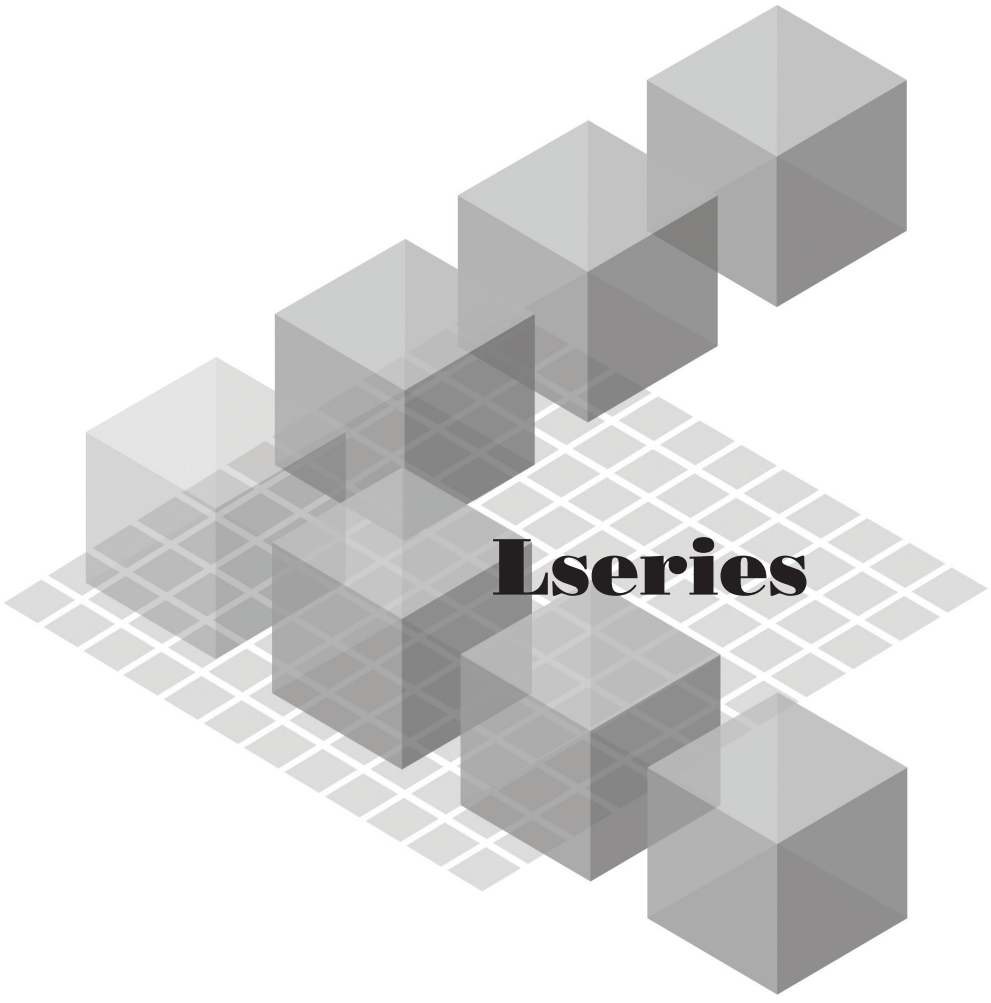
MITSUBISHI

Mitsubishi Programmable Controller

MELSEC *L series*

MELSEC-L CPU Module User's Manual

Hardware Design, Maintenance and Inspection



MODEL

-L02CPU
-L02CPU-P
-L26CPU-BT
-L26CPU-PBT

●SAFETY PRECAUTIONS●

(Read these precautions before using this product.)

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

In this manual, the safety precautions are classified into two levels: "⚠ WARNING" and "⚠ CAUTION".

⚠WARNING	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 minor or moderate injury or property damage.

Under some circumstances, failure to observe the precautions given under "⚠ CAUTION" may lead to serious consequences.
Observe the precautions of both levels because they are important for personal and system safety.

Make sure that the end users read this manual and then keep the manual in a safe place for future reference.

[Design Precautions]

⚠ WARNING

- Configure safety circuits external to the programmable controller to ensure that the entire system operates safely even when a fault occurs in the external power supply or the programmable controller. Failure to do so may result in an accident due to an incorrect output or malfunction.
  (1) Emergency stop circuits, protection circuits, and protective interlock circuits for conflicting operations (such as forward/reverse rotations or upper/lower limit positioning) must be configured external to the programmable controller.
  (2) Machine OPR (Original Point Return) of the positioning function is controlled by two kinds of data: an OPR direction and an OPR speed. Deceleration starts when the near-point watchdog signal turns on. If an incorrect OPR direction is set, motion control may continue without deceleration. To prevent machine damage caused by this, configure an interlock circuit external to the programmable controller.
  (3) When the CPU module detects an error during control by the positioning function, the motion slows down and stops.

[Design Precautions]

⚠ WARNING

(4) When the programmable controller detects an abnormal condition, it stops the operation and all outputs are:
- Turned off if the overcurrent or overvoltage protection of the power supply module is activated.
- Held or turned off according to the parameter setting if the self-diagnostic function of the CPU module detects an error such as a watchdog timer error.
  Also, all outputs may be turned on if an error occurs in a part, such as an I/O control part, where the CPU module cannot detect any error. To ensure safety operation in such a case, provide a safety mechanism or a fail-safe circuit external to the programmable controller. For a fail-safe circuit example, refer to Page 398, Appendix 8.

(5) Outputs may remain on or off due to a failure of a component such as a transistor in an output circuit. Configure an external circuit for monitoring output signals that could cause a serious accident.

- In an output circuit, when a load current exceeding the rated current or an overcurrent caused by a load short-circuit flows for a long time, it may cause smoke and fire. To prevent this, configure an external safety circuit, such as a fuse.
- Configure a circuit so that the programmable controller is turned on first and then the external power supply. If the external power supply is turned on first, an accident may occur due to an incorrect output or malfunction.
- Configure a circuit so that the external power supply is turned off first and then the programmable controller. If the programmable controller is turned off first, an accident may occur due to an incorrect output or malfunction.
- For the operating status of each station after a communication failure, refer to relevant manuals for each network. Incorrect output or malfunction due to a communication failure may result in an accident.
- When changing data from a peripheral device connected to the CPU module to the running programmable controller, configure an interlock circuit in the program to ensure that the entire system will always operate safely. For other controls to a running programmable controller (such as program modification or operating status change), read relevant manuals carefully and ensure the safety before the operation. Especially, in the case of a control from an external device to a remote programmable controller, immediate action cannot be taken for a problem on the programmable controller due to a communication failure. To prevent this, configure an interlock circuit in the program, and determine corrective actions to be taken between the external device and CPU module in case of a communication failure.
- An absolute position restoration by the positioning function may turn off the servo-on signal (servo off) for approximately 20ms, and the motor may run unexpectedly. If this causes a problem, provide an electromagnetic brake to lock the motor during absolute position restoration.

[Design Precautions]

⚠ CAUTION

- Do not install the control lines or communication cables together with the main circuit lines or power cables. Keep a distance of 100mm or more between them. Failure to do so may result in malfunction due to noise.
- During control of an inductive load such as a lamp, heater, or solenoid valve, a large current (approximately ten times greater than normal) may flow when the output is turned from off to on. Therefore, use a module that has a sufficient current rating.
- After the CPU module is powered on or is reset, the time taken to enter the RUN status varies depending on the system configuration, parameter settings, and/or program size.
  Design circuits so that the entire system will always operate safely, regardless of the time.

[Installation Precautions]

⚠ WARNING

- Shut off the external power supply for the system in all phases before mounting or removing a module. Failure to do so may result in electric shock or cause the module to fail or malfunction.

[Installation Precautions]

⚠ CAUTION

- Use the programmable controller in an environment that meets the general specifications in this manual. Failure to do so may result in electric shock, fire, malfunction, or damage to or deterioration of the product.
- To interconnect modules, engage the respective connectors and securely lock the module joint levers. Incorrect interconnection may cause malfunction, failure, or drop of the module.
- Do not directly touch any conductive parts and electronic components of the module. Doing so can cause malfunction or failure of the module.
- Securely connect an extension cable to the connectors of a branch module and an extension module. After connections, check that the cable is inserted completely. Poor contact may cause malfunction.

[Wiring Precautions]

⚠ WARNING

- Shut off the external power supply for the system in all phases before wiring. Failure to do so may result in electric shock or cause the module to fail or malfunction.
- After installation and wiring, attach the included terminal cover to the module before turning it on for operation. Failure to do so may result in electric shock.

[Wiring Precautions]

⚠ CAUTION

- Ground the FG and LG terminals to the protective ground conductor dedicated to the programmable controller. Failure to do so may result in electric shock or malfunction.
- Use applicable solderless terminals and tighten them within the specified torque range. If any spade solderless terminal is used, it may be disconnected when a terminal block screw comes loose, resulting in failure.
- Check the rated voltage and terminal layout before wiring to the module, and connect the cables correctly. Connecting a power supply with a different voltage rating or incorrect wiring may cause a fire or failure.
- Connectors for external devices must be crimped or pressed with the tool specified by the manufacturer, or must be correctly soldered. Incomplete connections may cause short circuit, fire, or malfunction.
- Securely connect the connector to the module.
- Do not install the control lines or communication cables together with the main circuit lines or power cables. Keep a distance of 100mm or more between them. Failure to do so may result in malfunction due to noise.
- Place the cables in a duct or clamp them. If not, dangling cable may swing or inadvertently be pulled, resulting in damage to the module or cables or malfunction due to poor contact.
- Check the interface type and correctly connect the cable.
  Incorrect wiring (connecting the cable to an incorrect interface) may cause failure of the module and external device.
- Tighten the terminal block screw within the specified torque range. Undertightening can cause short circuit, fire, or malfunction. Overtightening can damage the screw and/or module, resulting in drop, short circuit, fire, or malfunction.
- When disconnecting the cable from the module, do not pull the cable by the cable part. For the cable with connector, hold the connector part of the cable. For the cable connected to the terminal block, loosen the terminal screw. Pulling the cable connected to the module may result in malfunction or damage to the module or cable.
- Prevent foreign matter such as dust or wire chips from entering the module. Such foreign matter can cause a fire, failure, or malfunction.
- A protective film is attached to the top of the module to prevent foreign matter, such as wire chips, from entering the module during wiring. Do not remove the film during wiring. Remove it for heat dissipation before system operation.
- To use the high-speed counter function, ground the shield cable on the encoder side (relay box). Always ground the FG and LG terminals to the protective ground conductor. Failure to do so may cause malfunction.
- Mitsubishi programmable controllers must be installed in control panels. Connect the main power supply to the power supply module in the control panel through a relay terminal block.
  Wiring and replacement of a power supply module must be performed by qualified maintenance personnel with knowledge of protection against electric shock. For wiring methods, refer to Page 31, CHAPTER 4.

[Startup and Maintenance Precautions]

⚠ WARNING

- Do not touch any terminal while power is on. Doing so will cause electric shock or malfunction.
- Correctly connect the battery connector. Do not charge, disassemble, heat, short-circuit, solder, or throw the battery into the fire. Also, do not expose it to liquid or strong shock.
  Doing so will cause the battery to produce heat, explode, ignite, or leak, resulting in injury and fire.
- Shut off the external power supply for the system in all phases before cleaning the module or retightening the terminal block screw. Failure to do so may result in electric shock.

[Startup and Maintenance Precautions]

⚠ CAUTION

- Before performing online operations (especially, program modification, forced output, and operating status change) for the running CPU module from the peripheral device connected, read relevant manuals carefully and ensure the safety. Improper operation may damage machines or cause accidents.
- Do not disassemble or modify the modules. Doing so may cause failure, malfunction, injury, or a fire.
- Use any radio communication device such as a cellular phone or PHS (Personal Handy-phone System) more than 25cm away in all directions from the programmable controller. Failure to do so may cause malfunction.
- Shut off the external power supply for the system in all phases before mounting or removing a module. Failure to do so may cause the module to fail or malfunction.
- Tighten the terminal block screw within the specified torque range. Undertightening can cause drop of the component or wire, short circuit, or malfunction. Overtightening can damage the screw and/or module, resulting in drop, short circuit, or malfunction.
- After the first use of the product (module, display unit, and terminal block), the number of connections/disconnections is limited to 50 times (in accordance with IEC 61131-2). Exceeding the limit may cause malfunction.
- After the first use of the SD memory card, the number of insertions/removals is limited to 500 times. Exceeding the limit may cause malfunction.
- Do not drop or apply shock to the battery to be installed in the module. Doing so may damage the battery, causing the battery fluid to leak inside the battery. If the battery is dropped or any shock is applied to it, dispose of it without using.
- Before handling the module, touch a conducting object such as a grounded metal to discharge the static electricity from the human body. Failure to do so may cause the module to fail or malfunction.
- Before testing the operation by the positioning function, set a low speed value for the speed limit parameter so that the operation can be stopped immediately upon occurrence of a hazardous condition.

[Disposal Precautions]

⚠ CAUTION
● When disposing of this product, treat it as industrial waste. When disposing of batteries, separate them from other wastes according to the local regulations. (For details on battery regulations in EU member states, refer to Page 404, Appendix 11.)

[Transportation Precautions]

⚠ CAUTION
● When transporting lithium batteries, follow the transportation regulations. (For details on the regulated models, refer to Page 403, Appendix 10.)

●CONDITIONS OF USE FOR THE PRODUCT●

(1) Mitsubishi programmable controller ("the PRODUCT") shall be used in conditions;
i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident; and
ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.

(2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries.
MITSUBISHI SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY) FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI'S USER, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT.
("Prohibited Application")
Prohibited Applications include, but not limited to, the use of the PRODUCT in;
- Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
- Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
- Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.

Notwithstanding the above, restrictions Mitsubishi may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTs are required. For details, please contact the Mitsubishi representative in your region.

INTRODUCTION

Thank you for purchasing the Mitsubishi MELSEC-L series programmable controllers.
This manual describes the specifications of the hardware, such as CPU modules and power supply modules, maintenance and inspection of the system, and troubleshooting.

Before using this product, please read this manual and the relevant manuals carefully and develop familiarity with the functions and performance of the MELSEC-L series programmable controller to handle the product correctly.
When applying the program examples introduced in this manual to the actual system, ensure the applicability and confirm that it will not cause system control problems.

■ Relevant CPU modules: L02CPU, L26CPU-BT, L02CPU-P, and L26CPU-PBT

Remark

This manual does not describe the details of the instructions.
For the instructions, refer to the following.

