040, SW0041, SW0042, SW0046
F. Loop status of each station	Displays the main (F) loop condition in the case of a fiber optical system using the following colors. Light blue : Normal, reserved station, Not-connected station Red : Error	-	SW0091 - SW0094
R. Loop status of each station	Displays the sub (F) loop condition in the case of a fiber optical system using the following colors. Light blue : normal, reserved station, Not-connected station Red : Error	-	SW0095 - SW0098

(g) Reserved station designation of each station

Displays the setting status of a reserved station

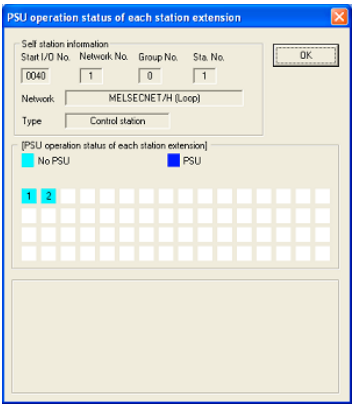
The No. of stations to be displayed is the “Total No. of stations” set by the “Parameter Setup” window.



Item	Description	Supported SB	Supported SW
[OK] button	Closes “Reserved station designation of each station” window.	-	-
Self station information	Displays self station information of MELSECNET/H unit. For details, refer to “(1) Other station monitor window”.	SB0044, SB0057, SB005A	SW0040, SW0041, SW0042, SW0046
Reserved station designation of each station	Displays the Reserved station designation of each station using the following colors. Light blue : Not-reserved station Blue : Reserved station	-	SW0064 - SW0067

(h) PSU operation status of each station extension

Displays the supply status of external 24V DC power supply for a MELSECNET/H unit.
The No. of stations to be displayed is the “Total No. of stations” set by the “Parameter Setup” window.

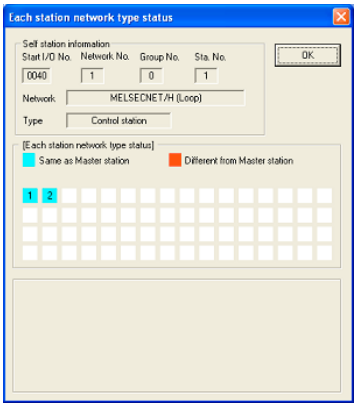


Item	Description	Supported SB	Supported SW
[OK] button	Closes “PSU operation status of each station extension”.	-	-
Self station information	Displays self station information of MELSECNET/H unit. For details, refer to “(1) Other station monitor window”.	SB0044, SB0057, SB005A	SW0040, SW0041, SW0042, SW0046
PSU operation status of each station extension	Displays the PSU operation status of each station extension using the following colors. Light blue : No external power supply Blue : External power supply available	-	SW008C - SW008F

(i) Each station network type status

Displays consistency between the network type set to the control station and the one set to normal stations.

The No. of stations to be displayed is the “Total No. of stations” set by the “Parameter Setup” window.

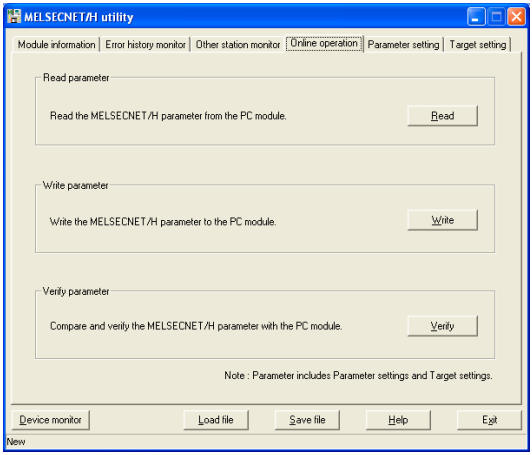


Item	Description	Supported SB	Supported SW
[OK] button	Closes “Each station network type status” window.	-	-
Self station information	Displays self station information of MELSECNET/H unit. For details, refer to “(1) Other station monitor window”.	SB0044, SB0057, SB005A	SW0040, SW0041, SW0042, SW0046
Each station network type status	Displays consistency between the network type set to the control station and the one set to normal stations using the following colors. Light blue : Normal station, reserved station and communication fault station, having the same network type as the control station. Red : Normal station having a network type different from that of the control station.	-	SW01E0 - SW01E3

5.4.5 Operating the Online Operation Window

This window is used to read, write and compare MELSECNET/H parameters.

Point
Operation on this window is not possible while the bus interface driver's resetting is in progress. Perform operation after the reset operation is complete.



Item	Description
Read parameter [Read] button	Read MELSECNET/H parameter from PC CPU module.
Write parameter *1 [Write] button	Write MELSECNET/H parameter to PC CPU module. The written parameter is enabled when PC CPU module is reset.
Verify parameter [Verify] button	Compares the MELSECNET/H parameter of PC CPU module with the MELSECNET/H parameter of MELSECNET/H utility. The comparison result appears in a message box.

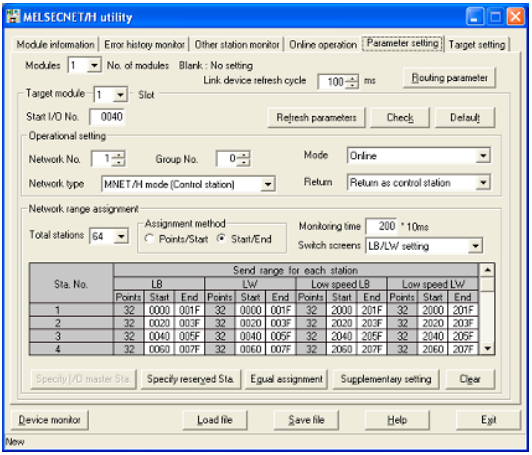
*1 : Writing of parameters is available only by the administrator's authority.

5.4.6 Operating on Routing Parameter Setting Window

Performs Parameter setting of MELSECNET/H unit.

Point
(1) If the entered parameters are mistaken, the warning message is displayed when the screen transitions to another window, and the screen does not switch to another window. Correct the mistakes in the entered parameters, and then switch over the window. (2) To reflect the settings in a PC CPU module, write the parameters using the “Online Operation” window and reset the PC CPU module. (3) Adjust a link device refresh cycle so that it is always over the maximum value for all links refresh time. Relational expression : (Maximum value of all links refresh time) < (link device refresh cycle)) For more details on max. value of total link fresh time refer to “5.4.2 Operating the Module Information Window”.

(1) Parameter setting window



Item	Dsscription
Modules	Sets the No. of MELSECNET/H units managed by the PC CPU module. When “ ” (vacant) is selected, no setting is made (setting cleared). (Initial value : “ “ (vacant), setting range : 1 - 4, “ “ (vacant))

Item		Dsscription
Link device refresh cycle *1		Sets a refresh cycle for a link device. (by ms unit) (Initial value : 100, setting range : 0 *2, 10 - 1000)
[Routing parameter] button		Displays the Routing Parameter Setup window. For more details on this, refer to “(2) Routing Parameter setting” window.
Target module		Select the unit to be set. (Initial value : 1, setting range : 1 - 4) For details about the number assigned in this item, refer to "5.3.5 (1) (a) No. to be assigned to target modules".
Start I/O No.		Sets the Start I/O No. of MELSECNET/H unit. (Setting range : 0 - FE0H (It should be noted that the start I/O No. set to another MELSECNET/H unit cannot be duplicated.))
[Default] button		Sets the operation setting and network coverage assignment parameters to default.
[Check] button		Check for any mistakes in the setting.
[Refresh parameters] button		Displays Refresh Parameter Setting windows. For more details on this, refer to “(3) Refresh parameter setting” window.
Operational setting		
	Network type	Sets the type of MELSECNET/H unit. (Initial value : “MNET/H mode (control station)”, setting range : “MNET/H mode (control station)”, “MNET/H mode (normal station)”, “MNET/10 mode (control station)”, “MNET/10 mode (normal station)”, “MNET/H extended mode (control station)”, “MNET/H extended mode (normal station)”)
	Network No.	Sets a network No. for a MELSECNET/H unit. (Initial value : 1, setting range : 1 - 239)
	Group No.	Sets Group No. of MELSECNET/H unit. (Initial value : 0, setting range : 0 - 32)
	Mode	Sets a mode for a MELSECNET/H unit. (Initial value : “online”, setting range : “online”, “offline”, “Main loop test”, “Sub-loop test”, “Inter-station test (initiating station)”, “Inter-station test (target station)”)
	Return	Sets return for the control station. This item can be set when “MNET/H mode (control station)”, “MNET/10 mode (control station)”, or “MNET/H extended mode (control station)” is selected for “Network type”. (Initial value : “Return as the control station”, setting range : “Return as a control station”, “Return as a normal station”)

*1 : For the link device refresh cycle setting, refer to “Section 8.2.12 (1) Increasing a link device refresh cycle value” or “Section 8.2.12 (2) Reducing a link device refresh cycle value”.

*2 : If 0 is set to the link device refresh cycle setting, refresh will not execute, all the refresh parameter settings will be deleted, and the [Refresh parameter] button will be disabled.

Item		Dsscription
Network range assignment		
	Total stations	Sets the total No. of stations (including the control station) for the target network. (Initial value : 2, setting range : 2 - 64)
	Assignment method	Switches the device range input method to points/start, or to start/end. (Initial value : "start/end", Setting range : point/start, start/end)
	Switch screens	Selects a target link device for which you want to set network coverage assignment. "Low-speed LB" and "Low-speed LW" can be set when "MNET/H mode (control station)" or "MNET/H extended mode (control station)" is set to "Network type". (Initial value : "LB/LW setting", Setting range : "LB/LW setting", "LX/LY setting (1)", "LX/LY setting (2)")
	Points	Sets link device points to be assigned to a target station. This item can be set when "points/start" is set to "Assignment method". (Initial value : " " (vacant), setting range : refer to "(1)(a) network coverage assignment setting range".
	Start	Sets the first among link devices to be assigned to a target station. (Initial value : " " (vacant), setting range : refer to "(1)(a) Network coverage assignment setting range".
	End	Sets the last among link devices to be assigned to a target station. This item can be set when "start/end" is set to "Assignment method". (Initial value : " " (vacant), setting range : refer to "(1)(a) Network coverage assignment setting range".
	Monitoring time	Sets monitoring time of link scan time. (by 10ms unit) (Initial value : 200, setting range : 1 - 200)
	[Specify I/O master station] button	Sets the selected station as the link device (LX/LY) I/O master station, or cancels that setting. This button can be used when "LX/LY setting (1)" or "LX/LY setting (2)" is set to "Window change".
	[Specify reserved station] button	Sets the selected station as a reserved station, or cancels the setting.
	[Equal assignment] button	Displays Even-Assignment window For more details on this, refer to "(4) Even-Assignment window".
	[Supplementary setting] button	Displays Supplementary setting window. For more details on this, refer to "(5) Supplementary setting window".
	[Clear] button	Deletes the settings for "Points," "Start," and "End" and sets "Total No. of stations" and "Monitoring time" to default.

(a) Network coverage assignment setting range
Network coverage assignment setting range is as follows :

Device station		Point/start/end	Setting range
LX		point	16 - 8192 *1
		start	0000 - 1FF0 *1
		end	000F - 1FFF *2
LY		point	16 - 8192 *1
		start	0000 - 1FF0 *1
		end	000F - 1FFF *2
When “network type” *3 is “MNET/Hmode (control station)”, “MNET/H extended mode (control station)”	LB	point	16 - 16384 *1
		start	0000 - 3FF0 *1
		end	000F - 3FFF *2
	LW	point	1 - 16384
		start	0000 - 3FFF
		end	0000 - 3FFF
	Low Speed LB	point	16 - 8192 *1
		start	2000 - 3FF0 *1
		end	200F - 3FFF *2
	Low Speed LW	point	1 - 8192
		start	2000 - 3FFF
		end	2000 - 3FFF
When “network type” *3 is “MNET/10 mode (control station)”	LB	point	16 - 8192 *1
		start	0000 - 1FF0 *1
		end	000F - 1FFF *2
	LW	point	1 - 8192
		start	0000 - 1FFF
		end	0000 - 1FFF

*1 : Only a multiple of 16 can be set to the “Points” and “Start” of LX, LY, and LB.

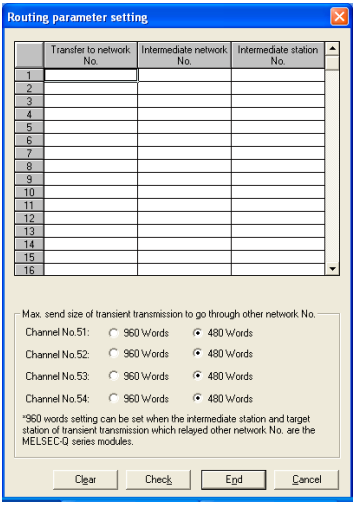
*2 : Only (a multiple of 16 minus 1) can be set to the “End” of LX, LY, and LB.

*3 : “Network type” is set on the “Parameter setting” window.
For more details on this, refer to “(1) Parameter setting window”.

(2) Routing parameter setting window

Set a transfer destination, relay destination network No., and relay destination station No.

Point
MELSECNET/H unit s managed by the PC CPU module cannot be used as relay stations that work as bridges. For relay stations, use MELSECNET/H units managed by a sequencer CPU that can configure a multiple-network system.

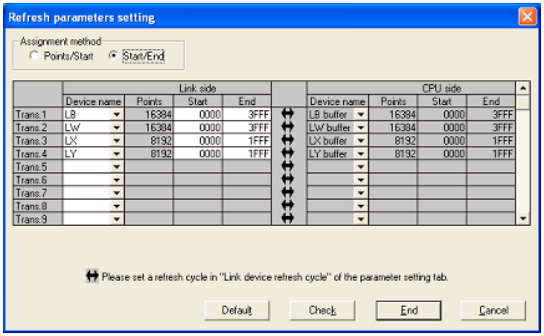


Item	Dsscription
Transfer to network No.	Sets Transfer to network No. (Initial value : " " (vacant), setting range : 1 - 239)
Intermediate network No.	Sets Intermediate network No. (Initial value : " " (vacant), setting range : 1 - 239)
Intermediate station No.	Sets Intermediate station No. (Initial value : " " (vacant), setting range : 1 - 64)
Channel No.51 - 54	Sets the maximum transmission size per channel to be conveyed in transient transmission through a MELSECNET/H unit to another network No. *1 (Initial value ： 480 words, setting range ： 960 words, 480 words)
[Clear button]	Clears the settings for "Transfer destination network No.," "Relay destination network No.," and "Relay destination station No.".
[Check] button	Checks setting for "Transfer to network No.", "Intermediate network No." and "Intermediate station No.".
[End] button	Closes Routing parameter setting window with saving the setting description.
[Cancel] button	Closes Routing parameter setting window without saving the setting description.

*1： Set the value to 960 words only when relay and target stations in transient transmission through another network No. are MELSEC-Q Series supported network modules.
Otherwise set the value to 480 words. If 960 words are set, normal transient transmission may not be possible because data can be cut off.

(3) Refresh parameter setting window

Performs refresh parameter setting window



Item		Dsscription
Assignment method		The device range input method can be switched between Points/Start and Start/End. (Initial value : “start/end”)
Link side	Device name	Sets the name of a link device to be refreshed. Refresh parameters can be set to a maximum of 64 devices. Avoid overlapping when setting. Devices cannot overlap one another. (Initial value : Refer to “(3)(a) Initial value of “device name”, “point”, “start” and ”end”, Setting range : Refer to “(3)(b) ”Device name” on link and CPU side).
	Points	Sets points for a link device to be refreshed. (Initial value : Refer to “(3)(a) Initial value of ”device name”, “point”, “start” and ”end”, Setting range : Refer to “(3)(c) Setting range of “point”, “start” and ”end” on link side).
	Start	Sets the first among link devices to be refreshed. (Initial value : Refer to “(3)(a) Initial value of ”device name”, “point”, “start” and ”end”, Setting range : Refer to “(3)(c) Setting range of “point”, “start” and ”end” on link side).
	End	Sets the last among link devices to be refreshed. (Initial value : Refer to “(3)(a) Initial value of ”device name”, “point”, “start” and ”end”, Setting range : Refer to “(3)(c) Setting range of “point”, “start” and ”end” on link side).
CPU side	Device name	Displays the names of devices to be refreshed by a CPU module in one-to-one correspondence with settings on the “link side.” (Display range : Refer to “(3)(b) ”Device name” on link and CPU side).
	Points	Displays the points for devices to be refreshed on the CPU side. Displays the same “points” as the ones on the “link side”.
	Start	Displays the start for devices to be refreshed on the CPU side. Displays the same “startNo.” as the ones on the “link side”.
	End	Displays the end for devices to be refreshed on the CPU side. Displays the same “endNo.” as the ones on the “link side”.

Item	Dsscription
[Default] button	Changes the settings on both “link side” and “CPU side” to default.
[Check] button	Performs an error check on the settings on both “link side” and “CPU side”.
[End] button	Close “Refresh Parameter setting” window with saving the setting description.
[Cancel] button	Close “Refresh Parameter setting” window without saving the setting description.

(a) Initial values for “Device name,” “Points,” “Start,” and “End”
Initial values for “Device name,” “Points,” “Start,” and “End” is as follows :

Setting item	Device name	Points	Start	End
Transfer 1	LB	16384	0000	3FFF
Transfer 2	LW	16384	0000	3FFF
Transfer 3	LX	8192	0000	1FFF
Transfer 4	LY	8192	0000	1FFF
Transfer 5 - transfer 64	“ ”(vacant)			

(b) “Device name” on the “Link” and “CPU side”
The following shows the setting ranges for “Device name” on the “link side” and the displays for “Device name” on the “CPU side”..

Setting range on “link side”	Display on “CPU side”
LX	LX buffer
LY	LY buffer
LB	LB buffer
LW	LW buffer

(c) Setting ranges for “Points,” “Start,” and “End” on the link side.
“Points,” “Start,” and “End” on the link side is as follows :
(The same setting range is applied for all : “Transfer 1” - "Transfer 64”.)

Device name	Points / Start / End	Setting range
LX	Points	16 - 8192 *1
	Start	0000 - 1FF0 *1
	End	000F - 1FFF *2
LY	point	16 - 8192 *1
	start	0000 - 1FF0 *1
	end	000F - 1FFF *2
LB	point	16 - 16384 *1
	start	0000 - 3FF0 *1
	end	000F - 3FFF *2
LW	point	1 - 16384
	start	0000 - 3FFF
	end	0000 - 3FFF

*1 : Only a multiple of 16 can be set to "Points" and "Start" of LX, LY and LB.

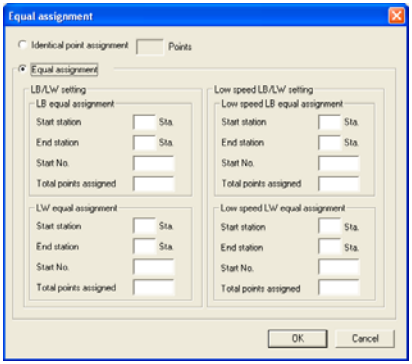
*2 : Only a (multiple of 16 -1) can be set to "End" of LX, LY and LB.

(4) Even-Assignment window

Evenly assigns link device points to all stations.

The start/end stations can be set within the range between the first and last even-assignment station No. (Total No. of links - (first station No. - 1)).

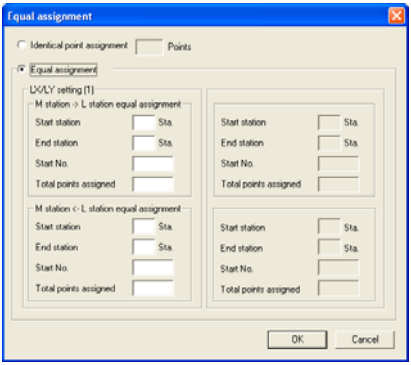
(a) When “LB/LW setting” is set to “Window change” in the “Parameter setting” window.



Item		Dsscription
Identical point assignment		Assigns the same entered points to a station's link devices respectively. (by 16 points) (Initial value : “ “ (vacant), Setting range : 16 or more)
[OK] button		Performs even-assignment according to the setting and closes the “Even-Assignment” window.
[Cancel] button		Closes the “Even-Assignment” window without performing even-assignment.
Equal assignment		Divide and assign the entered points to a station's individual link devices so that they are assigned points evenly.
LB equal assignment	Start station	Sets the first among stations to which points are evenly assigned. (Initial value : “ “ (vacant), setting range : 1 - (“Total No. of stations” *1 setting))
	End station	Sets the last among stations to which points are evenly assigned. (Initial value : “ “ (vacant), setting range : (“Start station” setting) - (“Total No. of stations” *1 setting))
	Start No.	Sets the No. of the first among link devices to which points are evenly assigned. (Initial value : “ “ (vacant), setting range : Refer to “(1)(a) network coverage assignment setting range”.)
	Total points assigned	Sets the total No. of points for link devices to which points are evenly assigned. (Initial value : “ “ (vacant), setting range : Refer to “(1)(a) network coverage assignment setting range”.)
LW equal assignment		Sets the method for LW even-assignment. Sets items the same way as in “LB even-assignment”.
Low speed LB equal assignment		Sets the method for Low speed LB equal assignment. Sets items the same way as in “LB even-assignment”.
Low speed LW equal assignment		Sets the method for Low speed LW equal assignment. Sets items the same way as in “LB even-assignment”.

*1 : “Total No. of stations” is set from “Network coverage assignment” on the “Parameter Setup” window.
For more details on this, refer to “(1) Parameter setting window”.

(b) When “LX/LY setting (1)” or "LX/LY setting (2)" is set to “Window change” in the “Parameter setting” window.

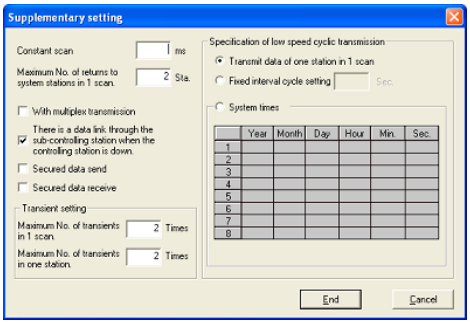


Item		Dsscription
Identical point assignment		Assigns the same entered points to a station’s link devices respectively. (Every 16 points) (Initial value : “ “ (vacant), setting range : 16 or more)
[OK] button		Performs even-assignment according to the setting and closes the “Even-Assignment” window.
[Cancel] button		Closes the “Even-Assignment” window without performing even-assignment.
Equal assignment		Divide and assign the entered points to a station's individual link devices so that they are assigned points evenly.
M station -> L station equal assignment	Start station	Sets the first among stations to which points are evenly assigned. (Initial value : “ “ (vacant), setting range : 1 - (“Total No. of stations” *1 setting))
	End station	Sets the last among stations to which points are evenly assigned. (Initial value : “ “ (vacant), setting range : (“Start station” setting) - (“Total No. of stations” *1 setting))
	Start No.	Sets the No. of the first among link devices to which points are evenly assigned. (Initial value : “ “ (vacant), setting range : Refer to “(1)(a) Network coverage assignment setting range”.)
	Total points assigned	Sets the total No. of points for link devices to which points are evenly assigned. (Initial value : “ “ (vacant), setting range : “Refer to (1)(a) Network coverage assignment setting range”.)
M station <- L station equal assignment		Sets the method for LX(1) or LX(2) equal assignment. Sets items the same way as in “M station->L station even-assignment”.

*1 : “Total No. of stations” is set from “Network coverage assignment” on the “Parameter setting” window.
For more details on this, refer to “(1) Parameter setting window”.

(5) Supplementary setting window

The supplementary setting is used for more detailed operation.
Normally, use it by default.



Item	Dsscription
Constant scan	Constant link scan is the function to keep link scan time at a certain level. It shall be set to avoid fluctuations in link scan time. (by ms unit) (Initial value : " " (vacant), setting range : 1 - 500, " " (vacant))
Maximum No. of returns to system stations in 1 scan.	Sets the No. of communication fault stations that can return during a one-link scan. (Initial value : 2, setting range : 1 - 64 ("Total No. of stations" *1 setting))
With multiplex transmission	Sets when performing the multiplex transmission function. Multiplex transmission is the function to increase transmission speed by simultaneously using both main and sub loops, when they operate normally, in a fiber optical loop system. This item can be set only when 4 or over are set to the "total No. of stations" *1 setting. (Initial value : No checking (Do not execute))
There is a data link through the sub-controlling station when the controlling station is down.	This item shall be set when using the control station switchover function - the function to make another normal station in the network continue communication as a substitute (sub control station) if the specified control station is disconnected due to failure, etc. (Initial value : Checking (Use control switchover function))

*1 : "Total No. of stations" is set from "Network coverage assignment" on the "Parameter Setup" window.
For more details on this, refer to "(1) Parameter setting window".

Item		Dsscription
Secured data send		This item is set to prevent Integrity Loss Prevention*2 (maintain integrity) of a station's link data in cyclic transmission.*3 This makes it possible to manipulate data of multiple words without interlock. Note that the above prevention*2 is effective only for link device refresh processing between PC CPU module and MELSECNET/H unit. (Initial value : refer to "(5) (a) Default values for transmit data with station data integrity assurance specified/receive data with station data integrity assurance specified".
Secured data receive		
Transient setting	Maximum No. of transients in 1 scan.	Set the No. of transient transmissions (total on a whole network) that can be executed by one network during 1 link scan. (Initial value : 2, setting range : 1 - 255)
	Maximum No. of transients in one station	Set the No. of transient transmissions that can be executed by one station during 1 link scan. (Initial value : 2, setting range : 1 - 10 (Setting for the "maximum No. of transient times per scan"))
Specification of low speed cyclic transmission		Beside normal cyclic transmission, sets the condition for low cycle transmission (low-speed cyclic transmission) of link data (LB, LW). This item can be set only when "Low-speed LB" and "Low-speed LW" of "Network coverage assignment" are set on the "Parameter Setup" window.
Transmit data of one station in 1 scan		Select this item when sending the data of one station to another station in 1 link scan.
Fixed interval cycle setting		Low speed cyclic transmission is performed in the specified cycles. (Initial value : " " (vacant), setting range : 1 sec - 65535 sec)
System times		Low speed cyclic transmission is performed according to the set time. (Initial value : " " (vacant), setting range : 00:00:00 Jan 1, 2000 - 23:59:59 Dec 31, 2099 *4)
[End] button		Close the "Supplementary setting" window with the setting description.
[Cancel] button		Close the "Supplementary setting" window without the setting description.

*2 : Securing consistency means preventing the 2-word (32 bits) link data, such as the current value of the positioning module, from being divided into new and old data in units of 1 word (16 bits) due to the cyclic transmission timing. The link device refresh processing between PC CPU module and MELSECNET/H unit is set on the "Refresh Parameter Setting" window. For more details on this, refer to "(3) Refresh Parameter setting window".

*3 : If this item is marked for station data integrity assurance, set "Link device refresh cycle" in the "Parameter Setting" window (see "(1) Parameter Setting window") and set "Refresh parameter" in the "Refresh Parameter Setup" window (see "(3) Refresh parameter setting window").

*4 : "Hour," "Minute," and "Second" cannot be omitted. If "Year," "Month," and "Day" are omitted, transmission is executed at the predetermined time every day. If only "Year" and "Month" are omitted, transmission is executed at the predetermined time every month. If only "Year" is omitted, transmission is executed at the predetermined time every year.

(a) Default values for transmit data with station data integrity assurance specified/receive data with station data integrity assurance specified

The default values are as follows depending on the network type (see "(1) Parameter Setting window").

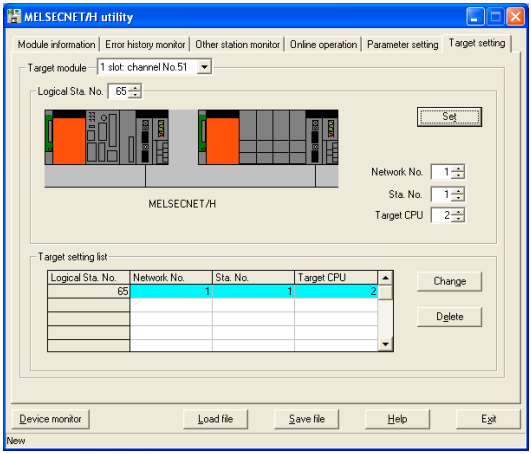
Network type	Initial value
MNET/H mode (control station)	"Not specified" for both transmission and reception.
MNET/10 mode (control station)	
MNET/H extended mode (control station)	"Specified" for both transmission and reception.

5.4.7 Operating the Target Setting Window

This operation sets the Logical Sta. No. for access to a multiple CPU system.

Point
(1) To reflect the settings in a PC CPU module, write the parameters using the “Online Operation” window and reset the PC CPU module. (2) Set a PLC CPU as the Target CPU.

(1) Target setting



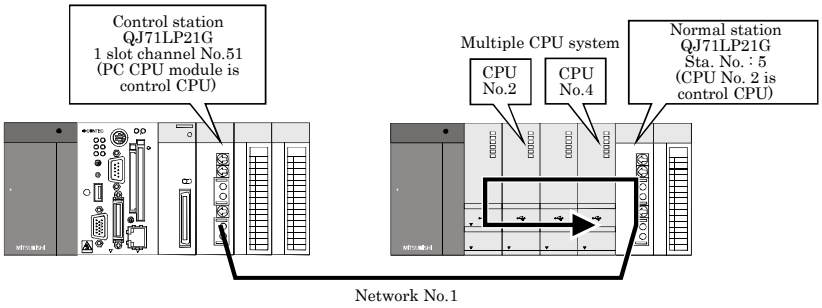
Item	Dsscription
Target module	Select the unit to be set. (Initial value : “1 slot”, setting range : “1 slot” - 4 slot”)
Logical Sta. No. *1	Specify the Logical Sta. No. of the module selected in "Target module". (Initial value : 65, setting range : 65 - 239)
Network No.	Sets the network No. of the MELSECNET/H unit controlled by the multiple CPU system. (Initial value : 1, setting range : 1 - 239)
Sta. No.	Sets the Sta. No. of the MELSECNET/H unit controlled by the multiple CPU system. (Initial value : 1, setting range : 1 - 64)
Target CPU *2	Sets the target CPU which is being accessed (CPU machine No. of multiple CPU system). (Initial value : 1, setting range : 1 - 4)

Item	Dsscription
[Set] button	Registers the setting contents (Logical sta., Network No., Sta. No., Target CPU) in the list of external devices.
Target setting list	Displays a list of the Logical Sta. No. set to the module selected in "Target module" and the corresponding Sta. No. and target CPUs.
[Change] button	Displays the data in the row (Logical Sta. No.) selected in the Target setting list in the Logical Sta. No. area. (The same operation is performed when the line being changed is double clicked.)
[Delete] button	Deletes the line (Logical Sta. No.) selected in the Target setting list.

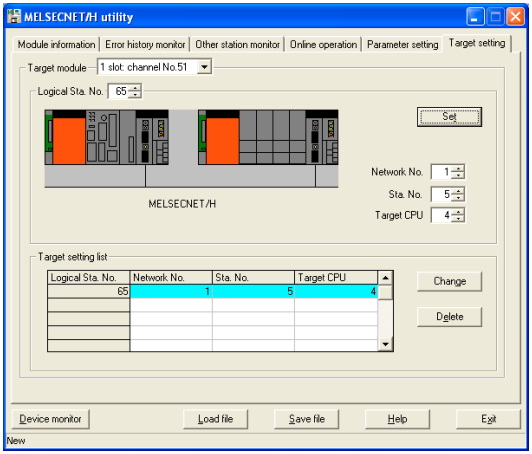
*1 : The Logical Sta. No. is a logical No. specified as the "Sta. No." in the Device monitor utility or user program (MELSEC data link function).
Use the Logical Sta. No. when accessing another station CPU (another CPU No. in the multiple CPU system) from the target module (channel No.).
When accessing a CPU module controlling another station (station 1 to 64) or a MELSECNET/H unit of another station, do not use the Logical Sta. No. but a Sta. No. used by MELSECNET/H.

*2 : The target CPU can be set only when the CPU module set to "Sta. No." is the one that can configure a multiple CPU system.

(2) Example of access
When Logical Sta. No.“65” is used, it is possible to access CPU No.4 via a MELSECNET/H unit (controlled by CPU No.2, Network No.1) from the MELSECNET/H unit controlled by the PC CPU module.
From the Device monitor utility or user program (MELSEC data link function), CPU No.4 can be accessed by opening Channel No.51 and specifying 65 as the Sta. No.



The target window for the above access is shown below.

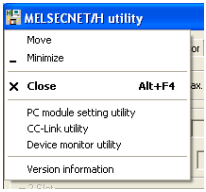


5.4.8 Operating the System Menu

(1) System menu

There are three ways, listed below, to open and use the system menu for the MELSECNET/H utility.

- Right-click on the title bar.
- Click icon ( ) on the title bar.
- Press the [↓] key after pressing [Alt] key.



Item	Description
Move, minimize, close	Refer to the Microsoft Windows's manual.
PC module setting utility	Move the PC module setting utility
CC-Link utility	Starts the CC-Link utility.
Device monitor utility	Starts the device monitor utility.
Version information	Opens the "Version information" window. For details on this, refer to "(2) Version information window".

(2) Version information window

Version information of MELSECNET/H utility is as follows :

Item	Description
Software package PPC-DRV-02	Displays PPC-DRV-02 version.
MELSECNET/H utility	Displays the date of MELSECNET/H utility
[OK] button	Close "Version information" windows.

5.5 Device Monitor utility

This section describes operations for device monitor utility

5.5.1 Functional List of Device Monitor Utility

A list of the Device Monitor utility's functions is as follows.

Name	Description	Referring Paragraph
Collective monitoring	Monitors only one type of device specified.	5.5.2
16-point mode monitoring	Monitors a maximum of five (5) bit-devices and one (1) word-device simultaneously.	5.5.3
Sets a target to be monitored.	Sets a network for which the Device Monitor utility is used.	5.5.4
Monitored device setting	Selects a target device to be monitored.	5.5.5
Word device value change	Changes the data of the specified word device.	5.5.6
Continuous word device value change	Changes data by the No. of points set to the specified word device.	5.5.7
Bit device ON/OFF	Turns ON/OFF the specified bit device.	5.5.8
Display format change	Changes the display format for device monitoring.	5.5.9
Numeric input pad	Enters a No. through mouse operation.	5.5.10

5.5.2 Specifying batch monitor

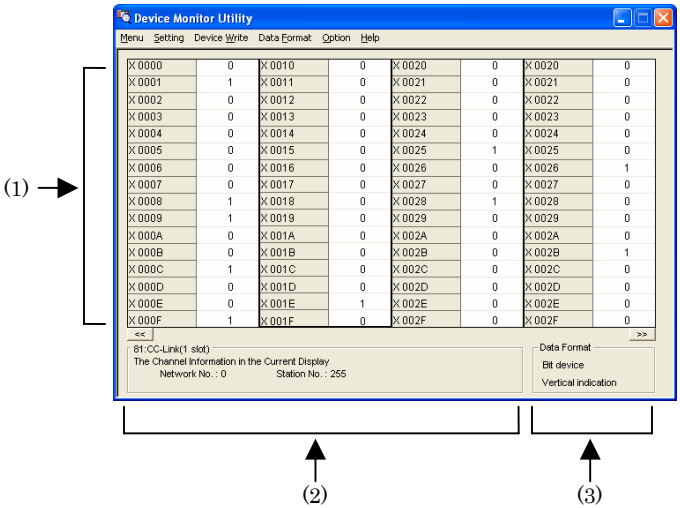
Monitors only one device that has been specified.

Point
It cannot be monitored while the bus interface driver is reset. Start monitoring after the reset is completed.

(1) Selecting the menu

Select [Menu] - [Batch monitor] from the menu bar.
(Selectable for 16- point register monitor only.)
Collective monitoring is displayed immediately after the device monitor is launched.)
Set a device to be monitored from [Settings] - [Device Setup] in the menu bar.
For details, refer to “Section 5.5.5 Specifying device to be monitored”.

(2) Display window



Item	Dsscription
(1) Device information	Displays the current device status. For changing the display form, refer to “5.5.9 Switching Display Form”.
(2) Network status	Displays the current network status. For setting the network, refer to “5.5.4 Specifying monitor target”.
(3) Display method	Displays the device type (word device, bit device) and its form. For changing the device type, refer to “5.5.5 Specifying device to be monitored”. For changing the display form, refer to “5.5.9 Switching Display Form”.

5.5.3 Specifying 16- point Register Monitor

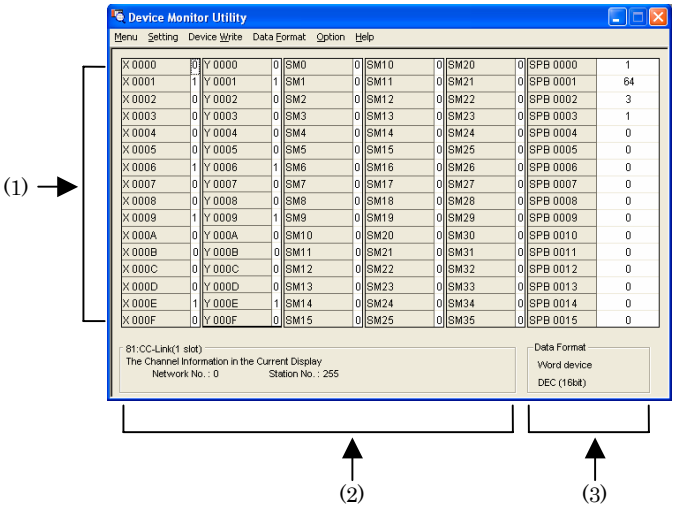
Monitors up to five bit devices and one word device simultaneously.

Point
It cannot be monitored while the bus interface driver is reset. Start monitoring after the reset is completed.

(1) Selecting the menu

Select [Menu] - [16- point register monitor] from the menu bar.
(Selectable only for collective monitoring)
Sets device to monitor by selecting [Settings] - [Device settings] from the menu bar.
For more details on this, refer to “5.5.5 Specifying device to be monitored”.

(2) Display window



Item	Dsscription
(1) Device information	Displays the current device status. For changing the display form, refer to “5.5.9 Switching Display Form”.
(2) Network status	Displays the current network status. For setting the network, refer to “5.5.4 Specifying monitor target”.
(3) Display method	Displays the device type (word device, bit device) and its form. For changing the device type, refer to “5.5.5 Specifying device to be monitored”. For changing the display form, refer to “5.5.9 Switching Display Form”.