MELSEC-Q/L Programming Manual (Common Instruction)

RELEVANT MANUALS

(1) CPU module user's manual

Manual name <manual number (model code)>	Description
MELSEC-L CPU Module User's Manual (Function Explanation, Program Fundamentals) <SH-080889ENG, 13JZ35>	Functions and devices of the CPU module, and programming
MELSEC-L CPU Module User's Manual (Built-In Ethernet Function) <SH-080891ENG, 13JZ37>	The built-in Ethernet function of the CPU module
MELSEC-L CPU Module User's Manual (Built-In I/O Function) <SH-080892ENG, 13JZ38>	The general-purpose I/O function, interrupt input function, pulse catch function, positioning function, and high-speed counter function of the CPU module
MELSEC-L CPU Module User's Manual (Data Logging Function) <SH-080893ENG, 13JZ39>	The data logging function of the CPU module

(2) Programming manual

Manual name <manual number (model code)>	Description
MELSEC-Q/L Programming Manual (Common Instruction) <SH-080809ENG, 13JW10>	Detailed description and usage of instructions used in programs
MELSEC-Q/L/QnA Programming Manual (SFC) <SH-080041, 13JF60>	System configuration, specifications, functions, programming, and error codes for SFC (MELSAP3) programs
MELSEC-Q/L Programming Manual (MELSAP-L) <SH-080076, 13JF61>	System configuration, specifications, functions, programming, and error codes for SFC (MELSAP-L) programs
MELSEC-Q/L Programming Manual (Structured Text) <SH-080366E, 13JF68>	System configuration and programming using structured text language
MELSEC-Q/L/QnA Programming Manual (PID Control Instructions) <SH-080040, 13JF59>	Dedicated instructions for PID control

(3) Operating manual

Manual name <manual number (model code)>	Description
GX Works2 Version1 Operating Manual (Common) <SH-080779ENG, 13JU63>	System configuration, parameter settings, and online operations (common to Simple project and Structured project) of GX Works2
GX Developer Version 8 Operating Manual <SH-080373E, 13JU41>	Operating methods of GX Developer, such as programming, printing, monitoring, and debugging

(4) I/O module and intelligent function module manual

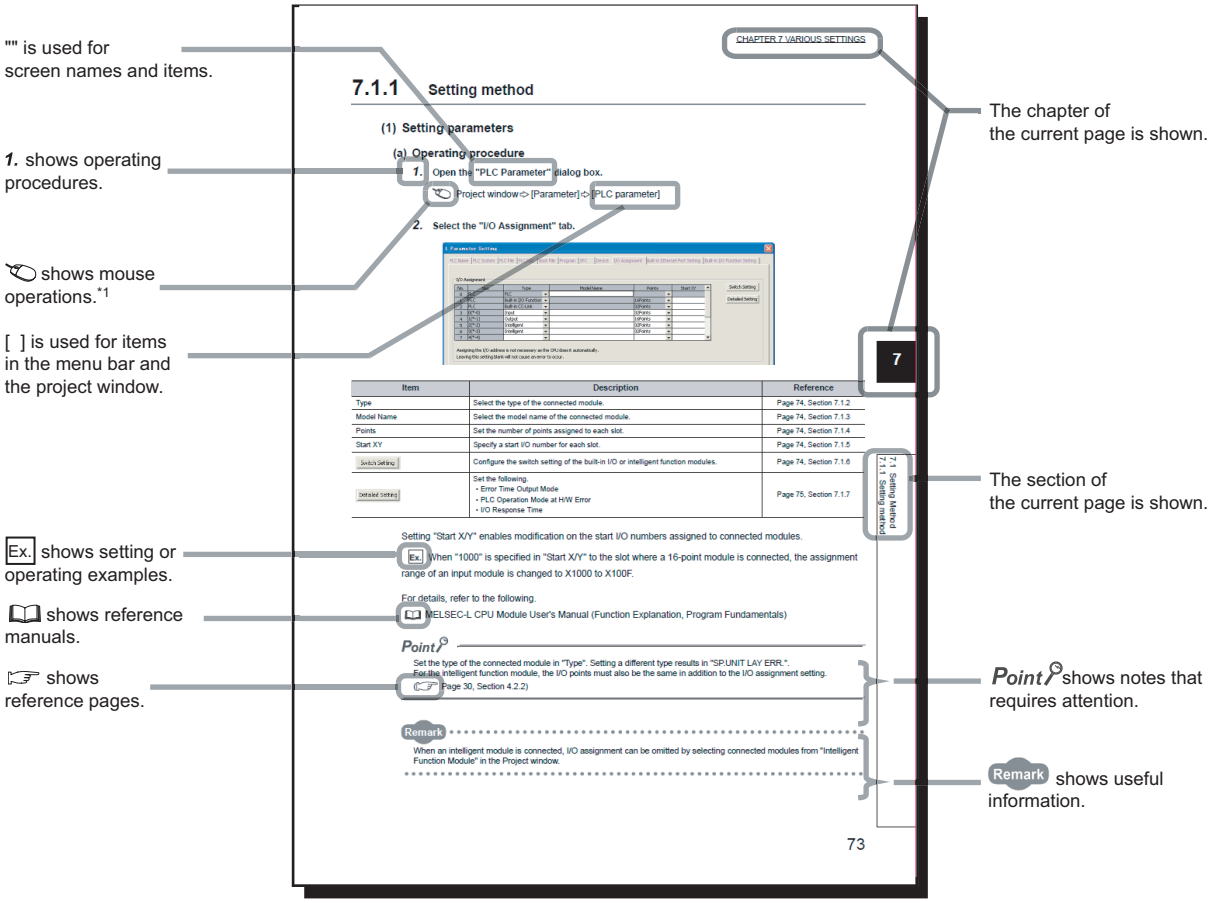
Manual name <manual number (model code)>	Description
MELSEC-L I/O Module User's Manual <SH-080888ENG, 13JZ34>	Specifications and troubleshooting of the I/O module
MELSEC-L Serial Communication Module User's Manual (Basic) <SH-080894ENG, 13JZ40>	System configuration, specifications, procedures before operation, data communication methods (basic), and troubleshooting of the serial communication module
MELSEC-Q/L Serial Communication Module User's Manual (Application) <SH-080007, 13JL87>	Special functions (specifications, usage, and settings) and data communication methods (application) of the serial communication module
MELSEC-Q/L MELSEC Communication Protocol Reference Manual <SH-080008, 13JF89>	Details of MELSEC communication protocol (MC protocol) that is used for data communication between a target device and a CPU module
MELSEC-L CC-Link System Master/Local Module User's Manual <SH-080895ENG, 13JZ41>	Settings, specifications, handling, data communication methods, and troubleshooting of the built-in CC-Link function of the CPU module or the CC-Link system master/local module
MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual <SH-080972ENG, 13JZ54>	Overview of CC-Link IE Field Network, and specifications, procedures before operation, system configuration, installation, wiring, settings, functions, programming, and troubleshooting of the MELSEC-L series CC-Link IE Field Network master/local module
MELSEC-L Analog-Digital Converter Module User's Manual <SH-080899ENG, 13JZ42>	System configuration, specifications, settings, and troubleshooting of the analog-digital converter module
MELSEC-L Digital-Analog Converter Module User's Manual <SH-080900ENG, 13JZ43>	System configuration, specifications, settings, and troubleshooting of the digital-analog converter module
MELSEC-L LD75P/LD75D Positioning Module User's Manual <SH-080911ENG, 13JZ46>	System configuration, specifications, settings, and troubleshooting of the positioning module
MELSEC-L High-Speed Counter Module User's Manual <SH-080920ENG, 13JZ49>	System configuration, specifications, settings, and troubleshooting of the high-speed counter module
MELSEC-L Temperature Control Module User's Manual <SH-081000ENG, 13JZ64>	System configuration, specifications, settings, and troubleshooting of the temperature control module

Memo

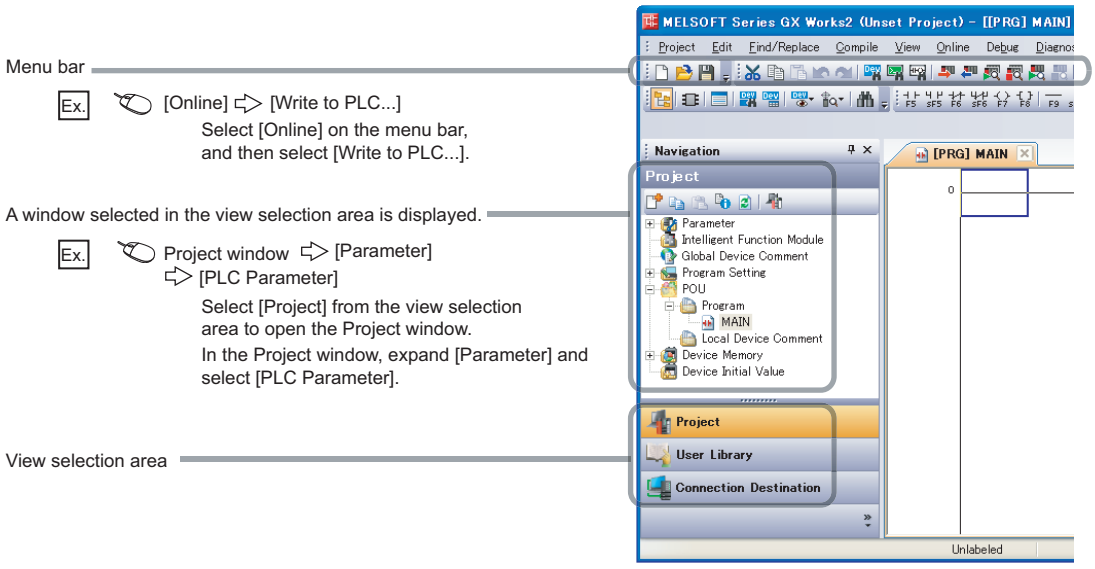
CONTENTS

MANUAL PAGE ORGANIZATION

In this manual, pages are organized and the symbols are used as shown below.
The following page illustration is for explanation purpose only, and is different from the actual pages.



*1 The mouse operation example is provided below. (For GX Works2)



TERMS

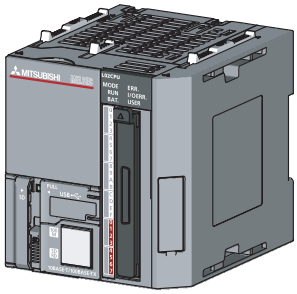
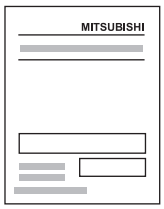
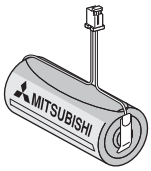
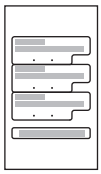
Unless otherwise specified, this manual uses the following terms.

Term	Description
CPU module	The abbreviation for the MELSEC-L series CPU module
Power supply module	The abbreviation for the MELSEC-L series power supply module
Branch module	The abbreviation for the MELSEC-L series branch module
Extension module	The abbreviation for the MELSEC-L series extension module
END cover	A cover to be attached to the right side of the rightmost MELSEC-L series module
Display unit	A liquid crystal display to be attached to the CPU module
Battery	A battery to be installed in the CPU module and used for backing up data such as the standard RAM data and latch device data in case of power failure. The Q6BAT and Q7BAT are available.
SD memory card	Secure Digital Memory Card, which is a flash memory device. The L1MEM-2GBSD and L1MEM-4GBSD are available.
Extension cable	The abbreviation for the MELSEC-L series extension cable
LCPU	Another term for the MELSEC-L series CPU module
QCPU	Another term for the MELSEC-Q series CPU module
QnUCPU	Another term for the MELSEC-Q series Universal model QCPU
Programming tool	A generic term for GX Works2 and GX Developer
GX Works2	The product name of the software package for the MELSEC programmable controllers
GX Developer	
GX Configurator-SC	A setting and monitoring tool added in GX Developer (for serial communication modules)
GX Configurator-AD	A setting and monitoring tool added in GX Developer (for A/D converter modules)
GX Configurator-DA	A setting and monitoring tool added in GX Developer (for D/A converter modules)
GX Configurator-CT	A setting and monitoring tool added in GX Developer (for high-speed counter modules)
GX Configurator-QP	A setting and monitoring tool (for positioning modules)
CC-Link	The abbreviation for Control & Communication Link A field network system where data processing for control and information can be simultaneously performed at high speed.
CC-Link IE	A generic term for CC-Link IE Controller Network[*1] and CC-Link IE Field Network
Intelligent function module	A MELSEC-L series module that has functions other than input or output, such as A/D converter module and D/A converter module
I/O module	The abbreviation for the MELSEC-L series I/O module
Head module	The abbreviation for the LJ72GF15-T2 CC-Link IE Field Network head module
CC-Link IE module	A generic term for a CC-Link IE Controller Network module[*1] and a CC-Link IE Field Network master/local module
Drive unit (servo amplifier)	A unit used to amplify the power and control the motor in the operation by the positioning function since the signals, such as pulses, that are output from the CPU module are low voltage and small current. The unit, also called a servo amplifier, is provided with a servomotor and step motor.
Main block	A block where a CPU module is connected in an extension system
Extension block	A block where an extension module is connected in an extension system
MC protocol	The abbreviation for the MELSEC communication protocol, a protocol to access a CPU module from a target device in the Ethernet or serial communication
Built-in CC-Link function	The abbreviation for the L26CPU-BT and L26CPU-PBT built-in CC-Link system master/local function

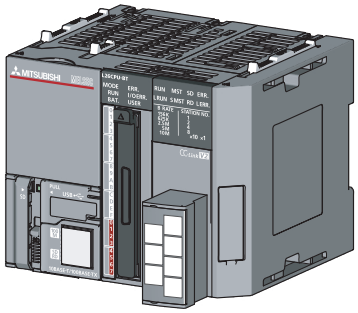
*1 MELSEC-L series products do not support this network.

PACKING LIST

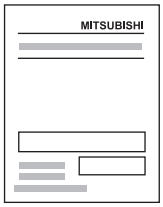
The following items are included in the package of this product. Before use, check that all the items are included.

L02CPU	
	
CPU module (L02CPU) + END cover (L6EC) (A dummy cover for the display unit is attached.)	Safety Guidelines (IB(NA)-0800456)
	
Battery (Q6BAT) (installed in the CPU module)	Battery replacement data stickers to fill out (three stickers on one sheet)

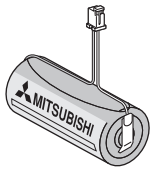
L26CPU-BT



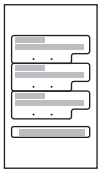
CPU module (L26CPU-BT) + END cover (L6EC)
(A dummy cover for the display unit is attached.)



Safety Guidelines (IB(NA)-0800456)

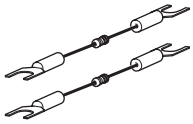


Battery (Q6BAT)
(installed in the CPU module)

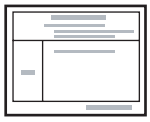


Battery replacement data stickers to fill out
(three stickers on one sheet)

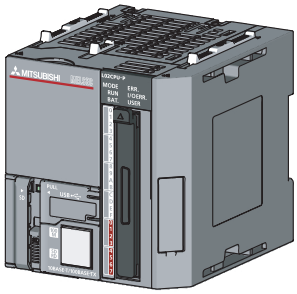
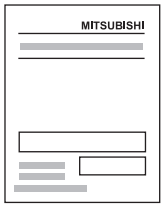
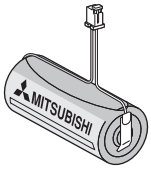
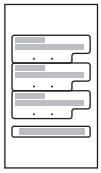
A set of terminating resistors



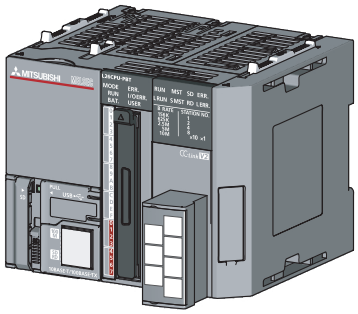
Terminating resistor 110Ω 1/2W × 2 pieces
(Brown-Brown-Brown, gold)



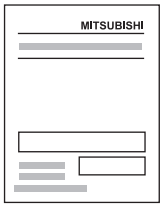
"CAUTION" note

L02CPU-P	
	
CPU module (L02CPU-P) + END cover (L6EC) (A dummy cover for the display unit is attached.)	Safety Guidelines (IB(NA)-0800456)
	
Battery (Q6BAT) (installed in the CPU module)	Battery replacement data stickers to fill out (three stickers on one sheet)

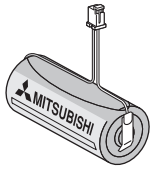
L26CPU-PBT



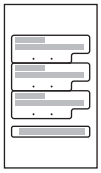
CPU module (L26CPU-PBT) + END cover (L6EC)
(A dummy cover for the display unit is attached.)



Safety Guidelines (IB(NA)-0800456)

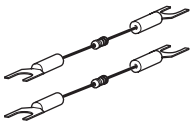


Battery (Q6BAT)
(installed in the CPU module)



Battery replacement data stickers to fill out
(three stickers on one sheet)

A set of terminating resistors



Terminating resistor 110Ω 1/2W × 2 pieces
(Brown-Brown-Brown, gold)

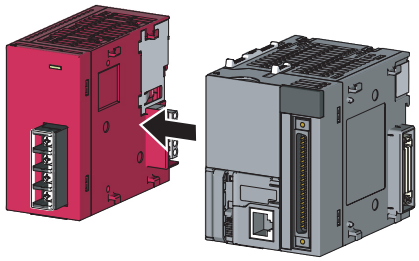
"CAUTION" note

CHAPTER 1 FEATURES

This chapter describes the features of a MELSEC-L series CPU module.

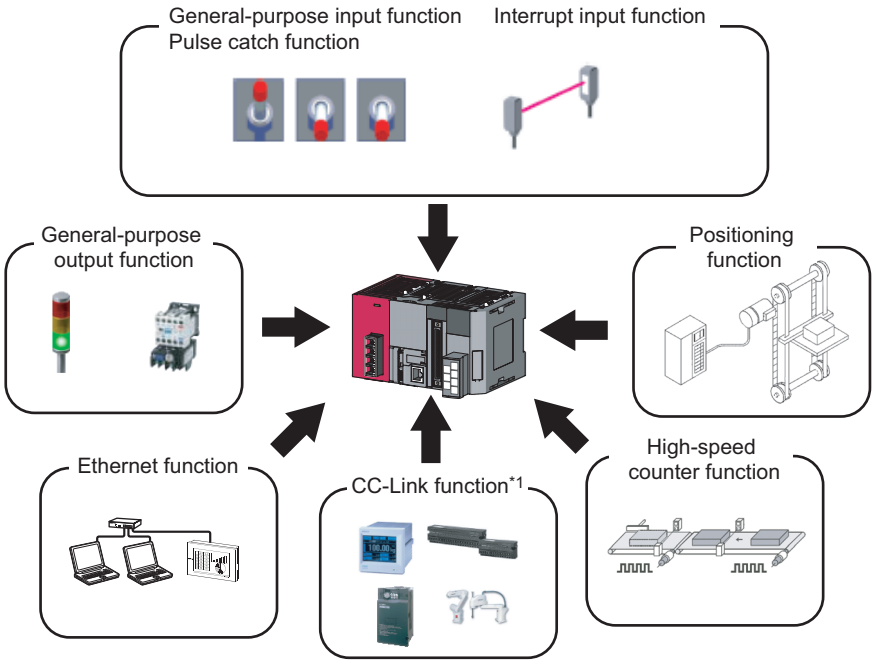
(1) Modules can be interconnected.

Using connectors on the both sides of modules, modules can be interconnected.
Therefore, expanding a system in a minimum space is possible.



(2) The built-in functions allow system cost reduction.

The following built-in functions allow constructing a small-scale system using CPU module alone.



*1 The L26CPU-BT and L26CPU-PBT support the built-in CC-Link function.

For the details on the built-in functions, refer to the following.

MELSEC-L CPU Module User's Manual (Built-In I/O Function)

MELSEC-L CPU Module User's Manual (Built-In Ethernet Function)

MELSEC-L CC-Link System Master/Local Module User's Manual

(3) Use of a display unit improves operation.

By attaching a display unit, the following operations can be performed without a personal computer.

- Checking and changing device values and checking wiring after device value change
- Displaying and setting the time
- Checking and changing values set for intelligent function modules
- Checking an error message and error detail information

For details, refer to the following.

MELSEC-L CPU Module User's Manual (Function Explanation, Program Fundamentals)

(4) An SD memory card is supported.

An SD memory card slot is equipped.

With an SD memory card, the following functions can be performed.

- Data logging function
- Boot operation from an SD memory card
- Data backup to an SD memory card
- Restoration of backup data

For details on each function, refer to the following.

MELSEC-L CPU Module User's Manual (Function Explanation, Program Fundamentals)

MELSEC-L CPU Module User's Manual (Data Logging Function)

(5) The CPU module can be directly connected to the Ethernet network.

Ethernet, standard interface for personal computers, can be used as a communication interface.

By using the Ethernet ports and hubs, multiple connection of peripherals, such as personal computers on which a programming tool has been installed and GOTs, is possible without changing cables.

For details on the function, refer to the following.

MELSEC-L CPU Module User's Manual (Built-In Ethernet Function)

(6) A system can be extended using branch modules and extension modules.

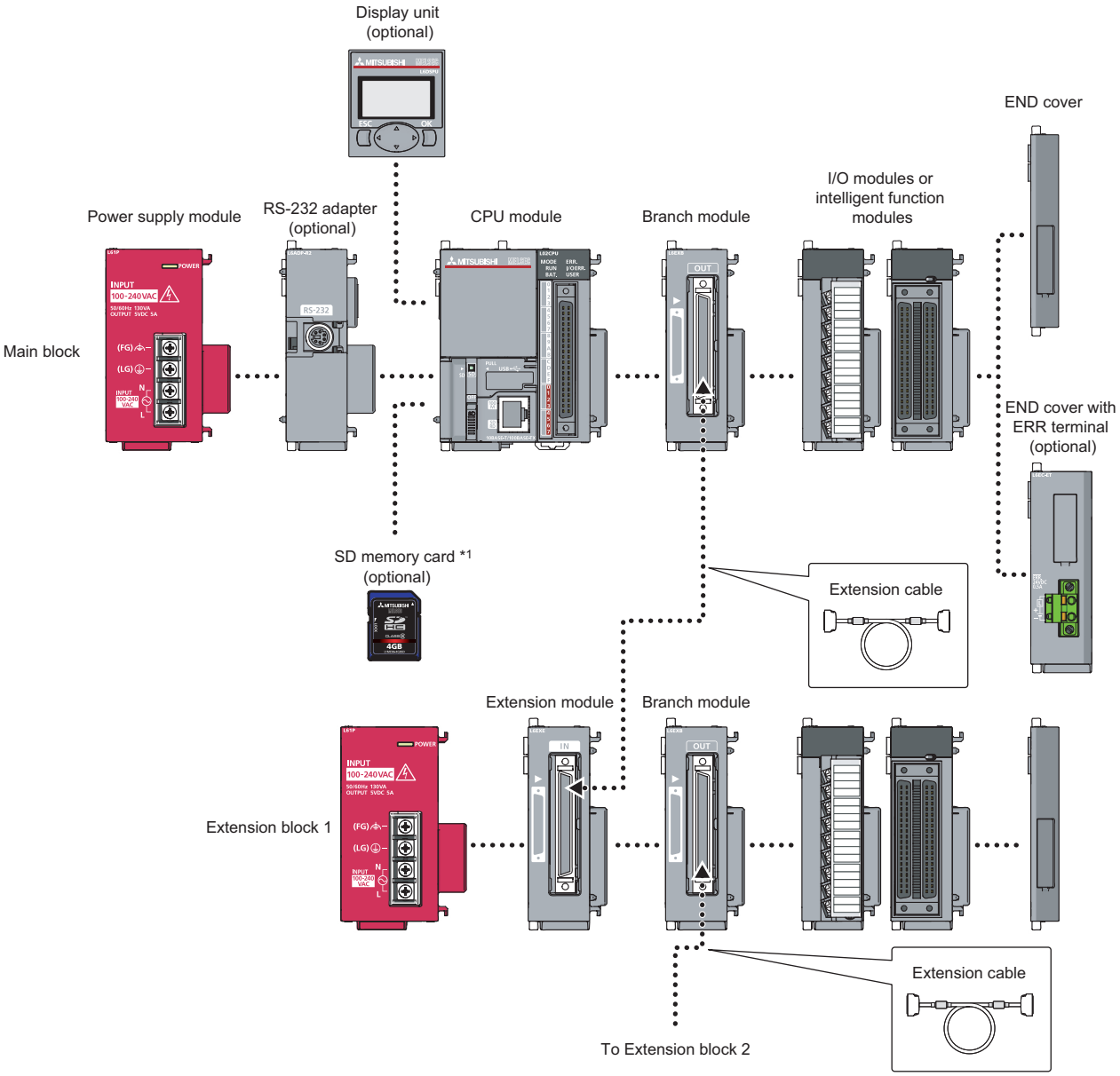
Up to 40 modules can be connected to a system using branch modules and extension modules.

CHAPTER 2 SYSTEM CONFIGURATION

This chapter describes overall system configuration, precautions for system configuration, and peripheral configuration.

2.1 Overall System Configuration

This section describes overall system configuration using a MELSEC-L series CPU module.



*1 For available SD memory card models, refer to Page 78, CHAPTER 12.

Point

A head module is not available for the system using the MELSEC-L series CPU module.

2.2 Precautions for Configuring a System

This section describes precautions for configuring a system.

(1) Number of extension blocks and connectable modules

The number of extension blocks differs depending on the CPU module used. Accordingly, the maximum configuration in a system differs.
The following table lists the number of extension blocks and connectable modules.

CPU module used	Number of extension blocks	Number of connectable modules*1	Maximum number of modules*2
L02CPU, L02CPU-P	Up to 2 blocks	Main block: Up to 10 modules Extension block: Up to 11 modules	30 modules • Main block: 9 modules • Extension block 1: 10 modules • Extension block 2: 11 modules
L26CPU-BT, L26CPU-PBT	Up to 3 blocks		40 modules • Main block: 9 modules • Extension block 1: 10 modules • Extension block 2: 10 modules • Extension block 3: 11 modules

*1 The number of power supply modules, CPU modules, display units, extension modules, RS-232 adapters, and END covers is not included.

*2 This is the total number of I/O modules, intelligent function modules, and network modules that can be connected in a system.

If extension blocks are connected exceeding the maximum number of blocks, the CPU module detects "SYSTEM LAY ERR." (error code: 2174). If modules are connected exceeding the maximum number of modules for each block, the CPU module detects "SYSTEM LAY ERR." (error code: 2173). If modules are connected exceeding the maximum number of modules for a system, the CPU module detects "SP.UNIT LAY ERR." (error code: 2124).

Point

The number of branch modules is included in the number of connectable modules. To add a branch module to a block where the maximum number of modules has already been connected, move one of the modules to an extension block.

There is a limit on the number of modules connected. The following table lists the modules that have a limit and the number of modules in a system.*3

Module	Model	Number of modules	
		L02CPU, L02CPU-P	L26CPU-BT, L26CPU-PBT
CPU module	—	1 (in a main block)	
Branch module	L6EXB	1 (per block)	
Extension module	L6EXE	1 (per extension block)	
RS-232 adapter	L6ADP-R2	1 (in a main block)	
CC-Link system master/local module	LJ61BT11	2 (2 modules)*4	3 (3 modules)*4
CC-Link IE Field Network master/local module*5	LJ71GF11-T2	4 (2 modules)*4	8 (4 modules)*4

*3 Some intelligent function modules and network modules occupy the spaces for two modules. Before configuring a system, check the number of modules occupied by one module in the user's manual for the module used.

*4 This is the number of modules that can be set in parameters using a programming tool. By using dedicated instructions, the maximum number of these modules can be connected. For details on dedicated instructions, refer to the manual for each module.

*5 To connect this module, check that the serial number (first five digits) of the CPU module is "13012" or later.

If more than one branch module is connected to the same block, the CPU module detects "SYSTEM LAY ERR." (error code: 2172).

(2) Configuring a system using a branch module and an extension module

(a) Connecting position

The following table describes the positions of a branch module and an extention module in a system.

Module	Connected block	Connected position
Branch module	Main block	On the right of a CPU module or on the left of an END cover
	Extension block	On the right of an extension module or on the left of an END cover
Extension module	Main block	Not connectable
	Extension block	On the right of a power supply module

(b) CPU module

Use a CPU module whose serial number (first five digits) is "13072" or later.

(c) END cover

Use an END cover that satisfies the following conditions.

- The L6EC whose serial number (first six digits) is "*****2"
- END cover with ERR terminal (optional item)

Point

When the L6EC-ET is connected to an extension block, a system error cannot be detected using the $\overline{\text{ERR.}}$ terminal. (The $\overline{\text{ERR.}}$ terminal is always off.)

(d) Power supply module of an extension block

Connect a power supply module to each extension block. If the power consumption of I/O modules and intelligent function modules connected to an extension block is low, those modules may operate even if no power supply module is connected. However, the voltage is instable and the module operation cannot be guaranteed.

(e) Extension cable

Do not leave a branch module with an extension cable connected (without connecting the other end of the cable to an extension module). Doing so may result in malfunction due to noise. (The CPU module regards the system as normal even if the system includes a branch module that is not connected to an extension module.)

(3) Rated output current (5VDC)

Configure a system so that the total current consumption may not exceed 5VDC, the rated output current of the power supply module. For the specifications of the power supply module, refer to ☞ Page 67, Section 7.2.

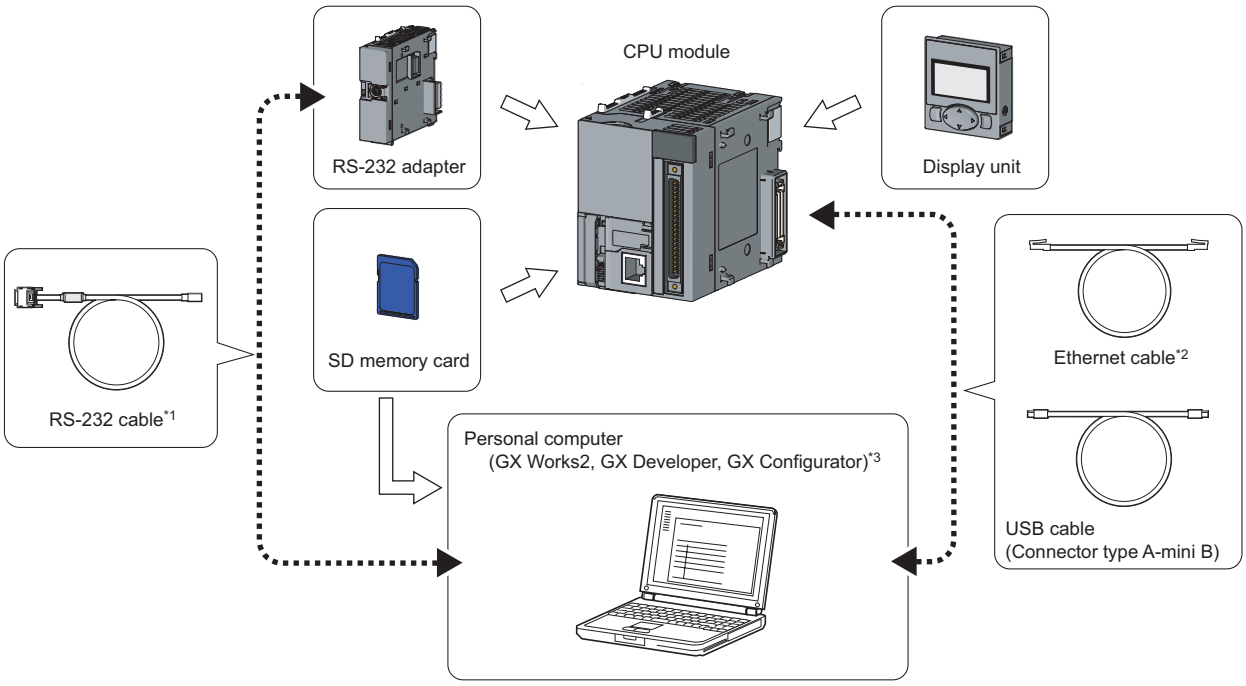
(4) Other series modules that cannot access the CPU module over a network

The following modules cannot access the CPU module over a network.

- Web server module
- MES interface module
- High speed data logger module

2.3 Peripheral Configuration

This section describes peripheral configuration using a MELSEC-L series CPU module.



*1 Use an RS-232 cable meeting the specifications. For the specifications of an RS-232 cable, refer to the following.