5.5.4 Specifying monitor target

Sets the network to be used for device monitoring.

Set the destination when starting the device monitor utility.

Point
(1) When local is selected in the network setting, as the network status, “0” is displayed in the network No. field, and “255” is displayed in the Sta. No. field. (2) To access a multiple CPU system, select another station, enter “0” to the network No. field, and enter the value of “Logical Sta. No.” set by each utility.

(1) Selecting the menu

Select [Setting] - [Network Setting] from the menu bar.

(2) Dialog box

Item	Dsscription
Channel	Set the channel to be used. For more details on this, refer to “6.5 Channel”.
Network Setting	Set the own Sta. and other Sta. along with network No. and Sta. No. For more details on this, refer to “6.6 Sta. No. Setting”.

5.5.5 Specifying device to be monitored

Set the device to be monitored.

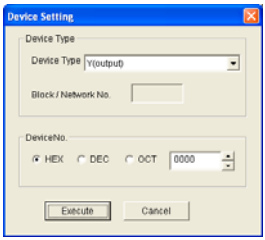
Point
Devices that can be monitored through 16-point mode monitoring are devices that can be randomly accessed. If a device that cannot be randomly accessed is specified, a device type error (-3) occurs. For whether or not devices can be randomly accessed, refer to “Chapter 7 Accessible Range - Device”.

(1) Selecting the menu

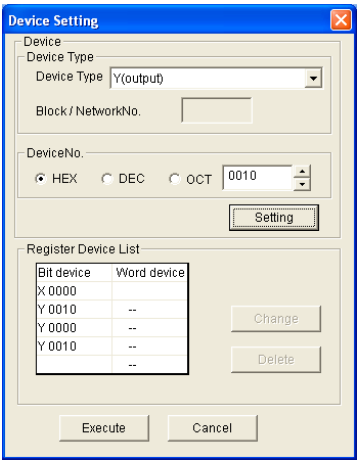
Select [Setting] - [Device setting] from the menu bar.

(2) Dialog box

Batch monitor



16-point register monitor



Item	Dsscription
Device Type	Set the type, block No., and network No. for the device to be monitored. For more details on this, refer to “6.7 Device Type”.
DeviceNo.	Set the start No. of the device to be monitored. (HEX : hexadecimal, DEC : decimal, OCT : octal)
Register Device List	Device List Displays a list of the devices entered.
[Setting] button	Enters the item set in Device type and Device No., then adds it to List of devices entered.
[Change] button	Select the device to be changed and click this button to change the entered data.
[Delete] button	Select the device to be deleted and click this button to delete it from List of devices entered.

5.5.6 Changing Word Device Values

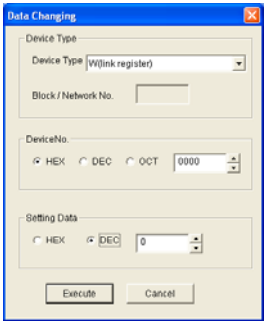
Changes the specified word device data.

⚠ DANGER	To perform control (data change) of the PC CPU module during operation, configure an interlock circuit on the user program so that the whole system runs safely at all times. To perform other control (change in the running status (status control)) of the PC CPU module during operation, also configure an interlock circuit on the user program so that the whole system runs safely at all times. Especially, when performing the above control of a remote PC CPU module from an external device, a problem occurring at the PC CPU module due to abnormal data communication may not be addressed immediately. In addition to configuring an interlock circuit on a user program, determine a system method between the external device and PC CPU module in case of abnormal data communication.

(1) Selecting the menu

Select [Device write] - [Data changing] from the menu bar.

(2) Dialog box



Item	Dsscription
Device Type	Set the type, block No. and network No. for the device for which data is to be changed. For more details on this, refer to “6.7 Device Type”.
DeviceNo.	Set the start No. of the device for which data is to be changed. (HEX : hexadecimal, DEC : decimal, OCT : octal)
Setting Data	Set the data to be changed. (HEX : hexadecimal, DEC : decimal)

5.5.7 Changing Word Device Value Continuously

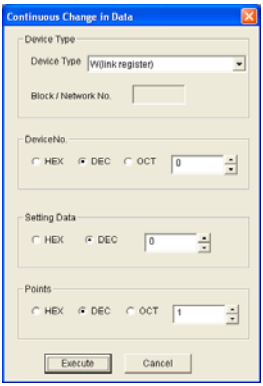
Change the specified word device data for the No. of specified points being set.

⚠ DANGER	To perform control (data change) of the PC CPU module during operation, configure an interlock circuit on the user program so that the whole system runs safely at all times. To perform other control (change in the running status (status control)) of the PC CPU module during operation, also configure an interlock circuit on the user program so that the whole system runs safely at all times. Especially, when performing the above control of a remote PC CPU module from an external device, a problem occurring at the PC CPU module due to abnormal data communication may not be addressed immediately. In addition to configuring an interlock circuit on a user program, determine a system method between the external device and PC CPU module in case of abnormal data communication.

(1) Selecting the menu

Select [Device write] - [Continuous Change in Data] from the menu bar.

(2) Dialog box



Item	Dsscription
Device Type	Set the type, block No., and network No. of the device for which data is to be changed. For more details on this, refer to “6.7 Device Type”.
DeviceNo	Set the start No. of the device to change data. (HEX : hexadecimal, DEC : decimal, OCT : octal)
Setting Data	Set the data to be continuously changed. (HEX : hexadecimal, DEC : decimal)
Points	Set the No. of points to perform continuos change of data. (HEX : hexadecimal, DEC : decimal, OCT : octal)

5.5.8 Turning ON/OFF Bit Device

Turns on/off the specified bit device.

⚠ DANGER	To perform control (data change) of the PC CPU module during operation, configure an interlock circuit on the user program so that the whole system runs safely at all times. To perform other control (change in the running status (status control)) of the PC CPU module during operation, also configure an interlock circuit on the user program so that the whole system runs safely at all times. Especially, when performing the above control of a remote PC CPU module from an external device, a problem occurring at the PC CPU module due to abnormal data communication may not be addressed immediately. In addition to configuring an interlock circuit on a user program, determine a system method between the external device and PC CPU module in case of abnormal data communication.

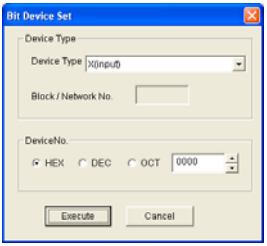
Point

BitDeviceSet (reset) makes it possible to turn ON/OFF devices that can be randomly accessed.
If a device that cannot be randomly accessed is turned ON/OFF, a device type error (-3) occurs.
For information about the availability of random access support for each device, refer to “Chapter 7 Accessible Range and Devices”.

(1) Selecting the menu

Select [Device write] - [Bit device setting (resetting)] from the menu bar.

(2) Dialog box



Item	Dsscription
Device Type	Sets the type, block No. and network No. of the bit device to be turned on/off. For more details on this, refer to “6.7 Device Type”.
DeviceNo.	Sets the No. of the bit device to be turned on/off. (HEX : hexadecimal, DEC : decimal, OCT : octal)

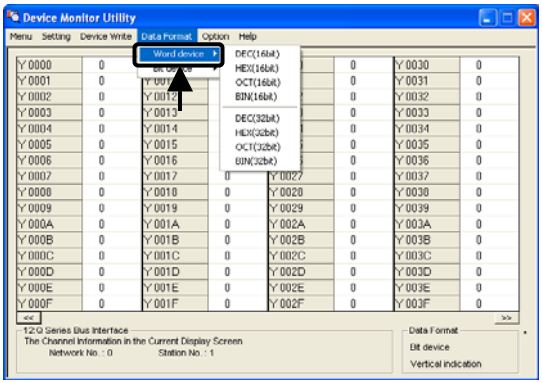
5.5.9 Switching Display Form

Switches the device monitoring display to the selected form.

The batch monitor and 16- point register monitor have different sets of selectable menus, respectively.

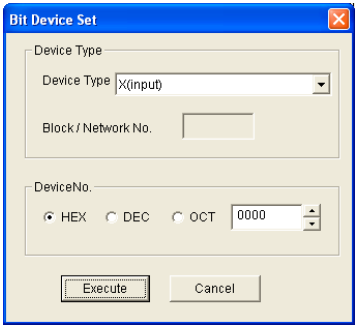
(1) Selecting the menu

Select [Data Format] - [Word(Bit) device] from the menu bar.

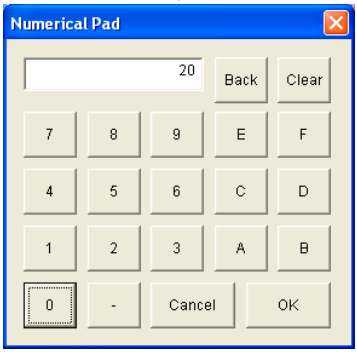


5.5.10 Numerical Pad

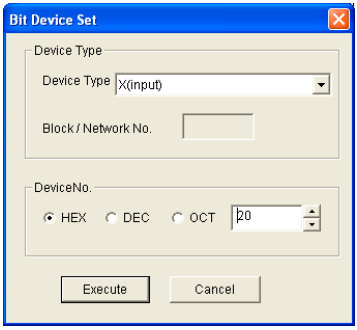
A numerical pad is available for setting device values and other numeric parameters. To display the numerical pad, select [Options] - [Numerical Pad] from the menu bar.



1. Click inside the numeric value input field.



2. The numerical pad is displayed. Use the buttons to enter a desired value and then click the [OK] button.



3. The value is entered in the system.

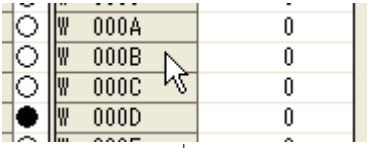
5.5.11 Other Operations

Double- clicking the device No. on the screen while monitoring changes data in word device and turns on/off the bit device.

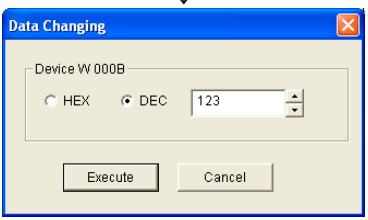
(1) Word device

The following explains how to change the word device.
(Only when the display form is 16 bit.)

⚠ DANGER	To perform control (data change) of the PC CPU module during operation, configure an interlock circuit on the user program so that the whole system runs safely at all times. To perform other control (change in the running status (status control)) of the PC CPU module during operation, also configure an interlock circuit on the user program so that the whole system runs safely at all times. Especially, when performing the above control of a remote PC CPU module from an external device, a problem occurring at the PC CPU module due to abnormal data communication may not be addressed immediately. In addition to configuring an interlock circuit on a user program, determine a system method between the external device and PC CPU module in case of abnormal data communication.

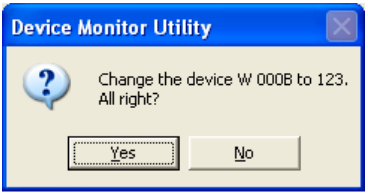


1. Double-click the No. of the word device to be changed.



- As the following dialog box is displayed, set a desired value. Click the [Execute] button.

  * : When the display format is 32bits, “Data change (32 bits)” is displayed on the title.



3. Select [Yes] button in the dialog box shown below if the change is acceptable.
   Select [No] button to cancel the operation.

(2) Bit device

The following explains how to turn on/off the bit device.

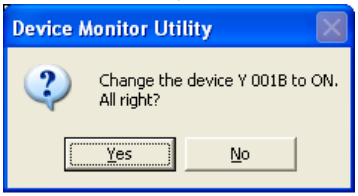
However, this operation is available only when the display orientation is "Vertical Indication".

⚠ DANGER	To perform control (data change) of the PC CPU module during operation, configure an interlock circuit on the user program so that the whole system runs safely at all times. To perform other control (change in the running status (status control)) of the PC CPU module during operation, also configure an interlock circuit on the user program so that the whole system runs safely at all times. Especially, when performing the above control of a remote PC CPU module from an external device, a problem occurring at the PC CPU module due to abnormal data communication may not be addressed immediately. In addition to configuring an interlock circuit on a user program, determine a system method between the external device and PC CPU module in case of abnormal data communication.

Point

BitDeviceSet (reset) makes it possible to turn ON/OFF devices that can be randomly accessed.
If a device that cannot be randomly accessed is turned ON/OFF, a device type error (-3) occurs.
For information about the availability of random access support for each device, refer to “Chapter 7 Accessible Range and Devices”.

1. Double- click the No. of the bit device to be changed.



2. Select [Yes] button in the dialog box shown below if the change is acceptable.
   Select [No] button to cancel.

6. Functions and Programming

This chapter describes bus interface functions and MELSEC data link functions provided by PPC-DRV-02.

When program examples introduced in this manual are diverted to be used in actual systems, carefully check that there will be no problem with control operation in a target system.

6.1 Outline of Functions

Use of functions provided by PPC-DRV-02 is required to access to and control PLC CPU or the modules from the user program. The following summarizes the uses of the functions.

Function type	Use
Bus interface functions	(1) Input/output control on input and output module controlled by PC CPU module. (2) Access to the buffer memory of intelligent functional module controlled by PC CPU module.
MELSEC data link functions	(1) Access to PLC CPU on the same system as PC CPU module. (2) Access to PLC CPUs of other Sta. via MELSECNET/H unit and CC- Link utility controlled by PC CPU module.

6.2 Function List

This chapter describes bus interface functions and MELSEC data link functions bundled with PPC-DRV-02.

6.2.1 Bus Interface Function List

The following lists bus interface functions.

Function name	Function
QBF_Open	Opens the bus.
QBF_Close	Closes the bus.
QBF_X_In_Bit	Performs X 1- point input.
QBF_X_In_Word	Reads X in word unit.
QBF_X_In	Reads specified No. of bits from specified bit position of X.
QBF_Y_Out_Bit	Performs 1- point output for Y.
QBF_Y_Out_Word	Writes Y in word unit.
QBF_Y_Out	Writes specified No. of bits from specified bit position of Y.
QBF_Y_In_Bit	Inputs a Y point. Perform 1- point input for Y.
QBF_Y_In_Word	Reads Y in word unit.
QBF_Y_In	Reads the specified No. of bits from specified bit position of Y.
QBF_ToBuf	Writes to buffer memory of intelligent functional module.
QBF_FromBuf	Reads from buffer memory of intelligent functional module.
QBF_UnitInfo	Reads the unit configuration information.
QBF_StartWDT	Sets the interval of the WDT and start up the WDT.
QBF_ResetWDT	Reset the WDT.
QBF_StopWDT	Stop the WDT.
QBF_ReadStatus	Reads PC CPU module information (LED, error, etc).
QBF_ReadStatusEx	Reads PC CPU module information (LED, error, link device refresh time etc).
QBF_ControlLED	Control LED s on PC CPU module.
QBF_Reset	Reset the bus.
QBF_WaitEvent	Wait for event interrupt from PLC program ((P).GINT instruction).
QBF_WaitUnitEvent	Wait for event interrupt from unit.
QBF_ControlProgram	Control execution of PLC program.

Point
Refer to bus interface function HELP of PCC- DRV- 02 for details of bus interface functions.

6.2.2 MELSEC Data Link Function List

MELSEC Data Link Function List as is follows :

Function name	Function
mdOpen	Opens communication loop.
mdClose	Closes communication loop.
mdSend	Performs batch write of devices.
mdReceive	Performs batch read of devices.
mdRandW	Writes device randomly.
mdRandR	Reads device randomly.
mdDevSet	Sets bit device.
mdDevRst	Resets bit device.
mdTypeRead	Reads the type of PLC CPU.
mdControl	Remotes RUN/STOP/PAUSE.
mdInit	Refreshes the PLC device address table.
mdBdModSet	Sets mode of network unit controlled by PC CPU module.
mdBdModRead	Reads mode of network unit controlled by PC CPU module.
mdBdLedRead	Reads LED information of network unit controlled by PC CPU module.
mdBdSwRead	Reads switch status of network unit controlled by PC CPU module.
mdBdVerRead	Reads version information of network unit controlled by PC CPU module.

Point

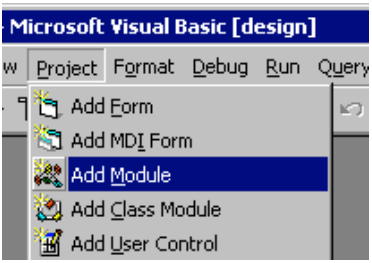
Refer to MELSEC data link function HELP of PCC-DRV-02 for details of MELSEC data link functions.

6.3 Settings for Using Functions

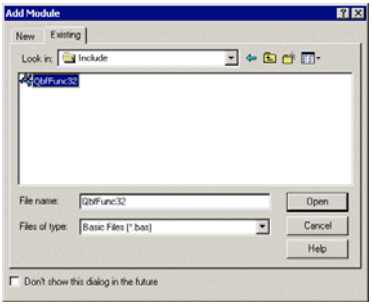
This section describes settings operations for using functions.

6.3.1 Using Microsoft Visual Basic 6.0

This section describes settings operations for using Visual Basic 6.0.



1. Start up Visual Basic 6.0 and select [Project] – [Add Module] menu.



2. Add a module. Select “Existing” tab and select the following files.
   1). When using bus interface function:
   Select “QBFFUNC32.BAS”

   “QBFFUNC32.BAS” has been stored in the folder below upon installation.

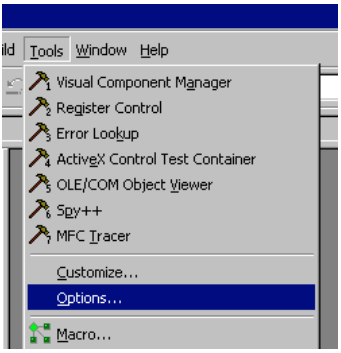
   <User- specified folder>- <QBF>- <QBFTOOL>- <INCLUDE>

   2). When using MELSEC data link function:
   Select “MDFUNC.BAS”
   “MDFUNC.BAS” has been stored in the folder below upon installation.
   <MELSEC>- <COMMON>- <INCLUDE>

6.3.2 Using Microsoft Visual C++ 6.0

This section describes settings operations for using Visual C++ 6.0.

(1) When specifying include file.



1. Start up Visual C++ 6.0 and select [Tools] – [Options] menu.

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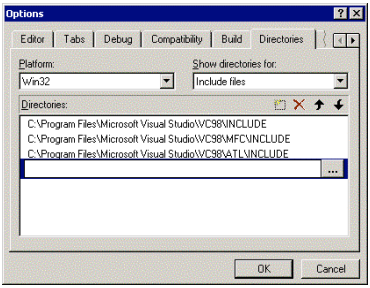

2. Select the "Directories" tab and set "show directories for" to "Include files".

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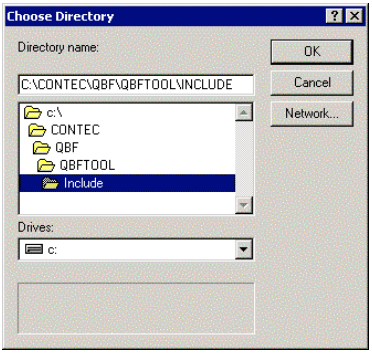


3. Double- click on item to be set and browse the folder storing include files.

   1). When using bus interface function:
   Select a folder storing “QBFFUNC32.H”

   “QBFFUNC32.H” has been stored in the folder below upon installation.

   <User- specified folder>- <QBF>- <QBFTOOL>- <INCLUDE>

   2). When using MELSEC data link function:
   Select a folder storing “MDFUNC.H”

   “MDFUNC.H” has been stored in the folder below upon installation.

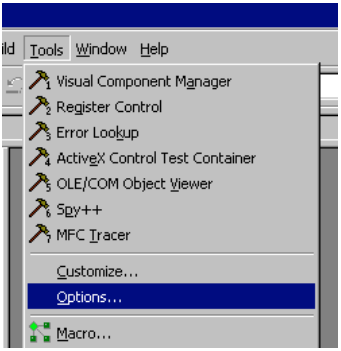
   <MELSEC>- <COMMON>- <INCLUDE>

4. Add “#include” at the top of a program.

   1). When bus interface functions are used.
   Add “#include <QBFFUNC32.H>“ at the top of a program.

   2). When MELSEC communication functions are used.
   Add “#include < MDFUNC.H >“ at the start of a program.

(2) When specifying library files



1. Start up Visual C++ 6.0 and select [Tools] – [Options] menu.

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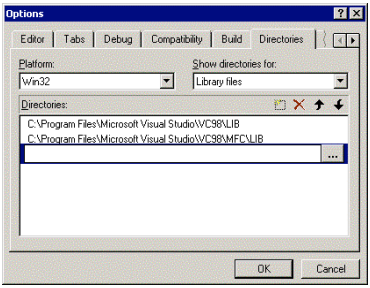

2. Select “Directory” tab and set "show directories for" to “Library files.”

↓

3. Double- click on item to be set and browse the folder storing include files.
   1). When using bus interface function:
   Select a folder storing “QBFFUNC32.LIB”

   “QBFFUNC32.LIB” has been stored in the folder below upon installation.

   <User- specified folder>- <QBF>- <QBFTOOL>- <LIB>

   2). When using MELSEC data link function:
   Select a folder storing “MDFUNC32.LIB”

   “MDFUNC32.LIB” has been stored in the folder below upon installation.
   <MELSEC>- <COMMON>- <LIB>

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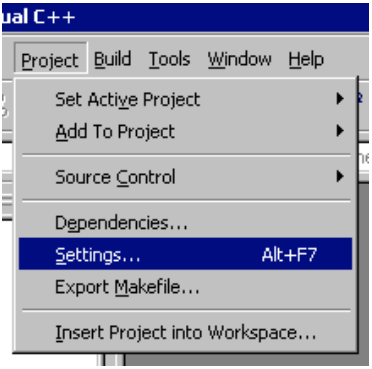

4. Open a work space to create and select [Project] – [Settings] menu.

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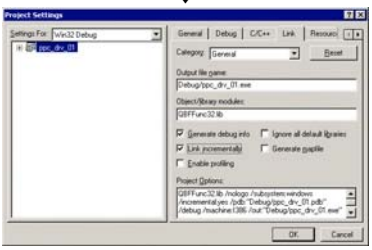
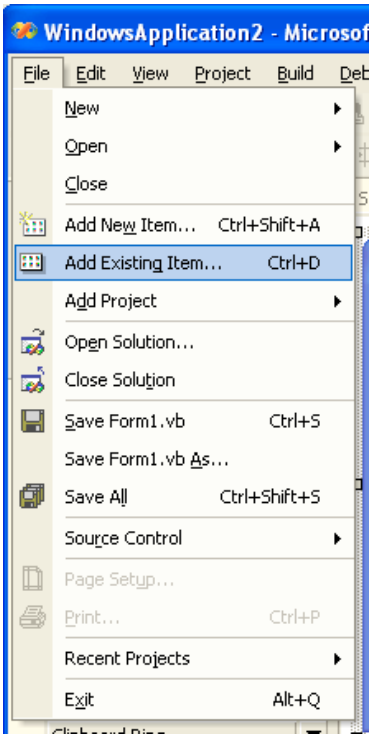


5. Select “Link” tab, select “General” in category, and enter the following library file name in Object/Library module.
   - When bus interface function is used : qbffunc32.lib
   - When MELSEC data link function is used : mdfunc32.lib

6.3.3 Using Microsoft Visual Basic .NET 2003

The following shows setup operation when Visual Basic .NET 2003 is used.



1. Start up Visual Basic .NET 2003 and select the menu item [File] - [Add Existing Item].

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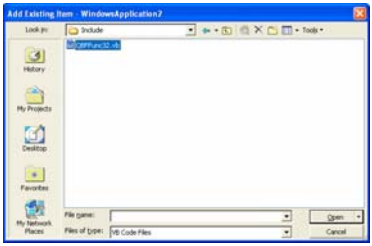

2. Select the files shown as follows.
   1). When using bus interface function :
   Select "QBFFUNC32.VB."
   "QBFFUNC32.VB" was stored under the following folder at the time of installation.
   <User- specified folder>-<QBF>-<QBFTOOL>-<INCLUDE>
   2). When using MELSEC data link function :
   Select "MDFUNC.VB".
   ""MDFUNC.VB" has been stored in the folder below upon installation.
   <MELSEC>-<COMMON>-<INCLUDE>

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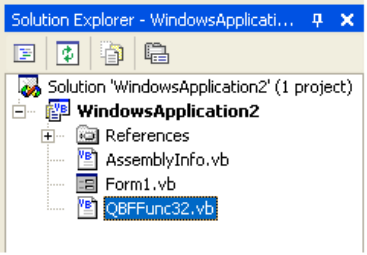
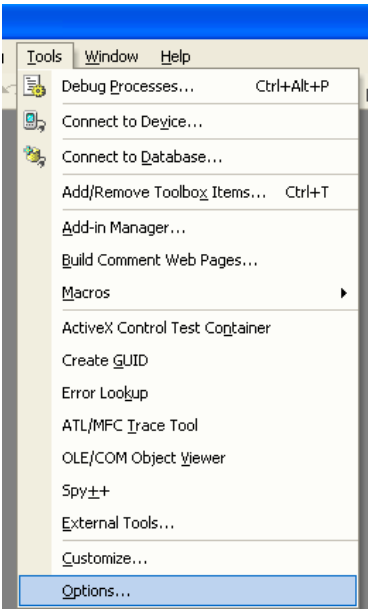


3. The added standard module is displayed in the solution explorer window.

6.3.4 Using Microsoft Visual C++ .NET 2003

This section describes settings operations for using Visual C++ .NET 2003

(1) Setting the include file



1. Start up Visual C++ .NET 2003 and select [Tools] – [Options] menu.

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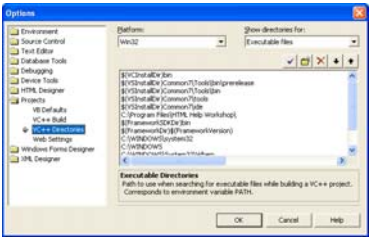

2. Select [Project] - [VC++Directory] on the navigation pane on the left, and select  (new row) button while selecting “include file” in the “project displaying a directory” field in the upper right.
Then selects the  button.

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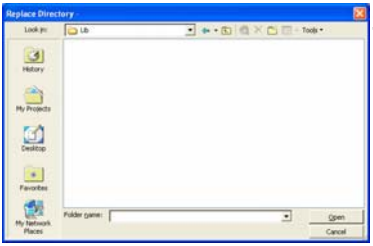


3. Reference the folder where the include file is stored.

1). When using bus interface function :
Select a folder storing “QBFFUNC32.H”

“QBFFUNC32.H” has been stored in the folder below upon installation.

<User- specified folder>-<QBF>-<QBFTOOL>-<INCLUDE>

2). When using MELSEC data link function :
Select a folder storing “MDFUNC.H”

““MDFUNC.H” has been stored in the folder below upon installation.

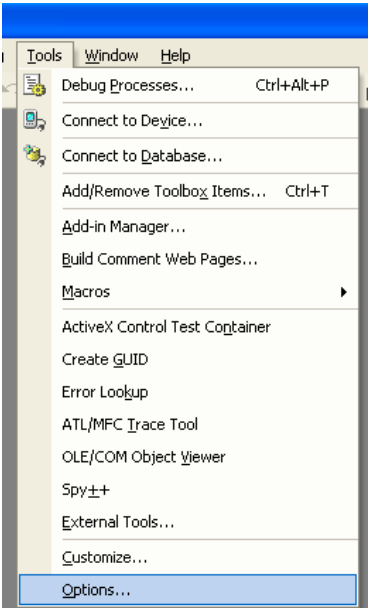
<MELSEC>-<COMMON>-<INCLUDE>

4. Add “#include” at the start of a program.

1). When bus interface functions are used.
Add “#include <QBFFUNC32.H>“ at the start of a program.

2). When MELSEC communication functions are used.
Add “#include < MDFUNC.H >“ at the start of a program.

(2) When specifying library files



1. Start up Visual C++ .NET 2003 and select [Tools] – [Options] menu.

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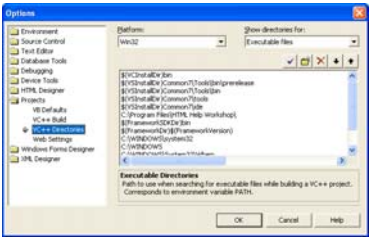

2. Select [Project] - [VC++Directory] on the navigation pane on the left, and select  (new row) button while selecting “include file” in the “project displaying a directory” field in the upper right.
Then selects the  button.

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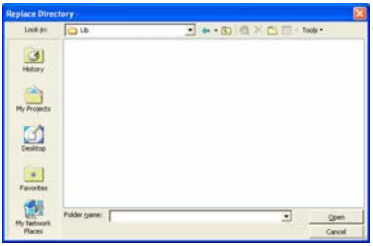


3. Refer to the folder storing the library files.

1). When using bus interface function :
Select a folder storing “QBFFUNC32.LIB”

“QBFFUNC32.LIB” has been stored in the folder below upon installation.

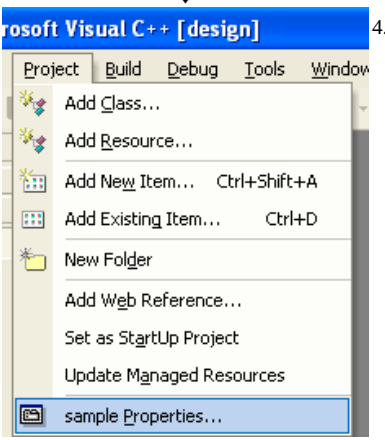
<User- specified folder>-<QBF>-<QBFTOOL>-<LIB>

2). When using MELSEC data link function :
Select a folder storing “MDFUNC32.LIB”

“MDFUNC32.LIB” has been stored in the folder below upon installation.

<MELSEC>-<COMMON>-<LIB>

↓



4. Open a project to create and select the menu item [Project] - [(Project name) properties].

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(To the next page)

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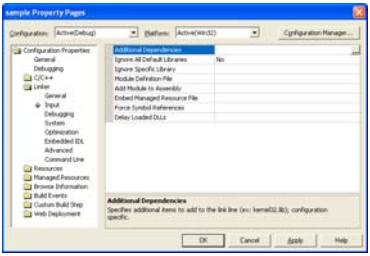

5. Select [Configured properties] - [Linker] - [Enter] on the navigation pane on the left, and select “Dependent file added” and select the ... button.

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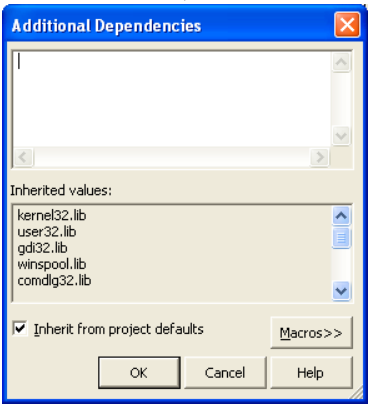
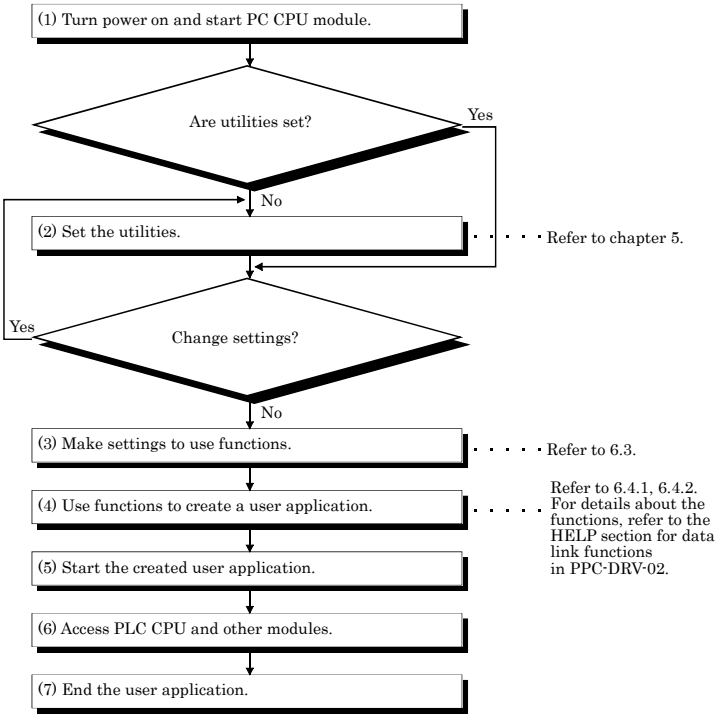


6. Enter the library file names shown as follows.
   - When using bus interface function : qbffunc32.lib
   - When using MELSEC data link function : mdfunc32.lib

6.4 Programming Procedures

The following shows the procedures of programming with bus interface functions and MELSEC data link functions.

The procedures assume that PPC-DRV-02 has already been installed.

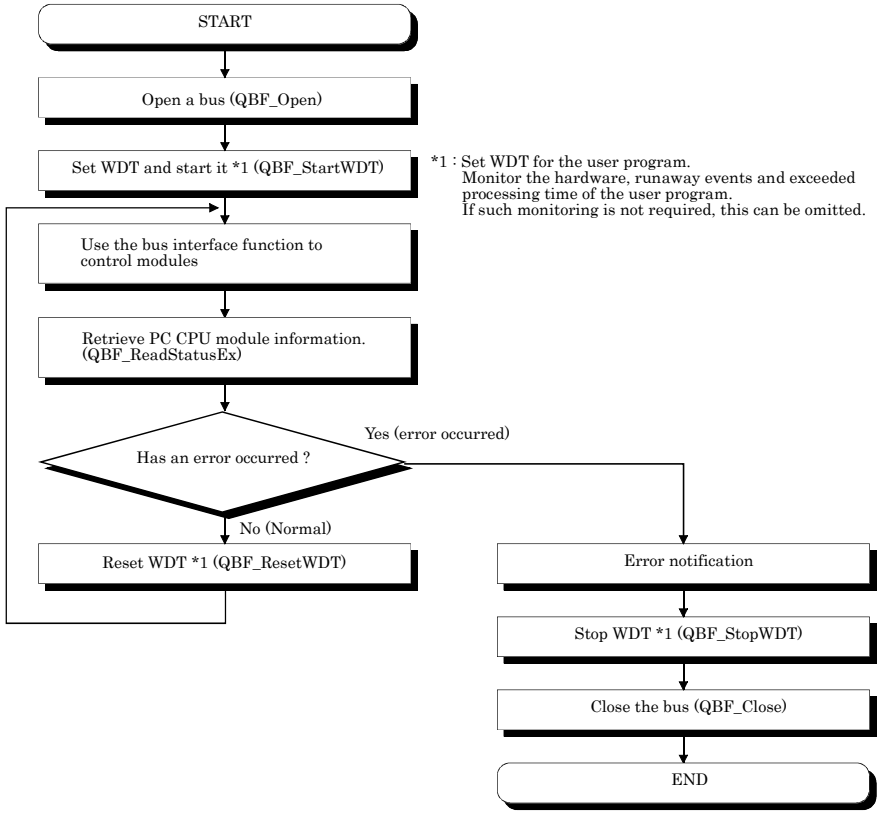


6.4.1 Using Bus Interface Function

The following shows the procedures of programming with bus interface functions.

(1) Programming outline

The following figure shows an outline of programming process using bus interface functions.



(2) Using the watchdog timer (WDT)

WDT (watchdog timer)

The WDT is used as a timer for a personal computer CPU unit to detect hardware faults and program errors in the personal computer CPU unit. The WDTs for personal computer CPU units are divided into two types: system WDT and user WDT.

a) System WDT

The WDT is used as a timer for a personal computer CPU unit to detect hardware faults and program errors in the personal computer CPU unit. The WDTs for personal computer CPU units are divided into two types: system WDT and user WDT.

When the system WDT causes a time- out, the system reacts as follows :

(1) All the outputs of the personal computer CPU unit are turned off.

(2) The RDY LED, B.RUN LED goes out and the ERR. LED blinks on the front panel of the personal computer CPU unit.

(3) On the Module Information window, the system WDT error of error information turns from (white) to (red).

b) User WDT

The WDT is a timer used for monitoring by the user application to detect problems with user applications.

The user WDT time is set and reset by using the QBF function in the user application.

Given below are examples of using the user WDT.

(1) Turn OFF all the outputs of the PC CPU module.

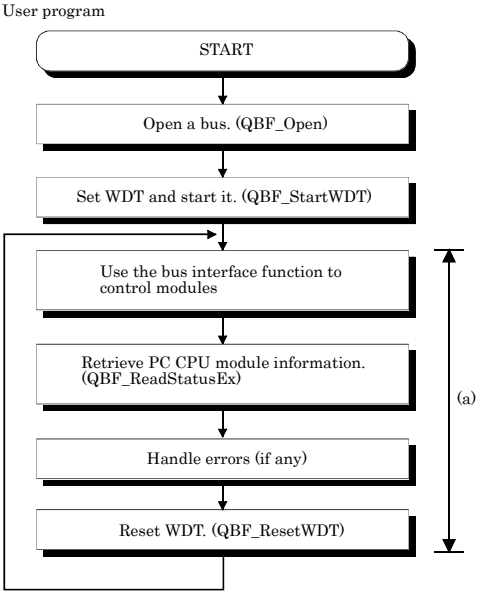
(2) The B.RUN LED goes out and the ERR. LED blinks on the front panel of the personal computer CPU unit.

(3) On the Module Information window, the system WDT error of error information turns from (white) to (red).

[How to use]

Given below are examples of using the user WDT.

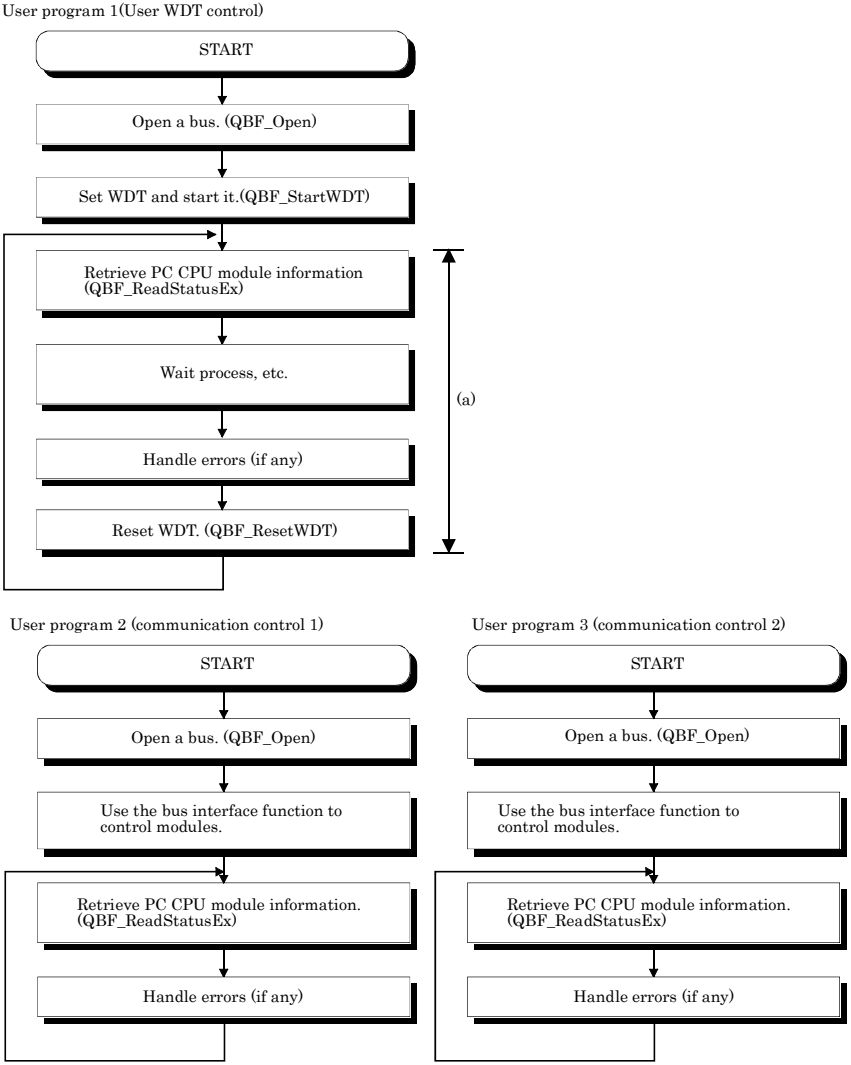
1) When the user WDT and communication control consist of a single application



[Caution]

- Set the user WDT time to a value equal to or greater than the maximum value of processing time in (a).
- The processing time in (a) is influenced by the operating states of other applications. Therefore, measure it with all the applications running during test operation of the system.
  (Refer to the sample program for sample program (2) of time measurement.)
- As the processing time in (a) is influenced by scheduling by the OS, the execution of a user application may be postponed or delayed. To prevent it, raise the priority of the user application.
  (Refer to the sample program for sample program (2) raising the priority.)

2) When the user WDT and communication control consist of two or more applications



[Caution]

- Set the user WDT time to a value equal to or greater than the maximum value of processing time in (a).
- The processing time in (a) is influenced by the operating states of other applications. Therefore, measure it with all the applications running during test operation of the system. (Refer to the sample program for time measurement.)
- As the processing time in (a) is influenced by scheduling by the OS, the execution of a user application may be postponed or delayed. To prevent it, raise the priority of the user application. (Refer to the sample program for raising the priority.)

[Sample program]

Refer to the sample program for time measurement

```
dispt1=timeGetTime();                // Obtain the system time.
        Communication control handling
dispt2=timeGetTime();                // Obtain the system time.
dispt=dispt2-dispt1;                 // Calculation the difference from the previously
                                        obtained system time.
```

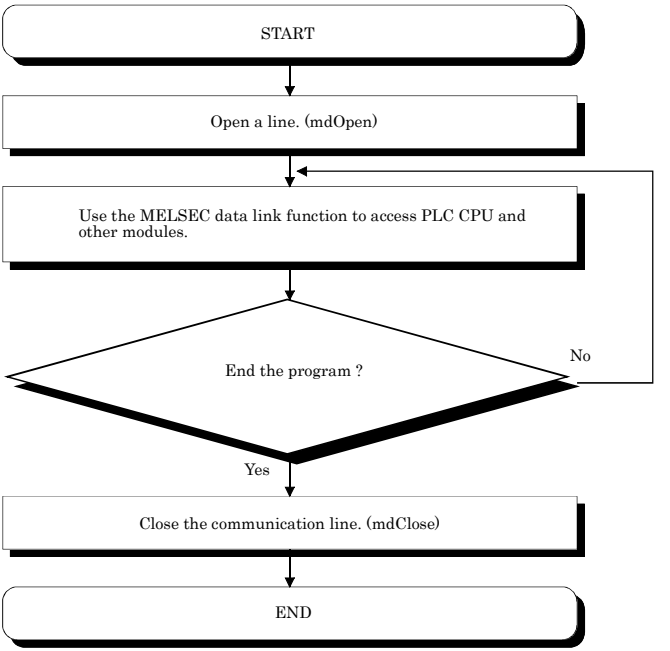
Refer to the sample program for raising the priority

```
VOID PriorityChange()
{
MODULE ret ;
HANDLE ph;
        ph=OpenProcess((PROCESS_SET_INFORMATION),
            FALSE,GetCurrentProcessId());
                                     // Obtain the handle of the current application.
        ret=SetPriorityClass(ph,HIGH_PRIORITY_CLASS);
                                     // Obtain the priority of the current application.
}
```

6.4.2 Using MELSEC data link functions

The following shows the procedures of programming with MELSEC data link functions.

(1) Programming procedures
The following shows an outline of creating user program with MELSEC data link functions.



(2) Cautions when using the MELSEC Data Link function.
(a) Cautions when programming
1). Perform the processing for opening and closing a data link function (mdOpen, mdClose) only once at the beginning and end of a program. Repeating opening and closing of a communication loop for each transaction will degrade the communication performance.
2). When a function is first executed by adding a corresponding device, this acquires PLC information in detail. For that reason, the initial function execution time becomes long.
3). Simultaneous remote access to 9 or more stations from PC CPU module using utilities, user program provided by PPC-DRV-02 and Mitsubishi- product software package may result in degraded communication performances. Limit the No. of stations to 8 or less for simultaneous remote station access from PC CPU module.
4). MELSEC communication functions do not support multi-thread programming.

(b) Cautions when accessing to own Sta. devices and other Sta. PLC devices
Depending on link status of own Sta. and other Sta. interlocking is required.
Data is valid only when the following conditions are satisfied.

<For MELSECNET/H>

1).. Access to a cyclic device (MELSECNET/H unit X, Y, B, W)
Writing data to and reading them from the own Sta. cyclic device is valid only if the own Sta.'s handshaking status (SB47H) and the own Sta.'s cyclic status (SB49 H) bit goes On (normal communications) and the own Sta.'s module status (SB20 H) goes Off (Normal). However, even if the above conditions are not established, writing and reading processing to the MELSECNET/H unit ends normally.

2). Other Sta. transient access (remote operation of and device access to other Sta.'s PLC CPU.)
In addition to a device which checks the cyclic device's access, access is possible if the accessing station's handshake status (the bits pertaining to the opposite station being communicated with when SW70 H - 73 H are read by the own Sta.) and the cyclic status (the bits pertaining to the opposite station being communicated with when SW74 H - 77 H are read by the own Sta.) are Off (normal communications).

6.5 Channel

The following summarizes channels used for MELSEC data link functions.

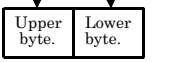
No.	Channel name	Description
12	Q series bus interface	Used for communication via bus.
51 - 54	MELSECNET/10, /H (1 - 4 slots)	Used for communication via MELSECNET/H unit controlled by PC CPU module. Channel No. are assigned starting from 51 in the order of input/output No.
81 - 84	CC- Link (1 - 4 slots)	Used for communication via CC- Link utility controlled by PC CPU module. Channel No. are assigned starting from 81 in the order of input/output No.

6.6 Sta. No. Setting

Sta. No. specified by the MELSEC data-link function :

Communication	Sta. No. specification
Q series bus interface	Own Sta. : 255(FFH) Other Sta. : Specified range of Stta. No. (1H) - 64(40H) Logical Sta. No. are set from the “Target setting” tab of the PC module setting utility. For details, refer to “5.2.8 Operating the Target Setting Window”.
MELSECNET/H	Own Sta. : 255(FFH) Other Sta. : *1
CC-Link	Own Sta. : 255(FFH) Other Sta. : 0(0H) - 63(3FH), 65(41H) - 239(EFH) *2 *3

*1 :



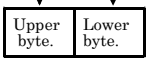
Network No.
1(1H) - 239(EFH) : When specifying the other station in the local network or a station in other network, and sending request to the MELSECNET/H or MELSECNET/10.

Sta. No, Group No. or All stations
1(1H) - 64(40H) : Other station
129(81H) - 160(A0H) : Group No. 1 - 32
In MELSECNET/10 mode and when the target CPU is a QnACPU, 129(81H) - 137(89H) are valid.
Group No. is valid when the SEND function (mdSend) function is used.
240(F0H) : All stations
"All stations specified" is valid when the SEND function (mdSend) function is used.

<How to specify a Logical Sta. No.>
Set "0" in the upper byte (network No.) of the above format, and specify a Logical Sta. No. in the lower byte (Sta. No.).
The setting range of Logical Sta. No. is 65(41H) - 239(EFH).
Logical Sta. No. is set from the "Target setting" tab of the MELSECNET/H Setup utility.
For details, refer to "5.4.7 Operating the Target Setting Window".

For details, refer to “5.4.7 Operating the Target Setting Window”.

*2:



Network No.
0 : CC-link

Sta. No.
0(0H) - 63(3FH) : Other Sta.

<How to specify a Logical Sta. No.>
Set "0" in the upper byte (network No.) of the above format, and specify a Logical Sta. No. in the lower byte (Sta. No.).
The setting range of Logical Sta. No. is 65(41H) - 239(EFH).
Logical Sta. No. is set from the "Target setting" tab of the CC-Link Setup utility.
For details, refer to "5.3.6 Operating the Target Setting Window".

*3 : Station #64 cannot be specified in CC-Link communication. And if your own Sta.'s No. is #64, other Sta. cannot be specified. (Access to your own Sta. only is possible.)

6.7 Device Type

Either code No. or device name is allowed for a device type to be used in MELSEC data link function.

This section describes all the device types that can be used for PC CPU module programs with MELSEC communication functions.
However, there are restraints depending on the connection route and the function used.

For more details on this, refer to “Chapter 7 Accessible Range and Devices”.

(1) Not usable devices

The following devices cannot be used for PC CPU module programs with MELSEC communication functions.

- Q/QnA SEND function (arrival confirmation available) and RECV function devices
- Q/QnA SEND function (arrival confirmation not available)
- EM (shared device)
- ED (shared device)

(2) shared device type

Device type			Device
Code specification		Device name specification *1	
Decimal	Hexadecimal		
1	1H	DevX	X
2	2H	DevY	Y
3	3H	DevL	L
4	4H	DevM	M
5	5H	DevSM	Special M (SM), SB (MELSECNET/H, MELSECNET/10, link special B for CC-Link)
6	6H	DevF	F
7	7H	DevTT	T (contact)
8	8H	DevTC	T (coil)
9	9H	DevCT	C (contact)
10	AH	DevCC	C (coil)
11	BH	DevTN	T (current value)
12	CH	DevCN	C (current value)
13	DH	DevD	D
14	EH	DevSD	Special D(SD), SW (MELSECNET/H, MELSECNET/10, link special W for CC-Link)
15	FH	DevTM	T (set value main)

*1： Device name specification (macro) is defined in the modules of MELSEC functions and the include file.

Device type		Device name specification *1	Device
Code specification			
Decimal	Hexadecimal		
16	10H	DevTS	T (set value sub1)
16002	3E82H	DevTS2	T (set value sub2)
16003	3E83H	DevTS3	T (set value sub3)
17	11H	DevCM	C (set value main)
18	12H	DevCS	C (set value sub1)
18002	4652H	DevC2	C (set value sub2)
18003	4653H	DevC3	C (set value sub3)
19	13H	DevA	A
20	14H	DevZ	Z
21	15H	DevV	V(index register)
22	16H	DevR	R(file register)
22000 - 22256	55F0H - 56F0H	DevER(0) - DevER(256)	ER (extended file register) Argument value for device name specification (0 - 256 *3) : Block No.
23	17H	DevB	B
24	18H	DevW	W
25	19H	DevQSB	Q/QnA link special relay (on Q/QnACPU)
26	1AH	DevSTT	Retentive timer (contact)
27	1BH	DevSTC	Retentive timer (coil)
28	1CH	DevQSW	Q/QnA link special register (on Q/QnACPU)
30	1EH	DevQV	Q/QnA edge relay (on Q/QnACPU)
33	21H	DevMRB	Own Sta. random access buffer *2
35	23H	DevSTN	Retentive timer (current value)
36	24 H	DevWw	Own Sta. link register (for sending) *2
37	25 H	DevWr	Own Sta. link register (for receiving) *2
50	32 H	DevSPB	Own Sta. buffer memory *2

*1 : Device name specification (macro) is defined in the modules of MELSEC functions and the include file.

*2 : Device dedicated for CC-Link utility (local) buffer memory access

*3 : The mdRandR function ends normally even if an actually not existing device is specified.
(The data read becomes 1.)

Device type		Device name specification *1	Device
Code specification			
Decimal	Hexadecimal		
1001 - 1255	3E9H - 4E7H	DevLX(1) - DevLX(255)	Direct link input (other Sta. side) Argument with a device name specified (1 - 255*3) : network No.
2001 - 2255	7D1H - 8CFH	DevLY(1) - DevLY(255)	Direct link output (other Sta. side) Argument value for device name specification (1 - 255*3) : network No.
23001 - 23255	59D9H - 5AD7H	DevLB(1) - DevLB(255)	Direct link relay (other Sta. side) Argument value for device name specification (1 - 255*3) : network No.
24001 - 24255	5DC1H - 5EBFH	DevLW(1) - DevLW(255)	Direct link register (other Sta. side) Argument value for device name specification (1 - 255*3) : network No.
25001 - 25255	61A9H - 62A7H	DevLSB(1) - DevLSB(255)	Direct link special relay (other Sta. side) Argument value for device name specification (1 - 255*3) : network No.
28001 - 28255	6D61H - 6E5FH	DevLSW(1) - DevLSW(255)	Direct link special register (other Sta. side) Argument value for device name specification (1 - 255*3) : network No.
29000 - 29255	7148H - 7247H	DevSPG(0) - DevSPG(255)	Special direct buffer register Argument value for device name specification (0 - 255*3) : startI/O No.÷16

*1： Device name specification (macro) is defined in the modules of MELSEC functions and the include file.

*3： The mdRandR function ends normally even if an actually not existing device is specified.
(The data read becomes -1.)

(3) Device types dedicated for Q Series bus interface

Device type			Device
Code specification		Device name specification *1	
Decimal	Hexadecimal		
501	1F5H	DevSPB1	CPU shared memory (Machine No.1 area)
502	1F6H	DevSPB2	CPU shared memory (Machine No.2 area)
503	1F7H	DevSPB3	CPU shared memory (Machine No.3 area)
504	1F8H	DevSPB4	CPU shared memory (Machine No.4 area)

*1： Device name specification (macro) is defined in the modules of MELSEC functions and the include file.

(4) CC-Link dedicated device type

Device type			Device
Code specification		Device name specification *1	
Decimal	Hexadecimal		
1	1H	DevX	Own Sta. RX
2	2H	DevY	Own Sta. RY
5	5H	DevSM	Own Sta. SB (link special B for CC-Link)*2
14	EH	DevSD	Own Sta. SW (link special W for CC-Link)*3
25	19H	DevQSB	Own Sta. SB (Special B for CC-Link)*2
28	1CH	DevQSW	Own Sta. SW (link special W for CC-Link) *3
33	21H	DevMRB	Own Sta. random access buffer
36	24H	DevWw	Own Sta. link register (for sending)
37	25H	DevWr	Own Sta. link register (for receiving)
50	32H	DevSPB	Own Sta. buffer memory
-32768	8000H	DevRBM	Other Sta. buffer memory *4
-32736	8020H	DevRAB	Other Sta. random access buffer *4
-32735	8021H	DevRX	Other Sta. RX
-32734	8022H	DevRY	Other Sta. RY
-32732	8024H	DevRW	Other Sta. link register *4
-32669	8063H	DevSB	Other Sta. SB (link special B for CC-Link)
-32668	8064H	DevSW	Other Sta. SW (link special W for CC-Link)*4

*1： Device name specification (macro) is defined in the modules of MELSEC functions and the include file.

*2： There are two device type definitions (DevSM, DevQSB) for CC-Link link special relays (local SB). You can specify either of them because they are the same.

*3： There are two device type definitions (DevSD, DevQSW) for CC-Link link special registers (own SW). You can specify either of them because they are the same.

*4： Cannot be used for the mdRandR, mdRandW, mdDevSet, and mdDevRst functions.

(5) Device types for MELSECNET/H unit access

(a) Internal buffer access

Device type			Device
Code specification		Device name specification *1	
Decimal	Hexadecimal		
1	1H	DevX	Own Sta. link input internal buffer (LX buffer)
2	2H	DevY	Own Sta. link output internal buffer (LX buffer)
23	17H	DevB	Own Sta. link relay internal buffer (LB buffer)
24	18H	DevW	Own Sta. link register internal buffer (LX buffer)

*1： Device name specification (macro) is defined in the modules of MELSEC functions and the include file.

(b) Direct access

Device type			Device
Code specification		Device name specification *1	
Decimal	Hexadecimal		
5	5H	DevSM	Local direct link special relay (SB)*2
14	EH	DevSD	Own Sta. direct link special register (SW)*3
25	19H	DevQSB	Own Sta. direct link special relay (SB) *2
28	1CH	DevQSW	Own Sta. direct link special register (SW) *3

*1： Device name specification (macro) is defined in the modules of MELSEC functions and the include file.

*2： There are two device type definitions (DevSM, DevQSB) for own Sta. direct link special relays (SB). You can specify either of them because they are the same.

*3： There are two device type definitions (DevSD, DevQSW) for own Sta. direct link special registers (SW). You can specify either of them because they are the same.

6.8 Data Communication via PLC Shared Memory

(1) Data Communication Function via PLC Shared Memory

This function performs data communication between PC CPU module and CPU module using CPU shared memory.

Use bus interface functions to create PC CPU module user programs.

The following shows data communication methods using CPU shared memory as well as method selection.

(a) Data communication using CPU shared memory

The following 2 methods are available for the data communication function using CPU shared memory.

- Data communication using automatic refresh of the sequencer CPU and motion CPU.
- Data communication without using automatic refresh of the sequencer CPU.

(b) Data communication method selection

To perform data communication using CPU shared memory, select a data communication method based on the target CPU module.

The following shows whether communication is possible or not according to the data communication type.

Data communication type	Data communication method		Referring item
	Automatic refresh used	Automatic refresh not used	
PLC CPU <-> PC CPU module	O	O	6.8.2, 6.8.3
Motion CPU <-> PC CPU module	O	x	6.8.2

O : Communication possible x : Communication not possible

(2) CPU Shared Memory Configuration

For CPU shared memory configuration for the PC CPU module, refer to “Section 6.8.1 CPU Shared Memory Configuration”.

(3) Function

The following shows functions used in the data communication function using CPU shared memory.

Function name	Description
QBF_ToBuf *1	Writes to the CPU shared memory in the specified position of the module and writes to the buffer memory of an intelligent functional module.
QBF_FromBuf *2	Reads from the CPU shared memory in the specified position of the module, and reads from the buffer memory of an intelligent functional module.

*1： The medSend function can be used instead of the QBF_ToBuf function.

*2： The mdReceive function can be used instead of the QBF_FromBuf.

Point

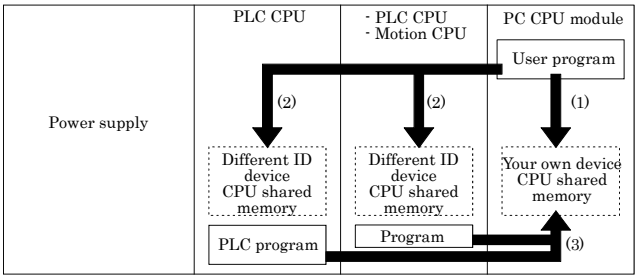
Only when 2 or more CPUs are specified in the “Multiple CPU setting” tab of the PC module setting utility, it is possible to access CPU shared memory.

Otherwise, a CPU No. specification error (return vaule : -28662) occurs.

6.8.1 CPU Shared Memory Configuration

CPU shared memory configuration and access availability to the memory of PC CPU module is as follows :

< Access diagram >



< Accessibility list >

Address *1, *6	Area name	Access from your own device				Access from local device	
		Access to your own device (1)		Access to local device (2)		Access to your own device (3)	
		Write *2	Read *3	Write	Read *4	Write	Read *5
0H(0H) - 1FFH (5FH)	Local operation information area of your own device	Disabled	Enabled	Disabled	Enabled	Disabled	Enabled
200H(60H) - 7FFH (BFH)	System area	Disabled	Disabled	Disabled	Enabled	Disabled	Enabled
800H(C0H) - FFFH (1FFH)	Auto refresh area	Enabled	Enabled	Disabled	Enabled	Disabled	Enabled
	User free area	Enabled	Enabled	Disabled	Enabled	Disabled	Enabled

*1 : Indicates the address of CPU shared memory

*2 : Use the QBF_ToBuf function to write to the automatic refresh area and user free area of your own device (PC CPU module).

*3 : Use the QBF_FromBuf function to read from the local operation information area, automatic refresh area and user free area of your own device (PC CPU module).

*4 : Use the QBF_FromBuf function to read from the local operation information area, automatic refresh area and user free area of a different ID device (sequencer CPU or motion CPU).

*5 : For how to make access from the sequencer CPU/motion CPU of a different ID device, refer to the manual for each CPU module.

*6 : If the Module No.1 is a basic model QCPU, the address of CPU shared memory is a value in brackets ( ).

Area name	Description
Own machine operation information area *1	Area storing error information and operating status of own machine (PC CPU module).
System area	Area used by system.
Automatic refresh area	Area that is automatically refreshed by PLC CPU and motion CPU device with automatic refresh settings. The size depends on parameter settings.
User's free area	Area that is freely available. The area size depends on parameter settings of automatic refresh area.

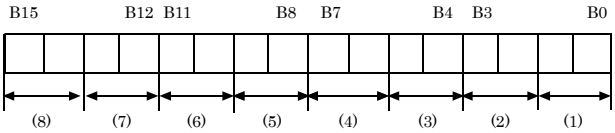
*1： The details of the local operation information area of a PC CPU module are shown in the next page.

(To the next page)

Shared memory address	Name	Details	Description
0H	Availability of information	Information Availability flag	The area to confirm if information is stored in the own machine's operation information area (1H - 1FH) or not. 0 : None, 1 : Information present
1H	Diagnostic error	Diagnostic error No.	The No. of errors triggered during diagnostics is stored with BIN code. Note 1
2H	Time the diagnosis error occurred	Time the diagnosis error occurred	The year and month that the error No. was stored in the common PLC memory's 1H address is stored with two digits of the BCD code. Note 1
3H			The day and time that the error No. was stored in the PLC shared memory's 1H address is stored with two digits of the BCD code. Note 1
4H			The minutes and seconds that the error No. was stored in the PLC shared memory's 1H address is stored with two digits of the BCD code. Note 1
5H	Error information identification code	Error information identification code	Stores an identification code to determine what error information has been stored in the common error information and individual error information. Note 1
6H - 10H	Common error information	Common error information	The common information corresponding with the No. of the error triggered during diagnostic is stored. Note 1
11H - 1BH	Individual error information	Individual error information	The individual information corresponding with the No. of the error triggered during diagnostic is stored.
1CH	Vacant	-	Cannot be used
1DH	Switch status	CPU switch status	Stores the PC CPU module's switch status. 0 : RUN, 1 : STOP
1EH	LED status	CPU- LED status	Stores the PC CPU module's LED bit pattern. (See Fig.1 below)
1FH	PC CPU module operation status	PC CPU module operation status	Stores the PC CPU module's operation status. (See Fig.2 below)

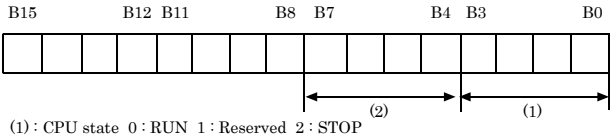
Note 1 : Contains 0 if no error occurs.

Fig.1 LED Status



(1) : RDY (2) : ERR. (3) : BAT. (4) : B.RUN (5) : USER (6) - (8) : Reserved
(1) - (5) : LED state 0 : OFF 1 : ON 2 : Blinking

Fig.2 Operation Status

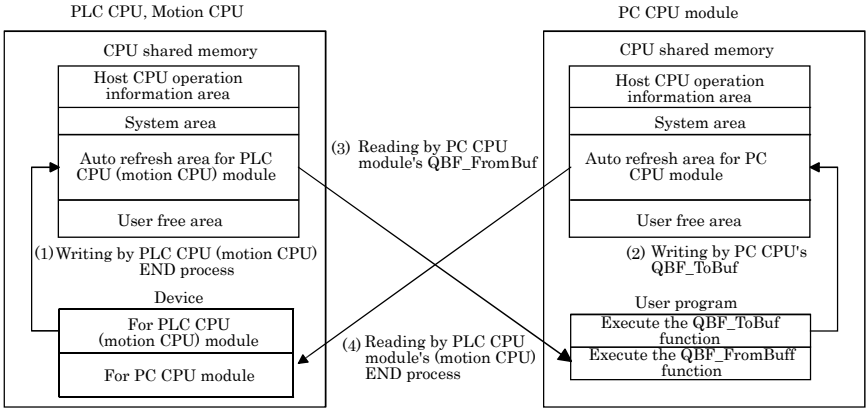


(1) : CPU state 0 : RUN 1 : Reserved 2 : STOP
(2) : STOP factor 0 : B.RST/B.RUN SW 1 - 3 : Reserved 4 : error

6.8.2 Data Communicatoin When Using Automatic Refresh settings

For data communication functionality using CPU shared memory, the following explains an overview of processing and settings when data communication is performed using the automatic refresh of the sequencer CPU and motion CPU.

(1) Overview of processing of data communication using automatic refresh
Overview of processing of data communication using automatic refresh is as follows :



Operation of END process on PLC CPU and motion CPU

(1) : Transfer device memory data for PLC CPU (motion CPU) to automatic refresh area of PLC CPU (motion CPU) shared memory.

(4) : Transfer data in automatic refresh area of PC CPU module to device memory for PC CPU module of PLC CPU (motion CPU)

Operation upon executing bus interface function of PC CPU module

(2) : By executing QBF_ToBuf function, transfer the settings of user program to automatic refresh area of PC CPU module's shared memory.

(3) : By executing QBF_FromBuf function, data in automatic refresh area of PLC CPU (motion CPU) to user program.

Point
Refreshing in (4) above is performed by PLC CPU (motion CPU) END process after execution of (2) in the figure, execution of QBF_ToBuf function.

(2) Automatic refresh area setting

To perform data communication using the automatic refresh of the sequencer CPU and motion CPU, you need to make the automatic refresh area setting.

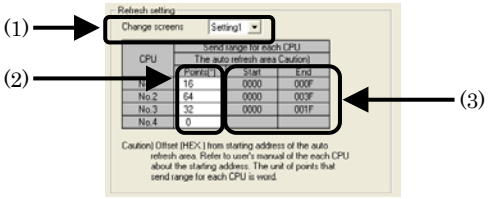
Make the refresh area setting from “Refresh setting” in the “Multiple CPU setting” tab of the PC module setting utility.

The settings for “Refresh setting” are as follows :

Point
Make the same automatic refresh area setting to all the device ID devices in a multiple CPU system. Otherwise, a parameter error occurs.

(a) About “Reflesh setting”

The following explains setting items for “Refresh setting” that sets an automatic refresh area.



(1) About “Setting change”

For “Refresh setting,” 4 ranges can be set by using “Setting change”.

(2) About “point”

Set points for the automatic refresh area of each CPU module in modules of two points (2 words).

A maximum of 2,048 points (2k words)*1 totaling points of 4 ranges (Setting 1 - 4) per CPU module, and a maximum of 8,192 points (8k words)*2 totaling points of all the device ID devices in a multiple CPU system, can be set for an automatic refresh area.

Set “0” to “Points” for CPU modules that do not use refresh areas.

*1 : For a basic model QCPU, a maximum of 320 points (320 words) totaling points of 4 ranges (setting 1 - 4) per module can be set.

*2 : If the Module No.1 is a basic model QCPU, 4,416 points totaling points of all the device ID devices in a multiple CPU system can be set.

(3) About “start”, “end”

When a value is set to the “Points” field, the first and last addresses of an automatic refresh area are displayed as offset values in hexadecimal No. for “Start” and “End” respectively.

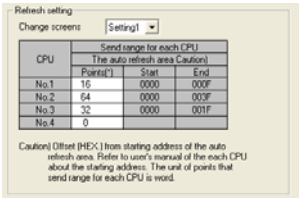
Remarks

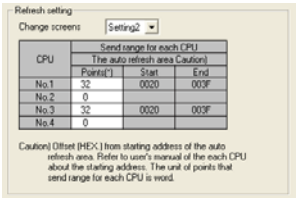
For how to set automatic refresh areas for a sequencer CPU and motion CPU, refer to the manual for each CPU module.

(b) Example of settings

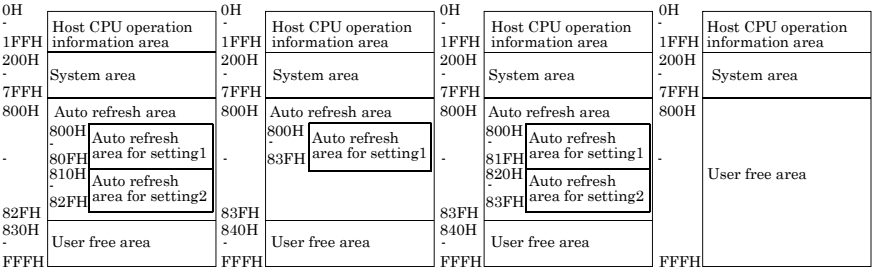
An automatic refresh area setting example is as follows.

The settings of the following example are made such that a high-performance model QCPU is used as the Module No.1 and that the Module No.4 does not use automatic refresh.





< CPU shared memory of No.1 > < CPU shared memory of No.2 >< CPU shared memory of No.3 >< CPU shared memory of No.4 >



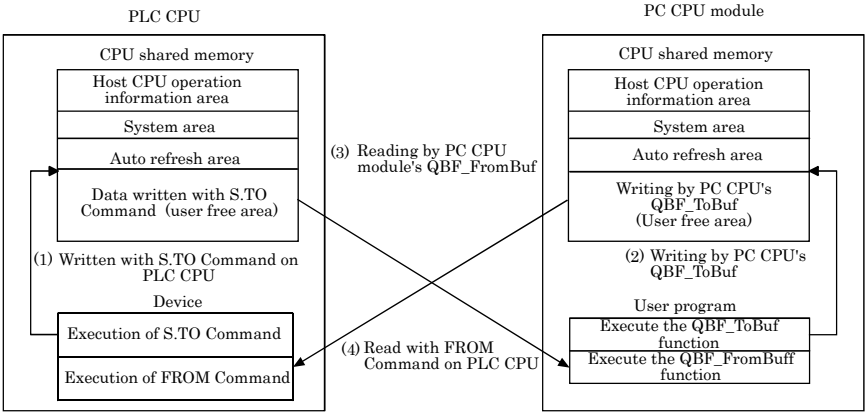
(3) Notes when data communication is performed using automatic refresh

Depending on the timing of writing to the automatic refresh area from your own Sta. and the timing of reading from a different ID device, data of each device ID device may have old and new data together. Create an interlock program to perform automatic refresh and avoid using data of a different ID device if old data and new one are mixed together.

6.8.3 Data Communication Without Using the Automatic Refresh

For data communication functionality using CPU shared memory, the following explains an overview of processing when data communication is performed without using the automatic refresh of the sequencer CPU.

(1) Overview of processing of data communication without using automatic refresh
Overview of processing of data communication without using automatic refresh is as follows :



Operation upon executing ladder program on PLC CPU

(1) : Writes data to the user free area in the CPU shared memory of the sequencer CPU with S.TO Command.

(4) : Reads data from the user free area in the PC CPU module into the specified device of the sequencer CPU with FROM Command.

Operation upon executing bus interface function on PC CPU module

(2) : Writes data to the user free area in the CPU shared memory of the PC CPU by executing the QBF_ToBuf function.

(3) : Reads data from the user free area in the sequencer CPU onto a user program by executing the QBF_FromBuf function.

Remarks

The above is an example of operation using S.TO Command and FROM Command in a high-performance model QCPU.

For operations without using the automatic refresh setting on the sequencer CPU side, refer to the manual for each CPU module.

6.9 Event Notify Function

This section describes a function that notify events from PLC CPU to user program on PC CPU module, using PC CPU module special instruction (S(P).GINT).

[Special PLC instruction for PC CPU module]

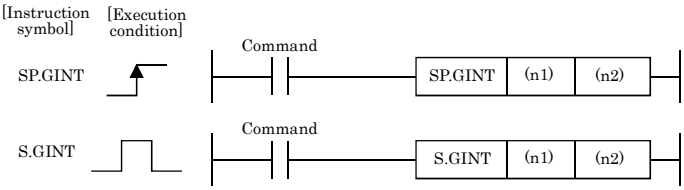
Interrupt instruction on PC CPU module: S(P).GINT

Setting data	Available devices							
	Internal device (System, user)		File register R, ZR	MELSECNET/10(H) Direct J□\□		Special unit U□\G□	Index register Zn	Constant K, H	Others
	Bit	Word		Bit	Word				
n1	-	O *1, *2		-				O	-
n2	-	O *2		-				O	-

O : Specifiable - : Not specifiable

*1 : For a high-performance model QCPU, indexes can be added.

*2 : For a basic model QCPU, indexes can be added.



[Setting data]

Setting data	Settings	Data format
(n1)	Start I/O No. of applicable CPU ÷16 Actual values to be specified are as follows: Unit No.1: 3E0H Unit No.2: 3E1H Unit No.3: 3E2H Unit No.4 : 3E3H	BIN16 bit
(n2)	Interrupt pointer No. (0 - 15)	BIN16 bit

[Available devices]

Dedicated commands can be used for the following devices.

Internal device		File register	Constant *2
Bit	Word *1		
M, L, B	D, W, @□	R, ZR	K, H

*1 : A bit device digit can be specified as word data.
A digit of a bit device shall be specified by digits No. Start No. of bit device.

For example, 16 points from M0 to M15 can be specified as K4M0 .

*2 : A device that can be set is described in the constant field of each item.

[Control operation]

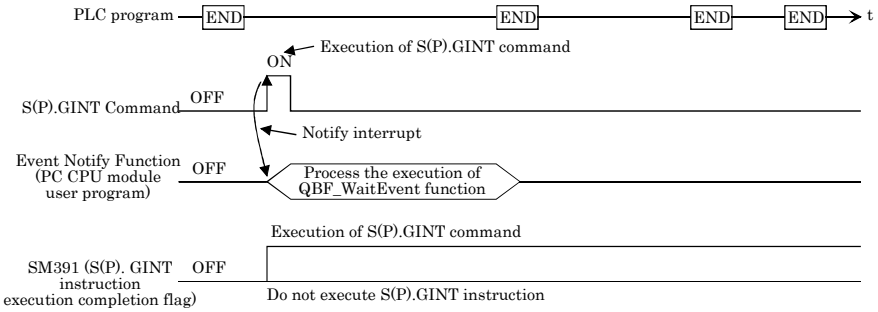
The process generates an interrupt to PC CPU module, upon startup (OFF - > ON) of executing S(P).GINT instruction by ladder program.

The PC CPU module, upon interrupt from PLC CPU, executes a bus interface function (QBF_WaitEvent) that has been programmed in user program.

(1) Upon completion of transferring instruction to PC CPU module, SM391 flag (completion of S(P).GINT instruction) of PLC CPU is turned on.

(2) Upon failure of transferring instruction from PLC CPU to PC CPU module, SM391 flag (completion of S(P).GINT instruction) of PLC CPU is turned off.

[Operation timing]



[Errors]

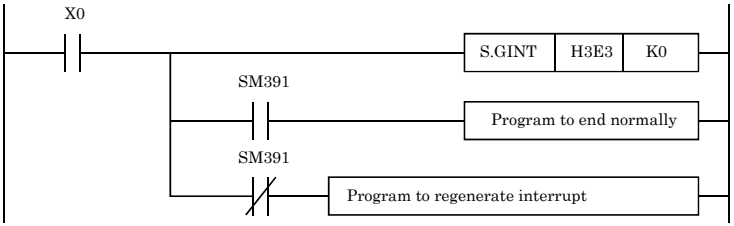
The following cases result in computation error, turning on error flag (SM0) of PLC CPU and storing an error code in SD0.

Error code *1	Error cause	Action
2110	Device ID device reserved (CPU vacant setting) by a target device ID device CPU head input/output No. / 16(nl) specified, or no-CPU-module-mounted device ID device specified.	Check program and modify it into a correct ladder program.
2114	Own machine was specified by "applicable CPU start I/O No. ÷ 16(n1)".	
2117	A module not supporting S(P).GINT instruction was specified by "applicable CPU start I/O No. ÷ 16(n1)".	
4100	"0 to 3DFH, 3E4H" was specified by "applicable CPU start I/O No. ÷ 16(n1)".	

*1 : 0000H(normal)

[Program example]

Ladder program that generates interrupt on Unit No.4 PC CPU module.



[Notes]

(1) When the QBF_WaitEvent function is executed, if an interruption event has been already notified from the sequencer CPU, a user program returns from interruption-event waiting mode immediately when the QBF_WaitEvent function is executed.
Also, when the QBF_WaitEvent function is executed, if multiple interruption event notifications have been sent for the same interruption event No., a user program processes them as a single interruption event notification.

(2) When using the event notification function in multiple user programs, do not set the same device ID device or same interruption event No. for multiple user programs.
If the same device ID device or the same interruption event is set in multiple user programs, it becomes uncertain which user program receives an interruption event.