Operating manual for the programming tool used

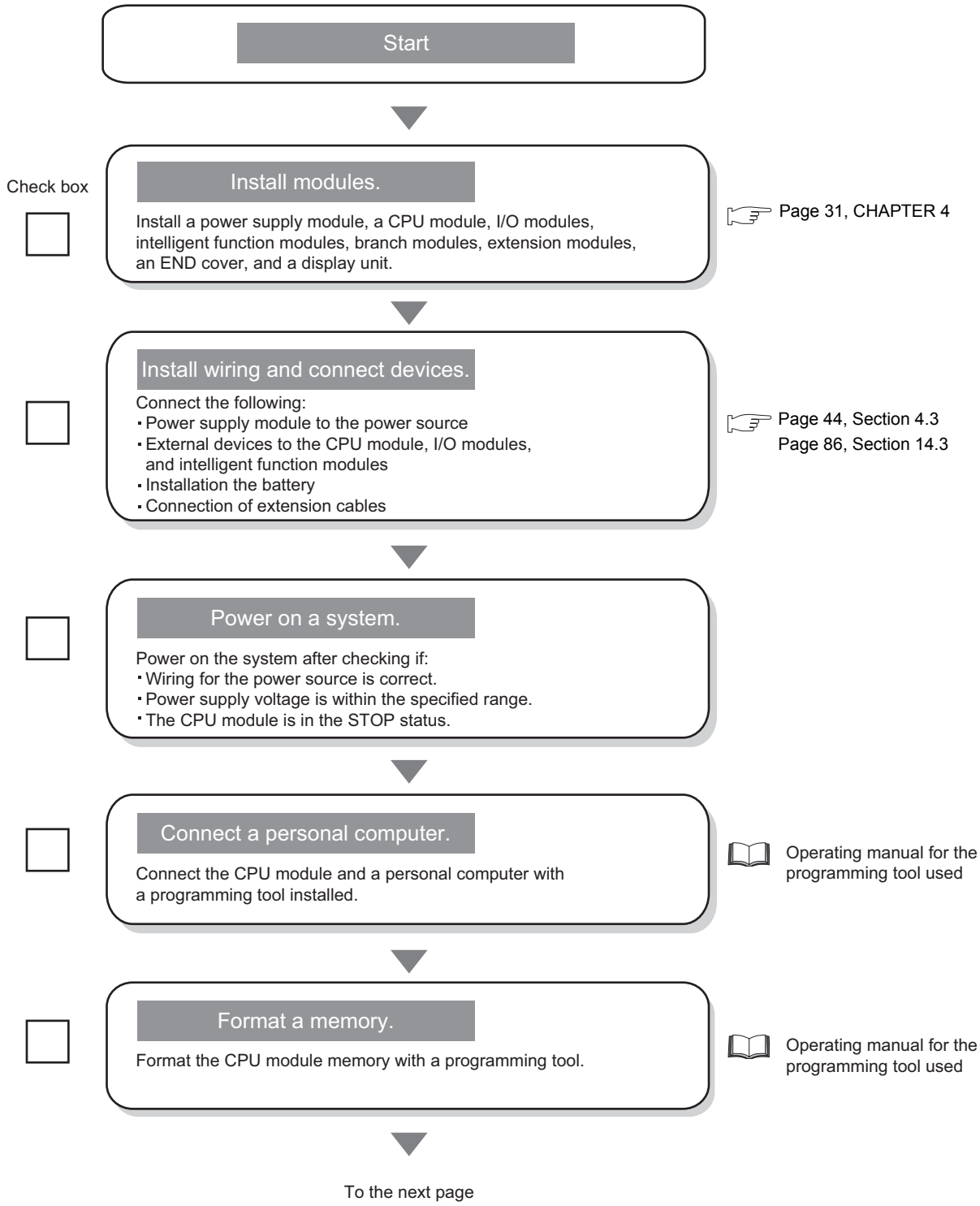
*2 Use the following Ethernet cables

- For 10BASE-T connection: Cables compliant to Ethernet standards, category 3 or higher (STP/UTP cables (In an environment subject to electric noise, use shielded twisted pair (STP) cables.))
- For 100BASE-TX connection: Cables compliant to Ethernet standards, category 5 or higher (STP cables)

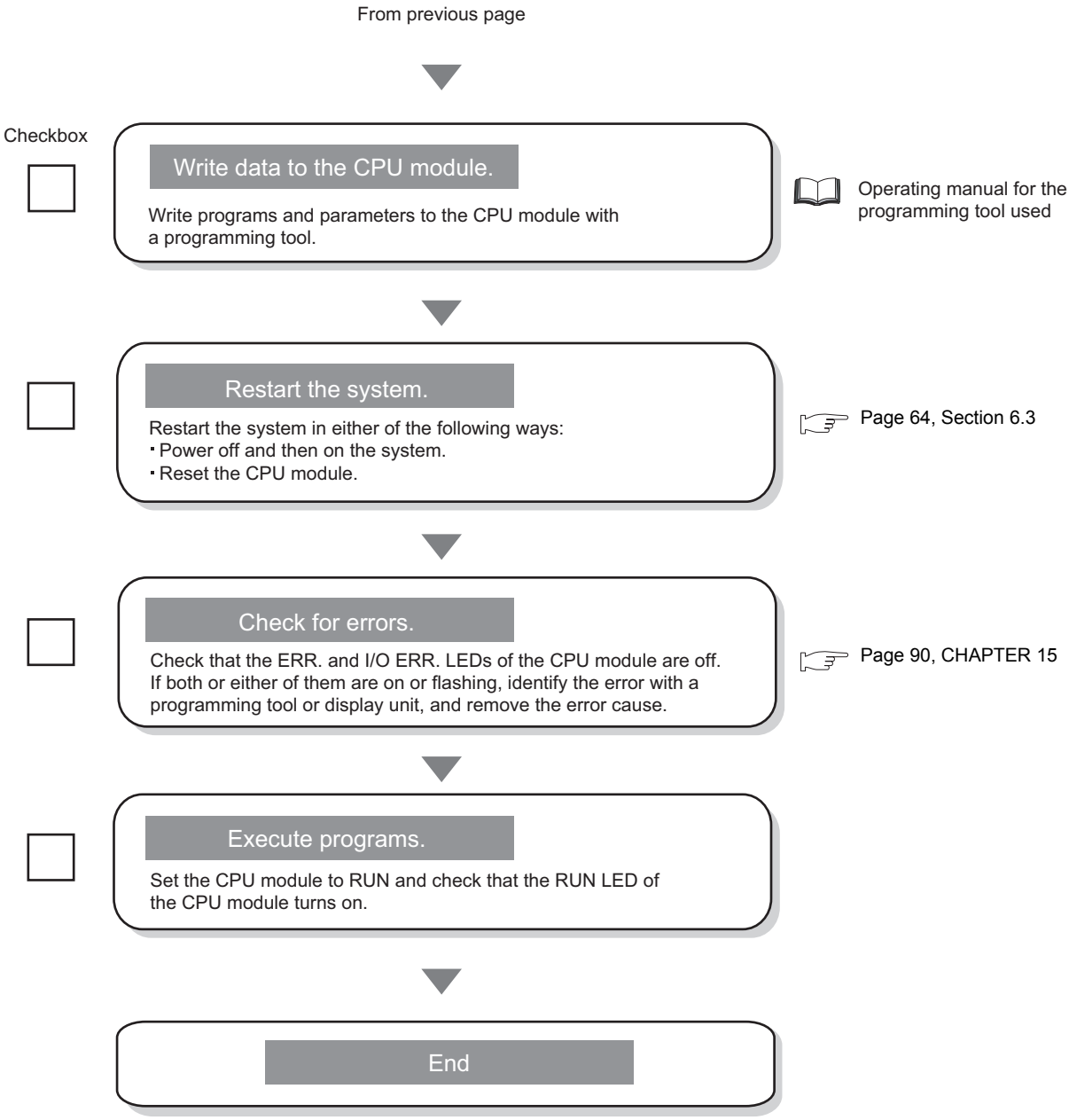
*3 For compatible software versions, refer to Page 382, Appendix 6.

CHAPTER 3 SYSTEM START-UP PROCEDURE

This chapter describes a procedure for starting a system.



To the next page


From previous page
Checkbox
Write data to the CPU module.
Write programs and parameters to the CPU module with a programming tool.
Operating manual for the programming tool used
Restart the system.
Restart the system in either of the following ways:
・Power off and then on the system.
・Reset the CPU module.
Page 64, Section 6.3
Check for errors.
Check that the ERR. and I/O ERR. LEDs of the CPU module are off. If both or either of them are on or flashing, identify the error with a programming tool or display unit, and remove the error cause.
Page 90, CHAPTER 15
Execute programs.
Set the CPU module to RUN and check that the RUN LED of the CPU module turns on.
End

CHAPTER 4 INSTALLATION AND WIRING

This chapter describes the installation and the wiring of modules.

4.1 Installation Environment and Installation Position

When installing the programmable controller in a control panel, fully consider its operability, maintainability, and environmental resistance.

4.1.1 Installation environment

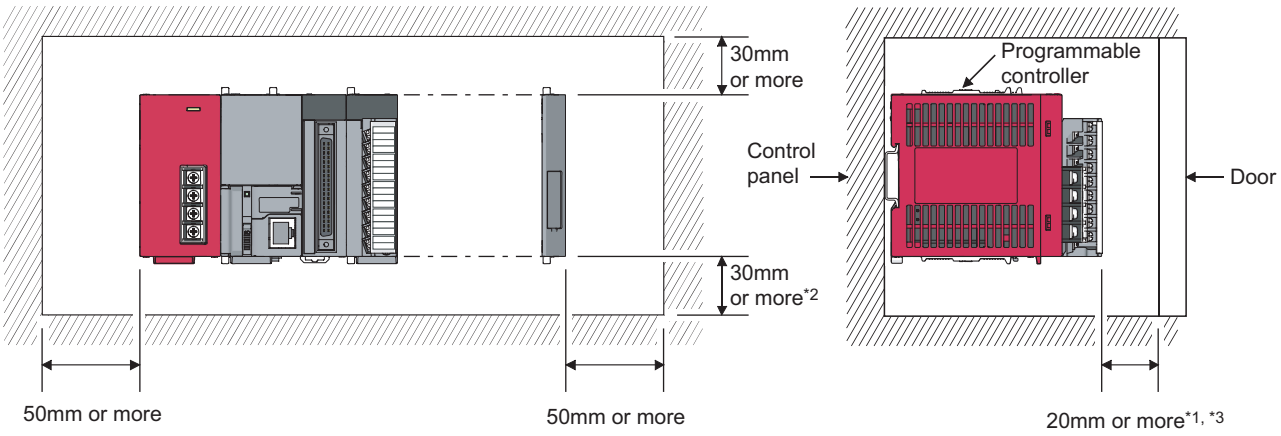
Install the programmable controller according to the installation environment shown in the general specifications. (☞ Page 57, CHAPTER 5)

Do not install the programmable controller to the place where:

- An ambient temperature is outside the range of 0 to 55°C;
- Ambient humidity is outside the range of 5 to 95%RH;
- Condensation occurs due to rapid temperature change;
- Corrosive gas or combustible gas is present;
- Conductive powder such as dust and iron powder, oil mist, salinity, or organic solvent is filled;
- The programmable controller is exposed to direct sunlight;
- A strong electric field or strong magnetic field is generated; and
- The programmable controller is subject to vibration and shock.

4.1.2 Installation position

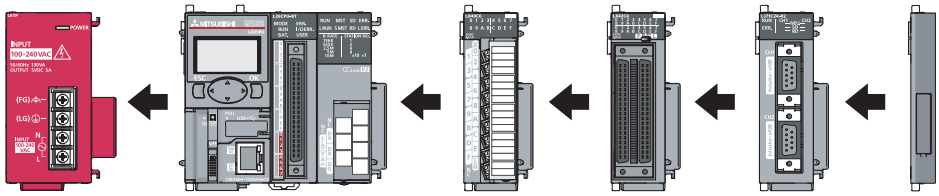
To ensure good ventilation and ease module change, provide clearance between the module top/bottom and structures/parts as shown below.



*1: When using connectors for external devices, provide clearance of 80mm or more.
*2: When using the Q7BAT, provide clearance of 45mm or more.
*3: When connecting an extension cable, provide clearance of 140mm or more.

4.2 Mounting the Modules

This section describes how to interconnect modules and how to mount them on a DIN rail.



Point

- Modules must be mounted on a DIN rail.
- Connect an END cover on the right of the terminal module.

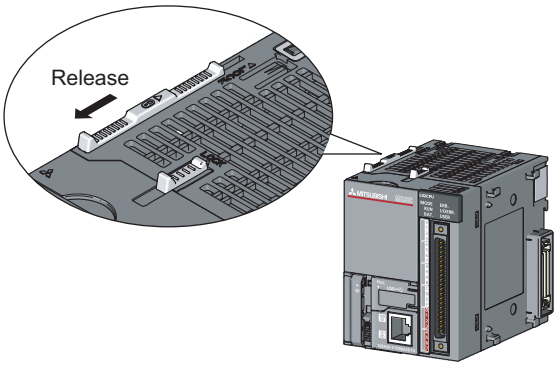
4.2.1 Precautions for connecting and mounting modules

- Do not directly touch any conductive parts and electronic components of the module. Doing so can cause malfunction or failure of the module.
- After the first use of the product (module, display unit, and terminal block), the number of connections/disconnections is limited to 50 times (in accordance with IEC 61131-2).
  Exceeding the limit may cause malfunction.
- Do not drop or apply strong shock to the module case, terminal block, and connectors.
- Do not remove the printed-circuit board of the module from the case.
  Doing so may cause failure of the module and/or printed-circuit board.
- To prevent consumption of the CPU module battery, the battery connector is disconnected at shipment.
  Connect the battery connector before using the CPU module for the first time. (☞Page 86, Section 14.3)

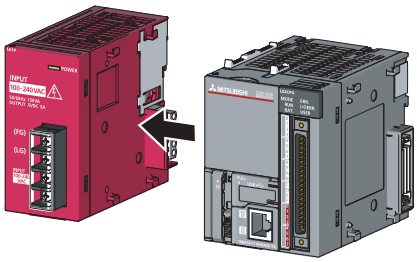
4.2.2 Connecting modules

This section describes a procedure for connecting modules with an example of how to connect the L02CPU with the L61P.
Shut off the external power supply for the system in all phases before connecting or disconnecting modules.

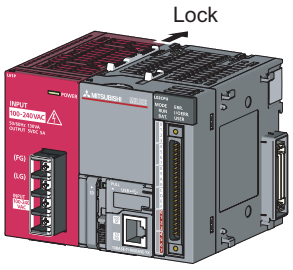
(1) Connecting modules



1. **To release the module joint levers located at the top and bottom of the L02CPU:**
Slide the levers toward the front side of the module.



2. **Insert the connector of the power supply module into that of the CPU module so that they are securely engaged.**



3. **To lock the module joint levers:**
Slide the levers toward the back side of the module.
Make sure that the modules are securely connected.

(2) Disconnecting modules

Disconnect the modules in the reverse manner of (1).

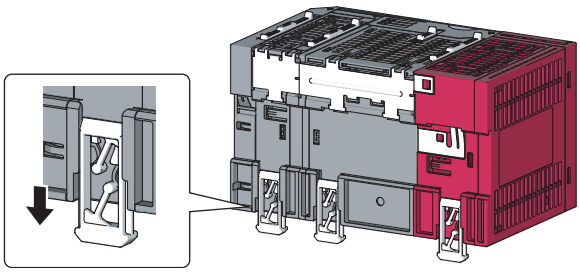
Point

- Failure to securely lock the module joint levers may cause malfunction, failure, or drop of the module.
- The metal parts of a module (such as the back side) may be heated to a high temperature immediately after the power is turned off. Therefore, be careful not to burn yourself when disconnecting a module.

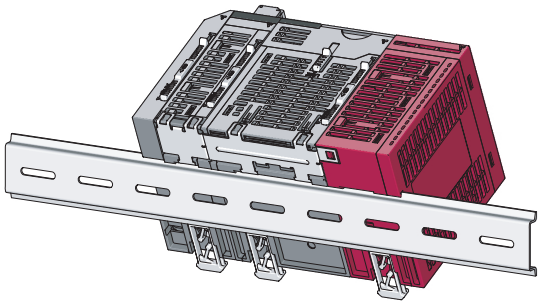
4.2.3 Mounting the modules on a DIN rail

This section describes a procedure for mounting the modules on a DIN rail.