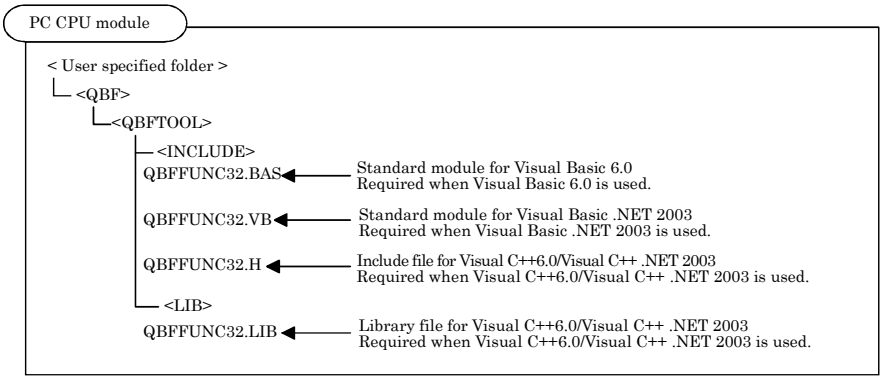
6.10 Creating User Program on Developing PC

The following files are required for preparing user programs on a developing PC. Make copies of the files from PC CPU module to a developing PC to prepare user programs.

Follow the procedures in section 6.3 “Settings for Using Functions” for settings to use functions. (When specifying a folder for using functions on a developing PC, specify a folder storing the files copied from PC CPU module.)

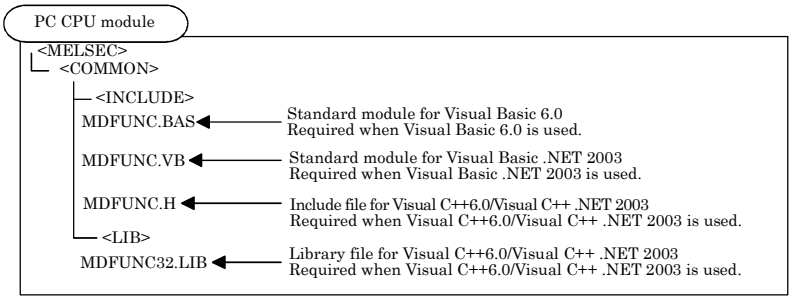
(1) Bus interface functions

Files in the folders listed below are required for using bus interface functions. Copy the following files from PC CPU module to a developing PC.



(2) MELSEC data link functions

Files in the folders listed below are required for using MELSEC data link functions. Copy the following files from PC CPU module to a developing PC.



6.11 About Sample Program

Installation of PPC-DRV-02 onto PC CPU module registers the following sample programs. The sample programs are provided for reference purposes that are used when preparing a user program. Use the sample programs on user's own authority.

(1) Sample programs for bus interface functions
Sample programs for bus interface functions are registered in <User- specified folder> - <Qbf> - <Qbftool> - <Sample>.
The following describes the folders in the Sample folder:

(a) Vb folder (for Visual Basic 6.0)

1). QBFtest folder

Sample program for bus interface functions in general

(b) NETVB folder (for Visual Basic .NET 2003)

1). QBFtest folder

Sample program for bus interface functions in general

(c) Vc folder (for Visual C++ 6.0/Visual C++ .NET 2003)

1). QBFtest folder

Sample program for bus interface functions in general

2). Shutdown folder

Sample program for shutdown test

3). QC24 folder

Sample program of data communication through the nonprocedural protocol by a serial communication module.

(2) Sample programs for MELSECNET/H communication
Sample programs for MELSECNET/H communication are registered in <User- specified folder> - <Qbf> - <Mneth> - <Sample>.
The following describes the folders in the Sample folder:

(a) Vb folder (for Visual Basic 6.0)

1). Demo folder

Sample program that read D0.

2). Mtest folder

Sample program for MELSEC data link functions (mdOpen, mdClose, mdSend, mdReceive) in general

(b) NETVB folder (for Visual Basic .NET 2003)

1). Demo folder

Sample program that read D0

2). Mtest folder

Sample program for MELSEC data link functions (mdOpen, mdClose, mdSend, mdReceive) in general

(c) Vc folder (for Visual C++ 6.0/Visual C++ .NET 2003)

1). Mtest folder

File name	Description
Mtest1.c	Sample program for MELSEC data link functions in general
Netsmp1.c	Sample program that read device D of Sta. No.1.

(3) Sample programs for CC- Link communication

Sample programs for CC- Link communication are registered in <User- specified folder> - <Qbf> - <Cclink> - <Sample>. The following describes the folders in the Sample folder:

(a) Master station folder

1). Datalink folder

Folder name		Description	Programming language
Ver.1	Vb	Master station←→local station communication sample program	Visual Basic 6.0
	NETVB		Visual Basic .NET 2003
	Vc		Visual C++ 6.0, Visual C++ .NET 2003
Ver.2	Vb		Visual Basic 6.0
	NETVB		Visual Basic .NET 2003
	Vc		Visual C++ 6.0, Visual C++ .NET 2003

2). PositioningSystem folder

Folder name		Description	Programming language
Vb		Sample program for initialization, positioning, zero- return and JOG operation on AJ65BT- D75P2- S3.	Visual Basic 6.0
NETVB		Sample program for initialization, positioning, zero- return and JOG operation on AJ65BT- D75P2- S3.	Visual Basic .NET 2003
Vc	Initialize	Sample program for initialization on AJ65BT- D75P2- S3.	Visual C++ 6.0, Visual C++ .NET 2003
	Jog	Sample program for JOG operation on AJ65BT- D75P2- S3.	
	Positioning	Sample program for positioning on AJ65BT- D75P2- S3.	
	ZeroReturn	Sample program for zero- return on AJ65BT- D75P2- S3.	

3). R2 folder

Folder name		Description	Programming language
Vb		Sample program for initialization, transmission and reception on AJ65BT- R2.	Visual Basic 6.0
NETVB		Sample program for initialization, transmission and reception on AJ65BT- R2.	Visual Basic .NET 2003
Vc	Rs2testB	Sample program for initialization of AJ65BT- R2.	Visual C++ 6.0, Visual C++ .NET 2003
	Rs2testR	Sample program for reception on AJ65BT- R2.	
	Rs2testS	Sample program for transmission on AJ65BT- R2.	

4). RemoteDevice folder

Folder name			Description	Programming language
68DAV	Ver.1	Vb	Sample program for digital- analog conversion output on AJ65VBTCU-68DAV.	Visual Basic 6.0
		NETVB		Visual Basic .NET 2003
		Vc		Visual C++ 6.0, Visual C++ .NET 2003
	Ver.2	Vb		Visual Basic 6.0
		NETVB		Visual Basic .NET 2003
		Vc		Visual C++ 6.0, Visual C++ .NET 2003

5). RemoteIO folder

Folder name	Description	Programming language
Vb	Sample program for remote I/O reading and writing on remote I/O station	Visual Basic 6.0
NETVB		Visual Basic .NET 2003
Vc		Visual C++ 6.0, Visual C++ .NET 2003

(b) Local station folder

1). Datalink folder

Folder name		Description	Programming language
Ver.1	Vb	Master station←→Sample program for local station communication	Visual Basic 6.0
	NETVB		Visual Basic .NET 2003
	Vc		Visual C++ 6.0, Visual C++ .NET 2003
Ver.2	Vb		Visual Basic 6.0
	NETVB		Visual Basic .NET 2003
	Vc		Visual C++ 6.0, Visual C++ .NET 2003

(c) MDFunction folder

1). Vb folder (for Visual Basic 6.0)

Sample programs for MELSEC data link functions (mdOpen, mdClose, mdSend, mdReceive)

2). NETVB folder (for Visual Basic .NET 2003)

Sample programs for MELSEC data link functions (mdOpen, mdClose, mdSend, mdReceive)

3). Vc folder (for Visual C++ 6.0/Visual C++ .NET 2003)

File name	Description
Mtest1.c	Sample program for MELSEC data link functions in general
Netsmp1.c	Sample program that read device D of Sta. No.1.

7. Accessible Range and Devices

This chapter describes accessible range and accessible devices when MELSEC data link functions are used.

(1) Non-accessible device

When MELSEC communication functions are used in the PC CPU module, the following devices cannot be accessed.

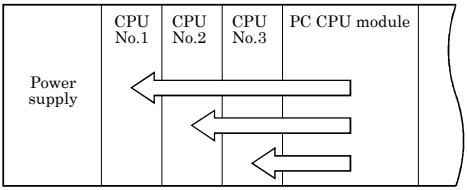
- Q/QnA SEND function (arrival confirmation available) and RECV function devices
- Q/QnA SEND function (arrival confirmation not available)
- EM (shared device)
- ED (shared device)

7.1 Multiple PLC System Access

This section describes accessible range and accessible devices by operation of multiple PLC system access.

7.1.1 Accessible Range

The accessible range when a multiple CPU system makes access covers only the PC CPU module (your own device) and sequencer CPUs (different ID devices) in a multiple CPU system.



7.1.2 Accessible Devices

This section describes accessible devices under multiple PLC system access operation.

Point
(1) “Batch” and “Random” in the table indicates the following operations: Batch : Batch writing (mdSend), Batch reading (mdReceive) Random : Random writing (mdRandW), Random reading (mdRandR), Bit set (mdDevSet), Bit reset (mdDevRst) (2) BitSet (mdDevSet function) and BitRest (mdDevRst function) can access bit devices only. (3) CPU shared memory is accessible only when the multiple CPU setting is made.

(1) Own machine access

Accessible devices at the time of own machine access is as follows :

Device	Device type (Device name specification)	Used function	Access target: Own machine (PC CPU module)
CPU shared memory *1	DevSPB1 (No.1 machine), DevSPB2 (No.2 machine), DevSPB3 (No.3 machine), DevSPB4 (No.4 machine)	Batch	O
		Random	x

O : Accessible, x : Not Accessible

*1 : For more details on Data Communication Via PLC Shared Memory, refer to “6.8 Data Communication Via PLC Shared Memory”.

(2) Other machine access

Accessible devices at the time of other machine access is as follows :

Device	Device type (Device name specification)	Used function	Access target
			PLC CPU
X	DevX	Batch	O
		Random	
Y	DevY	Batch	O
		Random	
L	DevL	Batch	O
		Random	
M	DevM	Batch	O
		Random	
Special M (SM), SB	DevSM	Batch	O
		Random	
F	DevF	Batch	O
		Random	
T (contact)	DevTT	Batch	O
		Random	
T (coil)	DevTC	Batch	O
		Random	

O : Accessible, x : Not Accessible

Device	Device type (Device name specification)	Used function	Access target PLC CPU
C (contact)	DevCT	Batch	O
		Random	
C (coil)	DevCC	Batch	O
		Random	
T (current value)	DevTN	Batch	O
		Random	
C (current value)	DevCN	Batch	O
		Random	
D	DevD	Batch	O
		Random	
Special D (SD), SW	DevSD	Batch	O
		Random	
T (setting value main)	DevTM	Batch	x
		Random	
T (setting value sub 1)	DevTS	Batch	x
		Random	
T (setting value sub 2)	DevTS2	Batch	x
		Random	
T (setting value sub 3)	DevTS3	Batch	x
		Random	
C (setting value main)	DevCM	Batch	x
		Random	
C (setting value sub 1)	DevCS	Batch	x
		Random	
C (setting value sub 2)	DevC2	Batch	x
		Random	
C (setting value sub 3)	DevC3	Batch	x
		Random	
A	DevA	Batch	x
		Random	
Z	DevZ	Batch	O
		Random	
V (index register)	DevV	Batch	x
		Random	

O : Accessible, x : Not Accessible

Device	Device type (Device name specification)	Used function	Access target
			PLC CPU
R (file register)	DevR	Batch	O
		Random	
ER (extension file register)	DevER(0) - DevER(256)	Batch	O
		Random	
B	DevB	Batch	O
		Random	
W	DevW	Batch	O
		Random	
Q/QnA link special relay (within the Q/QnACPU)	DevQSB	Batch	O
		Random	
Retentive timer (contact)	DevSTT	Batch	O
		Random	
Retentive timer (coil)	DevSTC	Batch	O
		Random	
Q/QnA link special register (within the Q/QnACPU)	DevQSW	Batch	O
		Random	
Q/QnA edge relay (within the Q/QnACPU)	DevQV	Batch	O
		Random	
Own Sta. random access buffer	DevMRB	Batch	x
		Random	
Retentive timer (current value)	DevSTN	Batch	O
		Random	
Own Sta. link register (for sending)	DevWw	Batch	x
		Random	
Own Sta. link register (for receiving)	DevWr	Batch	x
		Random	
Own Sta. buffer memory	DevSPB	Batch	x
		Random	
Direct link input (other Sta. side)	DevLX(1) - DevLX(255)	Batch	O
		Random	
Direct link output (other Sta. side)	DevLY(1) - DevLY(255)	Batch	O
		Random	
Direct link relay (other Sta. side)	DevLB(1) - DevLB(255)	Batch	O
		Random	

O : Accessible, x : Not Accessible

Device	Device type (Device name specification)	Used function	Access target PLC CPU
Direct link register (other Sta. side)	DevLW(1) - DevLW(255)	Batch / Random	O
Direct link special relay (other Sta. side)	DevLSB(1) - DevLSB(255)	Batch / Random	O
Direct link special register (other Sta. side)	DevLSW(1) - DevLSW(255)	Batch / Random	O
Special direct buffer register	DevSPG(0) - DevSPG(255)	Batch / Random	O
Other Sta. buffer memory	DevRBM	Batch / Random	x
Other Sta. random access buffer	DevRAB	Batch / Random	x
Other Sta. RX	DevRX	Batch / Random	x
Other Sta. RY	DevRY	Batch / Random	x
Other Sta. link register	DevRW	Batch / Random	x
Other Sta. SB (link special B for CC-Link)	DevSB	Batch / Random	x
Other Sta. SW (link special W for CC-Link)	DevSW	Batch / Random	x
CPU shared memory	DevSPB1 (Machine No.1), DevSPB2 (Machine No.2), DevSPB3 (Machine No.3), DevSPB4 (Machine No.4)	Batch / Random	x

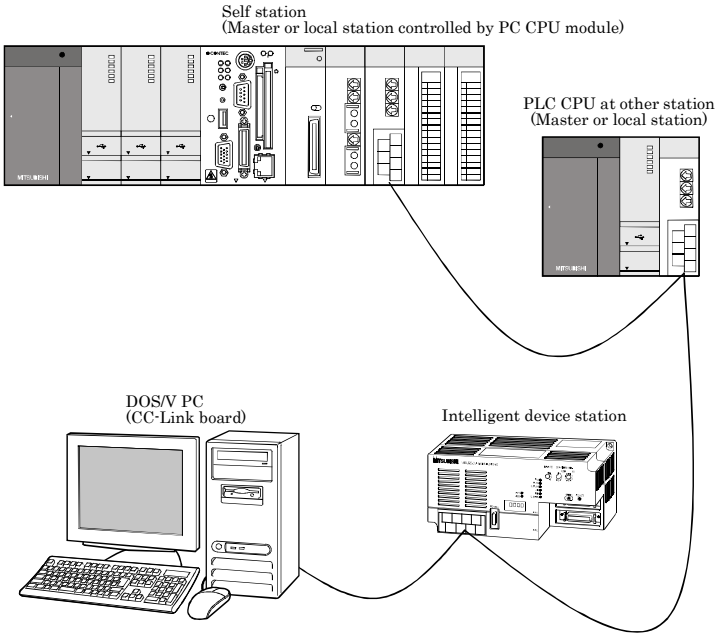
O : Accessible, x : Not Accessible

7.2 Access via CC-Link Utility

This section describes accessible range and accessible devices via CC- Link utility.

7.2.1 Accessible Range

Devices accessible via CC- Link utility are only CC- Link master station connected with CC- Link utility, PLC CPU of local station, intelligent device station and PC with CC- Link board installed.



Point
If your own Sta.'s No. is #64, access to other Sta. is not possible. Accessible for your own Sta.

7.2.2 Accessible Devices

This section describes devices accessible via CC- Link utility.

Point

(1) “Batch” and “Random” in the table indicates the following :

Batch : Batch writing (mdSend), Batch reading(mdReceive)
Random : Random writing (mdRandW), Random reading(mdRandR), bit setting (mdDevSet), bit resetting(mdDevRst

(2) BitSet (mdDevSet function) and BitRest (mdDevRst function) can access bit devices only.

(1) Own Sta. accessing
The following lists the devices accessible via the CC- Link utility controlled by PC CPU module.

Device	Device type (Device name specification)	Used function	Accessibility
Own Sta. RX	DevX	Batch / Random	O
Own Sta. RY	DevY	Batch / Random	O
Own Sta. SB (link special B for CC-Link)	DevSM, DevQSB	Batch / Random	O
Own Sta. SW (link special W for CC-Link)	DevSD, DevQSW	Batch / Random	O
Own Sta. link register (for sending)	DevWw	Batch / Random	O
Own Sta. link register (for receiving)	DevWr	Batch / Random	O
Own Sta. buffer memory	DevSPB	Batch / Random	O
Own Sta. random access buffer	DevMRB	Batch / Random	O

O : Accessible, x : Not Accessible

(2) Other Sta. access

The following Access target CPUs from (1) to (7) are used for description.

No.	Target CPU
(1)	A1NCPU
(2)	A0J2HCPU, A1S(H)CPU, A1SJ(H)CPU, A2C(J)CPU, A2NCPU(-S1), A2S(H)CPU
(3)	A2ACPU(-S1), A2UCPU(-S1), A2USCPU(-S1), A2USHCPU-S1, Q02(H)CPU-A, Q06HCPU-A
(4)	A3NCPU, A3ACPU, A3UCPU
(5)	A4UCPU
(6)	Q2ACPU(-S1), Q3ACPU, Q4ACPU, Q4ARCPU, Q2ASCPU(-S1), Q2ASHCPU(-S1), Q00JCPU, Q00CPU, Q01CPU, Q02(H)CPU, Q06HCPU, Q12HCPU, Q25HCPU, Q12PHCPU, Q25PHCPU
(7)	DOS/V PC (CC-Link board), intelligent device station, PC CPU module (CC-Link unit)

Device	Device type (Device name specification)	Used function	Accessibility						
			(1)	(2)	(3)	(4)	(5)	(6)	(7)
X	DevX	Batch / Random	O	O	O	O	O	O	x
Y	DevY	Batch / Random	O	O	O	O	O	O	x
L	DevL	Batch / Random	O	O	O	O	O	O	x
M	DevM	Batch / Random	O	O	O	O	O	O	x
Special M (SM), SB	DevSM	Batch / Random	O	O	O	O	O	O	x
F	DevF	Batch / Random	O	O	O	O	O	O	x
T (contact)	DevTT	Batch / Random	O	O	O	O	O	O	x
T (coil)	DevTC	Batch / Random	O	O	O	O	O	O	x
C (contact)	DevCT	Batch / Random	O	O	O	O	O	O	x
C (coil)	DevCC	Batch / Random	O	O	O	O	O	O	x
T (current value)	DevTN	Batch / Random	O	O	O	O	O	O	x

O : Accessible, x : Not Accessible

Device	Device type (Device name specification)	Used function	Accessibility (1)	(2)	(3)	(4)	(5)	(6)	(7)
C (current value)	DevCN	Batch	O	O	O	O	O	O	x
		Random							
D	DevD	Batch	O	O	O	O	O	O	x
		Random							
Special D (SD), SW	DevSD	Batch	O	O	O	O	O	O	x
		Random							
T (setting value main)	DevTM	Batch	O	O	O	O	O	x	x
		Random	x	x	x	x	x		
T (setting value sub 1)	DevTS	Batch	x	x	O *1	O	O	x	x
		Random			x	x	x		
T (setting value sub 2)	DevTS2	Batch	x	x	x	x	O	x	x
		Random					x		
T (setting value sub 3)	DevTS3	Batch	x	x	x	x	O	x	x
		Random					x		
C (setting value main)	DevCM	Batch	O	O	O	O	O	x	x
		Random	x	x	x	x	x		
C (setting value sub 1)	DevCS	Batch	x	x	O *1	O	O	x	x
		Random			x	x	x		
C (setting value sub 2)	DevC2	Batch	x	x	x	x	O	x	x
		Random					x		
C (setting value sub 3)	DevC3	Batch	x	x	x	x	O	x	x
		Random					x		
A	DevA	Batch	O	O	O	O	O	x	x
		Random							
Z	DevZ	Batch	O	O	O	O	O	O	x
		Random							
V (index register)	DevV	Batch	O	O	O	O	O	x	x
		Random							
R (file register)	DevR	Batch	x	O	O	O	O	O *2	x
		Random							
ER (extension file register)	DevER(0) - DevER(256)	Batch	x	O	O	O	O	O *2	x
		Random							

O : Accessible, x : Not Accessible

*1 : Cannot access A2ACPU(-S1).

*2 : Cannot access Q00JCPU

Device	Device type (Device name specification)	Used function	Accessibility						
			(1)	(2)	(3)	(4)	(5)	(6)	(7)
B	DevB	Batch	O	O	O	O	O	O	x
		Random							
W	DevW	Batch	O	O	O	O	O	O	x
		Random							
Q/QnA link special relay (within the Q/QnACPU)	DevQSB	Batch	x	x	x	x	x	O	x
		Random							
Retentive timer (contact)	DevSTT	Batch	x	x	x	x	x	O	x
		Random							
Retentive timer (coil)	DevSTC	Batch	x	x	x	x	x	O	x
		Random							
Q/QnA link special register (within the Q/QnACPU)	DevQSW	Batch	x	x	x	x	x	O	x
		Random							
Q/QnA edge relay (within the Q/QnACPU)	DevQV	Batch	x	x	x	x	x	O	x
		Random							
Own Sta. random access buffer	DevMRB	Batch	x	x	x	x	x	x	x
		Random							
Retentive timer (current value)	DevSTN	Batch	x	x	x	x	x	O	x
		Random							
Own Sta. link register (for sending)	DevWw	Batch	x	x	x	x	x	x	x
		Random							
Own Sta. link register (for receiving)	DevWr	Batch	x	x	x	x	x	x	x
		Random							
Own Sta. buffer memory	DevSPB	Batch	x	x	x	x	x	x	x
		Random							
Direct link input (other Sta. side)	DevLX(1) - DevLX(255)	Batch	x	x	x	x	x	O	x
		Random							
Direct link output (other Sta. side)	DevLY(1) - DevLY(255)	Batch	x	x	x	x	x	O	x
		Random							
Direct link relay (other Sta. side)	DevLB(1) - DevLB(255)	Batch	x	x	x	x	x	O	x
		Random							
Direct link register (other Sta. side)	DevLW(1) - DevLW(255)	Batch	x	x	x	x	x	O	x
		Random							

O : Accessible, x : Not Accessible

Device	Device type (Device name specification)	Used function	Accessibility						
			(1)	(2)	(3)	(4)	(5)	(6)	(7)
Direct link special relay (other Sta. side)	DevLSB(1) - DevLSB(255)	Batch	x	x	x	x	x	O	x
		Random							
Direct link special register (other Sta. side)	DevLSW(1) - DevLSW(255)	Batch	x	x	x	x	x	O	x
		Random							
Special direct buffer register	DevSPG(0) - DevSPG(255)	Batch	x	x	x	x	x	O	x
		Random							
Other Sta. buffer memory *3	DevRBM	Batch	O	O	O	O	O	O	O
		Random	x	x	x	x	x	x	x
Other Sta. random access buffer *3	DevRAB	Batch	O	O	O	O	O	O	O
		Random	x	x	x	x	x	x	x
Other Sta. RX *3	DevRX	Batch	O	O	O	O	O	O	O
		Random	x	x	x	x	x	x	x
Other Sta. RY *3	DevRY	Batch	O	O	O	O	O	O	O
		Random	x	x	x	x	x	x	x
Other Sta. link register *3	DevRW	Batch	O	O	O	O	O	O	O
		Random	x	x	x	x	x	x	x
Other Sta. SB (Special B for CC-Link) *3	DevSB	Batch	O	O	O	O	O	O	O
		Random	x	x	x	x	x	x	x
Other Sta. SW (link special W for CC-Link) *3	DevSW	Batch	O	O	O	O	O	O	O
		Random	x	x	x	x	x	x	x
CPU shared memory	DevSPB1 (Machine No.1), DevSPB2 (Machine No.2), DevSPB3 (Machine No.3), DevSPB4 (Machine No.4)	Batch	x	x	x	x	x	x	x
		Random							

O : Accessible, x : Not Accessible

*3 : Access to buffer memory of CC-Link (intelligent device station) modules mounted to each CPU module.
Cannot access a multiple CPU system (when logical Sta. No. are specified).

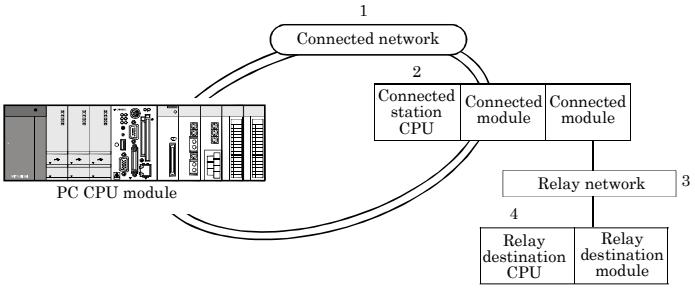
7.3 Access via MELSECNET/H unit

This section describes accessible range and accessible devices via MELSECNET/H unit.

7.3.1 Accessible Range

The following describes a system configuration of the accessible range and access possibility according to the destination CPU to be accessed through modules when access is made through MELSECNET/H units.

(1) Configuration



(2) Accessibility table
The following table shows the accessibility.
Own Sta. can be accessed.

1. Connected network	2. Connected station CPU	3. Relay network	4. Relay destination CPU			
			QCPU		QnACPU	ACPU
			Q mode	A mode		
MELSECNET/H	QCPU (Q mode)	MELSECNET/H *1	O	x	x	x
		MELSECNET/10 *2	O	O	O	O
		MELSECNET(II)	x	x	x	x
		Ethernet	x	x	x	x
		Computer link	x	x	x	x
		CC-Link	x	x	x	x

O : Accessible, x : Not Accessible

*1 : The MELSECNET/H units of the connected station can be accessed when in MELSECNET/H mode.

*2 : The MELSECNET/10(H) modules of the connected station can be accessed when in MELSECNET/10 mode.

1. Connected network	2. Connected station CPU	3. Relay network	4. Relay destination CPU			
			QCPU		QnACPU	ACPU
			Q mode	A mode		
MELSECNET/10	QCPU (Q mode)	MELSECNET/H	O	x	x	x
		MELSECNET/10	O	O	O	O
		MELSECNET(II)	x	x	x	x
		Ethernet	x	x	x	x
		Computer link	x	x	x	x
		CC-Link	x	x	x	x
	QnACPU	MELSECNET/H	x	x	x	x
		MELSECNET/10	O	O	O	O
		MELSECNET(II)	x	x	x	x
		Ethernet	x	x	x	x
		Computer link	x	x	x	x
		CC-Link	x	x	x	x
	QCPU (A mode), ACPU	MELSECNET/H	x	x	x	x
		MELSECNET/10	O	O	O	O
		MELSECNET(II)	x	x	x	x
		Ethernet	x	x	x	x
		Computer link	x	x	x	x
		CC-Link	x	x	x	x

O : Accessible, x : Not Accessible

7.3.2 Accessible Devices

This section describes devices accessible via MELSECNET/H unit.

Point

(1) “Batch” and “Random” in the table indicates the following :

Batch : Batch writing (mdSend), Batch reading(mdReceive)

Random : Random writing (mdRandW), Random reading(mdRandR), bit setting (mdDevSet), bit resetting (mdDevRst)

(2) BitSet (mdDevSet function) and BitRest (mdDevRst function) can access bit devices only.

(1) Own Sta. accessing

The following lists the devices accessible via the MELSECNET/H unit controlled by PC CPU module.

Device	Device type (Device name specification)	Used function	Accessibility
Own Sta. link input internal buffer (LX buffer)	DevX	Batch	O
		Random	
Own Sta. link output internal buffer (LY buffer)	DevY	Batch	O
		Random	
Own Sta. link relay internal buffer (LB buffer)	DevB	Batch	O
		Random	
Own Sta. link register internal buffer (LW buffer)	DevW	Batch	O
		Random	
Own Sta. direct link special relay (SB)	DevSM, DevQSB	Batch	O
		Random	
Own Sta. direct link special register (SW)	DevSD, DevQSW	Batch	O
		Random	

O : Accessible, x : Not Accessible

(2) Other Sta. access

The following Access target CPUs from (1) - (7) are used for description.

No.	Target CPU
(1)	A1NCPU
(2)	A0J2HCPU, A1S(H)CPU, A1SJ(H)CPU, A2C(J)CPU, A2NCPU(-S1), A2S(H)CPU
(3)	A2ACPU(-S1), A2UCPU(-S1), A2USCPU(-S1), A2USHCPU-S1, Q02(H)CPU-A, Q06HCPU-A
(4)	A3NCPU, A3ACPU, A3UCPU
(5)	A4UCPU
(6)	Q2ACPU(-S1), Q3ACPU, Q4ACPU, Q4ARCPU, Q2ASCPU(-S1), Q2ASHCPU(-S1), Q00JCPU, Q00CPU, Q01CPU, Q02(H)CPU, Q06HCPU, Q12HCPU, Q25HCPU, Q12PHCPU, Q25PHCPU
(7)	DOS/V PC (MELSECNET/H board), PC CPU module (MELSECNET/H unit)

Device	Device type (Device name specification)	Used function	Accessibility						
			(1)	(2)	(3)	(4)	(5)	(6)	(7)
X	DevX	Batch / Random	O	O	O	O	O	O	x
Y	DevY	Batch / Random	O	O	O	O	O	O	x
L	DevL	Batch / Random	O	O	O	O	O	O	x
M	DevM	Batch / Random	O	O	O	O	O	O	x
Special M (SM), SB	DevSM	Batch / Random	O	O	O	O	O	O	x
F	DevF	Batch / Random	O	O	O	O	O	O	x
T (contact)	DevTT	Batch / Random	O	O	O	O	O	O	x
T (coil)	DevTC	Batch / Random	O	O	O	O	O	O	x
C (contact)	DevCT	Batch / Random	O	O	O	O	O	O	x
C (coil)	DevCC	Batch / Random	O	O	O	O	O	O	x
T (current value)	DevTN	Batch / Random	O	O	O	O	O	O	x

O : Accessible, x : Not Accessible

Device	Device type (Device name specification)	Used function	Accessibility						
			(1)	(2)	(3)	(4)	(5)	(6)	(7)
C (current value)	DevCN	Batch	O	O	O	O	O	O	x
		Random							
D	DevD	Batch	O	O	O	O	O	O	x
		Random							
Special D (SD), SW	DevSD	Batch	O	O	O	O	O	O	x
		Random							
T (setting value main)	DevTM	Batch	O	O	O	O	O	x	x
		Random	x	x	x	x	x		
T (setting value sub 1)	DevTS	Batch	x	x	O *1	O	O	x	x
		Random			x	x	x		
T (setting value sub 2)	DevTS2	Batch	x	x	x	x	O	x	x
		Random					x		
T (setting value sub 3)	DevTS3	Batch	x	x	x	x	O	x	x
		Random					x		
C (setting value main)	DevCM	Batch	O	O	O	O	O	x	x
		Random	x	x	x	x	x		
C (setting value sub 1)	DevCS	Batch	x	x	O *1	O	O	x	x
		Random			x	x	x		
C (setting value sub 2)	DevC2	Batch	x	x	x	x	O	x	x
		Random					x		
C (setting value sub 3)	DevC3	Batch	x	x	x	x	O	x	x
		Random					x		
A	DevA	Batch	O	O	O	O	O	x	x
		Random							
Z	DevZ	Batch	O	O	O	O	O	O	x
		Random							
V (index register)	DevV	Batch	O	O	O	O	O	x	x
		Random							
R (file register)	DevR	Batch	x	O	O	O	O	O *2	x
		Random							
ER (extension file register)	DevER(0) - DevER(256)	Batch	x	O	O	O	O	O *2	x
		Random							

O : Accessible, x : Not Accessible

*1 : Cannot access A2ACPU(-S1).

*2 : Cannot access Q00JCPU

Device	Device type (Device name specification)	Used function	Accessibility						
			(1)	(2)	(3)	(4)	(5)	(6)	(7)
B	DevB	Batch	O	O	O	O	O	O	x
		Random							
W	DevW	Batch	O	O	O	O	O	O	x
		Random							
Q/QnA link special relay (within the Q/QnACPU)	DevQSB	Batch	x	x	x	x	x	O	x
		Random							
Retentive timer (contact)	DevSTT	Batch	x	x	x	x	x	O	x
		Random							
Retentive timer (coil)	DevSTC	Batch	x	x	x	x	x	O	x
		Random							
Q/QnA link special register (within the Q/QnACPU)	DevQSW	Batch	x	x	x	x	x	O	x
		Random							
Q/QnA edge relay (within the Q/QnACPU)	DevQV	Batch	x	x	x	x	x	O	x
		Random							
Own Sta. random access buffer	DevMRB	Batch	x	x	x	x	x	x	x
		Random							
Retentive timer (current value)	DevSTN	Batch	x	x	x	x	x	O	x
		Random							
Own Sta. link register (for sending)	DevWw	Batch	x	x	x	x	x	x	x
		Random							
Own Sta. link register (for receiving)	DevWr	Batch	x	x	x	x	x	x	x
		Random							
Own Sta. buffer memory	DevSPB	Batch	x	x	x	x	x	x	x
		Random							
Direct link input (other Sta. side)	DevLX(1) - DevLX(255)	Batch	x	x	x	x	x	O	x
		Random							
Direct link output (other Sta. side)	DevLY(1) - DevLY(255)	Batch	x	x	x	x	x	O	x
		Random							

O : Accessible, x : Not Accessible

Device	Device type (Device name specification)	Used function	Accessibility						
			(1)	(2)	(3)	(4)	(5)	(6)	(7)
Direct link relay (other Sta. side)	DevLB(1) - DevLB(255)	Batch	x	x	x	x	x	O	x
		Random							
Direct link register (other Sta. side)	DevLW(1) - DevLW(255)	Batch	x	x	x	x	x	O	x
		Random							
Direct link special relay (other Sta. side)	DevLSB(1) - DevLSB(255)	Batch	x	x	x	x	x	O	x
		Random							
Direct link special register (other Sta. side)	DevLSW(1) - DevLSW(255)	Batch	x	x	x	x	x	O	x
		Random							
Special direct buffer register	DevSPG(0) - DevSPG(255)	Batch	x	x	x	x	x	O	x
		Random							
Other Sta. buffer memory	DevRBM	Batch	x	x	x	x	x	x	x
		Random							
Other Sta. random access buffer	DevRAB	Batch	x	x	x	x	x	x	x
		Random							
Other Sta. RX	DevRX	Batch	x	x	x	x	x	x	x
		Random							
Other Sta. RY	DevRY	Batch	x	x	x	x	x	x	x
		Random							
Other Sta. link register	DevRW	Batch	x	x	x	x	x	x	x
		Random							
Other Sta. SB (link special B for CC-Link)	DevSB	Batch	x	x	x	x	x	x	x
		Random							
Other Sta. SW (link special W for CC-Link)	DevSW	Batch	x	x	x	x	x	x	x
		Random							
CPU shared memory	DevSPB1 (Machine No.1), DevSPB2 (Machine No.2), DevSPB3 (Machine No.3), DevSPB4 (Machine No.4)	Batch	x	x	x	x	x	x	x
		Random							

O : Accessible, x : Not Accessible

8. Actions against Errors

This chapter provides troubleshooting information, including information on various errors, return values (error codes) of bus interface functions and MELSEC communication functions, and available actions.

8.1 Basis on Troubleshooting

Before starting troubleshooting, the following three points must be checked.

(1) Visual check

Check the following :

1). The operating state of each external device
2). The operating state of each external power supply
3). Whether connection cables are correctly connected or not?
4). The operating states of the PC CPU module and the power supply module (determined from such as the states of LEDs)

Ex. : B.RUN LED and ERR.LED of PC CPU module,
POWER LED of power unit

5). Whether LEDs of the input module and the output module light appropriately according to the states of INPUT (X) and OUTPUT (Y)?
6). Whether each module is secured to the base module?

Once you checked the above items (1) - (6), connect to external devices and check the operation of user programs.

(2) Defect check

Check whether the state of the defect(s) changes or not according to methods :

1). Turn INPUT (X) to ON and OFF in order to check whether data can be read on user programs.
2). Turn OUTPUT (Y) to ON and OFF in order to check whether the state of each external device properly changes in response to it.

(3) Identification of the cause
The hardware and/or software on which more failures are detected during (1) and (2) is more likely the cause of the problem.
Among the following, identify the cause and perform troubleshooting :

1) PC CPU module
2) External device
3) Module (Excluding PC CPU module)
4) Connection cable
5) User program

8.2 Troubleshooting

Upon occurrence of a trouble, follow the troubleshooting flow on the basis of the table given below :

No.	Trouble description	Referring paragraph
1	Flow when POWER LED of PSU went out	8.2.1
2	Flow when PC CPU module does not work properly	8.2.2
3	Flow when PPC-DRV-02 cannot be installed	8.2.3
4	Flow when ERR.LED lights/blinks	8.2.4
5	Flow for UNIT VERIFY ERR.	8.2.5
6	Flow for CONTROL-BUS.ERR.	8.2.6
7	Flow for errors on function execution	8.2.7
8	Flow when LED of the output module does not light	8.2.8
9	Flow when the output load of the output module does not turn on	8.2.9
10	Troubleshooting when B.RUN LED continues to blink in the multiple CPU system configuration	8.2.10
11	Flow when "Bus I/F driver not activated" is displayed	8.2.11
12	Flow for "link refresh time over"	8.2.12
13	When BIOS error is displayed at startup of this module	*1
14	When OS does not operate properly	*1

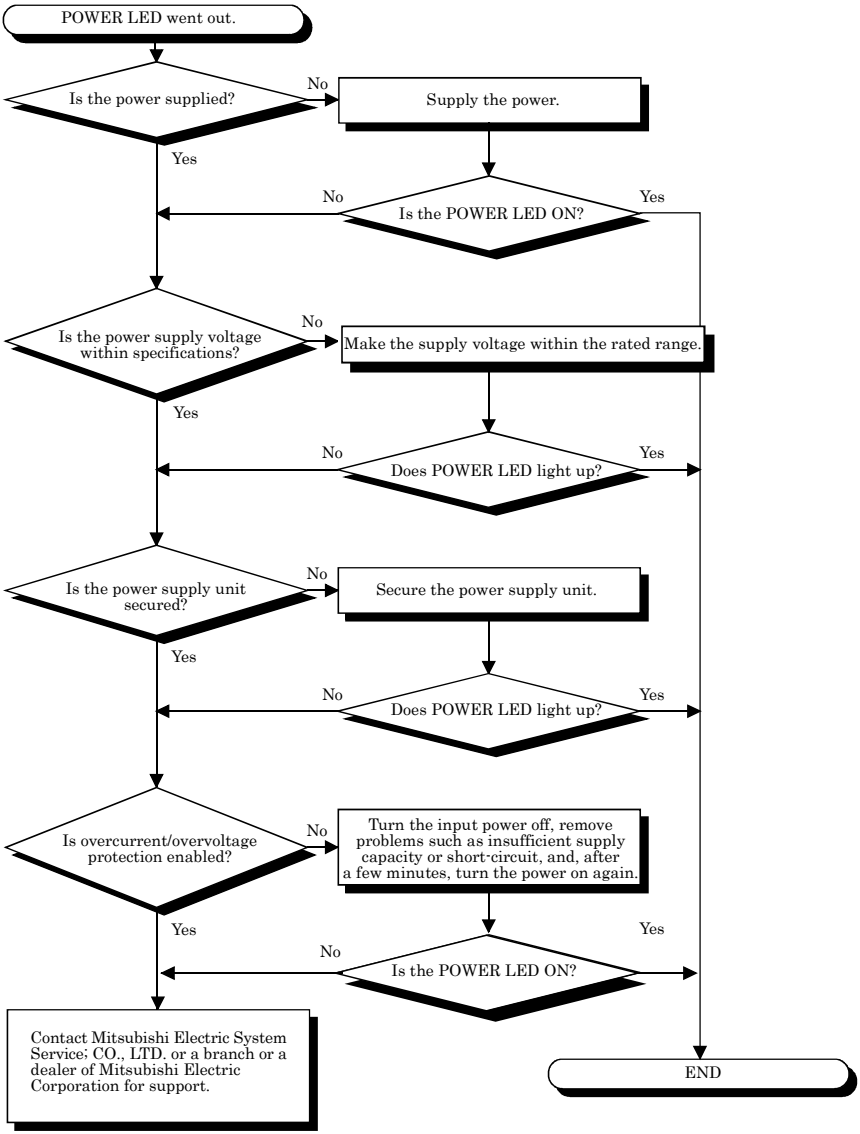
*1： Please refer to “PPC-CPU852(MS)-512 user’s manual”.