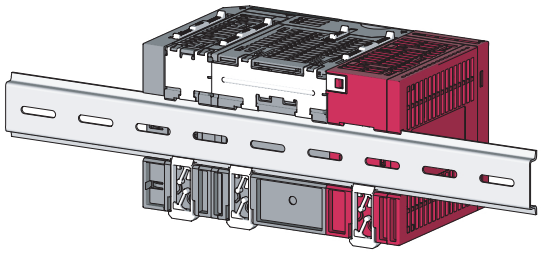
(1) Mounting procedure



1. **Pull down DIN rail hooks on the back of the modules until they click.**



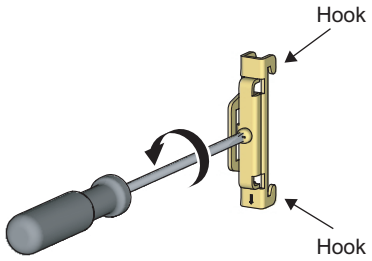
2. **Hang the upper tabs of the modules on a DIN rail, and push the modules in position.**



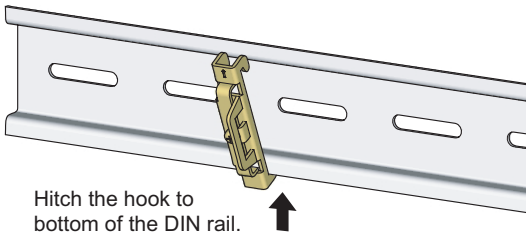
3. **Lock the DIN rail hooks to the DIN rail to secure the modules in position.**

Pull the hooks up until they click.

If the hooks are beyond the reach, use a tool such as a driver.

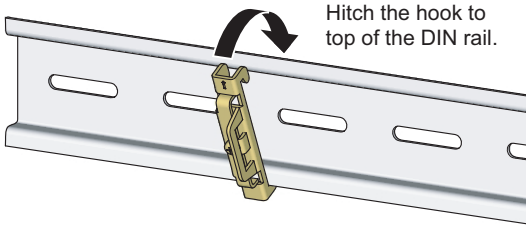


4. **Loosen the screw on DIN rail stopper.**

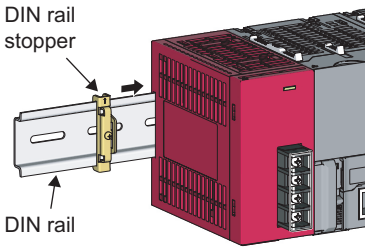


5. **Hitch the bottom hook of the DIN rail stopper to the bottom of the DIN rail.**

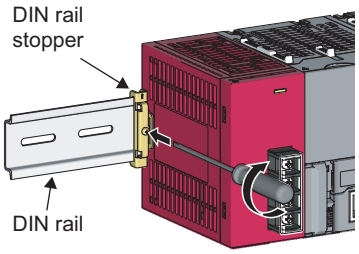
Hitch the hook according to the orientation of the arrow on the front of the stopper.



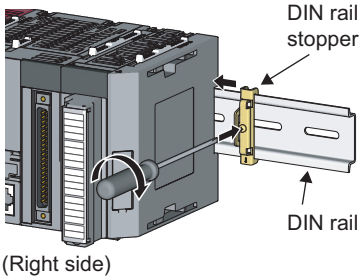
6. **Hitch the upper hook of the DIN rail stopper to the top of the DIN rail.**



7. **Slide the DIN rail stopper up to the left side of the modules.**



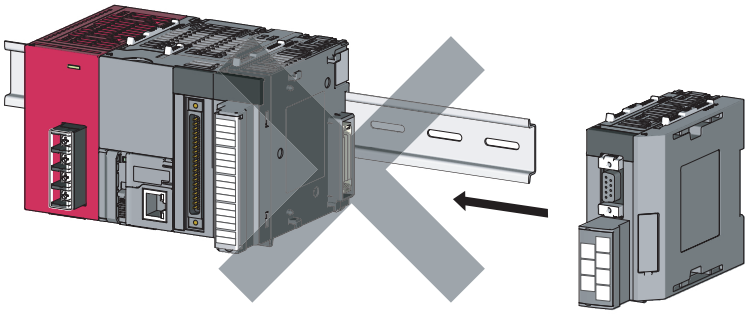
8. **Tighten the screw on the DIN rail stopper with a driver.**



9. **Attach a DIN rail stopper on the right of the modules with the same procedure.**

Point

Do not slide modules from the edge of the DIN rail when mounting them. Doing so may damage the metal part located on the back of the module.



(2) Removal procedure

Remove the modules from the DIN rail in the reverse manner of (1).

(3) Applicable DIN rail model (IEC 60715)

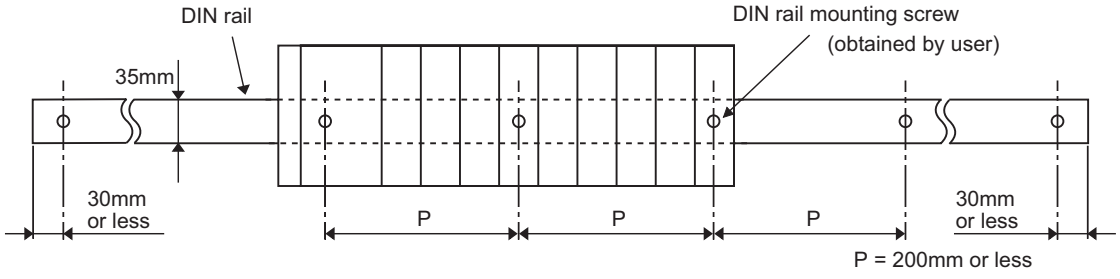
- TH35-7.5Fe
- TH35-7.5Al
- TH35-15Fe

(4) DIN rail stopper

Use a stopper that is attachable to the DIN rail.

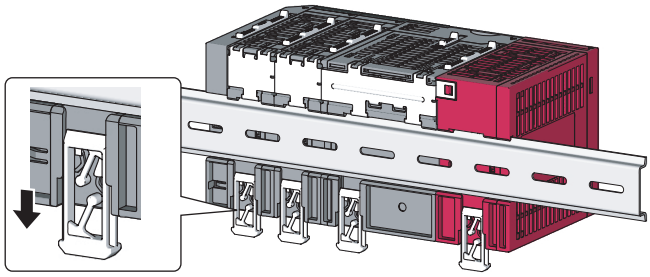
(5) Interval between DIN rail mounting screws

To ensure the strength of a DIN rail, tighten DIN rail mounting screws (obtained by user) within 30mm away from the both edges of the DIN rail and at 200mm-interval between the screws.



4.2.4 Changing modules on a DIN rail

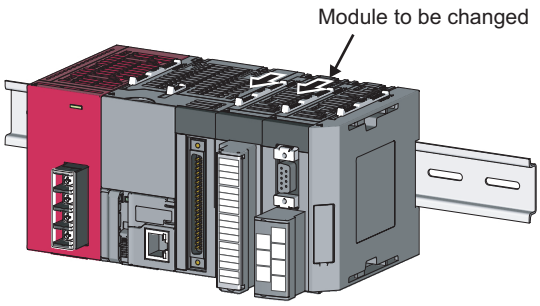
This section describes a procedure for changing modules on a DIN rail by sliding them rightward.
Remove the mounted terminal block and disconnect the connectors beforehand.



1. Remove the DIN rail stopper on the right edge.

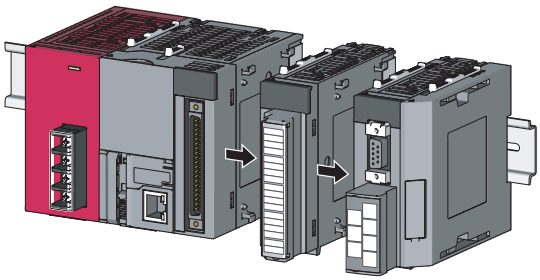
2. Pull down DIN rail hooks on the back of the modules.

Pull down the DIN rail hooks on the module to be changed and on the module on the right of the changed module until they click.
If the hooks are beyond the reach, use a tool such as a driver.

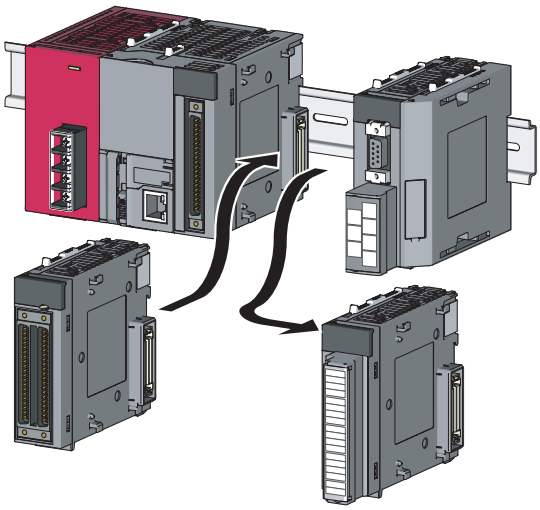


3. Release the module joint levers on the modules.

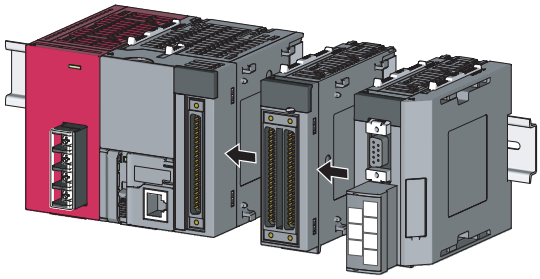
Release the levers on the module to be changed and on the module on the right of the changed module.



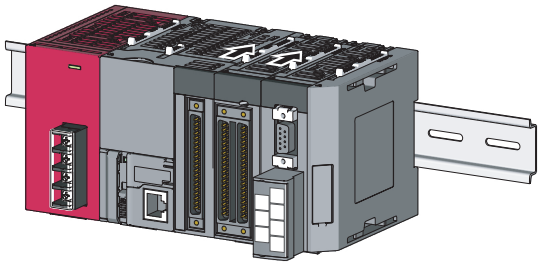
4. Disconnect the modules by sliding them individually.



5. Change the modules.



6. **Slide the modules and plug the connectors.**



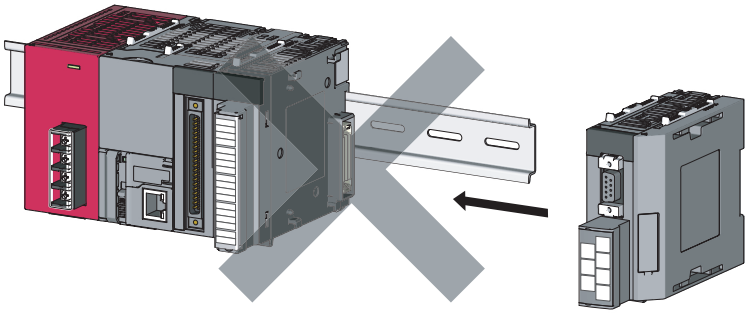
7. **Lock the module joint levers.**

8. **Lock the DIN rail hooks and attach the DIN rail stopper.**

(☞Page 34, Section 4.2.3)

Point

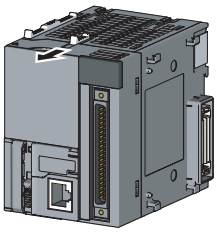
Do not slide modules from the edge of the DIN rail when mounting them. Doing so may damage the metal part located on the back of the module.



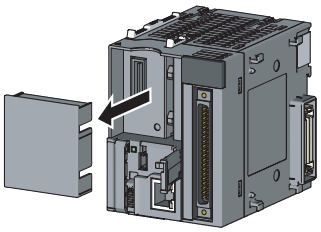
4.2.5 Attaching and removing a display unit

This section describes a procedure for attaching a display unit on the CPU module.
Shut off the external power supply for the system in all phases before attaching or removing a display unit.
After removing the display unit, always attach a display unit dummy cover for protecting the connector.

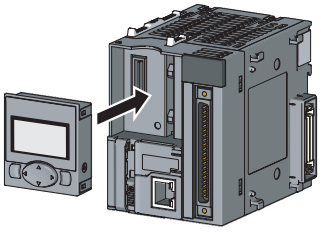
(1) Attachment procedure



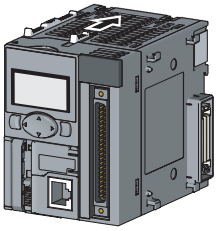
1. **Release the display unit hook on the module top.**
The hook clicks when released.



2. **Remove a display unit dummy cover.**
Keeping the USB connector cover open will ease removal of the unit.



3. **Embed the display unit straight into the CPU module.**



4. **Lock the display unit hook.**
The hook clicks when locked.

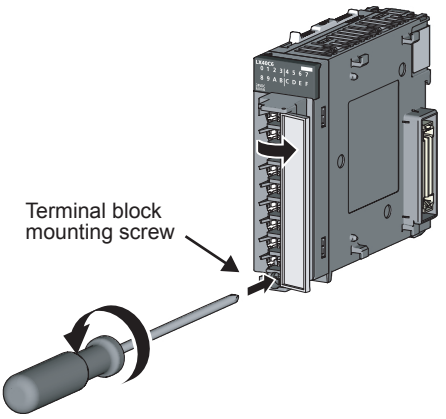
(2) Removal procedure

Change the display unit with the display unit dummy cover in the same manner of (1).

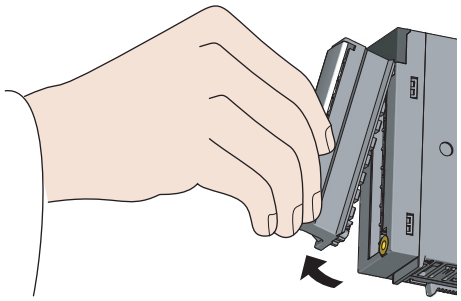
4.2.6 Mounting and removing a terminal block

This section describes a procedure for mounting and removing an 18-point terminal block.

(1) Removal procedure

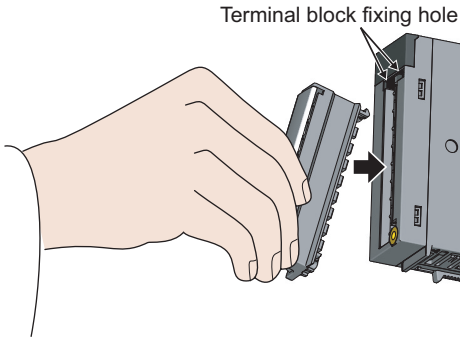


1. **Open the terminal cover and loosen the terminal block mounting screw.**

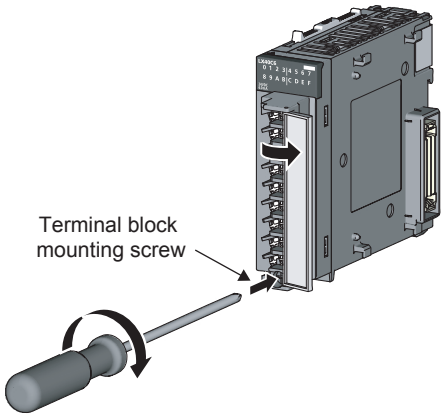


2. **Press the terminal block fixing holes until the lower part of the terminal block is disengaged from the module, and then remove the terminal block.**

(2) Mounting procedure



1. **Fully insert the projections on the top of the terminal block into the terminal block fixing holes and press the terminal block until it snaps into place.**



2. **Open the terminal cover and tighten the terminal block mounting screw.**

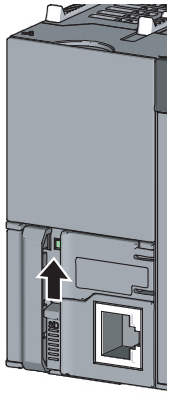
Point

For mounting and removal of other terminal blocks, refer to the user's manual for the module used.

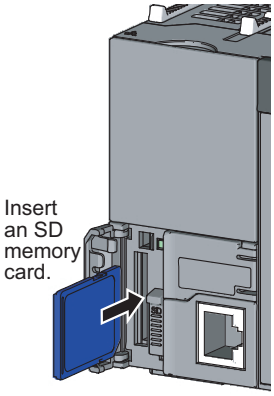
4.2.7 Inserting and removing an SD memory card

This section describes a procedure for inserting/removing an SD memory card into/from the CPU module.

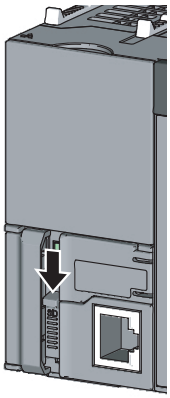
(1) Insertion procedure



1. **Check that the SD memory card lock switch is on the upper position.**



2. **Insert an SD memory card into the SD memory card slot.**



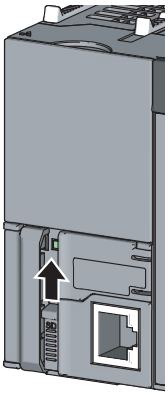
3. **Slide the SD memory card lock switch down.**

The SD LED will be flashing while the SD memory card is being prepared for operation and will turn on when the card becomes ready.
After power-on, check that the SD LED turns on.