Point

If the PC CPU module does not operate properly after you replace PPC-CPU686(MS) with PPC-CPU852(MS), refer to "9.1.2 How to replace the conventional product (PPC-CPU686(MS) with PPC-CPU852(MS)".

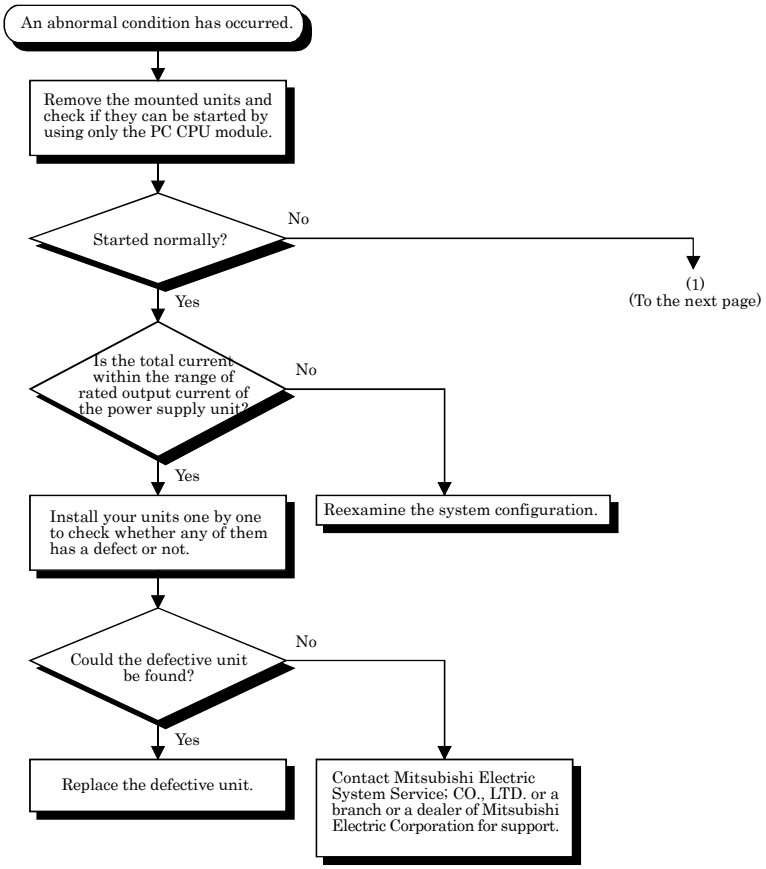
8.2.1 Flow when POWER LED of PSU went out

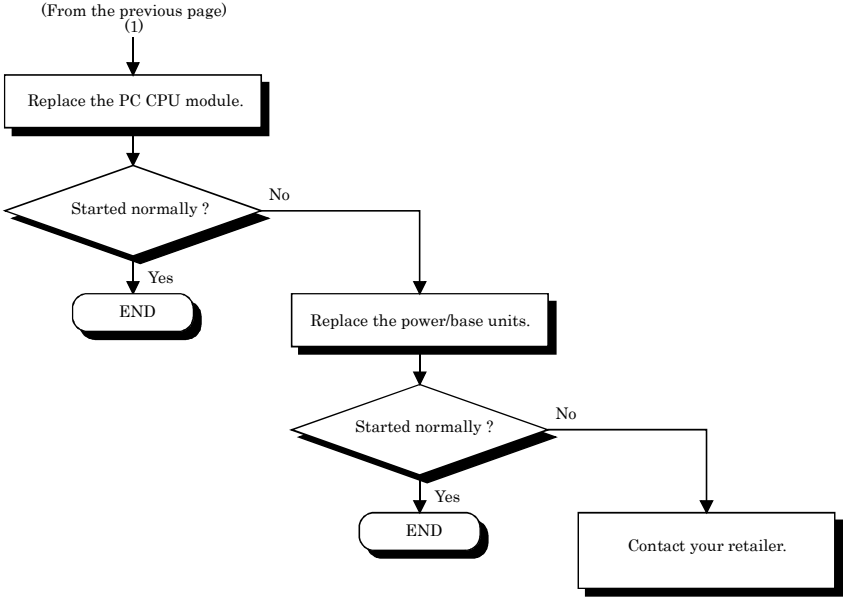
The following diagram shows the flow which should be performed when POWER LED goes out at power-on or during operation of the PC CPU system.



8.2.2 Flow when PC CPU module does not work properly

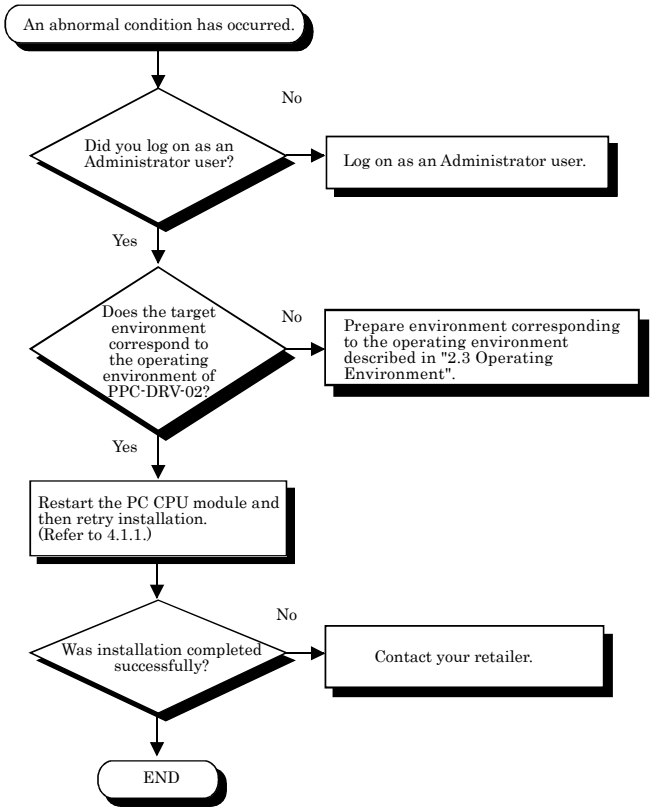
The following diagram shows the Flow When PC CPU Module Does Not Work Properly.




(From the previous page)
(1)
Replace the PC CPU module.
Started normally ?
No
Yes
END
Replace the power/base units.
Started normally ?
No
Yes
END
Contact your retailer.

8.2.3 Flow when PPC-DRV-02 cannot be installed

The following diagram shows the flow which should be performed when PPC-DRV-02 cannot be installed.

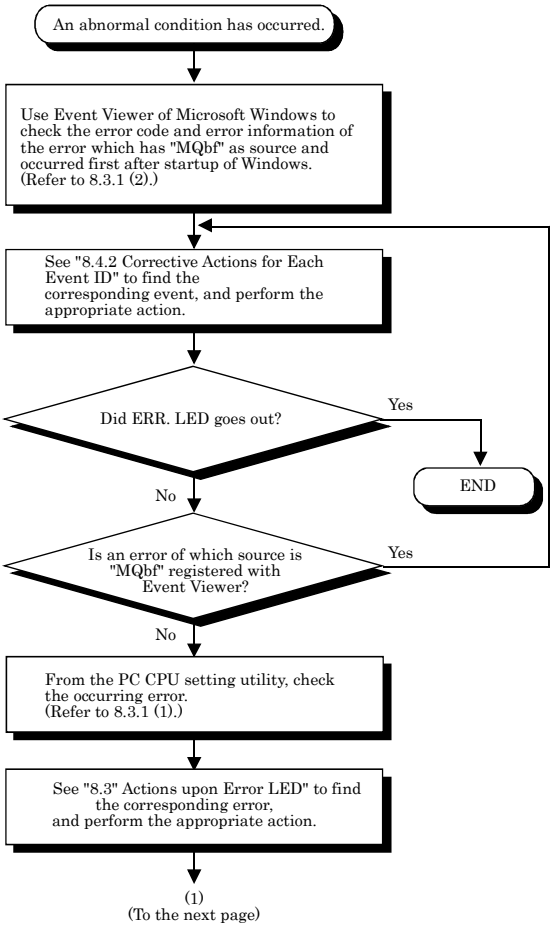


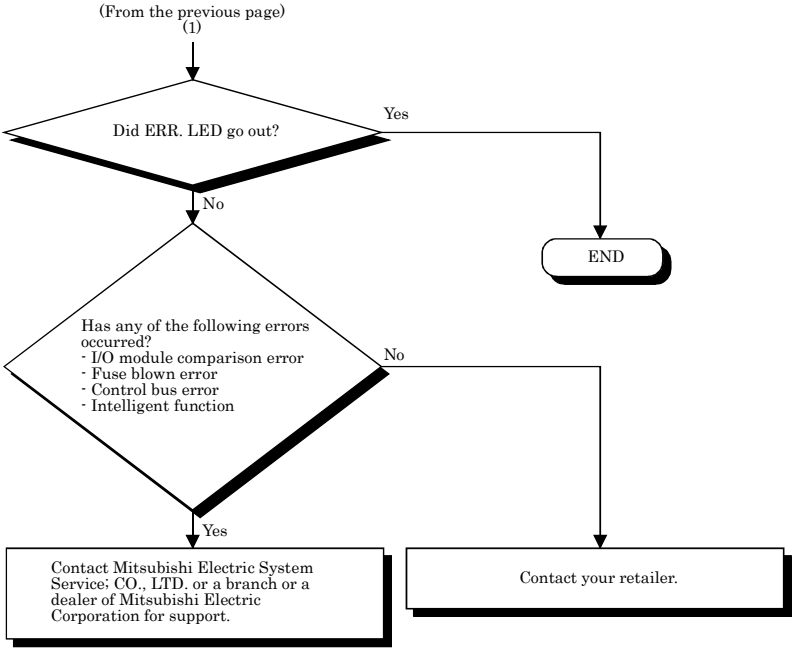
8.2.4 Flow when ERR.LED lights/blinks

This section describes the flow which should be performed when ERR LED lights up or blinks at power-on, starting up of operation or during operation of the PC CPU system.

(1) Error in the case of the multiple CPU system configuration
On the PC Diagnostic screen of GX Developer which is connected to the sequencer CPU or is running on the PC CPU module, check the module No. of the CPU in which STOP or CONTINUATION error occurred first and information on the error (error code, current error, and date and time).

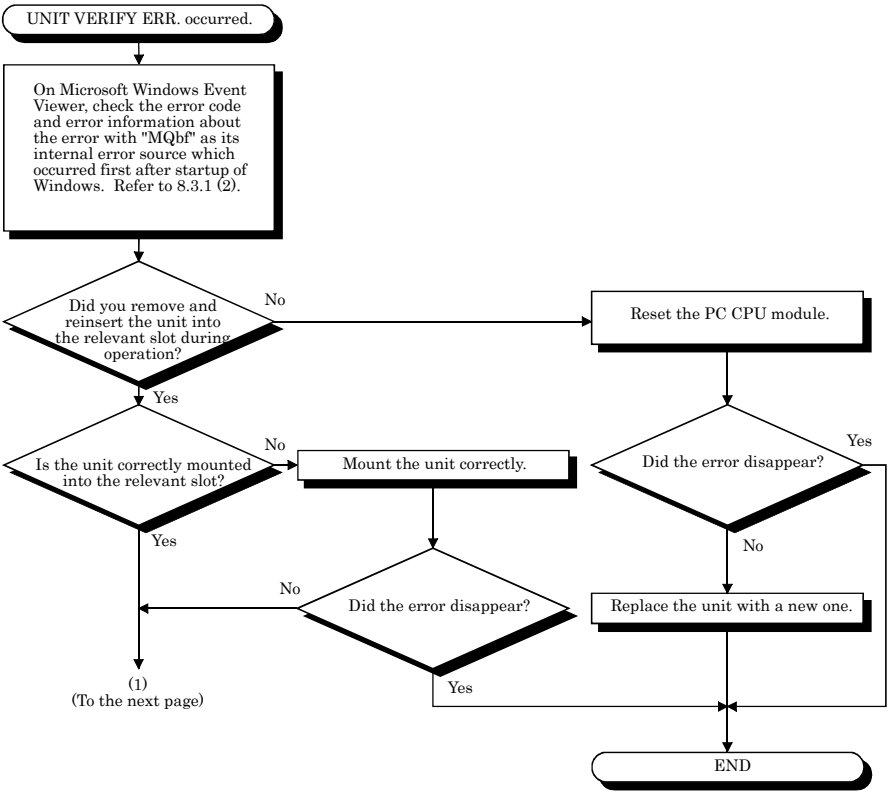
(2) Error in the PC CPU module (this module) :
Perform the flow shown below.

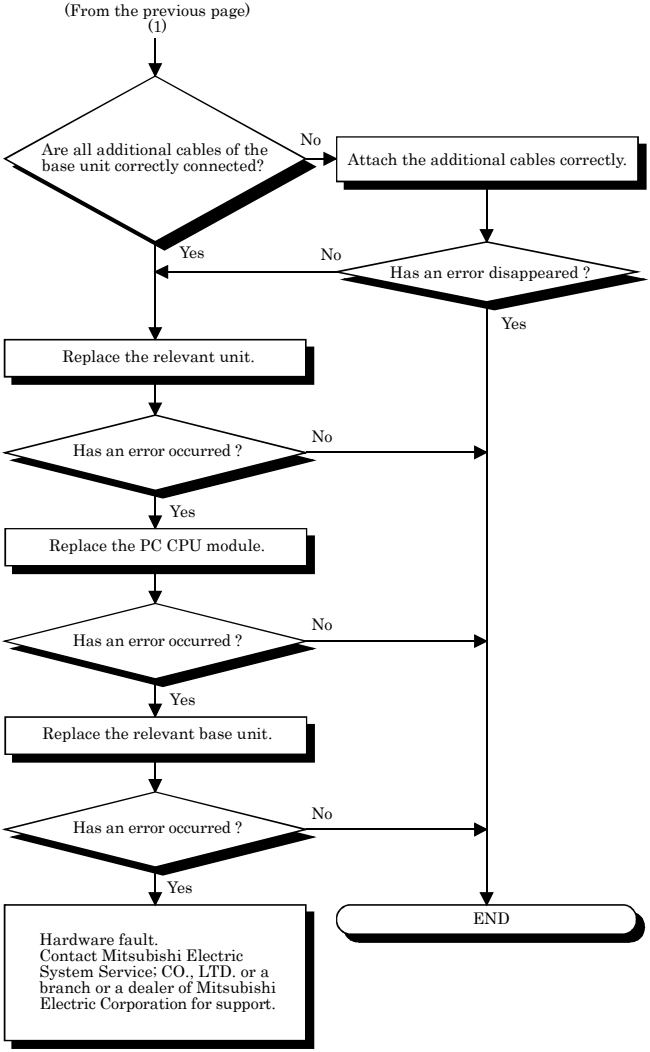



(From the previous page)
(1)
Did ERR. LED go out?
Yes
No
END
Has any of the following errors occurred?
- I/O module comparison error
- Fuse blown error
- Control bus error
- Intelligent function
No
Yes
Contact Mitsubishi Electric System Service; CO., LTD. or a branch or a dealer of Mitsubishi Electric Corporation for support.
Contact your retailer.

8.2.5 Flow for UNIT VERIFY ERR.

The following diagram shows the flow which should be performed when an I/O module verification error (Error code 2000 : UNIT VERIFY ERR.) occurred at power-on or during operation of the PC CPU system.

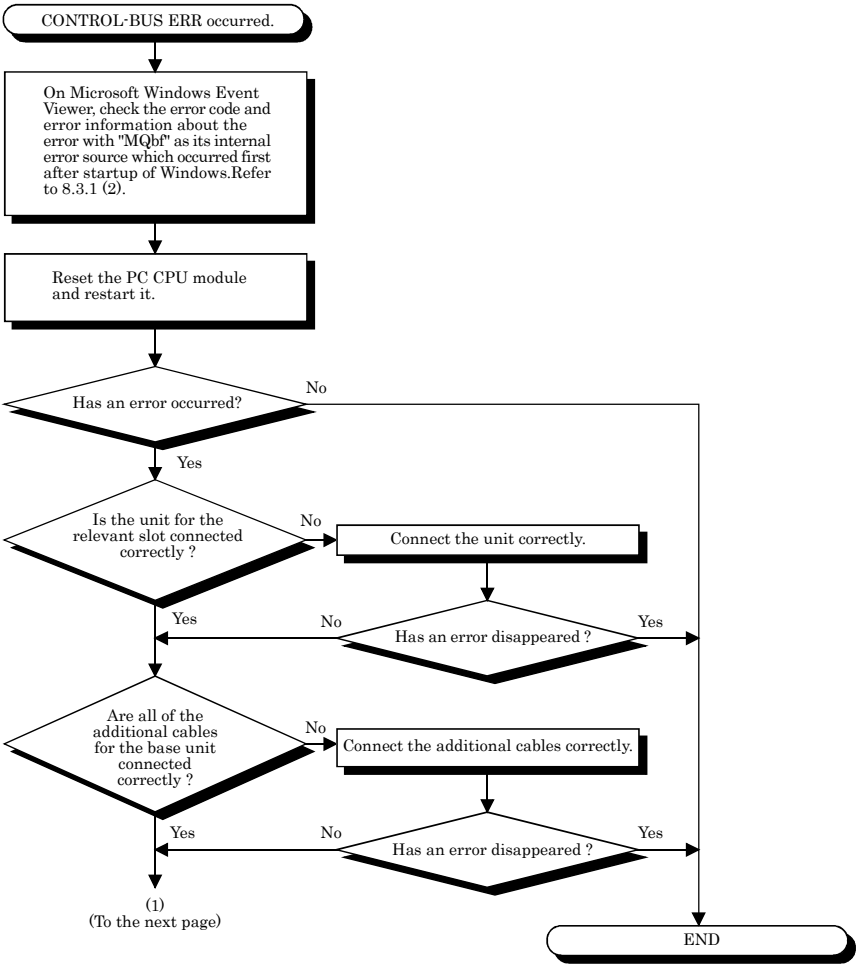


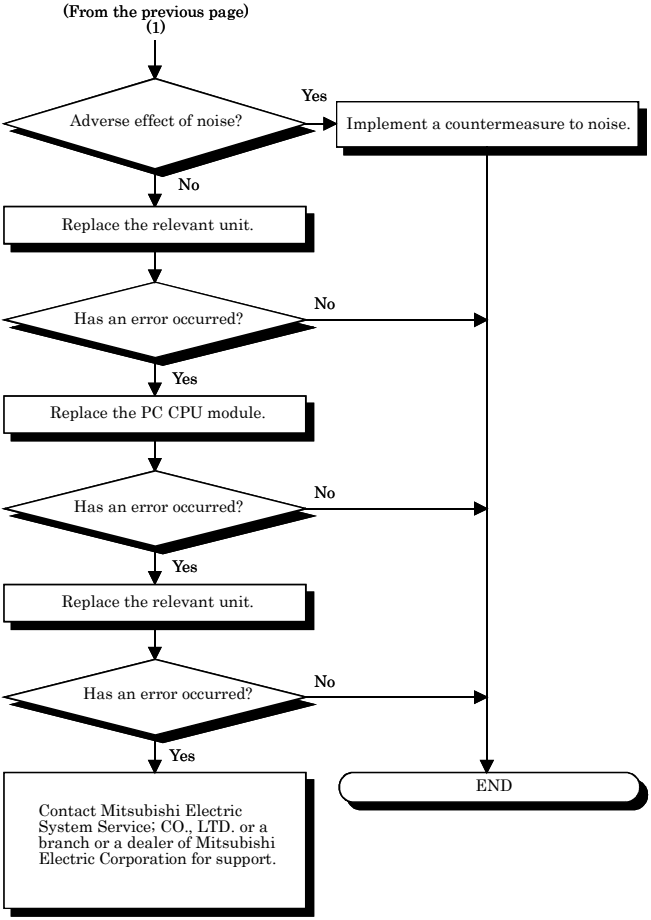

(From the previous page)
(1)
Are all additional cables of the base unit correctly connected?
No
Attach the additional cables correctly.
Yes
No
Has an error disappeared ?
Yes
Replace the relevant unit.
Has an error occurred ?
No
Yes
Replace the PC CPU module.
Has an error occurred ?
No
Yes
Replace the relevant base unit.
Has an error occurred ?
No
Yes
Hardware fault.
Contact Mitsubishi Electric System Service; CO., LTD. or a branch or a dealer of Mitsubishi Electric Corporation for support.
END

8.2.6 Flow for CONTROL-BUS.ERR.

The following diagram shows the flow which should be performed when a control bus error (Error codes 1412 - 1416 : CONTROL-BUS.ERR) occurs at power-on or during operation of the PC CPU system.

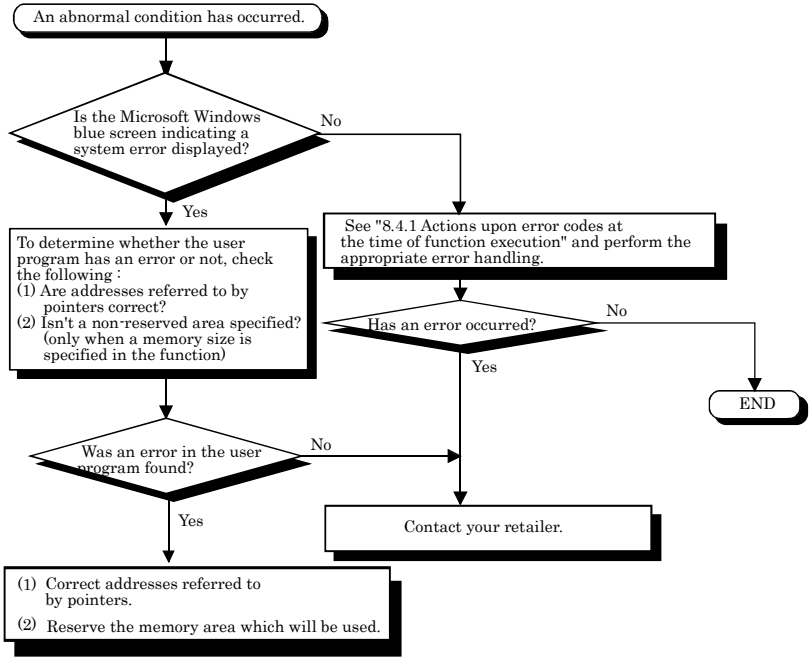
However, this flow is available only in the case where the faulty slot or base module can be determined from the error code.




(From the previous page)
(1)
Adverse effect of noise?
Yes
Implement a countermeasure to noise.
No
Replace the relevant unit.
Has an error occurred?
No
Yes
Replace the PC CPU module.
Has an error occurred?
No
Yes
Replace the relevant unit.
Has an error occurred?
No
Yes
Contact Mitsubishi Electric System Service; CO., LTD. or a branch or a dealer of Mitsubishi Electric Corporation for support.
END

8.2.7 Flow for errors on function execution

The following diagram shows the flow which should be performed when an error occurred on the PC CPU system during execution of a function.



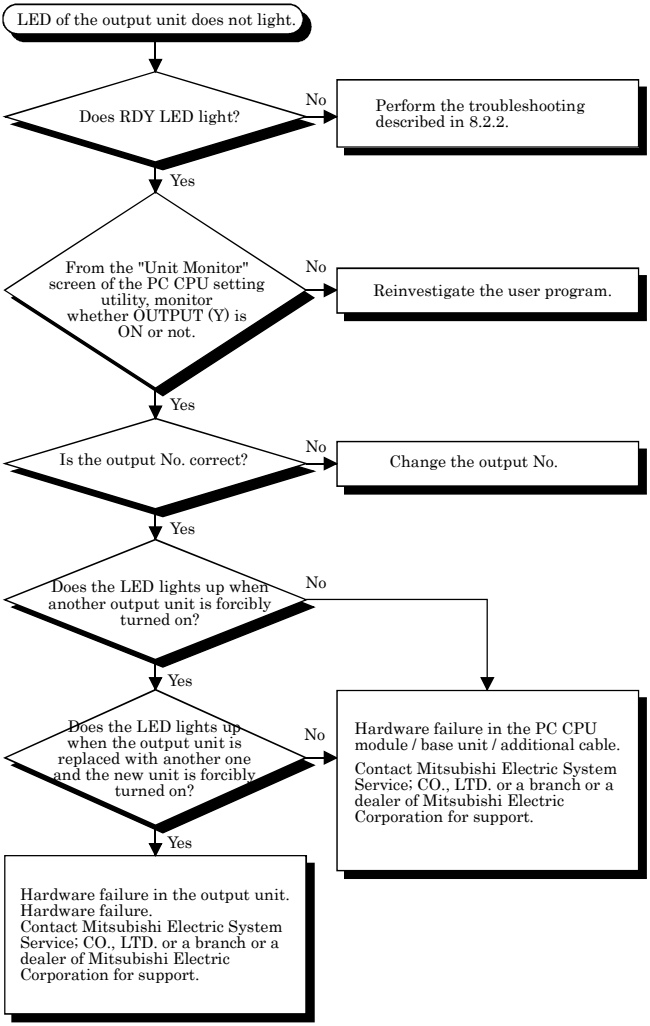
8.2.8 Flow when LED of the output module does not light

The following diagram shows the flow which should be performed when LED of the output module does not light during operation of the PC CPU system.

Point

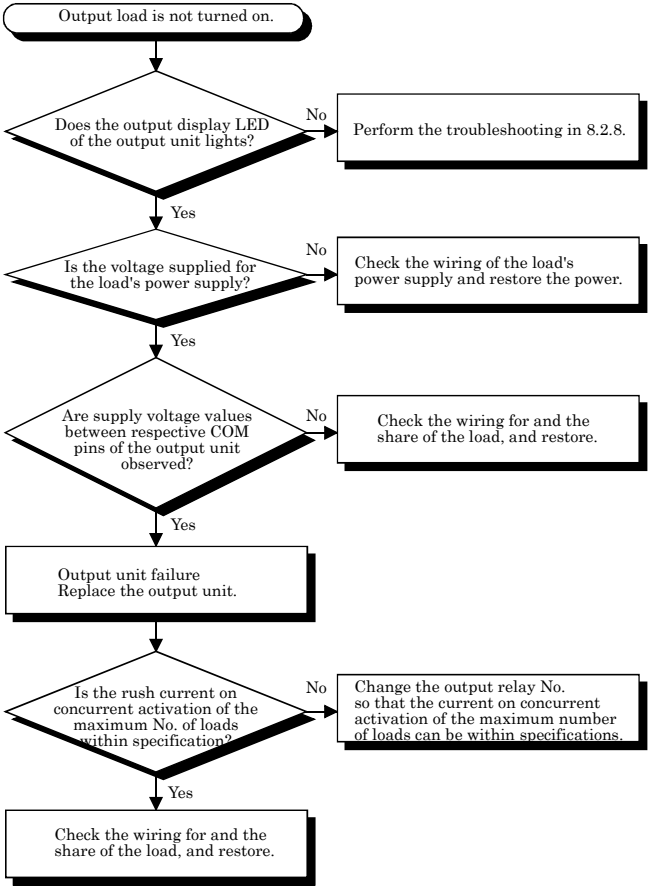
Before starting investigation according to the following flow, ensure that B.RUN LED of the PC CPU module lights.

If it doesn't, put the PC CPU module into the RUN state to turn B.RUN LED on.



8.2.9 Flow when the output load of the output module does not turn on

The following diagram shows the flow which should be performed when the output load of the output module is not turned on during operation of the PC CPU system.



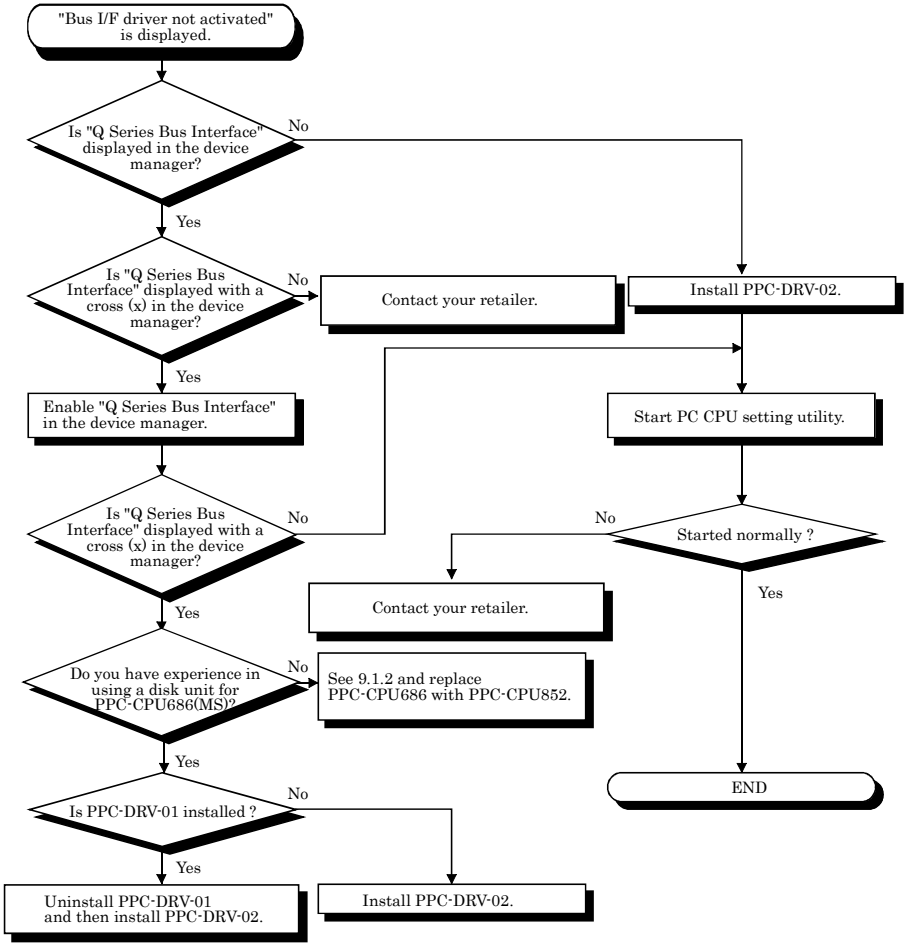
8.2.10 Troubleshooting when B.RUN LED continues to blink in the multiple CPU system configuration

If B.RUN LED continues to blink in the multiple CPU system configuration, clear reset of the CPU module No.1.

For information on how to clear reset of a CPU module, refer to "QCPU User's Manual : Hardware Design and Maintenance".

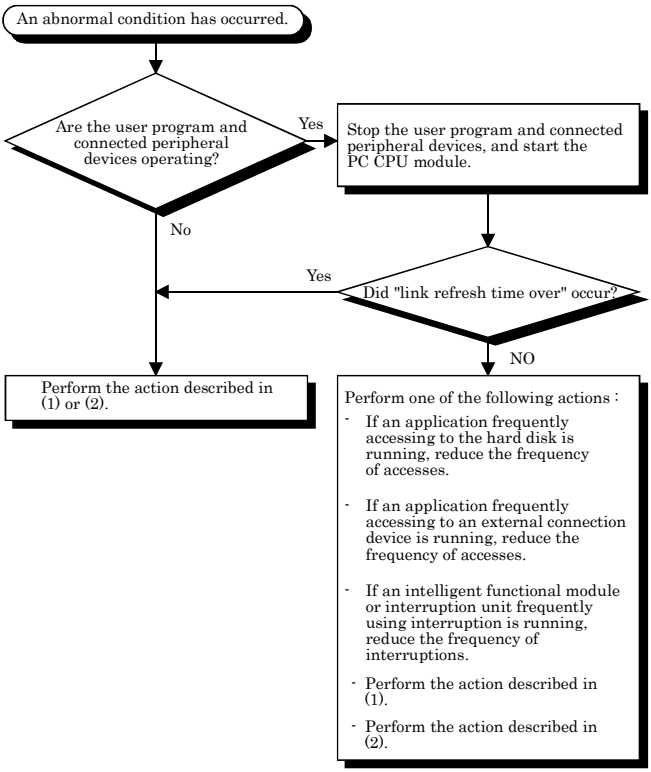
8.2.11 Flow when "Bus I/F driver not activated" is displayed

The following diagram shows the flow which should be performed when the "Bus I/F driver not activated" message is displayed at startup of the PC module setting utility.



8.2.12 Flow for "link refresh time over"

The following diagram shows the flow which should be performed when "link refresh time over" occurred during operation of the PC CPU system.



(1) Increasing a link device refresh cycle value
Increase the setting value of the link device refresh cycle to be larger than the actual measurement value of the maximum link device refresh time.
The actual measurement value of the maximum link device refresh time can be confirmed on the "Module Information" screen of the MELSECNET/H utility (see 5.4.2) or by using the QBF_ReadStatusEx function (refer to the help information on bus interface functions).
For information about setting the link device refresh cycle, refer to "5.4.6 Operating on Routing Parameter Setting Window".

(2) Reducing a link device refresh cycle value

Reduce the logical value of the total link device refresh time to be smaller than the setting value of the link device refresh cycle by decreasing the No. of points for refresh.

For more details on the setting value of the link device refresh cycle, refer to “5.4.6 Operating on Routing Parameter Setting Window”.

The logical value of the total link device refresh time can be calculated by the following formula :

$$\beta_T, \beta_R = KM1 + KM2 \times \left\{ \frac{LB+LX+LY+(LW \times 16)}{16} \right\} [ms]$$

βT : Total link device refresh time (Sending side)

βR : Total link device refresh time (Receiving side)

LB : The total No. of link relay (LB) which should be refreshed by the station.*1

LW : Total No. of link registers (LW) refreshed by the station *1

LX : Total No. of link input (LX) refreshed by the station *1

LY : Total No. of link output (LY) refreshed by the station *1

KM1, KM2 : See the constants shown below.

Where to mount MELSECNET/H unit	KM1	KM2 ($\times 10^{-3}$)
Main base unit	1.33	0.95
Additional base unit	1.33	1.08

*1 : The total No. of points of areas in which link refresh is actually performed.
In other words, the total No. of points of mounted MELSECNET/H units managed by the PC CPU module (including studded unused areas).

8.3 Actions upon Error LED

When a STOP or Continuation error occurs and an alert is issued, the items corresponding to the error and alert are changed from ☐ (white) to ■ (red) in "Error Information" and "Alert information," and the relevant error code is displayed in the "Module Information" screen of the PC module setting utility. *1

*1 : For errors other than STOP and CONTINUATION errors, no information is displayed in "Error Code," "Error Information," and "Alert Information" and therefore, you must check details by Event Viewer.

The action which should be taken when each error item is changed from ☐ (white) to ■ (red) is as follows.

8.3.1 How to confirm error information

How to confirm error information when ERR.LED lights or blinks is described below.

(1) PC module setting utility

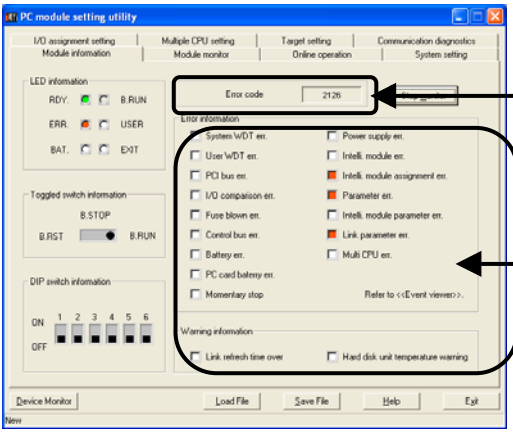
1). Click [Start] - [Program] - [PC CPU module] - [PC module setting utility]. The PC module setting utility starts.

2). Click the "Module Information" tab.

3). Click the [Start monitor] button.

4). An error code is displayed on the screen (see the following screen diagram).

For details of error codes and corresponding actions, see "8.3.4 Detailed error description and actions"



When the error item corresponding to the occurred error is changed from ☐ (white) to ■ (red), an error code is displayed.
During monitoring, it is always refreshed to the latest error code.
For details of error codes, see 8.3.4.

According to the current error and/or alert, the corresponding error item is changed from ☐ (white) to ■ (red).
For the mapping between respective error items and errors, see 8.3.3.

Point
(1) To switch to another tab during monitoring, stop the monitoring. Then, restart monitoring when displaying the "Module Information" tab again. (2) It cannot be monitored while the bus interface driver is reset. Start monitoring after the reset is completed.

(2) Event viewer

When ERR. LED lights up or blinks, error information is registered with Event Viewer.
Refer to “8.3.4 Detailed error description and actions” for details and actions against the error.

1). Starting up event viewer

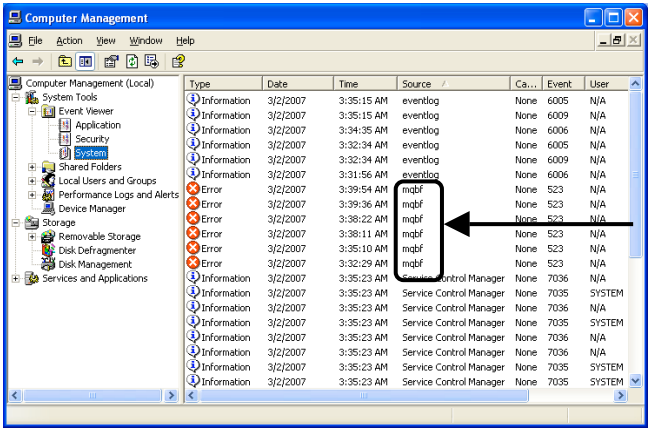
Start up event viewer by the following procedures :

- On Windows XP
  Select [Start] - [Control Panel] - [Administrative Tools] – [Event Viewer] to display system log.
- On Windows 2000 Professional
  Select [Start] – [Settings] – [Control Panel] - [Administrative Tools] – [Event Viewer] to display system log.

2). Selecting event

An error registered in event viewer is displayed as “mqbf” in “Source” on event viewer.
Select an event with “mqbf” indication to display details of the event.

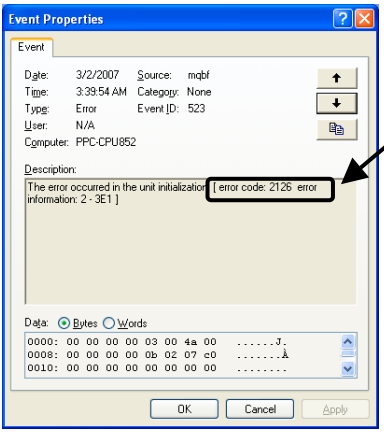
Select an event for which "MQbf" is displayed first since the last startup of Windows to view details of the event.



Errors in PC CPU module are indicated as "mqbf" at "Source".

3). Verifying Error code

An error code is displayed at the potion shown below.



Error code and error information are displayed here.
For more details on this, refer to ”8.3.4 Detailed error description and actions”.

8.3.2 Detection timings and operation

O : Performed - : Not performed

No	Item	Description	Detection timing	Detection operation			
				Halt output *1	ERR LED Illuminates, brinking *2	Display error in PC module setting utility / warning *3	Log in event viewer *4
1	System WDT error detected	Detected a system WDT error	Continuous	O	O	O *12	O
2	User WDT error detected	Detected a user WDT error	Continuous	O	O	O *12	O
3	PCI bus error detected	Detected the occurrence of PCI bus parity error, PCI bus target abort error	Continuous	O	O	O *11, *12	O
4	Battery error detected	Detected battery error on PC CPU module	Periodic monitoring	-	O*5	O *11, *13	-
5	PC card battery error detected	Detected battery error on PC card	Periodic monitoring	-	O*5	O *11, *13	-
6	Detection of immediate power outage	An immediate power outage was detected.	Continuous	-	-	O *12	O
7	I/O module comparison error detected *7, *8	Diagnosis of I/O unit mounting status	Periodic monitoring	O	O	O *12	O
8	Fuse blown error detected *7, *8	Output module fuse status check	Periodic monitoring	O	O	O *12	O
9	Control bus error detected	Base module bus status check	Power On, resetting, periodic monitoring, unit access	O	O	O *12	O

O : Performed - : Not performed

No	Item	Description	Detection timing	Detection operation			
10	Intelligent functional module error detected *9	DDetected abnormality in intelligent function unit, Detected abnormality in intelligent function unit based on card information and X signal An failure in the intelligent functional module was detected through handshake (keep alive check).	Power On, resetting, periodic monitoring, unit access At occurrence of interruption	O	O	O *12	O
11	Intelligent functional module assignment error detected	I/O allocation status check for intelligent functional module	Power ON, reset	O	O	O *12	O
12	Parameter error detected	Parameter check for system settings, Multiple CPU settings, etc.	Power ON, reset	O	O	O *12	O
13	Intelligent unit parameter error detected	Parameter check for intelligent functional module	Power ON, reset	O	O	O *12	O
14	Link parameter error detected	Parameter check for link module (CC- Link, MELSECNET/H)	Power ON, reset	O	O	O *12	O
15	Multiple CPU error *10	Detected CPU error on multiple CPU system or multiple CPU consistency error	Periodic monitoring, power ON, reset	O	O	O *12	O
16	Power error *6	A fault in the power supply module or the PC CPU module was detected.	Periodic monitoring, power ON, reset	O	O	O *12	O
17	link device refresh time over	The link device refresh time with the MELSECNET/H unit exceeded the setting value.	Periodic monitoring, power ON, reset	-	-	O *11, *12	-
18	Hard disk unit temperature warning detected	Detected abnormal hard disk temperature	Periodic monitoring	-	O	O *11, *12	O

*1 : In the "Error time output mode" of the "I/O Module & Intelligent Functional Module Detailed Setting" screen (accessible from the "I/O Assignment Setting" screen of the PC module setting utility), you can select whether to clear or keep the output state of each module in the case where a STOP error occurred on the PC CPU module.

*2 : ERR.LED lights up for STOP errors and blinks for CONTINUATION errors.

*3 : When more than one STOP or CONTINUATION errors and alerts are detected, the latest error code is displayed in the "Error Code" area, the items corresponding to the occurred errors and alerts are changed from  (white) to  (red) in the "Error Information" area and the "Alert information" area of the "Module Information" screen of the PC module setting utility.
For only error items logged by Event Viewer, you can see detailed information in the viewer.

*4 : Only errors that do not already exist are registered with Event Viewer.

*5 : BAT. LED on the front panel of the PC CPU module lights up (not ERR.LED).

*6 : The No. of times of detection of immediate power outages can be confirmed by the QBF_ReadStatusEx function. "Detection of immediate power outage"(including update of the No. of detection) is not performed while the PC CPU module is detecting "power supply errors."

*7 : This detection can be disabled by specifying it in "Error check" of the "System Setting" screen of the PC module setting utility.

*8 : The operating state of CPU at detection of an error can be changed to "Continue" by specifying it in "Operating mode when there is an error" of the "System Setting" screen of the PC module setting utility.

*9 : The operating state of CPU at detection of an error can be changed to "Continue" by specifying it in "H/W error time CPU operating mode" of the "I/O Module & Intelligent Functional Module Detailed Setting" screen which is accessible from the "I/O Assignment Setting" screen of the PC module setting utility.

*10 : Whether to stop the multiple CPU system or not can be specified in "Operating mode" of the "Multiple CPU Setting" screen of the PC module setting utility.

*11 : No error code will be displayed in "Error code" of the "Module Information" screen.

*12 : Once a STOP or CONTINUATION error or alert occurred, the corresponding item is kept in red  in "Error information" or "Alert information" of the "Module Information" screen of the PC module setting utility.

*13 : According to the state of each STOP or CONTINUATION error, the corresponding item is changed to  (red) or  (white) in "Error information" of the "Module Information" screen of the PC module setting utility.

8.3.3 Actions determined from error/alert information and error codes

This section describes errors and alerts which are indicated by changing the corresponding items from ☐ (white) to ■ (red).

For details of self-diagnostic items, see "8.3.2 Detection timings and operation".

For detailed error information and actions, see "8.3.4 Detailed error description and actions" after confirmation of the error codes shown in the following table.
For detailed information and actions on errors and alerts for which error codes are not displayed, see the following table.

Error item	Self-diagnostic item	Description	Error code
System WDT error	Detection of system WDT error	A system watchdog timer error was detected.	5000
User WDT error	Detection of user WDT error	A user watchdog timer error was detected.	5001
I/O module comparison error	Detection of I/O module comparison error	An error occurred during diagnostic of the mount state of the I/O module.	2000
Fuse blown error	Detection of fuse blown error	An error occurred during diagnostic of the state of the fuse of the I/O module.	1300
Control bus error	Detection of control bus error	An error occurred during diagnostic of the state of buses on the base module.	1412, 1413, 1414, 1415, 1416
Immediate power outage	Detection of immediate power outage	An immediate power outage was detected.	1500
Power error	Detection of power error	A failure in the power supply module or the PC CPU module was detected.	1009, 1510, 1520
Intelligent functional module error	Detection of intelligent functional module error	A failure in the intelligent functional module was detected.	1310, 1401, 1403

Error item	Self-diagnostic item	Description	Error code
Intelligent functional module assignment error	Detection of intelligent functional module assignment error	An error occurred during diagnostic of the I/O assignment state of the intelligent functional module.	2100, 2103, 2106, 2107, 2120, 2122, 2124, 2125, 2126, 2150
Parameter error	Detections of parameter error	An error occurred during diagnostic of parameters such as system setting and multiple CPU setting.	2200, 3000, 3001, 3010, 3012, 3014
Intelligent unit parameter error	Detections of intelligent unit parameter error	Error occurred in parameter checking between intelligent functional module.	3300, 3301, 3303
Link parameter error	Detections of link parameter error	An error occurred during diagnostic of parameters for network units (CC-Link unit, MELSECNET/H unit).	3100, 3101, 3102, 3103, 3104, 3105, 3107
Multiple CPU error	Detections of Multiple CPU error	For the multiple CPU system configuration, an error in a CPU module other than own or in the multiple CPU system was detected.	7000, 7002, 7010, 7020
PCI bus error	Detections of PCI bus parity error, PCI bus target abort error	Error descripsion : A PCI bus error occurred on the PC CPU module. Method : The PC CPU module must be replaced. Contact CONTEC Information Center to receive advice on the symptom.	-

Error item	Self-diagnostic item	Description	Error code
Battery error	Detection of PC CPU module battery error	Error description : The battery voltage of the PC CPU module body dropped to below the default. Method : The battery must be replaced. Contact your retailer.	-
PC card battery error	Detections of PC card battery error	Error description : The battery voltage of the PC card mounted into the PCMCIA slot dropped to below the default. Method : Replace the battery of the PC card mounted into the PCMCIA slot with a new one.	-
Link refresh time over	Detections of link refresh time over	Error description : The link device refresh time with the MELSECNET/H unit exceeded the setting value (link device refresh cycle). Method : See "8.2.12 Flow for "link refresh time over" to take action	-
Hard disk unit temperature error	Detections of hard disk unit temperature error	Error description : The hard disk may not function well because an abnormal ambient temperature was detected. Method : Move the PC CPU module to a place which has appropriate temperatures. If the detected abnormal temperature is higher than or equal to 255°C, it may be a failure in the hard disk module and you need to contact CONTEC Information Center to receive advice on the symptom.	-

8.3.4 Detailed error description and actions

The following summarizes Error descriptions identified by an error code, actions, and error information. If an error code which is not included in the following error code list will be detected, contact Mitsubishi Electric System Service CO., LTD. or a branch or dealer of Mitsubishi Electric Corporation to receive advice on the symptom.

Error code	Error information	Error description	Action
1009	-	A failure in the power supply module, the PC CPU module, the base module, an additional base module, or an additional cable was detected.	Reset and rerun the PC CPU module. If the same error appears again, it is a failure in the power supply module, the PC CPU module, the base module, an additional base module or an additional cable. Replace the faulty module with a new one. Or, contact Mitsubishi Electric System Service CO., LTD. or a branch or dealer of Mitsubishi Electric Corporation to receive advice on the symptom.
1300	Module No. *1	Fuse is broken in an output module.	Check ERR.LEDs of the output module and replace the module of which ERR.LED lights. - Check the output module's No. (module No.) in Event Viewer and replace the corresponding fuse. - When GOT is bus-connected to the base module or an additional base module, check the connection state of the additional cable and the state of the ground wire of GOT.
1310	-	Into a slot specified as empty by I/O assignment, an interruption module for A is mounted.	Compare I/O assignment with modules which are actually mounted.
		An interrupt occurred when no interrupt module is installed.	Because at least one of the mounted modules has a hardware failure, check these modules and replace the faulty module(s). Contact your retailer or Mitsubishi Electric System Service; CO., LTD. or a branch or a dealer of Mitsubishi Electric Corporation for support.

*1 : For example, error information (module No.) will be displayed in "Description" of the Event tab of Event Viewer in the following format :
"Error information : XX-YYY"
XX(decimal) : Slot No. (0 - 63), CPU machine (1 - 4)
YYY (hexadecimal) : Start I/O No.÷16(000 - 0FF, 3E0 - 3E3)

Error code	Error information	Error description	Action
1401	Unit No. *1	- No response is returned from intelligent functional module upon updating of initials. - Buffer memory size in intelligent functional module is faulty.	Hardware of accessed intelligent functional module is faulty. Contact Mitsubishi Electric System Service; CO., LTD. or a branch or a dealer of Mitsubishi Electric Corporation for support.
1403	Unit No. *1	Error was detected in intelligent functional module (handshake error).	
1412	Unit No. *1	Execution of FROM/TO instruction is impossible due to control bus failure to intelligent functional module.	Reset and rerun the PC CPU module. If the same error appears again, it is a failure in the intelligent functional module, the PC CPU module or the base module, contact Mitsubishi Electric System Service CO., LTD. or a branch or dealer of Mitsubishi Electric Corporation to receive advice on the symptom.
1413	-	In the multiple CPU system a module incompatible with the system is mounted.	- Remove the multiple CPU system incompatible module from the basic base module. Otherwise, replace the incompatible CPU module with a compatible one. Or, move the incompatible CPU module to the CPU slot or one of Slots 0 - 2. - This is a failure in the intelligent functional module, the PC CPU module or the base module, and contact Mitsubishi Electric System Service CO., LTD. or a branch or dealer of Mitsubishi Electric Corporation to receive advice on the symptom.
		A failure on the system bus was detected. - System bus self-diagnostic error - CPU module self-diagnostic error	Reset and rerun the PC CPU module. If the same error appears again, it is a failure in the intelligent functional module, the PC CPU module or the base module, contact Mitsubishi Electric System Service CO., LTD. or a branch or dealer of Mitsubishi Electric Corporation to receive advice on the symptom.
		For the multiple CPU configuration, reset of Module No.1 was tried while B.RUN LED was blinking. Or, Windows was restarted only on the PC CPU.	Retry to reset Module No.1.

*1 : For example, error information (module No.) will be displayed in "Description" of the Event tab of Event Viewer in the following format :

"Error information : XX-YYY", XX (decimal) : Slot No.(0 - 63), CPU machine (1 - 4),

YYY(hexadecimal) : Start I/O No.÷16 (000 - 0FF, 3E0 - 3E3)

Error code	Error information	Error description	Action
1414	Unit No. *1	Error was detected on installed modules. In a multiple CPU system, a CPU module incompatible with the multiple CPU system is mounted.	- Remove the CPU module incompatible with the multiple CPU system from the main base unit. Or, replace the CPU module incompatible with the multiple CPU system with a CPU module compatible with the multiple CPU system. - Reset the PC CPU module and RUN it again. If the same error is displayed again, the intelligent function unit, CPU unit or base unit is faulty. Please consult your local Mitsubishi service center or representative, explaining the details of the problem.
1415	Base No.	Error was detected on main base unit or expansion base unit.	Failure of intelligent functional module, CPU module or base unit. Contact Mitsubishi Electric System Service; CO., LTD. or a branch or a dealer of Mitsubishi Electric Corporation for support.
1416	Unit No. *1	Bus failure was detected upon turning the power on or upon resetting.	
1500	-	- An immediate power outage of the electric supply source was detected. (The No. of times of detection of immediate power outages can be confirmed by the QBF_ReadStatusEx function.) - The electric supply source was turned off.	Check the electric supply source.
1510	Base No./power No.	On the dual base modules, the supply voltage of one side dropped.	Check the electric power supply to the dual power modules mounted on the dual base modules.
1520	Base No./power No.	In the dual-power system, a failure was detected in one of the dual power modules.	This is a hardware failure in the dual power modules, and contact Mitsubishi Electric System Service CO., LTD. or a branch or dealer of Mitsubishi Electric Corporation to receive advice on the symptom.
1600	-	- The battery voltage of the CPU module body dropped to below the default. - The lead connector of the buttery of the CPU module body is not attached.	- Replace the battery. - Attach the lead connector.

*1 : For example, error information (module No.) will be displayed in "Description" of the Event tab of Event Viewer in the following format :

"Error information : XX-YYY"

XX (decimal) : Slot No.(0 - 63), CPU machine (1 - 4)

YYY (hexadecimal) : Start I/O No.÷16 (000 - 0FF, 3E0 - 3E3)

Error code	Error information	Error description	Action
1601	-	Battery voltage on memory card went down below specified value.	Replace batteries of card mounted on PC card slot.
2000	Unit No. *1	In a multiple CPU system, a CPU module incompatible with the multiple CPU system is mounted.	Replace the CPU module incompatible with the multiple CPU system with a CPU module compatible with the multiple CPU system
		I/O module information is different than that upon turning on the power. (Installation status of I/O module was changed during operation, or a module is about to drop off.	- Check error information on Event Viewer, and check/replace the unit corresponding to the identified numeric value (unit No.). - When a GOT is bus-connected to the main base unit or extension base unit, check the connection status of the extension cable and the grounding status of the GOT.
2100	Unit No. *1	A slot with QI60 was specified for a module other than intelligent functional module or interrupt unit on parameter I/O assignment.	Specify I/O assignment according to the installation settings.
		- On I/O assignment parameters, I/O module was assigned to intelligent functional module, or vice versa. - On I/O assignment parameters, CPU module was assigned to other module or specified to idle, or vice versa. - The No. of points of the intelligent functional module specified in I/O assignment setting of parameters is smaller than the actual No.. - For a module of which switch setting is not specified in I/O assignment setting of parameters, switch setting was specified.	- Specify I/O assignment according to the installation settings of intelligent functional module or CPU module. - Delete the switch setting in I/O assignment setting of parameters.

*1 : For example, error information (module No.) will be displayed in "Description" of the Event tab of Event Viewer in the following format :
"Error information : XX-YYY"
XX (decimal) : Slot No.(0 - 63), CPU machine (1 - 4)
YYY (hexadecimal) : Start I/O No.÷16 (000 - 0FF, 3E0 - 3E3)

Error code	Error information	Error description	Action
2103	Unit No. *1	- Two ore more QI60s are mounted on single CPU system. - Two or more QI61/A1SI61 (only PLC CPU) are mounted on a same control CPU of multiple PLC system. - Two or more A1SI61s are mounted in the multiple CPU system.	- In the single CPU system, mount only one QI60. - In the multi CPU system, mount only one QI61 for CPUs controlled together. - In the multiple CPU system, mount only one A1SI61. When the interruption module is used for each QCPU in the multiple CPU system, use QI60 (Use one A1SI61 plus the maximum three QI60s, or use only QI60s).
2106	Unit No. *1	- Five or more MELSECNET/H units are mounted on multiple PLC system in total. - Five or more Q series Ethernet modules are mounted on multiple CPU system in total.	- Mount a maximum of 4 units on a total multiple CPU system. - Reduce the No. of Q Series Ethernet modules in the entire multiple CPU system to four or less.
		- Five or more MELSECNET/H units are mounted. - Five or more Q series Ethernet modules are mounted. - In the MELSECNET/H network system, an identical network No. and/or Sta. No. exist.	- Limit the No. of MELSECNET/H unit to 4 or less. - Limit the No. of Q series Ethernet modules to 4 or less. - Check network No. and Sta. No..
2107	Unit No. *1	Start X/Y specified by I/O assignment parameter overlaps with start X/Y of other modules.	Re- specify I/O assignment parameter according to installation status of intelligent functional module.
2108	Unit No. *1	- Network unit for A2UCPU (A1SJ71LP21, A1SJ71BR11, A1SJ71LR21, A1SJ71AP21, A1SJ71AR21, A1SJ71AT21B) is mounted. - Network unit for Q2AS (A1SJ71QLP21(S), A1SJ71QBR11, A1SJ71QLR21) is mounted.	Change network module into MELSECNET/H unit.
2120	-	- In the single CPU system, QA□B or QA1S□B is used as the base module. - For the multiple CPU system configuration, the PC CPU module was specified as the control CPU for modules on QA□B or QA1S□B.	- Change the base module to Q□B. - Specify a high-performance QCPU as the control CPU for modules on QA□B or QA1S□B.

*1 : For example, error information (module No.) will be displayed in "Description" of the Event tab of Event Viewer in the following format :
"Error information : XX-YYY"
XX (decimal) : Slot No.(0 - 63), CPU machine (1 - 4)
YYY (hexadecimal) : Start I/O No.÷16 (000 - 0FF, 3E0 - 3E3)

Error code	Error information	Error description	Action
2121	-	PC CPU module is mounted on other slot than CPU slot or slots 0 though 2.	Check installation slot of PC CPU module, and install the module on a correct slot.
2122	-	QA1S[] B is mounted on main base unit.	Change main base unit into Q[]B
2124	-	- A module was mounted on a slot later than 65. - A module was mounted on a slot later than that specified by base allocation. - A module was mounted on later point than I/O point No. 4096. - A module was mounted across the border of I/O point of 4096.	- Remove modules on slot 65 and later. - Remove modules mounted on slots later than the No. specified by base assignment. - Remove modules mounted on point 4096 and later. - Replace a last module with one having points that does not exceed 4096.
2125	Unit No. *1	- In multi CPU configuration, Windows was restarted only on the PC CPU. - An unrecognizable module is mounted. - No response is returned from intelligent functional module.	- Reset CPU No.1. - Mount a usable module. - Failure of intelligent functional module, PLC CPU or base unit. Contact Mitsubishi Electric System Service; CO., LTD. or a branch or a dealer of Mitsubishi Electric Corporation for support.
2126	Unit No. *1	CPU modules on multiple PLC system are configured as the following : - There is an empty slot on the left of the CPU module. - On the left in between high-performance model QCPU modules, another type of CPU module is mounted. - On the right of the PC CPU module, another type of a CPU module is mounted when Module No.1 is the high-performance model QCPU module. - On the right of the PC CPU module, the sequencer CPU is mounted when Module No.1 is the PC CPU module. - On the right of the PC CPU module, the CPU module is mounted when Module No.1 is the basic model QCPU module.	Perform an appropriate action among the following. For the places to mount CPU modules in the multiple CPU system, refer to manuals of respective CPU modules. - Move a CPU module(s) to fill the empty slot (Make empty slots on the right side of CPU modules.) - Replace the non high-performance model QCPU module mounted on the left in between high-performance model QCPU modules with an additional high-performance QCPU module. - Remove the non PC CPU module mounted on the right of the PC CPU module. - Remove the sequencer CPU module mounted on the right of the PC CPU module. - Remove the CPU module mounted on the right of the PC CPU module.

*1 : For example, error information (module No.) will be displayed in "Description" of the Event tab of Event Viewer in the following format :

"Error information : XX-YYY"

XX (decimal) : Slot No.(0 - 63), CPU machine (1 - 4)

YYY (hexadecimal) : Start I/O No.÷16 (000 - 0FF, 3E0 - 3E3)

Error code	Error information	Error description	Action
2150	Unit No. *1	In the multiple CPU system, a module No. other than No.1 is specified for the control CPU of which target is an intelligent functional module incompatible with the multiple CPU system.	- Change the module to an intelligent functional module compatible with the multiple CPU system (functionality module version B or later). - Change the module No. of the control CPU to Module No.1.
2200	-	No parameter file is set.	Set a parameter file.
3000	Parameter No.	On multiple PLC system, an intelligent functional module controlled by other machine is specified by interrupt point of parameter.	- In interruption event setting of parameters, specify the first I/O No. of the intelligent functional module controlled by this PC CPU module. - Delete interrupt pointer settings of parameter.
		Vacant slot points for parameters are not set within the available range of the PC CPU module.	- See error information in Event Viewer. Check and correct parameter items relevant to the No. (Parameter No.). - If the error remains even after correction of parameters, this may be a failure in the PC CPU module. Contact your retailer.
3001	Parameter No.	Parameter data has been destroyed.	- Read detailed information of the error by peripheral device, check parameter corresponding to the value (Parameter No.), and correct the value. - If the error remains even after correction of parameters, this may be a failure in the PC CPU module. Contact your retailer.
3010	Parameter No.	On multiple PLC system, the No. of CPU modules specified by parameter is different from actual No. of mounted modules.	Make the No. of mounted CPUs match (specified No. of modules on multiple PLC system) - (CPU (empty) settings of I/O assignment).
3012	Parameter No.	On multiple PLC system, settings of multiple PLC are different from that of reference machine.	Specify multiple PLC settings and control CPU settings in accordance with reference machine (Unit No.1).

*1 : For example, error information (module No.) will be displayed in "Description" of the Event tab of Event Viewer in the following format :
"Error information : XX-YYY"
XX (decimal) : Slot No. (0 - 63), CPU machine (1 - 4)
YYY (hexadecimal) : Start I/O No.÷16 (000 - 0FF, 3E0 - 3E3)

Error code	Error information	Error description	Action
3014	Parameter No.	For the multiple CPU configuration, a module other than the primary module is specified in the online module replacement parameter (multiple CPU system parameter).	Change the setting of the online module replacement parameter to the primary module (Module No.1).
		For the multiple CPU configuration, online module replacement setting is allowed even though a CPU module which does not support the online module replacement parameter is mounted.	When a CPU module which does not support the online module replacement parameter is mounted, online module replacement setting must be disabled.
3100	Parameter No.	On multiple PLC system, a MELSECNET/H unit controlled by other machine is specified as start I/O No. of network setting parameter for MELSECNET/H.	- Delete network setting parameters of MELSECNET/H for MELSECNET/H unit controlled by other machine. - Change the parameter into start I/O No. of MELSECNET/H unit controlled by own machine.
		Link parameters of MELSECNET/H unit operating as normal station were changed into “control station” Or, link parameters of MELSECNET/H unit operating as control station were changed into “normal station”. (Link parameters are reflected on modules upon resetting.)	Reset CPU.
		- The No. of modules in the MELSECNET/H unit count parameter setting is different from the number of actually mounted modules. - The first I/O No. specified by a network setting parameter for MELSECNET/H is different from the actual No.. - Invalid data exists in parameters.	- Compare network parameters with the actual mount state and if there is a difference, adjust these parameters for the actual state. When you change a network parameter, write it to the CPU module. - Check the setting of the order of addition of additional base modules. - Check the connection states of each additional base module and additional cable. When the GOT is bus-connected to the main base unit and extension base units, check the connection status. - If the error remains even after the checks mentioned above, it is a hardware failure and you must replace the faulty module. Contact Mitsubishi Electric System Service; CO., LTD. or a branch or a dealer of Mitsubishi Electric Corporation for support.

Error code	Error information	Error description	Action
3101	Parameter No.	- PC- PC network parameters are specified when Sta. No. of MELSECNET/H unit is "0". - Remote master parameters are specified when Sta. No. of MELSECNET/H unit is not "0".	Correct MELSECNET/H unit type or Sta. No. in parameters according to a system to be used.
		- Network type specified by parameter is different from actual type. - Network refresh parameter of MELSECNET/H and MELSECNET/10 is out of range.	- Check the connection status of the extension base units and extension cables. When the GOT is bus-connected to the main base unit and extension base units, also check the connection status. - If the error occurs even after performing the above checks, it indicates a hardware fault. Please replace the faulty module. Contact Mitsubishi Electric System Service; Co., LTD. or a branch or a dealer of Mitsubishi Electric Corporation for support.
3102	Parameter No.	- Check of network parameters for the network module resulted in error. - A parameter specific to MELSECNET/H or MELSECNET/10 is not correct. - The network type of the control station is specified as the advanced mode but that of the own Sta. (normal station) is not. - The Sta. No. specified for the own Sta. is larger than the total No. of stations specified by a network parameter on the control station.	- Correct and write network parameters. - If an error occurs even after correction, hardware failure is suspected. Contact Mitsubishi Electric System Service; CO., LTD. or a branch or a dealer of Mitsubishi Electric Corporation for support. - Specify an identical network type for both. - As the Sta. No. for the own Sta., specify a No. smaller than or equal to the total No. of stations.
3103	Parameter No.	Q series Ethernet unit controlled by other machine is specified in start I/O No. of Ethernet networks parameter.	Delete the network parameter of Q series Ethernet unit controlled by other machine.
		- Although the No. of Ethernet units was specified as one or more actual No. of unit is 0. - Start I/O No. of Ethernet setting parameter is different from actual I/O No..	- Correct and write network parameters. - If an error occurs even after correction, hardware failure is suspected. Contact Mitsubishi Electric System Service; CO., LTD. or a branch or a dealer of Mitsubishi Electric Corporation for support.

Error code	Error information	Error description	Action
3104	Parameter No.	- An identical network No. is used for Ethernet, MELSECNET/H, and MELSECNET/10. - Network No., Sta. No., or group No. specified by parameter is out of valid range. - I/O No. is out of valid range of used CPU. - Values of Ethernet- specific parameters are invalid.	- Correct and write network parameters. - If an error occurs even after correction, hardware failure is suspected. Contact Mitsubishi Electric System Service; CO., LTD. or a branch or a dealer of Mitsubishi Electric Corporation for support.
3105	Parameter No.	On multiple PLC system, QJ61BT11 module controlled by other machine is specified as start I/O No. of CC- Link setting parameter	- Delete CC- Link setting parameter of QJ61BT11 controlled by other machine. - Change the parameter into start I/O No. of QJ61BT11 module controlled by own machine.
		- Although the No. of CC- Link utility was specified as one or more, the actual No. of mounted units is 0. - Start I/O No. of common parameter setting is different from actual I/O No.. - Different station types are specified in the module count setting parameter for CC-Link.	- Correct and write network parameters. - If an error occurs even after correction, hardware failure is suspected. Contact Mitsubishi Electric System Service; CO., LTD. or a branch or a dealer of Mitsubishi Electric Corporation for support.
3107	Parameter No.	- CC- Link parameters are faulty. - The specified mode is not available for the version of the mounted CC-Link utility.	Review the setting of the parameter.
3300	Parameter No.	The first I/O No. in the intelligent functional module's parameter specified in GX Configurator is different from the actual one.	Check parameter settings.
3301	Parameter No.	The refresh parameter of the intelligent function module is outside the range, or the refresh range exceeded the file register capacity.	Check parameter settings.
3302	Parameter No.	Parameters of intelligent functional module are faulty.	Check parameter settings.

Error code	Error information	Error description	Action
3303	Parameter No.	On multiple PLC system, parameters of automatic refresh, etc. have been specified for an intelligent functional module controlled by other machine.	- Delete parameters of automatic refresh, etc. specified for an intelligent functional module controlled by other machine - Change the data into parameters of automatic refresh, etc. specified for an intelligent functional module controlled by own machine.
5000	Time (Setting value： ms)	The system watchdog timer managed by the system detected an error. Or, an failure occurred in system software. - The time set for the system watchdog timer is too short. - A task with a high CPU usage rate is running. - A program causing a memory or stack failure was executed.	- Increase the system WDT setting time included in the system settings of the PC module setting utility. - Reduce the CPU usage rate of the relevant task. Or, disable the task. - Reexamine the user program. - If the error remains even after implementation of the above actions, it may be a hardware failure and you need to contact CONTEC Information Center to receive advice on the symptom.
5001	Time (Setting value： ms)	Because WDT reset had not been performed within the user WDT setting time (specified by the QBF_ResetWDT function), the error was detected on USERWDT (watchdog timer), which is managed by the system. Or, a user program failure occurred. - The user WDT setting time is too short. - A task of high CPU utilization rate is running. - A program that will cause an error in the memory, stack, etc. was executed.	- Increase the user WDT setting time specified by the QBF_StartWDT function. - Decrease the CPU utilization rate of a task with a high CPU utilization rate, or do not run that task. - Reexamine the user program. - If the error remains even after the corrective actions are taken, it may be a hardware failure and you need to contact CONTEC Information Center to receive advice on the symptom.
7000	Unit No. *1	- A CPU failure occurred in the CPU in which system halt was selected in the operation mode on multi CPU system. - In a multiple CPU system, a CPU module incompatible with the multiple CPU system is mounted. - When Module No.1 is the basic model QCPU, "CPU (empty)" is specified for the slot on the right of the PC CPU module.	- Check and remove the error in the CPU module which caused the CPU failure. - A CPU module incompatible with the multiple CPU system is removed from basic unit. - Change the setting.
		In the multi CPU system, Module No.1 has a halt error at powerup and other modules cannot be started. (Modules No.2 - No.4).	Check and remove the error in the CPU module which caused the CPU failure.

Error code	Error information	Error description	Action
7002	Unit No. *1	- During initial communication in the multiple CPU system, no response was returned from the destination module. - In a multiple CPU system, a CPU module incompatible with the multiple CPU system is mounted.	- Reset the CPU module and RUN it again. If the same error is displayed again, any of the CPU modules is faulty. Please consult your local Mitsubishi service center or representative, explaining the details of the problem. - Remove the CPU module incompatible with the multiple CPU system from the main base unit. Or replace the CPU module with a CPU module compatible with the multiple CPU system.
7010	Unit No. *1	- On multiple PLC system, a faulty CPU is mounted. - In a multiple CPU system, a CPU module incompatible with the multiple CPU system is mounted. (This error is detected by a CPU module compatible with the multiple CPU system.) - On multiple PLC system, Unit No.2 to 4 was reset with the power turned on. (This error is detected by a module of which reset was cleared.)	- Replace faulty machines. - Replace it with a CPU module compatible with the multiple CPU system. - Do not reset a high-performance model QCPU of Module No.2 to 4. Reset the CPU module of Module No.1 and relaunch the multiple CPU system.
7020	Unit No. *1	CPU failure occurred on CPU of a machine with no “System halt” selected on operation mode of multiple PLC system. (An error was detected on a CPU module which does not actually have any failures.))	Check a CPU error of CPU failure, and remove the error.

*1 : For example, error information (module No.) will be displayed in "Description" of the Event tab of Event Viewer in the following format :
“Error information : XX-YYY”
XX (decimal) : Slot No. (0 - 63), CPU machine (1 - 4)
YYY (hexadecimal) : Start I/O No.÷16 (000 - 0FF, 3E0 - 3E3)

8.4 List of Error Code, Error Message

This section describes error codes and error messages returned at the time of error.

8.4.1 Actions upon error codes at the time of function execution

An error code returned when executing bus interface function or MELSEC communication function is directly returned as a return value.

(1) Error codes common between bus interface functions and MELSEC communication functions

The following table shows description of errors and actions corresponding to error codes which will be returned from both bus interface functions and MELSEC communication functions.

Return value (HEX)	Error description	Actions
0	Normal completion.	-
1 (1H)	Driver not started. The driver has not been started.	Correct the error occurred when starting the driver.
2 (2H)	Timeout error. The timeout occurred while waiting for the response of process.	Check the operation status of the access Sta.(s). Retry.
66 (42H)	Already opened . Selected channel has been already opened.	Open once
67 (43H)	Already closed . Selected channel has been already closed.	Close once
69 (45H)	Processing code error. An unsupported processing code was issued.	Use the supported processing code.
70 (46H)	station specification error. The specified station is incorrect. A process that should have been requested to other station was requested to the own Sta. Or, the Sta. No. corresponds to the own Sta. (0xFF) but the network No. is not 0.	Correct the specification of the Sta. No. in the user program.
71 (47H)	No reception data error (during RECV request). Data has not been received.	Wait until data is received.

Return value (HEX)	Error description	Actions
77 (4DH)	Memory error/insufficient resource memory error. Enough memory could not be secured.	Terminate other application(s) currently running. Check if the system is operating normally. Reboot the system. *1 Increase the minimum working set area of your computer. *1
85 (55H)	Network channel No. error (When a SEND / RECV request is issued.) Channel No. error.	Check the specified channel No. when a SEND / RECV request is issued.
102 (66H)	Data sending error. Data sending has failed.	Retry. Check whether the system is operating properly or not. Relaunch the system. *1
103 (67H)	Data receiving error. Data receiving has failed.	
130 (82H)	Device No. error. The specified device No. is out of range. When specifying the bit device, the device No. is not a multiple of 8.	Check the specified device No..
131 (83H)	Device points error. The specified No. of points is out of device range. When specifying the bit device, the device No. is not a multiple of 8.	Check the size.

*1： For the single CPU configuration, the PC CPU module body must be reset.
For the multiple CPU configuration, the CPU Module No.1 must be reset.

Return value (HEX)	Error description	Actions
4110 (100EH)	DLL unload error.	Exit the relevant program and restart your computer. Reinstall your software package. Contact your retailer.
8204 (200CH)	Request cancellation.	
8205 (200DH)	Drive name error.	
8206 (200EH)	First step error.	
8207 (200FH)	Parameter type error.	
8208 (2010H)	File name error.	
8209 (2011H)	Registration/reset/setting status error.	
8210 (2012H)	Detailed condition division error.	
8211 (2013H)	Step condition error.	
8212 (2014H)	Bit device condition error.	
8213 (2015H)	Parameter setting error.	
8215 (2017H)	Keyword error.	
8216 (2018H)	Read/write flag error.	
8217 (2019H)	Refresh method error.	
8218 (201AH)	Buffer access method error.	
8219 (201BH)	Start mode/stop mode error.	
8220 (201CH)	Written clock data error.	
8221 (201DH)	Online data write error.	

Return value (HEX)	Error description	Actions
8223 (201FH)	Trace time error.	Exit the relevant program and restart your computer. Reinstall your software package. Contact your retailer.
8224 (2020H)	First I/O No. error.	
8225 (2021H)	First address error.	
8226 (2022H)	Pattern error.	
8227 (2023H)	SFC block No. error	
8228 (2024H)	SFC step No. error.	
8229 (2025H)	Step No. error.	
8230 (2026H)	Data error.	
8231 (2027H)	System data error.	
8232 (2028H)	TC setting count error.	
8233 (2029H)	Clear mode error.	
8234 (202AH)	Signal flow error.	
8235 (202BH)	Version management error.	
8236 (202CH)	Unregistered-monitor error.	
8237 (202DH)	PI type error.	
8238 (202EH)	PI No error.	
8239 (202FH)	PI No. error.	
8240 (2030H)	Shift error.	