Point

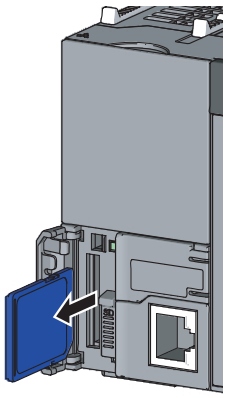
- Check that the SD memory card is inserted completely. Incomplete insertion may cause malfunction due to poor contact.

(2) Removal procedure



1. Slide the SD memory card lock switch up.

Check that the SD LED turns off before removing the SD memory card while the CPU module is on.*1



2. Push the SD memory card into the slot once, and then pull the card out.

*1 While the SD memory card is being used, the SD LED does not turn off even if the SD memory card lock switch is slid up. In this case, check that the all bits of SD604 (Memory card use conditions) turn off, and then slide the lock switch up.

Point

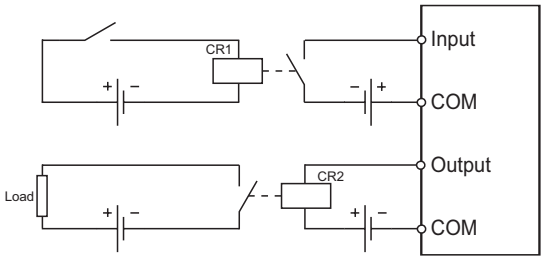
- Do not remove an SD memory card while a function using an SD memory card is being performed.
- To turn off all points of SD604 (Memory card use conditions), leave files in the SD memory card unused, or stop using all files in the SD memory card with SM606 (SD memory card forced disable instruction) and SM607 (SD memory card forced disable status flag). (Page 80, Section 12.3)

4.3 Wiring

This section describes precautions for wiring of power cables and wiring to I/O equipment.

(1) Precautions

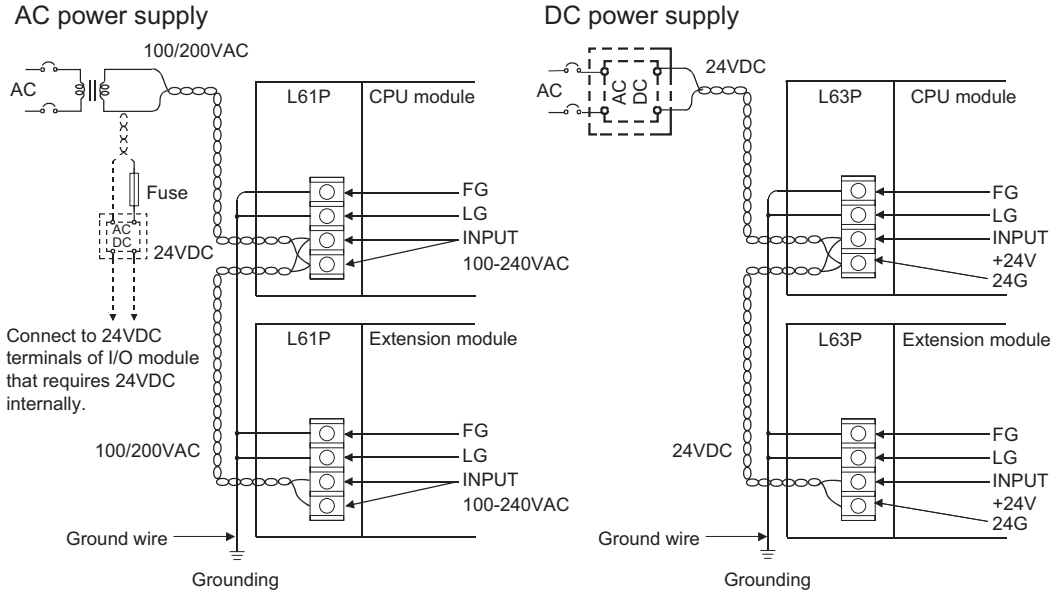
- Do not connect 24VDC outputs from several power supplies in parallel to supply power to one I/O module. Parallel connection will damage the power supplies and/or the I/O module.
- Prevent foreign matter such as dust or wire chips from entering the module.
- When disconnecting the cables from the CPU module or external devices, do not pull the cables by the cable part.
- Do not install the cables connected to the external I/O signals or external devices together with the main circuit lines, power cables, or load cables connected to other than the programmable controller. Keep a distance of 100mm or more between them.
  When bringing the cable connected to the CPU module close to the power cables, use shielded cables for noise reduction measures. Securely install the shielded part of the cables to the control panel on the CPU module side.
- If I/O signals are exposed to the outdoors, isolate them with a relay.



4.3.1 Wiring to power supply modules

(1) Wiring method

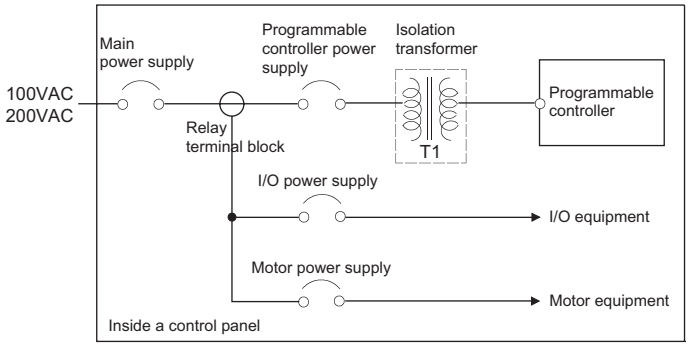
The following figures show examples of wiring to power supply modules.



(2) Precautions

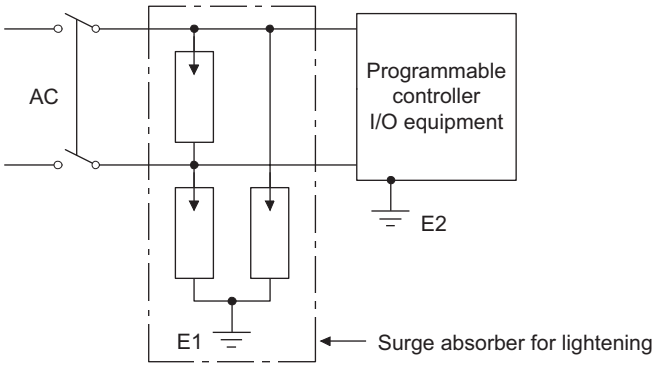
The following describes precautions for wiring to power supply modules.

- Wire cables of the power supply for the programmable controller, I/O power supply, and motor power supply separately as shown below.

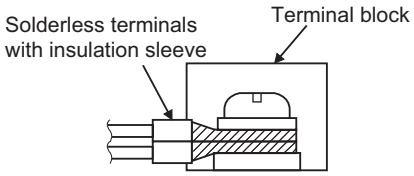


- Considering the rated current and inrush current of the power supply module, connect a breaker having appropriate sensing property or an external fuse causing proper blowout. (When using a single programmable controller, connecting a breaker around 10A or an external fuse is recommended.)
- To minimize a voltage drop, use thick power cables up to 2mm^2, twist the cables closely, and connect the modules with the shortest distance.
- Do not install the power cables together with the main circuit (high voltage and high current) cables, I/O signal cables, and common cables. Keep a distance of 100mm or more between them.
- If there is much noise due to a lightning surge or other causes, connect an isolation transformer. For an isolation transformer, refer to Page 383, Appendix 7.
- After wiring, always attach the included terminal cover to the power supply module and do not touch any terminal while the power is on or the module is operating.
- Use a Class 2 power supply for a module using a DC power supply.
- Configure a system so that the total current consumption may not exceed 5VDC, the rated output current of the power supply module. For the specifications of the power supply module, refer to Page 67, Section 7.2.

- Due to noise caused by lightening surge, a momentary power failure may be detected or the CPU module may be reset. As measures against the noise, connect a surge absorber for lightening as shown below.



- Always use a solderless terminal for wiring to the terminal block on a power supply module.
  To prevent a short when screws come loose, always use a solderless terminal with insulation sleeve of 0.8mm or less in thickness. Up to two solderless terminals can be connected to one terminal block.



- Use UL-approved solderless terminals and, for processing, use a tool recommended by their manufacturer.
- Tighten the terminal screws of the power supply module within the range of 0.66 to 0.89N•m.
- Use the following wire to the power supply module.

Applicable wire size	Material	Temperature rating
0.75 to 2mm^2 (AWG18 to 14) (stranded)	Copper	75°C or more

- Inputting a signal with a different voltage may cause malfunction of the module and failure of the connected devices.
- Use an online UPS (uninterruptible power supply) with a power distortion factor of 5% or less or a line interactive UPS. If a standby UPS is used, use a Mitsubishi low-capacity UPS "FREQUPS FW-F series" (hereinafter FW-F series)*1. (Example: FWF10-0.3K/0.5K)
  Do not use any standby UPS other than the FW-F series UPS.

*1 Use the FW-F series UPS whose serial number starts with P or later or ends with HE.

SERIAL : Q00000000
Starts with "P" or later

SERIAL : B00000000 HE
Ends with "HE"

- Select a power supply for the power supply module having enough power capacity. (The power capacity should be twice or more as great as the current consumption of the power supply module.)

Point

To make the wiring comply with the EMC and Low Voltage Directives, refer to Page 383, Appendix 7.

4.3.2 Wiring to an 18-point screw terminal block

(1) Precautions

- For the 18-point screw terminal block wiring, use a solderless terminal of 0.8mm or less in thickness. Up to two solderless terminals can be connected to one terminal block.
- For an 18-point screw terminal block, a solderless terminal with insulation sleeve cannot be used. To prevent a short when screws come loose, the junction of a solderless terminal and a cable should be covered up with a cable tag or an insulation tube.
- Use the following wire to the 18-point screw terminal block

Applicable wire size	Material	Temperature rating
Core: 0.3 to 0.75mm ^{2} (AWG22 to 18) (stranded) Outside diameter: 2.8mm or less	Copper	75°C or more

- Use R1.25-3 solderless terminal.
- Use UL-approved solderless terminals and, for processing, use a tool recommended by their manufacturer.
- Tighten the terminal block screws within the following specified torque range.

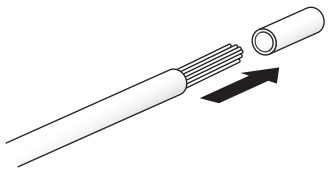
Screw type	Tightening torque range
Terminal block screw (M3)	0.42 to 0.58N•m
Terminal block mounting screw (M3.5)	0.66 to 0.89N•m

Point

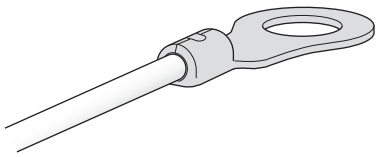
For screw terminal blocks other than the 18-point screw terminal block, refer to the user's manual for the module used.

(2) Wiring method

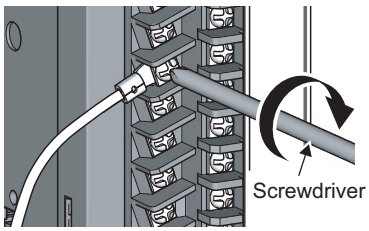
(a) Wiring to an 18-point screw terminal block



1. **Strip the insulating coating from the cable.**



2. **Connect a solderless terminal to the stripped part of the cable.**
For applicable solderless terminals, refer to the specifications of each module.



3. **Wire the solderless terminals to the 18-point screw terminal block.**
For terminal layout, refer to the specifications of each module.

4.3.3 Wiring to a spring clamp terminal block

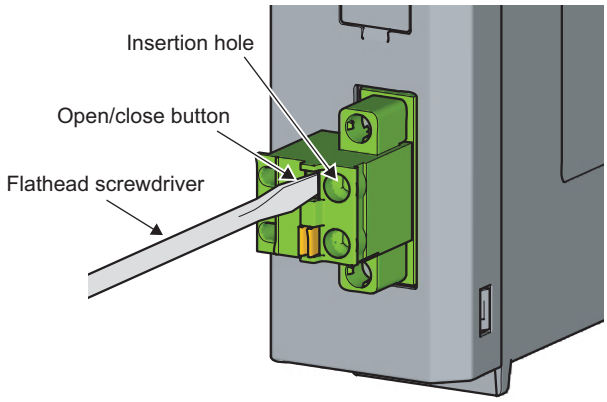
(1) Precautions

- A bar terminal is recommended for the spring clamp terminal block.
- Tighten the terminal block mounting screw within the following specified torque range.

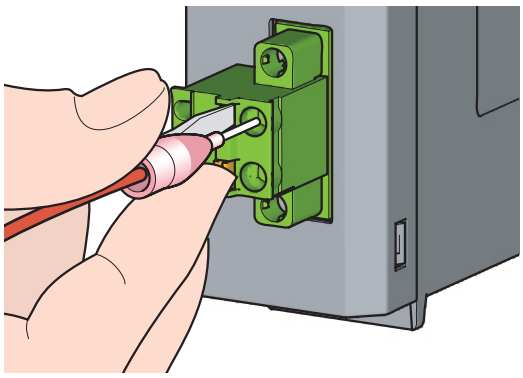
Screw type	Tightening torque range
Terminal block mounting screw	0.20 to 0.30N•m

- To use a bar terminal, use an applicable solderless terminal for a module, and crimp an applicable size wire by using an applicable crimp tool. For applicable solderless terminals and applicable wire size, refer to the user's manual for the module used.
- Only one terminal can be connected to one terminal block.
- Keep the cable wiring length to 30m or less.

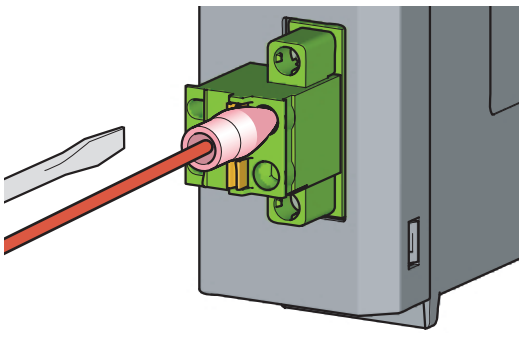
(2) Connecting and disconnecting cables



1. **Insert the flathead screwdriver to the open/close button, and fully press the button.**
The insertion hole opens.
For using the bar terminal, the cable can be inserted without pressing the open/close button.



2. **Insert the cable to the insertion hole or pull off the cable.**
To connect the cable, fully insert the cable.



3. **Remove the flathead screwdriver from the open/close button.**
To connect the cable, check that the cable is securely inserted.

4.3.4 Wiring to connectors

(1) Precautions

- Connectors for external devices (A6CON□) must be crimped, pressed, or correctly soldered.
- Plug connectors for external devices (A6CON□) securely to the module and tighten the two screws.
- Use copper wires having temperature rating of 75°C or more for the connectors.
- Tighten the connector screws within the following specified torque range.

Screw type	Tightening torque range
Connector screw (M2.6)	0.20 to 0.29N•m

- To use the high-speed counter function (built-in I/O function) in 1-phase input, connect the pulse input cable to A-phase line.
- Do not connect the module to the connector/terminal block converter module (A6TB□). If not, I/O signals of the CPU module short, resulting in damage to the module or cables or malfunction due to poor connection.
- Place the cables in a duct or clamp them. If not, dangling cable may swing or inadvertently be pulled, resulting in damage to the module or cables or malfunction due to poor connection.

Point

To make the wiring comply with the EMC and Low Voltage Directives, Page 383, Appendix 7.
Even when compliance with the EMC Directive and Low Voltage Directives is not required, configuring the system that complies with the EMC Directive may reduce external noise.

(2) Applicable connectors

The following tables list the crimp tool, pressure-displacement tools, and the types of connectors used for modules.