Return value (HEX)	Error description	Actions
8241 (2031H)	File type error.	Exit the relevant program and restart your computer. Reinstall your software package. Contact your retailer.
8242 (2032H)	Specified module error.	
8243 (2033H)	Error Check flag error.	
8244 (2034H)	Step RUN-operation error.	
8245 (2035H)	Step RUN data error.	
8246 (2036H)	Step RUN time error.	
8247 (2037H)	Program RUN inside writing error to E2ROM.	
8248 (2038H)	Clock data read/write error.	
8249 (2039H)	Trace non-completion.	
8250 (203AH)	Registration clearness flag error.	
8251 (203BH)	Operation error.	
8252 (203CH)	The No. of station error.	
8253 (203DH)	The No. of repeat error.	
8254 (203EH)	The acquisition data selection error.	
8255 (203FH)	The No. of SFC cycle error.	
8258 (2042H)	The scheduled time setting error.	
8259 (2043H)	Function count error.	
8260 (2044H)	System information error.	

Return value (HEX)	Error description	Actions
8262 (2046H)	Function No. error.	Exit the relevant program and restart your computer. Reinstall your software package. Contact your retailer.
8263 (2047H)	RAM operation error.	
8264 (2048H)	Boot former ROM forwarding failure.	
8265 (2049H)	Boot former transfer mode specification error.	
8266 (204AH)	Not enough memory.	
8267 (204BH)	Backup drive (former boot drive) ROM error.	
8268 (204CH)	Block size error.	
8269 (204DH)	RUN-time detaching error.	
8270 (204EH)	Module has already registered.	
8271 (204FH)	Password registration data full error.	
8272 (2050H)	Password unregistration error.	
8273 (2051H)	Remote password error.	
8274 (2052H)	IP address error.	
8275 (2053H)	Error (argument when requesting) outside time-out value range.	
8276 (2054H)	Instruction cast undetection.	
8277 (2055H)	Trace execution type error.	
8278 (2056H)	Version error.	

Return value (HEX)	Error description	Actions
16384 - 20479 (4000H - 4FFFH)	Errors detected by the access target CPU.	Refer to the user's manual of the access target CPU module.
16386 (4002H)	A request that cannot be processed was received.	Change the request destination.
16400 (4010H)	Not executable during running.	Execute when the CPU 's execution status is stop.
16432 (4030H)	The specified device type does not exist.	Check the specified device type.
16433 (4031H)	The specified device No. is out of range. Block No. of the specified device is invalid.	Check the specified device No.. Check the block No. (device type) of the specified device. Check if the specified device and block No. are effective in the target.
16448 (4040H)	The module does not exist.	Do not issue a request that generated an error to the specified special function module.
16449 (4041H)	The No. of device points is out of range.	Check the head address and No. of access points. Access the devices within the existing range.
16450 (4042H)	Corresponding module error	Check if the specified module is operating normally.
16451 (4043H)	The module does not exist at the specified location.	Check the start I/O No. of the specified module.
18944 (4A00H)	Network No., Sta. No. is incorrect. Other network No. was specified, but routing parameter did not exist.	Check the specified network No., Sta. No.. Check the setting of routing parameter.
19200 (4B00H)	The target error was detected.	Review the specified access destination. Check the error occurred on the specified access destination or on the relay station(s) for the access station and take action.
19201 (4B01H)	The target is not the bus master CPU.	If the CPU No. of the C Controller module is not "1", it cannot reset.
19203 (4B03H)	Unsupported path error The request cannot execute through the specified path.	Check the path that the specified request is supported. Do not send a request causing error to PC CPU module.

Return value (HEX)	Error description	Actions
-475 - -3839 (FE25H - F101H)	- Refer to Q- mode ready MELSECNET/H network system reference manual (PC- PC network). - QnA/Q4AR supported MELSECNET/10 network system reference manual - AnU supported MELSECNET/10 network system reference manual (PC- PC network).	Same as the left column
-2174 (F782H)	Destination Sta. No. specification error The destination Sta. No. for the processing request is specifying the own Sta.	Check the specified Sta. No. When issuing a request to the own Sta., specify 255 (0xFF) as the Sta. No.
-16386 - -20222 (BFFFH - B102H)	- Refer to Q- mode ready CC- Link system master local unit user' manual (detailed edition). - AJ61QBT11 form /A1SJ61QBT11 form CC-Link system master local unit user' manual (detailed edition). - AJ61BT11 form /A1SJ61BT11 form CC-Link system master/ local unit user's manual (detailed edition).	Same as the left column
-18558 (B782H)	Destination Sta. No. specification error The destination Sta. No. for the processing request is specifying the own Sta..	Check the specified Sta. No. When issuing a request to the own station, specify 255 (0xFF) as the Sta. No.
-18560 (B780H)	Unit mode setting error Transient that is remote I/O station is edited.	A demand place Sta. No. is improved..
-18572 (B774H)	Transient unsupported error The target station was not an intelligent device station.	Check the specified Sta. No. Check if the target station is an intelligent device station.
-18575 (B771H)	Other Sta. device was accessed by own Sta..	Confirm the device type.
-25056 (9E20H)	Processing code error The target station can not process the request.	Check the specified Sta. No. and processing codes. Do not execute the function other than mdTypeRead to the other Sta.
-26334 (9922H)	Card reset error During the access to other Sta., other process that is using same channel card reset. Reset operation was executed by the utility during monitor.	Monitor again. Retry it.
-26336 (9920H)	Request error for other loop Routing to other loop was performed.	Change the routing request destination to AnUCPU, QnACPU, QCPU.
-28150 (920AH)	Data link stop error RX / RY / Rww / Rwr device was accessed when data link was stopping.	Restart the date link. Writing the data or reading are done. However, the data is not guaranteed. Access the Own Sta.'s link device when data link not in progress.

Return value (HEX)	Error description	Actions
-28151 (9209H)	APS No. error Invalid response data was received.	Check the status of the process request destination. Change the module at the process request destination. Retry.
-28158 (9202H)	WDT error Watchdog timer (WDT) error occurred. Watchdog Timer error	Reboot the system. *1 reset the CC-Link card. Restart the personal computer.
-28413 (9103H)	Target CPU down error. The target module is down.	Check the operation state of the target CPU and do troubleshooting of the error.
-28414 (9102H)	Target CPU abnormal start error Processing was requested to a CPU which is not operating properly.	Check the operation state of the target CPU and do troubleshooting of the error.
-28415 (9101H)	Target CPU critical error. Processing was requested to a CPU on which a serious error occurs.	Check the operation state of the target CPU and do troubleshooting of the error.
-28416 (9100H)	Target CPU not mounted error. Processing was requested by specifying the CPU No. of a CPU which is not mounted.	Check the mount state of the target CPU. Change the specified CPU No.
-28625 (902FH)	Intelligent function module offline error. Access was tried to the intelligent functional module which is offline.	Check the mode state of the intelligent function module and access in the online mode.
-28626 (902EH)	Control data error The specified control data is out of range.	Check the specified control data.
-28627 (902DH)	Transient unsupported error A transient demand cannot be executed for the specified path and target. (By CC-Link communication, when the Sta. No. of the own Sta. was “64”, other Sta. was specified.)	Check the path and target by which the transient demand is supported. Change the Sta. No. of the own Sta..
-28628 (902CH)	Pointer address specification error Pointer address was invalid. An address of a short type pointer is not a multiple of 2. An address of a long pointer is not a multiple of 4.	Check the type of the specified pointer. Check the specified pointer address.
-28629 (902BH)	WDT not running error WDT reset was executed when WDT was not start.	Start the WDT.
-28630 (902AH)	WDT startup impossible error WDT start was executed when WDT was start.	Execute WDT start when WDT was not start.

*1： In single CPU configuration, reset the PC CPU module. In multiple CPU configuration, reset CPU No.1.

Return value (HEX)	Error description	Actions
-28631 (9029H)	Buffer access range error The specified offset is out of range. The specified offset + size is out of range.	Check the specified offset. Check the specified offset + size.
-28632 (9028H)	I/O No. error The specified I/O No. is out of range. The module does not exist at the specified I/O No.	Check the specified I/O No..
-28633 (9027H)	Non-controlled module read error The non-controlled module data was read when parameter setting did not allow.	Allow the non-controlled module read by parameter. Check that the control CPU of the specified module is own CPU.
-28634 (9026H)	Intelligent function module down error Intelligent function module down error occurred.	Check the specified intelligent function module. Exchange the intelligent function module or base unit.
-28635 (9025H)	Intelligent function module error The slot where there is no intelligent function module was accessed.	Check the specified I/O No.. Check the specified intelligent function module.
-28636 (9024H)	Control bus error. The control bus to the intelligent functional module is not operating properly.	When multiple CPU configuration, check that an error occurred at CPU No.1. Check the specified intelligent function module. Exchange the intelligent function module or base unit.
-28638 (9022H)	Multiple CPU unsupported operation error	Reset CPU No.1.
-28640 (9020H)	Stop/pause error Output data was written to output module when the CPU execution status is stop /pause. Buffer memory data was written to intelligent function module when the CPU execution status is stop /pause.	Check that the CPU execution status is "run".
-28653 (9013H)	Input/output assignment error Input data was read from output module. Output data was written to input module. Output data was read from input module.	Check the specified I/O No.
-28654 (9012H)	Non-controlled module write error Own CPU does not control the specified module.	Check that the control CPU of the specified module is own CPU.

*1： In single CPU configuration, reset the PC CPU module. In multiple CPU configuration, reset CPU No.1.

Return value (HEX)	Error description	Actions
-28660 (900CH)	Access size error The specified size is out of range.	Check the specified offset and size.
-28661 (900BH)	Access impossible error The specified area cannot access.	Check the specified offset and size.
-28662 (900AH)	CPU No. specification error The specified CPU No. Is out of range. The specified CPU No. Is invalid.	Check the specified CPU No.. Check the operation status of the specified CPU.
-28663 (9009H)	Base No. specification error The specified base No. Is out of range.	Check the specified base No..
-28664 (9008H)	Data transmission area occupied error.	Retry.
-28665 (9007H)	No registration data error	Reboot the system. *1
-28666 (9006H)	Data length error.	Reboot the system. *1
-28668 (9004H)	Reply data stored error.	Demand once again.
-28669 (9003H)	Area No. error The specified area No. or offset address or mode is out of range.	Check the specified area No. or offset address or mode.
-28671 (9001H)	Module identification error	Check the parameter. Check the specified module. Reboot the system. *1
-28672 (9000H)	Processing code error	Install software package again. Reboot the system. *1

*1： In single CPU configuration, reset the PC CPU module. In multiple CPU configuration, reset CPU No.1.

(2) Error codes returned from bus interface functions

The following table shows description of errors and actions corresponding to error codes which will be returned from bus interface functions.
For error codes returned from both bus interface functions and MELSEC communication functions, see "(1) Error codes common between bus interface functions and MELSEC communication functions".

Return value (HEX)	Error description	Actions
0	Normal completion.	-
-201 (FF37H)	Module identification error The specified module identification is invalid.	Check the specified module identification.
-202 (FF36H)	Path error The specified path is invalid.	Use the path pointer returned with "QBF_Open".
-203 (FF35H)	Input No./output No. error The specified input No./output No. is out of range.	Check the specified input No./output No.
-204 (FF34H)	I/O access size error The specified I/O No. + size is out of range.	Check the specified I/O access size. Check the I/O No. + size.
-205 (FF33H)	I/O No. error The specified I/O No. is out of range.	Check the specified I/O No.
-206 (FF32H)	Program execution type error The specified program execution type is out of range.	Check the specified program execution type.
-209 (FF2FH)	Buffer memory size error The specified offset + size is out of range. The address of specified data stored buffer pointer is 0.	Check the specified buffer memory size. Check the offset + size. Check the data stored buffer pointer.
-210 (FF2EH)	Read area size error The read area is too small.	Check the read size and read area size.
-217 (FF27H)	Driver not started up Driver is not started.	Check the driver is started.
-218 (FF26H)	Bus already opened "QBF_Open" is executed twice.	Check the "QBF_Open" is executed twice.
-219 (FF25H)	Program name error The specified program name is invalid (does not exist on QCPU or is not registered with a parameter).	Check the specified program name.

Return value (HEX)	Error description	Actions
-220 (FF24H)	WDT type error The specified WDT type is out of range.	Check the specified WDT type.
-223 (FF21H)	Memory allocation error Sufficient memory could not be allocated.	Check available size of memory area.
-224 (FF20H)	LED control value error The specified LED control value is out of range.	Check the specified LED control value.
-225 (FF1FH)	Event No. error The specified event No. is out of range. The specified event No. is duplicated.	Check the specified event No.
-227 (FF1DH)	Control code send error Control code sending is failed.	Retry. Check if the system is operating normally. Reboot the system. *1
-231 (FF19H)	Event timeout error The timeout occurred while waiting for the event.	Set timeout value long. Retry.
-232 (FF18H)	CPU machine No. error The specified CPU machine No. is wrong.	Change the specified CPU machine No.
-234 (FF16H)	Event wait error The error except timeout occurred while waiting for the event.	Check if it is not implementing algorithm's compulsion finish etc. Check if the system is operating normally. Reboot system. *1
-235 (FF15H)	Event setting No. error The specified event setting No. is out of range.	Check the specified event setting No.

*1： In single CPU configuration, reset the PC CPU module. In multiple CPU configuration, reset CPU No.1.

(3) Error codes returned from MELSEC communication functions

The following table shows description of errors and actions corresponding to error codes which will be returned from MELSEC communication functions.
For error codes returned from both bus interface functions and MELSEC communication functions, see "(1) Error codes common between bus interface functions and MELSEC communication functions".

Return value (HEX)	Error description	Actions
0	Normal completion.	-
-1 (FFFFH)	Path error The specified path is invalid.	Check the path pointer that was returned by the mdOpen function.
-2 (FFFEH)	Device No. error The specified device No. is out of range. When specifying the bit device, the device No. is not a multiple of 8. In mdRandR / mdRandW function, the specified device No. + points of the same block is out of range.	Check the head device No. for the specified device. Check the specified device No. + points of the same block.
-3 (FFFDH)	Device type error The specified device type is invalid.	Check if the specified device type is in the device list.
-5 (FFFBH)	Size error The device No. and size are over the device range. Access was attempted using an odd device. The device No. and size are over the range for the same block.	Check the specified device size. Check the device No. and size.
-6 (FFFAH)	No. of block error The No. of blocks specified in dev[0] for device random read/write is out of range.	Check the No. of blocks specified in dev[0].
-8 (FFF8H)	Channel No. error The channel No. specified in the mdOpen function is invalid.	Check the specified channel No.
-11 (FFF5H)	Insufficient buffer area The read area size for read data storage array variables is too small.	Check the read size and the read data storage destination size.
-12 (FFF4H)	Block error The specified block No. of the extension file register is invalid.	Check the block No. (device type) of the extension file register.
-13 (FFF3H)	Write protect error The specified block No. of the extension file register is overlapping with the write protect area of the memory cassette.	Check the block No. (device type) of the extension file register. Check the write protect DIP switch of the accessed memory cassette.

Return value (HEX)	Error description	Actions
-16 (FFF0H)	Sta. No., network No. error Sta. No. and network No. are beyond the range.	Confirm the set Sta. No. and network.
-17 (FFEFH)	All- stations / group No. specification error A function that does not support all- stations / group No. specification was specified.	Check if the function supports all- stations / group No. specification.
-18 (FFEEH)	Remote instruction error An undesignated code was specified.	Check the specified code.
-31 (FFE1H)	Module load error An attempt to load a module, which is necessary to execute the function, has failed.	Check the status of the system ROM drive.
-32 (FFE0H)	Another task/thread is occupying the resource and the resource is not released within 30 seconds.	Retry. There may be a possibility of insufficient memory. Terminate other task(s) currently running. Check if the system is operating normally. Restart the system. *1
-33 (FFDFH)	Invalid access destination error The setting for the communication destination is invalid.	Check if the communication destination is correctly set by the utility.
-34 (FFDEH)	Registry open error An attempt to open the registry has failed.	Check if the communication destination is correctly set by the utility.
-35 (FFDDH)	Registry read error An attempt to read from the registry has failed.	Check if the communication destination is correctly set by the utility.
-36 (FFDCH)	Registry write error An attempt to write to the registry has failed.	Check if the communication destination is correctly set by the utility.
-37 (FFDBH)	Communication initialization setting error An attempt to perform initial setting for communication has failed.	Retry. There may be a possibility of insufficient memory. Terminate other task(s) currently running. Check if the system is operating normally. Restart the system. *1
-42 (FFD6H)	Close error Communication cannot be closed.	Retry. Check if the communication destination is correctly set by the utility.
-43 (FFD5H)	ROM operation error A TC setting value was written to the CPU during ROM operation.	Change the TC setting value during RAM operation.

*1： In single CPU configuration, reset the PC CPU module. In multiple CPU configuration, reset CPU No.1.

8.4.2 Corrective Actions for Each Event ID

When an error occurred in a bus interface function, an event ID and error information are registered with the system log of Event Viewer.
The following table shows description of errors displayed by Event Viewer and corresponding actions on an event ID basis.

Event ID (HEX)	Error description	Actions
2 (002H)	Failed to register an interrupt.	Replace PC CPU module.
4 (004H)	Failed to map the memory address and I/O address.	Reinstall OS.
285 (11DH)	The hard disk may not function well because an abnormal ambient temperature was detected. <Additional information> 1) HDD No. (1 : Master HDD, 2 : Slave HDD) 2) Temperature (Ambient temperature upon detection of abnormality [°C])	Place the PC CPU module at a location where an appropiate temperature is achieved. If the detected abnormal temperature is higher than or equal to 255oC, it may be a failure in the hard disk module and you need to contact your retailer to receive advice on the symptom.
286 (11EH)	Failed to secure the memory area necessary for starting the driver.	Adds system memory. Reduce the memory used for other programs.
295 (127H)	SYSTEM WDT ERROR occurred.	Extend the system WDT setting time in the system setting of the PC module setting utility. Decrease the CPU utilization rate of a task with a high CPU utilization rate, or do not run that task. Reexamine the user program.
297 (129H)	A target abort error occurred on the PC CPU.	Replace PC CPU module.
304 (130H)	A data parity error occurred on the PC CPU.	Replace PC CPU module.
305 (131H)	USER WDT ERROR occurred.	Extend the user WDT setting time set with the QBF_StartWDT function. Decrease the CPU utilization rate of a task with a high CPU utilization rate, or do not run that task. Reexamine the user program.
513 (201H)	AC/DC DOWN occurred.	Perform the action described for the error code 1500. *1

*1 : For more details on method, refer to “8.3.4 Detailed error description and actions”.

Event ID (HEX)	Error description	Actions
514 (202H)	CONTROL-BUS.ERR. occurred.	Treats error code 1413, 1414, 1415, 1416. *1
516 (204H)	MODULE VERIFY ERR. occurred.	Treats error code 2000.
518 (206H)	FUSE BREAK OFF occurred.	Treats error code 1300.
519 (207H)	SP.MODULE DOWN occurred.	Treats error code 1401, 1403. *1
520 (208H)	CONTROL-BUS.ERR. occurred.	Treats error code 1412. *1
521 (209H)	SP.MODULE LAY ERR. occurred.	Treats error code 2100, 2103, 2106, 2107, 2108, 2120, 2121, 2122, 2124, 2125, 2126, 2150. *1
522 (20AH)	PARAMETER ERROR occurred.	Treats error code 3000, 3001, 3010, 3012, 3014. *1
523 (20BH)	An error occurred during initialization of the module. *2	Perform an action corresponding to the error code which is indicated in the event information. *1
525 (20DH)	PC card built-in battery error occurred.	Treats error code 1601. *1
526 (20EH)	A CPU module built-in battery error occurred.	Treats error code 1600. *1
528 (210H)	MULTIPLE CPU DOWN occurred.	Treats error code 7000, 7002. *1
529 (211H)	MULTI EXE.ERROR occurred.	Treats error code 7010. *1
530 (212H)	MULTIPLE CPU ERROR occurred.	Treats error code 7020. *1
531 (213H)	SP.PARAMETER ERROR occurred.	Treats error code 3300, 3301, 3302, 3303 *1

*1 : For more details on Method, refer to “8.3.4 Detailed error description and actions”.

*2 : Only the error code of the error detected first during initialization of the module is displayed.

Event ID (HEX)	Error description	Actions
532 (214H)	LINK PARAMETER ERROR occurred.	Treats error code 3100, 3101, 3102, 3103, 3104, 3105, 3107. *1
533 (215H)	I/O INT.ERROR occurred.	Treats error code 1310. *1
534 (216H)	PS.ERROR occurred.	Treats error code. *1
537 (219H)	SINGLE PS.DOWN occurred.	Treats error code 1510. *1
538 (21AH)	SINGLE PS.ERROR occurred.	Treats error code 1520. *1
539 (21BH)	A hardware failure was detected.	Replace PC CPU module.

*1 : For more details on Method, refer to "8.3.4 Detailed error description and actions".

*2 : Only the error code of the error detected first during initialization of the module is displayed.

8.4.3 Corrective Actions for Each Error Message

When an error occurred in each utility, the corresponding error message will be displayed.

This section describes actions on an error message basis.

For errors of which error codes are displayed, see "8.4.1 Actions upon error codes at the time of function execution".

(1) Error message for the PC module setting utility

The following table shows error messages and corresponding actions for the PC module setting utility.

Error message	Actions
Failed to start CC-Link utility.	Reinstall PPC-DRV-02 because its installation may have been failed.
CPU slot is left empty. For CPU slots, specify a CPU module No. or "CPU (empty)".	Specify a CPU module No. or "CPU (empty)" for the CPU slot.
CPU (empty) is specified between CPUs. Do not specify CPU (empty) between CPUs.	Ensure that CPU (empty) is not specified between CPUs.
CPU (empty) is specified between CPUs. The connection destination PC CPU module is incompatible. Do not specify CPU (empty) between CPUs.	Check the version of the connection destination PC CPU module.
No I/O response time. Specify an I/O response time.	Sets the I/O response time.
Failed to start MELSECNET/H utility.	Reinstall PPC-DRV-02 because its installation may have been failed.
Failed to save the event log file.	Check the available capacity of the save destination.
Invalid entry for watchdog timer (WDT). Enter a numeric value.	Reenter using a numeric value.
Error occurred. Error code ： XX(XXXXH)	Perform an action corresponding to the error code. (See the error list in the help information of bus interface functions or MELSEC data link functions.)
The slot for the CPU (empty) is specified for the control CPU. Specify a slot with the type CPU.	Check the setting of the type of the control CPU.
I/O assignment is specified after the basic settings. Specify the No. of slots.	Sets the slot No.

Error message	Actions
Vacant in the basic settings. Vacant should not be included in the basis settings.	Specify the basic settings without vacant (vacant lines).
Failed to save the system information.	- Check the available capacity of the save destination. - Check the save destination media.
Could not read parameters from the specified file. Recreate the file.	Create the parameters again, save to a file, and read the file by GX Developer or the PC module setting utility.
Cannot read the specified file because it was created by a different version of the PC module setting utility.	Install the version of the PC CPU utility by which the file was created.
The specified file is not a parameter file created by the PC module setting utility.	Check the specified file.
Cannot open the specified file.	Check the specified file.
No intelligent functional module parameter is set for the specified project.	Check whether the specified project has an intelligent functional module parameter or not.
No multiple CPU parameter is set for the specified project.	Check the contents of the specified project file.
The specified project does not exist. Specify an existing project path / project name.	Respecify a project path / project name.
Failed to write Output (Y).	Check whether I/O assignment by parameters matches with the actual state.
Failed to read Output (Y).	Check whether I/O assignment by parameters matches with the actual state.
A slot with the type CPU (empty) is specified for the following : - The control CPU for the detailed setting of the I/O module or the intelligent functional module.	Check whether the slot with the type CPU (empty) is specified for the control CPU in the detailed setting or not.
The No. of characters is beyond the available No. The No. of characters must be within 150.	Respecify or select a drive/path name with up to 150 characters.
The setting value of the switch data is out of range. Specify the setting value of the switch data within the range of 0 - 65535.	Specify a setting value of switch data within the range of 0 - 65535.
A non-binary setting value is specified for the switch data. Specify a binary value represented by 0 and 1.	Specify a binary setting value for the switch data.
The No. of slots is not specified. Specify the No.	Sets the slot No.
This function is not supported by the connection destination PC CPU module. Check the version of the connection destination PC CPU module.	Check the version of the connection destination PC CPU module.

Error message	Actions
The connection destination PC CPU module does not support the multiple CPU Module No.1.	Check the version of the connection destination PC CPU module.
The setting value is out of the range of the word data. - Specify a value within the range of -32768 - 32767.	Specify a value within the range of -32768 - 32767.
Cannot select. The drive/path must be specified with up to 150 characters.	Re-enter or select a drive/path with up to 150 characters.
The first I/O No. is not specified. Enter a startI/O No. within the range of 0000 - 0FF0.	Specify a hexadecimal value within the range of 0000 - 0FF0.as the start I/O No.
Duplicated first I/O No.. Specify a non-duplicated No..	Correct the startI/O No. setting to eliminate duplication.
Invalid first I/O No.. Specify a hexadecimal value within the range of 0000 - 0FF0.	Specify a hexadecimal value within the range of 0000 - 0FF0.as the start I/O No.
startSINo. is not set. Enter a startSINo. within the range of 0 - 15.	Specify a value within the range of 0 - 15 as the startSINo.
Setting value of startSINo. is out of range. Enter a startSINo. within the range of 0 - 15.	Specify a value within the range of 0 - 15 as the startSINo.
Setting value of startSINo. is not right. Specify a single-byte numeric value.	Specify a single-byte numeric value as the startSINo.
Duplicated startXY. Specify a non-duplicated startXY.	Make the setting so that startXY is not duplicated.
The target CPU is this CPU. Change the target.	Specify another CPU as the target of communication diagnostic.
The target CPU does not exist. The specified module No. may exceed the No. of modules for the multiple CPU configuration.	Check whether the connection destination PC CPU module has the multiple CPU configuration or not. Then, specify the module No. of a CPU which is included in the configuration, as the target of communication diagnostic.
The target CPU is not mounted. Change the target.	- Check the mount state of the target CPU. Change the specified target CPU No. to another.
The setting value of the communication diagnostic count is out of range. Specify a value within the range of 1 - 32767.	Specify a value within the range of 1 - 32767.
This operation cannot be performed during communication diagnostic. Retry after communication diagnostic.	- Wait until communication diagnostic is completed. - Press the Stop Diagnostic button to exit communication diagnostic.
Failed to start device monitor utility.	Reinstall PPC-DRV-02 because its installation may have been failed.
The total of points is beyond the range. The total must be up to 1000H points.	Make the setting so that the total should be up to 1000H points.

Error message	Actions
Failed to read Input (X).	Check whether I/O assignment matches with the actual state or not.
Failed to read version information.	Reinstall PPC-DRV-02 because its installation may have been failed.
The bus interface driver is not running.	- Check whether the connection destination PC CPU module is operating or not. - Check whether the PC CPU module is operating properly or not.
Failed to write buffer memory.	- Check whether an intelligent functional module is mounted to the specified slot or not. - Check whether the intelligent functional module mounted to the specified slot has an error or not. - Check whether the PC CPU module is operating properly or not.
Failed to read buffer memory.	- Check whether an intelligent functional module is mounted to the specified slot or not. - Check whether the intelligent functional module mounted to the specified slot has an error or not. - Check whether the PC CPU module is operating properly or not.
Failed to obtain the module configuration information because of a WDT error in the PC CPU module. Check the connection destination PC CPU module.	Check whether a watch dog timer error (system user) occurred on the PC CPU module or not.
Failed to write parameters. This may be because : - The user logging on to Windows does not have the administrator privilege. - The OS has a failure.	- Check whether you are logging on as a user who has the administrator privilege for Windows or not. - Check whether the PC CPU module has a hardware failure or not.
Failed to clear parameters. This may be because : - The user logging on to Windows does not have the administrator privilege. - The OS has a failure.	- Check whether you are logging on as a user who has the administrator privilege for Windows or not. - Check whether the PC CPU module has a hardware failure or not.
Failed to read parameters. This may be because : - No PC CPU parameter is set. - The OS has a failure..	- Write PC CPU parameters. - Check whether the PC CPU module has a hardware failure or not.
Failed to save parameter file. Check the save destination.	- Check the available capacity of the save destination. - Check the save destination media. - Respecify the save destination so that the total characters of the location name and the file name should be up to 128.
The file path exceeding 255 characters cannot be specified. Respecify.	Specify a file path with up to 255 characters.

Error message	Actions
No project name. Enter a project name.	Specify the intended project name.
Failed to open help file.	Reinstall PPC-DRV-02 because its installation may have been failed.
Cannot access parameters because another utility is writing/reading them. Retry later.	Retry after that utility (the PC module setting utility, the CC-Link utility or the MELSECNET/H utility) completes reading, writing, and/or verifying parameters.
The setting of the first I/O No. for the intelligent functional module interruption event setting became inconsistent because the No. of CPUs for the multiple CPU setting was changed. Either the No. of CPUs for the multiple CPU setting or the first I/O No. for the intelligent functional module interruption event setting must be changed.	Change either the No. of CPUs for the multiple CPU setting or the beginning I/O No. for the intelligent functionality module interruption event setting.
Failed to reserve the memory.	Check whether there is sufficient available memory or not.
The utility is already operating.	The PC module setting utility is already operating. Retry after exiting the operating PC module setting utility.
No interruption event No.. Specify the interruption event within the range of 50 - 255.	Specify the setting value of the interruption event within the range of 50 - 255.
Setting value of interrupt event No. is out of range. Specify the interruption event within the range of 50 - 255.	Specify the setting value of the interruption event within the range of 50 - 255.
Invalid interruption event No.. Specify the interruption event within the range of 50 - 255.	Specify the setting value of the interruption event within the range of 50 - 255.
The No. of interruption events is out of range. Specify a value within the range of XX to YY.	Specify the setting value of the No. of interruption events within the prescribed range.
The No. of interruption events is not specified. Specify the No. of the interruption event within the range of 1 - 16.	Specify the setting value of the No. of interruption event within the range of 1 - 16.
The No. of interruption events is out of range. Specify the No. of the interruption event within the range of 1 - 16.	Specify the setting value of the No. of interruption event within the range of 1 - 16.
The No. of interruption events is invalid. Specify a single-byte numeric value.	Specify a single-byte numeric value as the setting value of the No. of interruption events.
Duplicated setting range of interruption events. Specify a non-duplicated setting range of interruption events.	Correct the setting range of interruption events to eliminate duplication.

(2) Error message for the CC-Link utility

The following table shows error messages and corresponding actions for the CC-Link utility.

Error message	Actions
Faulty station was detected among stations 1 - 64. Error code : XX(XXXXH)	Refer to the manual of the PC CPU module or the CC-Link utility to see details of the error.
More than one CC-Link utility cannot run at the same time. A CC-Link utility is already operating.	A CC-Link utility is already operating. End the CC-Link utility that is already operating, and then execute it again.
The parameter for the CC-Link utility No.XX is not specified. Specify as many parameters as the No. of specified modules.	Check whether as many parameters as the No. of modules specified on the Parameter Setting screen.
Five or more CC-Link utility are not mounted. Select "1st to 4th" for the target module, or mount five or more modules and then perform monitoring.	Specify the No. of monitored modules as "1st to 4th" or perform monitoring after mounting five or more modules.
No CC-Link utility is mounted. Mount a CC-Link utility and then perform test.	Mount at least one CC-Link utility on the base module, activate data link properly, and then perform test.
No CC-Link utility is mounted. Mount a CC-Link utility and then perform test.	Mount at least one CC-Link utility on the base module, and then perform monitoring.
No response from the CC-Link utility. This may be because : - Hardware fault	- Check if the CC-Link unit has any hardware fault. - Retry the request after data link is restored to the normal state.
Communication error with the CC-Link utility Error code : XX(XXXXH)	Refer to the manual of the PC CPU module or the CC-Link unit to see details of the error.
Only XX CC-Link utilities are mounted. Up to XX modules are testable.	Change the No. of tested modules within the No. of mounted ones, and perform test.
Only XX CC-Link unit are mounted. Up to XX modules can be monitored.	Change the No. of monitored modules within the No. of mounted ones, and perform monitoring.
Failed to start MELSECNET/H utility.	Reinstall PPC-DRV-02 because its installation may have been failed.
Failed to save the SBSW save file. Check the save destination.	- Check the available capacity of the save destination. - Check the save destination media.

Error message	Actions
The Ver.1 station type (Ver.1 Remote I/O station, Ver.1 Remote device station and Ver.1 Intelligent device station) and the Ver.2 station type (Ver.2 Remote device station and Ver.2 Intelligent device station) cannot coexist. Specify the Ver.1 station type prior to the Ver.2 station type.	When including both the Ver.1staion type and the Ver.2 station type in the station information setting, specify the Ver.1 station type prior to the Ver.2 station type.
Ver.1 station type is not specified. Specify the Ver.1 station type prior to the Ver.2 station type.	In the station information setting, specify the Ver.1 station type prior to the Ver.2 station type.
The XX-th and YY-th start I/O Nos. are duplicated. Make the setting so that start I/O Nos are not duplicated.	On the Parameter Setting screen, check the first I/O No. for all of the mounted modules to eliminate duplication.
Communication error with the XXth CC-Link unit Error code : XX(XXXXH)	Refer to the manual of the PC CPU module or the CC-Link unit to see details of the error.
The maximum No. of intelligent device stations is exceeded. The No. of stations must be within 42.	Change the No. of intelligent device stations specified in the station information setting to be within 42.
Error occurred during circuit test Error code : XX(XXXXH)	Refer to the manual of the PC CPU module or the CC-Link unit to see details of the error.
Circuit test is executable only when data link is in the following states : - In data link - Being automatically reconnected	Check the state of data link on the "Module Information" screen, and retry.
Wrong Sta. No. Specify a value within the range of 0 - 63.	Specify the Sta. No. within the range of 1 - 64.
Wrong target Sta. No. Specify a value within the range of 1 - 64.	Specify the Sta. No. of the target of circuit test within the range of 1 - 64.
Cannot read the specified file because it was created by a different version of the CC-Link utility.	Install the version of the CC-Link utility by which the file was created.
The specified file is not the parameter file of the CC-Link utility.	Check the specified file.
Cannot open the specified file.	- Check the specified file. - Limit the total No. of characters for the file location and file name to 128.
The specified module is a local Sta. Test from a local Sta. is not available.	Change the test target module to the Master station.

Error message	Actions
The total automatic buffer size is beyond 4096 words. Specify a value smaller than or equal to the maximum value.	In the station information setting, specify a value which is smaller than or equal to 4096 as the total automatic buffer size.
Wrong setting value of automatic buffer size. Enter the automatic buffer size within the range of 0, 128 - 4096.	In the station information setting, specify the automatic buffer size within the range of 0 and 128 - 4096.
Wrong setting value of the No. of automatic-parallel-on modules. Enter a value within the range of 1 - 10.	In the other setting, specify the No. of automatic-parallel-on modules within the range of 1 - 10.
Wrong setting value of receiving baffer size. Enter the receiving buffer size within the range of 0, 64 - 4096.	In the station information setting, specify the receiving buffer size within the range of 0 and 64 - 4096.
The value of the conditional expression, {(16xA)+(54x B)+(88xC)} (A : the No. of I/O station, B : the No. of device station and C : the No. of intelligent station), exceeds 2304. Adjust the value to be smaller than or equal to 2304.	In the station information setting, specify a station type which can satisfy the conditional expression {(16xA)+(54xB)+(88xC)} =<2304.
StartI/O No. is not set. Enter a value within the range of 0 - 0FE0.	Specify a startI/O No. within the range of 0 - 0FE0.
The maximum total No. of occupied stations is exceeded. The total No. of occupied stations must be smaller than or equal to 64.	In the station information setting, specify a value which is smaller than or equal to 64 as the total No. of occupied stations for connected modules.
Cannot specify all stations as "Reserved station". Change any of the stations to a non-reserved station.	In the station information setting, change the setting of at least one reserved station to "None" or "Disabled station".
The total transferring / receiving buffer size exceeds 4096 words. Specify a value which does not exceed the maximum value.	In the station information setting, set the total transferring / receiving buffer size to 4096 or less.
Wrong setting value of transferring baffer size. Enter the transferring buffer size within the range of 0, 64 - 4096.	In the station information setting, specify the transferring buffer size within the range of 0 and 64 - 4096.
The total No. of connected modules is wrong. Enter a value within the range of 1 - 64.	Specify the total No. of connected modules within the range of 1 - 64.
The No. of specified station types does not match with the total No. of connected modules. Specify the same No. of station types.	Specify the same No. of station types as the total No. of connected modules which is specified in the station information setting.
The No. of specified occupied stations does not match with the total No. of connected modules. Specify the same No. of occupied station.	Specify the same No. of occupied stations as the total No. of connected modules which is specified in the station information setting.
The station information specified by the standby Master station No. does not exist. Specify a standby Master station No. which has the corresponding station information.	In the other setting, specify the standby Master station No. within the range of 1 to the total No. of connected modules (the No. specified in the station information setting).

Error message	Actions
The station information specified by the standby Master station No. is not that of a Ver.2 intelligent device station. Specify the standby Master station No. representing a Ver.2 intelligent device station.	Change the station type corresponding to the standby Master station No. which was selected in the station information setting, to Ver.2 intelligent device station.
The station information specified by the standby Master station No. is not that of an intelligent device station. Specify the standby Master station No. representing an intelligent device station.	Change the station type corresponding to the standby Master station No. which was selected in the station information setting, to intelligent device station.
Wrong standby Master station No. Enter 0 (None) or a value within the range of XX - YY.	In the other setting, specify the standby Master station No. within the range of 0 to the No. of connected modules (the No. specified in the station information setting).
Wrong standby Master station No. Enter 0 (None) or a value within the range of 1.	In the other setting, specify the standby master station number within the range of 0 or 1.
Wrong target CPU No. Specify a value within the range of 1 - 4.	Specify a setting value of target device No. within the range of 1 - 4.
Wrong delay time. Enter a value within the range of 0 - 100.	In the other setting, specify the delay time within the range of 0 - 100.
Failed to start device monitor utility.	Reinstall PPC-DRV-02 because its installation may have been failed.
The driver is not activated yet. Or, this is not a PC CPU.	Check whether the driver is active or not.
Error occurred during network test Error code : XX(XXXXH)	Refer to the manual of the PC CPU module or the CC-Link unit to see details of the error.
Network test is executable only when data link is in the following states : - In data link - Suspend data link - Being automatically reconnected	Check the state of data link on the "Module Information" screen, and retry.
Failed to read version information.	Reinstall PPC-DRV-02 because its installation may have been failed.
Failed to start PC module setting utility.	Reinstall PPC-DRV-02 because its installation may have been failed.
Communication error with the PC CPU module Error code : XX(XXXXH)	Refer to the manual of the PC CPU module or the CC-Link unit to see details of the error.