(a) 40-pin connector

Type	Model	Applicable wire size
Soldering connector (straight out type)	A6CON1	0.3mm^2 (AWG22) (stranded)
Crimp connector (straight out type)	A6CON2	0.088 to 0.24mm^2 (AWG28 to 24) (stranded)
Pressure-displacement connector (straight out type)	A6CON3*1	AWG28 (stranded) AWG30 (solid) Flat cable of 1.27mm pitch
Soldering connector (both for straight out and 45-degree types)	A6CON4	0.3mm^2 (AWG22) (stranded)

*1 When the A6CON3 is used for the CPU module to connect external devices, it can be used only when all I/O signal points are used for the general-purpose I/O function.

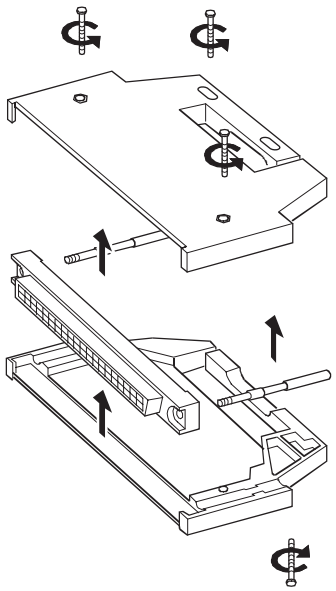
(b) Crimp tool and pressure-displacement tools for 40-pin connectors

Type	Model	Contact
Crimp tool	FCN-363T-T005/H	FUJITSU COMPONENT LIMITED http://www.fcl.fujitsu.com/en/
Pressure-displacement tool	FCN-367T-T012/H (locator plate)	
	FCN-707T-T001/H (cable cutter)	
	FCN-707T-T101/H (hand press)	

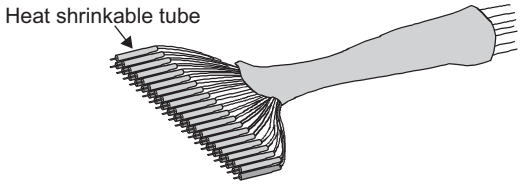
For wiring of the connectors and usage of the crimp tool and pressure-displacement tools, contact FUJITSU COMPONENT LIMITED.

(3) Wiring method

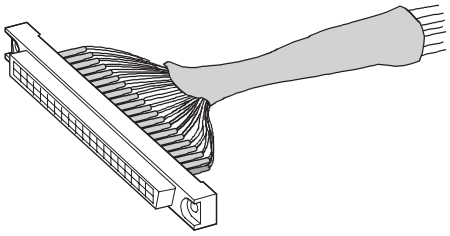
(a) A6CON1, A6CON4



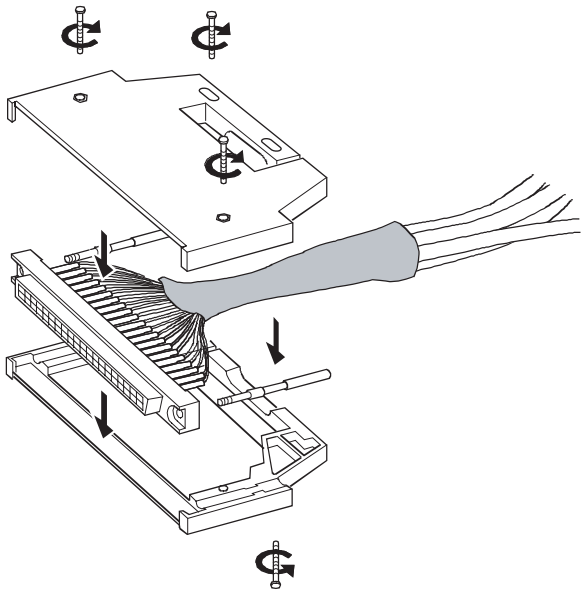
1. **Loosen the four fixing screws on the connector and remove the screws. Open the connector cover from the connector side.**



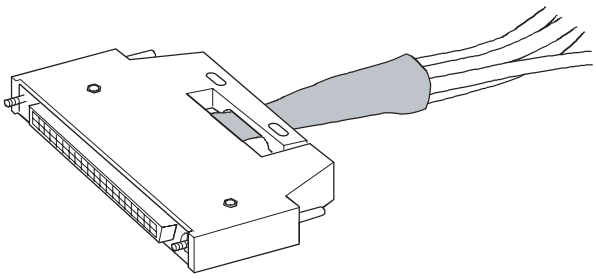
2. **Solder the wires and coat them with heat shrinkable tubes.**



3. **Check the terminal layout and install the wires to the connector.**
When the connector is plugged into an I/O module, an FG wire needs not to be installed.



4. **Place the connector on one side of the connector cover and put the fixing screws through the screw holes. Cover the other connector cover onto the connector.**



5. **Tighten the four screws.**

(b) A6CON2

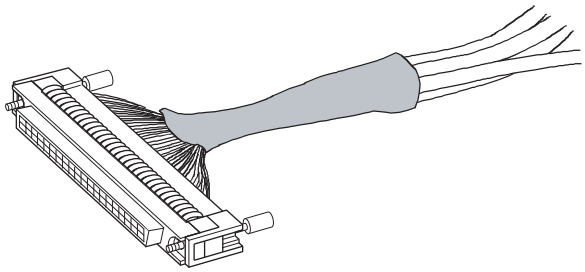
The following table shows the specifications of the FCN-363T-T005/H used for the A6CON2.

Applicable wire size	Cross-section area of wire	Crimp height	Outside diameter of coated wire	Length of stripped wire part
AWG24	0.20 to 0.24mm^2	1.25 to 1.30	ϕ1.2 or less	3.0 to 4.0
AWG26	0.13 to 0.16mm^2	1.20 to 1.25	ϕ1.2 or less	3.0 to 4.0
AWG28	0.088 to 0.096mm^2	1.15 to 1.20	ϕ1.2 or less	3.0 to 4.0

Wiring of the A6CON2 requires special tools.
For usage and adjustment of the tools, contact FUJITSU COMPONENT LIMITED.

(c) A6CON3

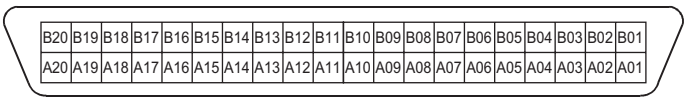
Wiring of the A6CON3 requires special tools.
For usage and adjustment of the tools, contact FUJITSU COMPONENT LIMITED.



1. **Check the terminal layout and press the wires against the connector.**

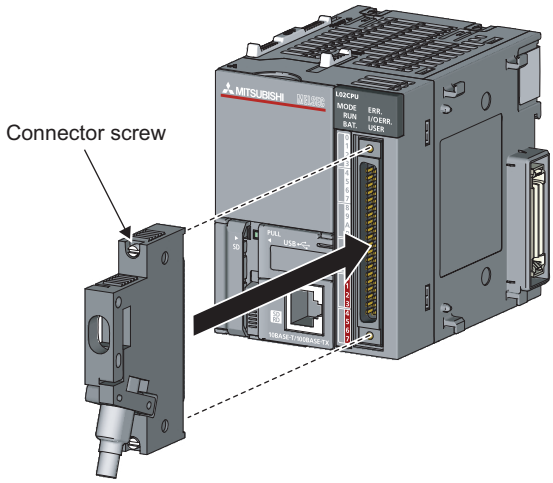
Point

Arrangement for a flat cable is in the order of A1→ B1→A2•••••.
(The following figure shows a connector seen from the plug-in side.)

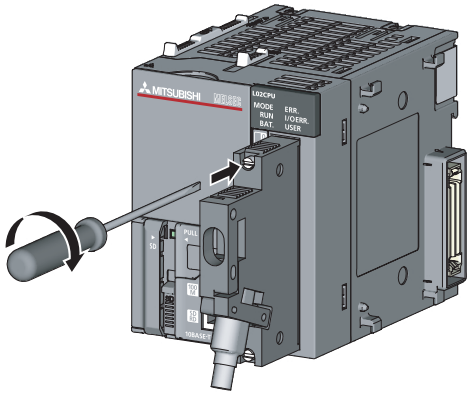


(4) Plugging a connector

(a) Installation procedure

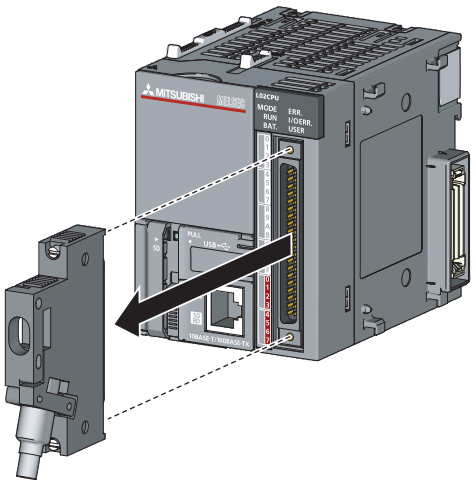


1. **Plug the connector into the slot on the module.**



2. **Tighten the two connector screws (M2.6).**

(b) Removal procedure



1. **Loosen the two connector screws and pull out the connector from the module.**

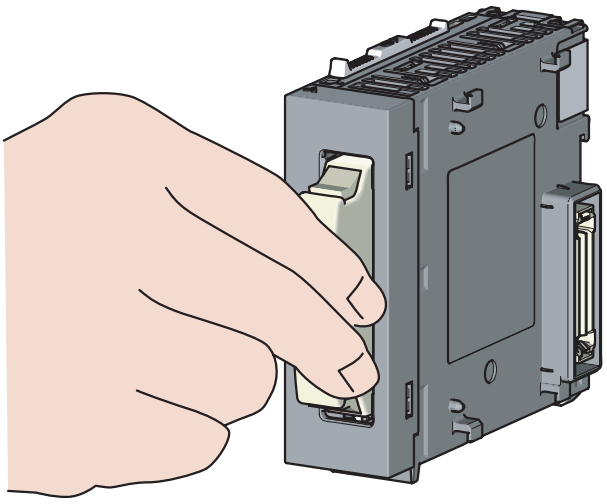
4.3.5 Connecting extension cables

(1) Precautions

- Do not step on an extension cable.
- When laying an extension cable, secure 76mm or more as the minimum cable bending radius.
- If it is less than 76mm, malfunction may occur due to characteristic deterioration or cable disconnection.
- The overall length of extension cables must be up to 3.0m.
- Do not install extension cables with the main circuit (high voltage and large current) lines.

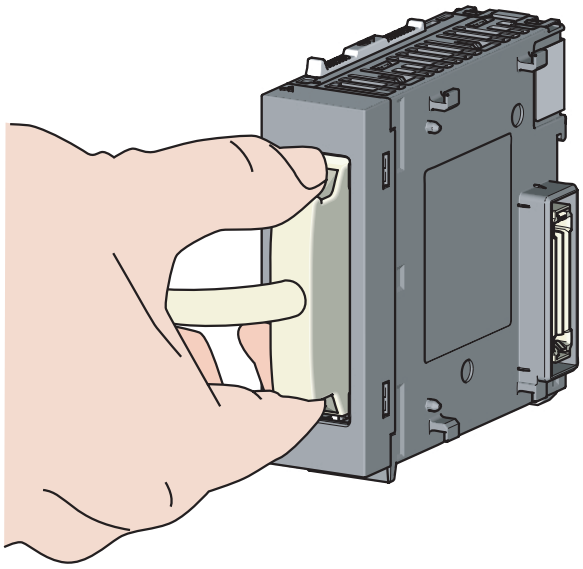
(2) Connection method

(a) Connecting an extension cable



1. **Properly hold the connector part of an extension cable and insert it to the extension connector of a branch module or an extension module until it clicks. (Do not hold the ferrite core to connect the cable.)**

(b) Disconnecting an extension cable



1. **Press the buttons on the connector part and pull the cable out of the module. (Do not hold the ferrite core to disconnect the cable.)**

(3) Specifications

Item	Model		
	LC06E	LC10E	LC30E
Cable length	0.6m	1.0m	3.0m
Conductor resistance value	0.034Ω	0.051Ω	0.14Ω
Weight	0.19kg	0.23kg	0.45kg

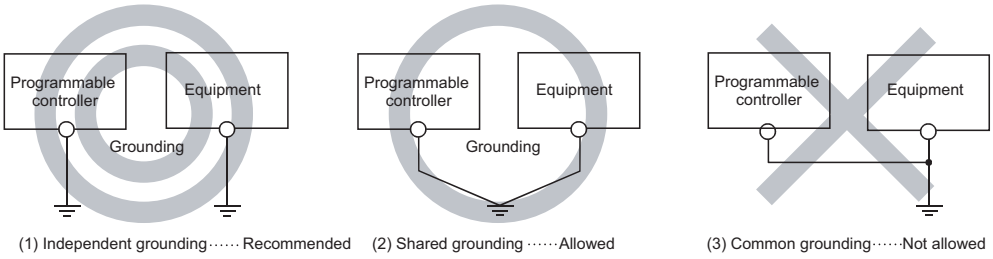
Point

When different models of extension cables are used in combination, select cables so that the overall distance becomes 3.0m or less.

4.3.6 Grounding

Observe the following:

- Provide independent grounding when possible. Ground the FG and LG terminals to the protective ground conductor dedicated to the programmable controller (ground resistance: 100Ω or less).
- If independent grounding cannot be provided, employ (2) Shared grounding shown below.



(1) Independent grounding ····· Recommended (2) Shared grounding ·····Allowed (3) Common grounding·····Not allowed

- Use thick cables up to 2mm^2. Bring the grounding point close to the programmable controller as much as possible so that the ground cable can be shortened.

CHAPTER 5 GENERAL SPECIFICATIONS

This chapter describes the general specifications of a programmable controller.

<table>
<tr><th>Item</th><th colspan="6">Specifications</th></tr>
<tr><td>Operating ambient temperature</td><td colspan="6">0 to 55°C</td></tr>
<tr><td>Storage ambient temperature</td><td colspan="6">-25 to 75°C</td></tr>
<tr><td>Operating ambient humidity</td><td colspan="6" rowspan="2">5 to 95%RF, non-condensing</td></tr>
<tr><td>Storage ambient humidity</td></tr>
<tr><td rowspan="5">Vibration resistance</td><td rowspan="5">Compliant with JIS B 3502 and IEC 61131-2</td><td></td><td>Frequency</td><td>Constant acceleration</td><td>Half amplitude</td><td>Sweep count</td></tr>
<tr><td rowspan="2">Under intermittent vibration</td><td>5 to 8.4Hz</td><td>—</td><td>3.5mm</td><td rowspan="2">10 times each in X, Y, and Z directions</td></tr>
<tr><td>8.4 to 150Hz</td><td>9.8m/s^2</td><td>—</td></tr>
<tr><td rowspan="2">Under continuous vibration</td><td>5 to 8.4Hz</td><td>—</td><td>1.75mm</td><td rowspan="2">—</td></tr>
<tr><td>8.4 to 150Hz</td><td>4.9m/s^2</td><td>—</td></tr>
<tr><td>Shock resistance</td><td colspan="6">Compliant with JIS B 3502 and IEC 61131-2 (147m/s^2, 3 times each in X, Y, and Z directions)</td></tr>
<tr><td>Operating atmosphere</td><td colspan="6">No corrosive gases</td></tr>
<tr><td>Operating altitude*1</td><td colspan="6">0 to 2000m</td></tr>
<tr><td>Installation location</td><td colspan="6">Inside a control panel</td></tr>
<tr><td>Overvoltage category*2</td><td colspan="6">II or less</td></tr>
<tr><td>Pollution degree*3</td><td colspan="6">2 or less</td></tr>
<tr><td>Equipment class</td><td colspan="6">Class I</td></tr>
</table>

*1 Do not use or store the programmable controller under pressure higher than the atmospheric pressure of altitude 0m. Doing so may cause malfunction. When using the programmable controller under pressure, please consult your local Mitsubishi Electric representative.

*2 This indicates the section of the power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within premises.
Category II applies to equipment for which electrical power is supplied from fixed facilities. The surge voltage withstand level for up to the rated voltage of 300V is 2500V.

*3 This index indicates the degree to which conductive material is generated in terms of the environment in which the equipment is used.
Pollution level 2 is when only non-conductive pollution occurs. A temporary conductivity caused by condensing must be expected occasionally.