Error message	Actions
Failed to write parameters. This may be because : - The user logging on to Windows does not have the administrator privilege. - The OS has a failure.	- Check whether you are logging on as a user who has the administrator privilege for Windows or not. - Check whether the PC CPU module has a hardware failure or not.
Failed to write parameters. This may be because : - CC-Link parameter is not set. - The OS has a failure.	- Set CC-Link parameter and write to PC CPU module. - Check whether the PC CPU module has a hardware failure or not.
Failed to save parameter file. Check the save destination.	- Check the available capacity of the save destination. - Check the save destination media. - Respecify the save destination so that the total characters of the location name and the file name should be up to 128.
The file path exceeding 255 characters cannot be specified. Respecify.	Specify a file path with up to 255 characters.
Failed to open help file.	Reinstall PPC-DRV-02 because its installation may have been failed.
Cannot open the Detailed Module Information screen. The module corresponding to the specified module No. does not exist.	Specify a module No. within the No. of mounted modules.
Wrong retry count. Enter a value within the range of 1 - 7.	In the other setting, specify the retry count within the range of 1 - 7.
When the No. of points for remote stations is 8, it must be specified as the total for two modules.	In the station information setting, specify the value 8 to the No. of points for remote stations as the total for two modules.
The total No. of points for remote stations must be smaller than or equal to 8192.	In the station information setting, specify a value which is smaller than or equal to 8192 as the total No. of points for remote station.
The maximum No. of remote device station modules is exceeded. The No. of station must be within 42.	Change the No. of remote device station modules specified in the station information setting to be within 26.
Wrong logical Sta. No. Specify a value within the range of 65 - 239.	Specify a setting value of logical Sta. No. within the range of 65 - 239.

(3) Error message for the MELSECNET/H utility

The following table shows error messages and corresponding actions for the MELSECNET/H utility.

Error message	Actions
The maximum transient counts per module is larger than that per scan. The maximum transient counts per module must be smaller than or equal to that per scan.	Correct the setting so that the maximum transient counts per module becomes smaller than or equal to that per scan.
The setting value of the maximum transient counts per station is out of range. Enter a value within the range of 1 - 10.	Specify the maximum transient counts per station within the range of 1 - 10.
The setting value of maximum transient counts per scan is out of range. Enter a value within the range of 1 - 255.	Specify the maximum transient counts per scan within the range of 1 - 255.
The setting value of the maximum parallel station per scan is out of range. Enter a value within the range of 1 - XX.	Specify the maximum parallel station per scan within the range of 1 - XX.
Failed to start CC-Link utility.	Reinstall PPC-DRV-02 because its installation may have been failed.
More than two Sta. No. are selected for the I/O master station setting/reset. Select only one Sta. No.	Select only one Sta. No. and press the Specify I/O master station button.
No Sta. No. is selected for the I/O master station setting/reset. Select a Sta. No. for the I/O master station setting/reset.	Select only one Sta. No. and press the Specify I/O master station button.
Duplicated LB setting. Specify a non-duplicated LB setting.	Correct the LB setting to eliminate duplication.
Duplicated LW setting. Specify a non-duplicated LW setting.	Correct the LW setting to eliminate duplication.
Duplicated L station->M station of LX/LY setting1. Specify a non-duplicated L station->M station of LX/LY setting1.	Correct the L station->M station of LX/LY setting1 to eliminate duplication.
Duplicated M station->L station of LX/LY setting1. Specify a non-duplicated M station->L station of LX/LY setting1.	Correct the M station->L station of LX/LY setting1 to eliminate duplication.
Duplicated L station->M station of LX/LY setting2. Specify a non-duplicated L station->M station of LX/LY setting2.	Correct the L station->M station of LX/LY setting2 to eliminate duplication.

Error message	Actions
Duplicated M station->L station of LX/LY setting2. Specify a non-duplicated M station->L station of LX/LY setting2.	Correct the M station->L station of LX/LY setting2 to eliminate duplication.
More than one MELSECNET/H utility cannot run at the same time. A MELSECNET/H utility is already operating.	MELSECNET/H utility is already operating. End the MELSECNET/H utility that is already operating, and then execute it again.
The parameter for the MELSECNET/H unit No.XX is not specified. Specify as many parameters as the No. of specified modules.	Confirm the No. of mounted MELSECNET/H units, and specify as many parameters as the No.
No MELSECNET/H unit is mounted. Mount a MELSECNET/H unit and then perform test.	- Check whether the target MELSECNET/H unit is mounted or not. - If not, mount the MELSECNET/H unit and perform monitoring.
Only XX MELSECNET/H units are mounted. Up to XX modules can be monitored.	Change the No. of monitored modules into that of XX or less and then perform monitoring.
Failed to save SBS saving file. Check the save destination.	- Check the available capacity of the save destination. - Check the save destination media.
The first I/O No. of Module No.XX and Module No.YY are the same. Specify different first I/O No.	On the Parameter Setting screen, check the first I/O No. for all of the mounted modules to eliminate duplication.
Communication error with the XX MELSECNET/H units Error code : XX(XXXXH)	Refer to description of the error code in the help information on bus interface functions or MELSEC communication function s and perform the corresponding action.
The setting value of the monitoring time is out of range. Enter a value within the range of 1 - 200.	Specify setting value of monitoring time within the range of 1 - 200.
The setting value of the Sta. No. is out of range. Specify a value within the range of 1 - 64.	Specify setting value of Sta. No. within the range of 1 - 64.
The setting value of the end station for even assignment is out of range. Enter a value within the range of XX - YY.	Specify setting value of end station within the range of XX - YY.
The setting value of the first station for even assignment is out of range. Enter a value within the range of 1 - XX.	Specify setting value of start station within the range of 1 - XX.
The setting value of the first device No. for even assignment is out of range. Enter a value within the range of XX - YY.	Specify start device No. of assingment within the range of XX - YY.
The setting value of the No. of points for even assignment is out of range. Enter a value within the range of XX - YY.	Specify setting value of assingment point within the range of XX - YY.
The item to be cleared is not selected.	Select an item of which error history to be cleared.

Error message	Actions
The setting value of the group No. is out of range. Enter a value within the range of 0 - 32.	Specify setting value of group No. within the range of 0 - 32.
The setting value of constant link scan is out of range. Enter a value within the range of 1 - 500. To skip the setting, leave it vacant.	Specify vacant or a value within the range of 1 to 500 for constant link scan.
The setting value of the end device No. is out of range. Enter a value within the range of XX - YY.	Specify setting value of end device No. within the range of XX - YY.
No system timer. Specify the system timer.	Sets system timer.
The specified Sta. No. is already set for the I/O master station. Reset the I/O master station setting of the target station and then specify it as a reserved station..	Reset the I/O master station setting of the target station and then specify it as a reserved station.
Cannot read the specified file because it was created by a different version of the MELSECNET/H utility.	Install the version of the MELSECNET/H utility by which the file was created.
The specified file is not a parameter file created by the MELSECNET/H utility.	Check the specified file.
Cannot open the specified file.	- Check the specified file. - Limit the total No. of characters for the file location and file name to 128.
The setting value of the hour is out of range. Enter a value within the range of 0 - 23.	Within the range of 0 - 23, specify the hour of the system timer.
The setting of the hour is mandatory.	Specify the hour of the system timer.
startI/O No. is not set. Enter a value within the range of 00 - 0FE0.	Specify a setting value of startI/O No. within the range of 0 - 0FE0.
The setting value of the start device No. is out of range. Enter a value within the range of XX - YY.	Specify a setting value of start device No. within the range of XX - YY.
You cannot specify all the stations as “reserved stations”. Change any station to a non-reserved station.	Change at least one reserved station specified for network range assignment to a non-reserved station.
The setting value of the target group CPU No. is out of range. Specify a value within the range of 1 - 4.	Specify a setting value of target CPU No. within the range of 1 - 4.
The setting value of the relay destination Sta. No. is out of range. Enter a value within the range of 1 - 64.	Specify the setting value of the relay destination station No. within the range of 1 - 64.
The setting value of the relay destination network No. is out of range. Enter a value within the range of 1 - 239.	Specify the setting value of the relay destination network No. within the range of 1 - 239.

Error message	Actions
The sum of B, W and Y per normal station is larger than 2000 bytes. Correct the value to be within 2000 bytes.	Correct the value to be within 2000 bytes.
The sum of low speed LB, LW per normal station is larger than 2000 bytes. Correct the value to be within 2000 bytes.	Correct the value to be within 2000 bytes.
The setting value of the month of the system timer is out of range. Enter a value within the range of 1 - 12.	Specify a setting value of of the month of the system timer within the range of 1 - 12.
The setting value of the scheduled cycle is out of range. Enter a value within the range of 1 - 65535.	Specify a setting value of the scheduled cycle within the range of 1 - 65535.
Duplicated device setting. Specify a non-duplicated device setting.	Correct the refresh parameter setting to eliminate duplication.
Failed to start device monitor utility.	Reinstall PPC-DRV-02 because its installation may have been failed.
The setting value of the No. of points is out of range. Enter a value within the range of XX - YY.	Specify a setting value of point within the range of XX - YY.
Duplicated Transfer to network No. Specify a non-duplicated Transfer to network No. setting.	Correct the Transfer to network No. setting to eliminate duplication.
The setting value of the transfer destination network No. is out of range. Enter a value within the range of 1 - 239.	Specify a setting value of Transfer to network No. within the range of 1 - 239.
The setting value of the identical point assignment is out of range. Specify a value within the range of XX to YY.	Specify a setting value of identical point assignment within the range of XX - YY.
Driver not started up. Or it is not PC CPU.	Check the driver is started.
Duplicated network No.XX setting. Specify a non-duplicated network No.	Correct the network No. setting to eliminate duplication.
The setting value of the network No. is out of range. Specify a value within the range of 1 - 239.	Specify a setting value of network No. within the range of 1 - 239.
The setting value of the year of the system timer is out of range. Enter a value within the range of 2000 - 2099.	Within the range of 2000 - 2099, specify the year of the system timer.
Failed to read version information.	Reinstall PPC-DRV-02 because its installation may have been failed.
Failed to start PC module setting utility.	Reinstall PPC-DRV-02 because its installation may have been failed.

Error message	Actions
Communication error with the PC CPU module Error code : XX(XXXXH)	Perform an action corresponding to the error code. (See the error list in the help information of bus interface functions or MELSEC data link functions.)
Failed to write parameters. This may be because : - The user logging on to Windows does not have the administrator privilege. - The OS has a failure.	- Check whether you are logging on as a user who has the administrator privilege for Windows or not. - Check whether the PC CPU module has a hardware failure or not.
Failed to write parameters. This may be because : - MELSECNET/H parameter is not set. - The OS has a failure.	- Write parameters. - Check whether the PC CPU module has a hardware failure or not.
Failed to save parameter file. Check the save destination.	- Check the available capacity of the save destination. - Check the save destination media. - Respecify the save destination so that the total characters of the location name and the file name should be up to 128.
The setting value of the date of the system timer is out of range. Enter a value within the range of 1 - XX.	Specify a setting value of the date of the system timer within the range of 1 - XX.
The setting value of the second of the system timer is out of range. Enter a value within the range of 0 - 59.	Specify a setting value of the second of the system timer within the range of 0 - 59.
The setting of the second is mandatory.	Specify the second of the system timer.
The file path exceeding 255 characters cannot be specified. Respecify.	Specify a file path with up to 255 characters.
The setting value of the minute of the system timer is out of range. Enter a value within the range of 0 - 59.	Specify a setting value of the minute of the system timer within the range of 0 - 59.
You cannot omit the minute.	Specify a setting value of the minute of the system timer.
Failed to open help file.	Reinstall PPC-DRV-02 because its installation may have been failed.
Master station 1 is not specified. Specify the Master station.	Specify I/O Master station 1.
Muster station 2 is not set. Specify the Master station.	Specify the I/O Master station 2.
You cannnot open the unit detailed information window. The No. of specified unit is not existed.	Specify the unit within current pieces.
A Sta. No. for setting/reset of reserved stations is not selected. Select the intended Sta. No.	Select the intended Sta. No. and press the Specify Reserved stations button.
The setting value of the link-side end device No. is out of range. Enter a value within the range of XX - YY.	Specify a setting value of the link-side end device No. within the range of XX - YY.

Error message	Actions
The setting value of the link-side first device No. is out of range. Enter a value within the range of XX - YY.	Specify a setting value of the link-side start device No. within the range of XX - YY.
The setting value of the No. of points on the link side is out of range. Enter a value within the range of XX - YY.	Specify a setting value of the link-side point within the range of XX - YY.
The setting value of the total No. of linked station is out of range. Enter a value within the range of 2 - 64.	Specify a setting value of the total No. of linked station within the range of 2 - 64.
The setting value of the refresh cycle of linked devices is out of range. Enter a value within the range of 0 or 10 - 1000.	Specify a refresh cycle of linked devices within the range of 10 - 1000.
The setting value of the logical Sta. No. is out of range. Specify a value within the range of 65 - 239.	Specify a setting value of logical Sta. No. within the range of 65 - 239.

(4) Error message for the device monitor utility

The following table shows error messages and corresponding actions for the device monitor utility.

Error message	Actions
Decimal value input range error Enter a value from 0 to 9.	Enter a decimal value from 0 to 9.
Hexadecimal value input range error Enter a value from 0 to 9, A to F.	Enter a hexadecimal value from 0 to 9, A - F.
Octal value input range error Enter a value from 0 to 7.	Enter an octal value from 0 to 7.
XX : Could not communicate with YY. Error code : ZZ (Signed decimal)	Refer to the error list in the help information on MELSEC communication functions.
No Sta. No. is entered.	Enter a Sta. No.
The Sta. No. is out of range.	Confirm the range of Sta. No. and enter the intended No.
The device selected for this function does not exist.	Select a device which is available for this function.
Setting data is not entered.	Enter a setting data.
The setting value of the No. of points is out of range.	Check the range of setting point and enter it.
The value obtained by dividing the first I/O No. by 16 is not entered.	Enter the value obtained by dividing the first I/O No. by 16.
The value of startI/O No.÷16 is out of range.	Check the value of startI/O No.÷16 and enter it.
No channel information is registered.	- Update parameters again. - Restart the development environment (computer). - Reinstall PPC-DRV-02.
Failed to get the channel information.	- Update parameters again. - Restart the development environment (computer). - Reinstall PPC-DRV-02.
Device No. is not entered.	Enter device No.
Device No. is not out of range.	- Check the device No., and respecify. - Check the specified device block No. (device type). - Check whether the specified device and block No. are valid for the specified target.
Device data is out of range.	Check the setting of the device data.
The No. of points is not entered.	Enter the intended No. of points.
Network No. is not entered.	Enter the network No.
Network No. is out of range.	Check the range of network No. and enter it.
Block No. is not entered.	Enter the intended block No.
Block No. is out of range.	Check the range of block No. and enter it.
Cannot find information required at startup of the utility. Perform reinstallation.	Reinstall PPC-DRV-02 because its installation may have been failed.

9. Appendix

9.1 Functionality Improvement for PC CPU Module and its Bus Interface Driver Software

This chapter describes differences between PPC-CPU852(MS)/PPC-DRV-02 and the conventional products, PPC-CPU686(MS)/PPC-DRV-01, and provide information on how to replace the conventional product.

9.1.1 Comparison with Conventional Products

(1) Function comparison between PC CPU modules

The following table shows the differences between functionalities of PPC-CPU852 (MS) and the conventional product, PPC-CPU686 (MS).

Item			PPC-CPU852(MS)	PPC-CPU686(MS)
Hardware specification	CPU		Intel Celeron M Processor 600MHz	Mobile Intel Celeron Processor 400MHz
	Main memory		256 - 512MB	64 - 256MB
	USB interface		4ch(USB2.0)	1 ch(USB1.0)
	Compact frash card slot		1 slot	x
	PCMCIA slot		1 slot	2 slot
	FDD interface		x (USB-connected FDD is available)	O
	Software product key		x	O
Supported OS	Microsoft Windows XP Professional		O	O
	Microsoft Windows XP Embedded		O	x
	Microsoft Windows 2000 Professional		O	O
	Microsoft WindowsNT Workstation 4.0		x	O
	Microsoft WindowsNT Embedded 4.0		x	O
Supported unit	CC-Link unit	QJ61BT11N *1	O	x
		QJ61BT11 *2	O	O

O : Available, x : Not available

*1 : Please use a product of which serial No. has a beginning five digits larger than "08102".

*2 : Please use a product of which function version is B or later.

Item			PPC-CPU852(MS)	PPC-CPU686(MS)
Supported OS	MELSECNET/H unit	QJ71LP21 *2	O	O
		QJ71LP21-25 *2	O	O
		QJ71LP21S-25	O	x
		QJ71LP21G *2	O	O
		QJ71BR11 *2	O	O
	Serial communication unit	QJ71C24N	O	x
		QJ71C24N-R2	O	x
		QJ71C24N-R4	O	x
		QJ71C24	O	x
		QJ71C24-R2	O	x
Supported mode/functionality for each network	Remote net Ver.2 mode of CC-Link system		O	x
	MELSECNET/H extended mode		O	x
	Nonprocedural-protocol communication for serial communication module		O	x
Self-diagnostic functionality	Detection of power supply errors and link refresh time over		O	x
Setting of the Output (Y) state in the STOP/RUN state			O	O
Input response time selection (I/O response time)			O	O
Error-time output mode setting			O	O
Hardware-error-time CPU operating mode setting			O	O
Switch setting for intelligent functional module / interruption module			O	O
Watch dog timer (WDT) *3			O	O
Interruption from intelligent functional module			O	O
Data communication functionality by MELSEC data link communication function library			O	O
Data communication functionality via CPU shared memory	Own-to-own access	Read of own module's operating information area	O	x
		Read of automatic refresh area	O	x
		Read of user's free area	O	x
	Own-to-another access	Read of system area	O	x
Sequencer remote control functionality			O	O
Sequence program control functionality			O	O
Support of multiple CPU configuration using sequencer CPU of basic model			O	O

O : Available, x : Not available

*2 : Please use a product of which function version is B or later.

*3 : PPC-CPU852(MS) turns all outputs to OFF when a user WDT error occurs.

*4 : For details, see "6.8 Data Communication via PLC Shared Memory " or "PPC-DRV-01 Bus Interface Driver Software for PC CPU Module User's Guide".

(2) Function comparison between PC module setting utility
The following table shows the differences between functionalities of PPC-DRV-02 and the conventional product, PPC-DRV-01.

Item	PPC-DRV-02*1	PPC-DRV-01*1
Reading/saving a parameter setup file.	O (*2)	O (System menu)
Displays LED information, Displays Toggled switch information, Displays DIP switch information, Displays Error code, Displays Error information *3	O (Module information window)	O (PC CPU module information window)
Monitors of input (X), output (Y), buffer memory	O (Unit monitor window) *3	O (Unit monitor window)
Reads / compares parameter	O (Online operation window)	x
Writes parameter	O (Online operation window)	O (*2)
Settings of empty slot point, Settings of output mode at the time of B.STOP->B.RUN, WDT (watch dog timer) setting, Intelligent function module setting (interrupt event setting), Settings of error check item *4, Module synchronization, Initial data of intelligent function module setting	O (System setting window)	O (System setting window)
I/O assignment setting	O (I/O assignment setting window)	O (I/O assignment setting windows)
Multiple CPU setting	O (Multiple CPU setting window)	O (Multiple CPU setting window)
Target setting	O (Target setting)	O (Communication setting window)
Communication diagnostics	O (Communication diagnostics window)	O (Communication setting window)
Displays version information	O (PC module setting utility version information window)	O (Version information window)

O : Available, x : Not available

*1 : The screens and menus enclosed in parentheses are those for display and/or setting of the relevant items.

*2 : Operatable from any screens.

*3 : Monitored items are changed in PPC-DRV-02.

*4 : "Perform PC Card 1 battery check" in PPC-DRV-01 was changed to "Perform PC card battery check" in PPC-DRV-02. "Perform PC Card 2 battery check" in PPC-DRV-01 is no longer available in PPC-DRV-02.

(3) Function comparison between CC-Link utility
The following table shows the differences between functionalities of PPC-DRV-02 and the conventional product, PPC-DRV-01.

Item	PPC-DRV-02*1	PPC-DRV-01*1
Save/read of parameter setting file	O (*2)	x
Display of own Sta.'s information	O (Module information window, Module detail information window)	O (Unit list window, Module information window, Line monitor (own Sta.) window)
Display of the state of LED for CC-Link utility	x	O (Module Information Window)
Save the state of SB/SW to CSV file	O (Module detail information window)	x
Monitoring of another station.	O (Other station monitor window)	O (Line monitor (other Sta.) window)
Parameter read/verification	O (online operation window)	x
Parameter write	O (online operation window)	O (Module information window)
Setting of the station type of other station, Setting of the No. of occupied stations of another station, Setting of another station as reserved/disabled station, Specification of buffer for intelligent module of another station, Setting of the retry count*3, Settings of the No. of automatic parallel-on modules *3 *4 Settings of waiting Master station No. *3, Settings of delay time *3*5	O (Parameter setting window)	O (Parameter setting window)
Setting of Master station /Local station. *6, Mode settings, Setting of the No. of occupied stations of own Sta., Setting of error-time input data	O (Parameter setting window)	O (Module information window)
Setting of the No. of modules, Settings of startI/O No., Extended cyclic setting, Setting of advanced cyclic of another station, Case of CPU STOP setting, Setting of the No. of points of remote stations of another station, Specification of CPU down*3	O (Parameter setting window)	x

O : Available, x : Not available

*1 : The screens and menus enclosed in parentheses are those for display and/or setting of the relevant items.

*2 : Operatable from any screens.

*3 : In PPC-DRV-02, this is set on the Other Setting screen. In PPC-DRV-01, the Detailed Setting screen is used.

*4 : "The No. of automatic parallel-on stations" in PPC-DRV-01 was changed to "The No. of automatic parallel-on modules" in PPC-DRV-02.

*5 : "Delay timer " in PPC-DRV-01 was changed to "Delay time setting" in PPC-DRV-02.

*6 : "Station type" in PPC-DRV-01 was changed to "Type" in PPC-DRV-02.

Item	PPC-DRV-02*1	PPC-DRV-01*1
Target setting	O (Target setting)	O (Target setting)
Line test, network test	O (Test window) *7	O (Test window) *7
Displays version information	O (CC-Link utility version information window)	O (version information window)

O : Available, x : Not available

*1 : The screens and menus enclosed in parentheses are those for display and/or setting of the relevant items.

*7 : Monitored items are changed in PPC-DRV-02.

(4) Function comparison between MELSECNET/H utility
The following table shows the differences between functionalities of PPC-DRV-02 and the conventional product, PPC-DRV-01.

Item	PPC-DRV-02*1	PPC-DRV-01*1
Reading/saving a parameter setup file.	O (*2)	x
Displays information of your own Sta.	O (Module information window, Module detail information window)	O (Unit list window, module information window, Line monitor window)
Displays LED states of MELSECNET/H unit	x	O (Module information window)
Saves SB/SW states to CSV files.	O (Module detail information window)	x
Displays error history of MELSECNET/H network system	O (Err history monitor window) *3	O (Err history monitor window)
Clears 0 error history of MELSECNET/H network system	O (Err history monitor window)	x
Other station monitor	O (Other station monitor window)	O (Each station states window)
Reads / compares parameter	O (Online operation window)	x
Writes parameter	O (Online operation window)	O (Module information window)
Settings of routing parameter *4, Settings of network type *5, Settings of network No., Settings of group No., Settings of modes, Control station"s reconnected setting Settings of network range assignment *6	O (Parameter setting window)	O (Module information window)
Settings of No. of unit, Settings of link device refresh cycle, Settings of startI/O No., Link refresh parameter setting	O (Parameter setting window)	x
Target setting	O (Target setting)	O (Target setting)
Displays version information	O (MELSECNET/H utility version information window)	O (Version information window)

O : Available, x : Not available

*1 : The screens and menus enclosed in parentheses are those for display and/or setting of the relevant items.

*2 : Operatable from any screens.

*3 : Monitored items are changed in PPC-DRV-02.

*4 : "Channel" and "Configuration only for MELSECNET/H network" in PPC-DRV-01 were changed to "The maximum transient transmission size via other network No." in PPC-DRV-02.

*5 : "NET mode" and "Control station / normal station" in PPC-DRV-01 were changed to "Network type" in PPC-DRV-02.

*6 : "Common parameter setting" in PPC-DRV-01 was changed to "Network range assignment" in PPC-DRV-02.

(5) Function comparison between device monitor utility
The following table shows the differences between functionalities of PPC-DRV-02 and the conventional product, PPC-DRV-01.

Item	PPC-DRV-02	PPC-DRV-01
Batch monitor	O	O
16-point register monitor	O	O
Specifying monitor target	O	O
Specifying device to be monitored	O	O
Changing word device Values	O	O
Changing word device value continuously	O	O
Turning ON/OFF bit device	O	O
Switching display form	O	Δ *1
Numerical pad	O	O

O : Available, Δ : Available (However, there is a restriction.), x : Not available

*1: The order of bits at the time of display of bit devices cannot be changed.

(6) Programming specification comparison
The following table shows the differences between functionalities of PPC-DRV-02 and the conventional product, PPC-DRV-01.

<table>
<tr><th colspan="3">Item</th><th>PPC-DRV-02</th><th>PPC-DRV-01</th></tr>
<tr><td rowspan="4">Programming language</td><td colspan="2">Microsoft Visual Basic 6.0</td><td>O</td><td>O</td></tr>
<tr><td colspan="2">Microsoft Visual C++ 6.0</td><td>O</td><td>O</td></tr>
<tr><td colspan="2">Microsoft Visual Basic .NET 2003</td><td>O</td><td>x</td></tr>
<tr><td colspan="2">Microsoft Visual C++ .NET 2003</td><td>O</td><td>x</td></tr>
<tr><td colspan="3">H/W form name of PC CPU module to read with mdBdVerRead function</td><td>“009PPC-CPU852”</td><td>“009PPC-CPU686”</td></tr>
<tr><td rowspan="4">Enablement/disablement of access to CPU shared memory by QBF_FromBuf/mdReceive function</td><td rowspan="3">Access from your own device to the same device</td><td>Reads host CPU operation information</td><td rowspan="4">O</td><td rowspan="4">x</td></tr>
<tr><td>Reads automatic refresh area</td></tr>
<tr><td>Reads user free area</td></tr>
<tr><td>Access from your own device to local device</td><td>Reads system area</td></tr>
<tr><td colspan="3">Support of QBF_ReadStatusEx function</td><td>O</td><td>x</td></tr>
<tr><td colspan="3">Processing speed</td><td colspan="2">PPC-CPU852(MS) has a higher processing speed than PPC-CPU686(MS). *2</td></tr>
</table>

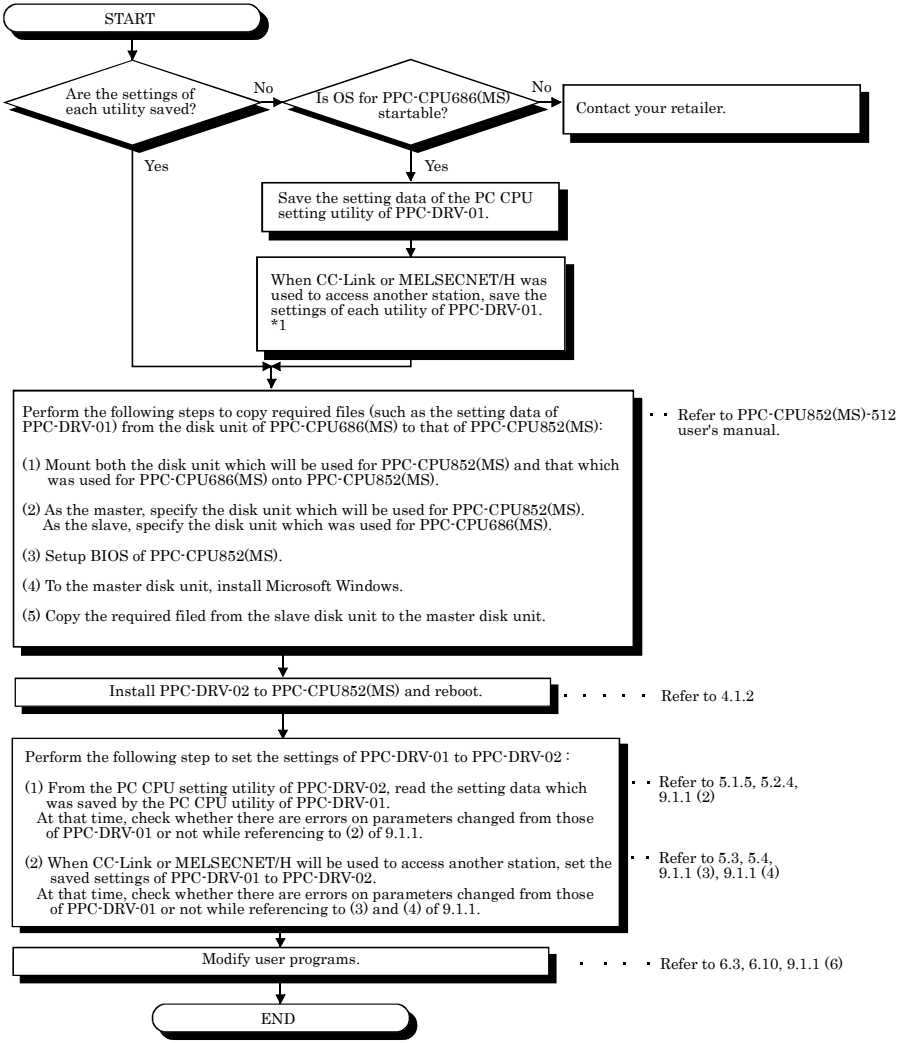
O : Available, Δ : Available (However, there is a restriction.), x : Not available

*1 : For details, see "6.8 Data Communication via CPU Shared Memory" or "PPC-DRV-01 Bus Interface Driver Software for PC CPU Module User's Guide".

*2 : Note that, for processing-speed-dependent programming, the processing timing may be changed if the program is reused without modification.
(Examples : In the case where the loop counter is used to synchronize with another process.)
When reusing a program, modify it according to the processing speed of the target PC CPU module or change it to be independent on processing speed.

9.1.2 How to replace the conventional product (PPC-CPU686(MS)) with PPC-CPU852(MS).

This section describes how to replace the conventional product (PPC-CPU686(MS)) with PPC-CPU852(MS).



*1 : The settings of the CC-Link utility and the MELSECNET/H utility of PPC-DRV-01 cannot be saved to the parameter setting file. Therefore, in order to use the same settings as respective utilities of PPC-DRV-01 to those of PPC-DRV-02, setting item names and their values must be saved to a text file or the like.

9.2 List of Parameter No.

Parameter No. are displayed in Microsoft Windows Event Viewer when an error on parameter setting (see 8.3) occurred.

The following table shows the mapping between parameter No. and the places to specify parameters.

(1) Description of mn, M and N in the Parameter No. column

Mn, **, M and N in the Parameter No. column indicate :

Mn : The value obtained by dividing the beginning I/O No. by 16.
** : Any value
N : The No. in the order of modules
M : Network type

(a) Settings for MELSECNET/H

M	Network type
1H	MELSECNET/H mode (control station), MELSECNET/H extended mode (control station)
2H	MELSECNET/H mode (normal station), MELSECNET/H extended mode (normal station)
3H	MELSECNET/10 mode (control station)
4H	MELSECNET/10 mode (normal station)
5H	MELSECNET/H (remote master station)
AH	MELSECNET/H (waiting station)
BH	MELSECNET/H mode multiple remote I/O net master station
DH	MELSECNET/H mode multiple remote I/O net sub master station (No Parameter setting)
EH	MELSECNET/H mode multiple remote I/O net sub master station (Parameter setting)

(b) CC-Link setting

M	Network type
0H	Master station
1H	Local station
2H	Waiting master station

(2) List of Parameter No.

The following table shows the mapping between parameter No. and the places to specify parameters.

Parameter No.	Item		Utility name
0000H	Label		-
0001H	Comment		-
0400H	I/O assignment	Type Model name point StartXY (start I/O No.)	PC Module Setting Utility (I/O assignment setting window)
0401H	Basic setting	Base model Power module model Additional cable model No. of slot	PC Module Setting Utility (I/O assignment setting window)
0403H	Detailed setting	Error time output mode	PC Module Setting Utility (Intelligent function module detailed setting window)
0405H		I/O response time	PC Module Setting Utility (Intelligent function module detailed setting window)
0406H		Control CPU	PC Module Setting Utility (Intelligent function module detailed setting window)
0407H	Switch setting		PC Module Setting Utility (Switch setting for I/O and intelligent function module window)
05mnH	Switch setting	Group No. Mode	MELSECNET/H Utility
0Cmn H	Switch setting	Mode	CC-Link Utility
0D00H	Duplex parameter		-
0E00H	No. of CPU [*]		PC Module Setting Utility (Multiple CPU setting window)
0E01H	Operating mode		PC Module Setting Utility (Multiple CPU setting)
0E04H	Extra-group I/O setting	Capture the extra-group input state Capture the extra-group output state	PC Module Setting Utility (Multiple CPU setting window)

Parameter No.	Item			Utility name
1000H	Timer limit setting	Low speed		-
		High speed		
1001H	RUN-PAUSE contact	RUN		-
		PAUSE		
1002H	Remote reset			-
1003H	Output mode when STOP→RUN			PC module setting utility (system setting window)
1004H	Floating-point operation			-
1005H	Common pointer No.			-
1007H	Empty slot point			PC module setting utility (system setting window)
1008H	Interrupt / fixed cycle program setting			-
	System interrupt setting	Interrupt counter startNo.		
		Interval at fixed cycle (n : 28 - 31)		
100AH	Intelligent function module setting (interrupt event setting)			PC Modulw Setting Utility (Intelligent function module interrupt event setting window)
100CH	Module synchronization			PC module setting utility (system setting window)
100DH	A series CPU compatible setting			-
100EH	Enablement of serial communication functionality			-
	Transfer speed			
	Sum check			
	Message waiting time			
	Write setting during RUN			
100FH	System interrupt setting	High speed interrupt setting	X input	-
1010H			Y output	-
1011H			Reads buffer	-
1012H			Writes buffer	-
1100H	File register			-
1101H	Comment file used for instruction			-
1102H	Device initial value			-
1103H	File for local device			-
2000H	Device point			-
2001H	Latch (1) start / end			-
2002H	Latch (2) start / end			-
2003H	Local device start / end			-

Parameter No.	Item		Utility name
3000H	WDT (watch dog timer) setting	System WDT setting	PC module setting utility (system setting window)
		Initial execution monitoring time	-
		Low-speed execution monitoring time	
3001H	Error check	Carry out PC battery check.	-
		Carry out fuse blown check.	PC module setting utility (system setting window)
		Carry out I/O module comparison.	
3002H	Operating mode when there is an error.	Calculation error	-
		Advanced instruction error	
		Fuse blown	PC module setting utility (system setting window)
		I/O module comparison error	
		Intelligent module program execution error	-
		Memory card access error	
		Memory card operation error	
		External power supply OFF	
3003H	Constant scan		-
3005H	Failure history		-
3006H	Low-speed program execution time		-
3008H	Memory check	Performs program memory check	-
4004H	Detailed setting	H/W error time CPU operation mode	PC Module Setting Utility (Intelligent function module interrupt event setting window)
5000H	No. of unit		MELSECNET/H utility
5001H	Effective module on access to another station		-
5002H	Intra-link transfer (intra-data-link transfer parameter)		-
5003H	Routing parameter		MELSECNET/H utility
5NM0H	Start I/O No.		MELSECNET/H utility
	Network No.		
	Total No. of stations		
5NM1H	Refresh parameter		MELSECNET/H utility

Parameter No.	Item		Utility name
5NM2H	Network range assignment	Network range assignment	MELSECNET/H utility
		Monitor time	
		I/O master station specification	
		Reserved station specification	
		Supplementary setting	
5NM3H	Station-specific parameter		MELSECNET/H utility
5NM5H	Parameter for sub-master		-
5NMAH	Common parameter 2		MELSECNET/H utility
5NMBH	Station peculiar parameter		MELSECNET/H utility
	Interrupt setting		
7000H	Program setting		-
	Boot option	Program memory clear	-
		Automatic write from memory card to all standard ROM data	-
	Boot file setting		-
8002H	SFC program startup mode		-
8003H	Starting condition		-
8006H	Block-stop-time output mode		-
9000H	Setting of the No. of Ethernet modules		-
9N00H	Start I/O No.		
	Network No.		
	Group No.		
	Sta. No.		
	Operation setting		
9N01H	Initial setting		-
9N02H	Open setting		-
9N03H	Router relay parameter		-
9N04H	Routing parameter		-
9N05H	Sta. No.<->IP related information		-
9N06H	FTP parameter		-
9N07H	E-mail setting		-
9N08H		Information setting	-
9N09H	Interrupt setting		-

Parameter No.	Item		Utility name
C000H	No. of unit		CC-Link utility
CNM1H	Remote input (RX) refresh device		-
	Remote output (RY) refresh device		
	Remote register (RWr) refresh device		
	Remote register (RWw) refresh device		
	Ver.2 remote input (RX) refresh device		
	Ver.2 remote output (RY) refresh device		
	Ver.2 remote register (RWr) refresh device		
	Ver.2 remote register (RWw) refresh device		
	Special relay (SB) refresh device		
	Special relay (SW) refresh device		
CNM2H	Start I/O No.		CC-Link utility
	Operation setting		
	Total No. of connection		
	No. of retry		
	No. of automatic parallel-on modules		
	Waiting master station No.		
	CPU down specification		
	Scan mode setting		-
	Delay time setting		CC-Link utility
	Station information setting		
	Remote device station initial setting		-
	Interrupt setting		
D001H	Setting when Power turns on		-
	Waiting system monitor setting		
	Debug mode setting		
	Backup mode setting		
D002H	Tracking transfer mode setting		-
D003H	Tracking device setting		-
	Rising/falling execution instruction history (signal flow)		
	Detailed setting on device	Tracking block No.	
		Automatically transfer Tracking Block No.1 (Automatic activation of SM1520)	
		Device range setting	
		File register setting	

Parameter No.	Item	Utility name
D004H	Group setting	-
D5**H	Doubling setting	-
D9**H		-
E002H	Reflesh setting	-
E003H		PC module setting utility
E006H	Online module change	PC module setting utility

PPC-CPU852(MS)-512

Bus interface driver

User's Manual

PPC-CPU852(MS)-MU

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