Point

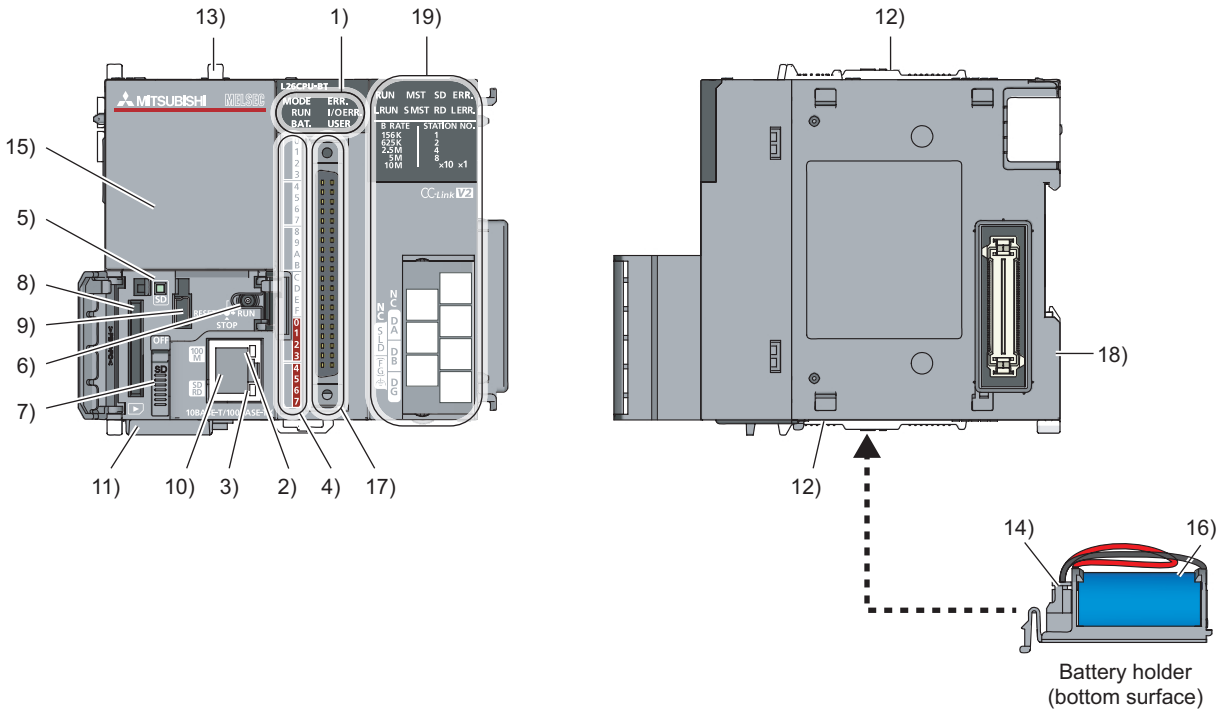
To make the programmable controller comply with the EMC and Low Voltage Directives, refer to Page 383, Appendix 7.

Memo

CHAPTER 6 CPU MODULE

This chapter describes the specifications and hardware operation of a CPU module.

6.1 Part Names



No.	Name	Application
1)	MODE LED	Indicates the mode of the CPU module. On (green): Normal operation mode Flashing (green): Force mode (when the function is active) The forced on/off function for external I/O, the executional conditioned device test function, or the CPU module change function with SD memory card is active.
	RUN LED	Indicates the operating status of the CPU module. On (green): The module is operating normally (in the RUN status). Flashing (green): The write to PLC operation is performed when the CPU module is in the STOP status. Then, the CPU module is switched to the RUN status without resetting. Off: The CPU module is in the STOP status or a stop error has been detected.
	BAT. LED	Indicates the battery status or latch data backup status of the CPU module. On (green): Restoration of latch data backup to standard ROM is completed. (The LED is on for five seconds.) Flashing (green): Latch data backup to standard ROM is completed. Flashing (yellow): A battery error has occurred. Off: The module is operating normally.
	ERR. LED	Indicates the error status of the CPU module. On (red): A continuation error has been detected. Flashing (red): A stop error has been detected or the CPU module has been reset. Off: The module is operating normally.
	I/O ERR. LED	Indicates the error detection status of the built-in I/O function. On (red): An error has occurred in the built-in I/O function. Off: The module is operating normally.

No.	Name	Application
1)	USER LED	Indicates the status of the annunciator (F). On (red): The annunciator (F) is on. Off: The module is operating normally or the annunciator (F) is not used.
2)	100M LED	Indicates the data transmission speed over Ethernet. On (green): Data is communicated at a speed of 100Mbps. Off: Data is communicated at a speed of 10Mbps or connection is not established.
3)	SD/RD LED	Indicates the data communication status over Ethernet. On (green): Data is being sent or being received. Off: Data is not being sent or not being received.
4)	IN 0 to IN F LEDs	Indicates the input status. On (green): The corresponding input signal is on. Off: The corresponding input signal is off.
	OUT 0 to OUT 7 LEDs	Indicates the output status. On (green): The corresponding output signal is on. Off: The corresponding output signal is off.
5)	SD LED	Indicates the status of an SD memory card. On (green): An SD memory card is being used. Flashing (green): An SD memory card is being prepared. Off: An SD memory card is not used.
6)	RUN/STOP/RESET switch	A switch that controls the operating status of the CPU module RUN: Status for performing sequence program operations STOP: Status for stopping sequence program operations RESET: Status for resetting a CPU module (☞ Page 65, Section 6.3.2)
7)	SD memory card lock switch	A switch that disables card access while an SD memory card is being inserted or removed
8)	SD memory card slot	A slot where an SD memory card is inserted
9)	USB connector	A connector for peripherals supporting USB (connector type: miniB)
10)	Built-in Ethernet port	A connector for Ethernet supporting devices (RJ-45 connector) Devices can be connected using twisted pair cables for Ethernet.
11)	Serial number display	Displays the serial number printed on the rating plate.
12)	Module joint levers	Levers for connecting two modules
13)	Display unit hook	A hook for fixing a display unit to the CPU module
14)	Battery connector pin	A pin for connecting a lead wire for the battery (The lead wire is disconnected at the factory to save the battery.)
15)	Display unit dummy cover	A dummy cover used when a display unit is not connected
16)	Battery	A battery for the backup power function, which backs up data in standard RAM and latch devices at power failure
17)	Connectors for external devices (40 pins)	A connector for I/O signal cables to/from external devices
18)	DIN rail hook	A hook used to mount the module to a DIN rail
19)	Built-in CC-Link part	An area for configuring a CC-Link system. (Only the L26CPU-BT and L26CPU-PBT have this part.) For details, refer to the following. MELSEC-L CC-Link System Master/Local Module User's Manual

6.2 Specifications

This section describes the specifications of a CPU module.

(1) Hardware specifications

Item			L02CPU, L02CPU-P	L26CPU-BT, L26CPU-PBT
Control method			Stored program repeat operation	
I/O control mode			Refresh mode (Direct mode is available by specifying the direct access input/output (DX, DY).)	
Programming language (sequence control language)			Function block, relay symbol language, MELSAP3 (SFC), MELSAP-L, structured text (ST), logic symbolic language	
Processing speed (sequence instruction)	LD X0		40ns	9.5ns
	MOV D0 D1		80ns	19ns
Constant scan			0.5 to 2000ms (Setting is available in increments of 0.5ms by parameter.)	
Program size			20K steps (80K bytes)	260K steps (1040K bytes)
Memory capacity	Program memory (drive 0)		80K bytes	1040K bytes
	Memory card (RAM) (drive 1)		—	
	Memory card (ROM) (drive 2)		Depends on the SD/SDHC memory card used.	
	Standard RAM (drive 3)		128K bytes	768K bytes
	Standard ROM (drive 4)		512K bytes	2048K bytes
Maximum number of files stored	Program memory		64 files	252 files
	Memory card (RAM)		—	
	Memory card (ROM)	SD	Root directory: 511 files (maximum) Subdirectory: 65533 files (maximum)	
		SDHC	Root directory: 65534 files (maximum) Subdirectory: 65533 files (maximum)	
	Standard RAM		4 files (each one of the following files: file register file, local device file, sampling trace file, and module error collection file)	
	Standard ROM		128 files	256 files
Maximum number of intelligent function module parameters		Initial setting	2048 parameters	4096 parameters
		Refresh	1024 parameters	2048 parameters
Number of writes to program memory			100000 times (maximum)	
Number of writes to standard ROM			100000 times (maximum)	
Built-in I/O function			MELSEC-L CPU Module User's Manual (Built-In I/O Function)	
Built-in Ethernet function			MELSEC-L CPU Module User's Manual (Built-In Ethernet Function)	
Built-in CC-Link function			—	MELSEC-L CC-Link System Master/Local Module User's Manual
Clock function	Displayed information		Year, month, date, hour, minute, second, and day of the week (automatic leap year detection)	
	Accuracy		0°C: -2.96 to +3.74s (TYP. +1.42s) per day 25°C: -3.18 to +3.74s (TYP. +1.50s) per day 55°C: -13.20 to +2.12s (TYP. -3.54s) per day	
Allowable momentary power failure time			Depends on the power supply module used.	
Internal current consumption (5VDC)	With display unit		1.00A	1.43A
	Without display unit		0.94A	1.37A
External dimensions		H	90mm	
		W	70mm	98.5mm
		D	95mm	
Weight			0.37kg	0.47kg

(2) Device specifications

Item		L02CPU, L02CPU-P	L26CPU-BT, L26CPU-PBT
Number of I/O device points (number of points available on a program)		8192 points (X/Y0 to X/Y1FFF)	
Number of I/O points		1024 points (X/Y0 to X/Y3FF)	4096 points (X/Y0 to X/YFFF)
Internal relay (M)		8192 points (M0 to M8191) by default (changeable)	
Latch relay (L)		8192 points (L0 to L8191) by default (changeable)	
Link relay (B)		8192 points (B0 to B1FFF) by default (changeable)	
Timer (T)		2048 points (T0 to T2047) by default (changeable) (Low-speed and high-speed timers available) Low-speed or high-speed is specified by an instruction. The measurement unit is set by parameter. (Low-speed timer: 1 to 1000ms (in increments of 1ms), default: 100ms) (High-speed timer: 0.1 to 100ms (in increments of 0.1ms), default: 10ms)	
Retentive timer (ST)		0 points by default (changeable)(Low-speed and high-speed retentive timers available) Low-speed or high-speed is specified by an instruction. The measurement unit is set by parameter. (Low-speed retentive timer: 1 to 1000ms (in increments of 1ms), default: 100ms) (High-speed retentive timer: 0.1 to 100ms (in increments of 0.1ms), default: 10ms)	
Counter (C)		Normal counter 1024 points (C0 to C1023) by default (changeable)	
Data register (D)		12288 points (D0 to D12287) by default (changeable)	
Extended data register (D)		32768 points (D12288 to D45055) by default (changeable)	131072 points (D12288 to D143359) by default (changeable)
Link register (W)		8192 points (W0 to W1FFF) by default (changeable)	
Extended link register (W)		0 points by default (changeable)	
Annunciator (F)		2048 points (F0 to F2047) by default (changeable)	
Edge relay (V)		2048 points (V0 to V2047) by default (changeable)	
Link special relay (SB)		2048 points (SB0 to SB7FF) by default (changeable)	
Link special register (SW)		2048 points (SW0 to SW7FF) by default (changeable)	
File register	(R)	32768 points (R0 to R32767) (Maximum 65536 points are available by switching blocks.)	32768 points (R0 to R32767) (Maximum 393216 points are available by switching blocks.)
	(ZR)	65536 points (ZR0 to ZR65535) (Blocks do not need to be switched.)	393216 points (ZR0 to ZR393215) (Blocks do not need to be switched.)
Step relay (S)		8192 points (S0 to S8191) by default (The points can be changed to 0.)	
Index register/standard device register (Z)		20 points (Z0 to Z19) (maximum)	
Index register (Z) (32-bit index modification of ZR device)		10 points (Z0 to Z18) (maximum) (The index register is used as a double-word device.)	
Pointer (P)		4096 points (P0 to P4095) (The local pointer range and the common pointer range can be set by parameter.)	
Interrupt pointer (I)		256 points (I0 to I255) (The fixed scan interval for the system interrupt pointer I28 to I31 can be set by parameter.) 0.5 to 1000ms (in increments of 0.5ms) Default I28: 100ms, I29: 40ms, I30: 20ms, I31: 10ms	
Special relay (SM)		2048 points (SM0 to SM2047) (The number of device points is fixed.)	
Special register (SD)		2048 points (SD0 to SD2047) (The number of device points is fixed.)	
Function input (FX)		16 points (FX0 to FX F) (The number of device points is fixed.)	
Function output (FY)		16 points (FY0 to FY F) (The number of device points is fixed.)	
Function register (FD)		5 points (FD0 to FD4) (The number of device points is fixed.)	
Link direct device		Device that directly accesses the link device Dedicated to CC-Link IE Field Network Specification format: J□□\X□□, J□□\Y□□, J□□\SB□□, J□□\W□□, J□□\SW□□	
Intelligent function module device		Device that directly accesses the buffer memory of an intelligent function module Specification format: U□□\G□□	
Latch (data retention during power failure) range		8192 points (L0 to L8191) by default (The latch range can be set for the devices, B, F, V, T, ST, C, D, W, and R by parameter.)	

Point

For details on the devices, refer to the following.

MELSEC-L CPU Module User's Manual (Function Explanation, Program Fundamentals)

6.3 Hardware Operation

This section describes the hardware operation of a CPU module.

6.3.1 Switch operation after a program is written to the CPU module

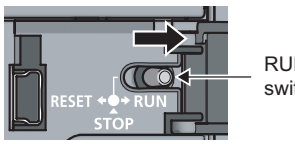
This section describes the switch operation after a program is written to the CPU module.

(1) When a program is written to the CPU module in the STOP status*1

(a) Run the CPU module, clearing data in the device memory

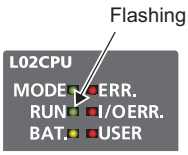
Reset the CPU module. (☞ Page 65, Section 6.3.2)

(b) Run the CPU module, retaining data in the device memory

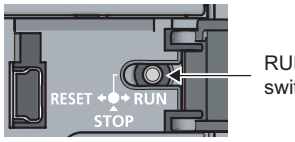


RUN/STOP/RESET switch

1. **Set the RUN/STOP/RESET switch to the RUN position.**

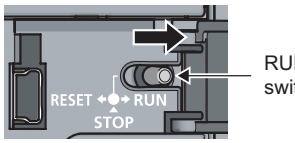


2. **Check that the RUN LED flashes.**



RUN/STOP/RESET switch

3. **Set the RUN/STOP/RESET switch to the STOP position.**



RUN/STOP/RESET switch

4. **Set the RUN/STOP/RESET switch to the RUN position again.**

(2) When a program is written to the CPU module in the RUN status (online change)*1

The switch operation is not required. Data in the device memory is not cleared.

*1 When a program is written to the program memory during boot operation, write the same program to the boot source memory. If not written, an old program will be executed at next boot operation.
For details on the boot operation, refer to the following.

MELSEC-L CPU Module User's Manual (Function Explanation, Program Fundamentals)

Point

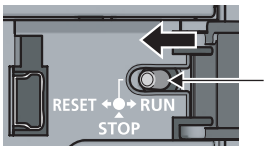
When a program is written to the CPU module which has been stopped by the remote STOP operation from a programming tool, the CPU module runs by the remote RUN operation from the programming tool. Therefore, the switch operation is not required.
For details on the programming tool, refer to the following.

Operating manual for the programming tool used

6.3.2 Reset operation

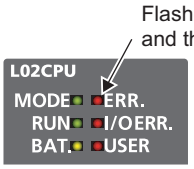
A CPU module can be reset using the RUN/STOP/RESET switch. However, setting the RUN/STOP/RESET switch to the RESET position will not immediately reset the CPU module.

(1) Procedure

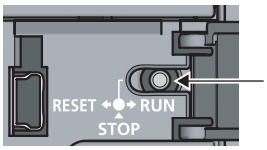


RUN/STOP/RESET switch

1. **Hold the RUN/STOP/RESET switch in the RESET position for 1 second or more.**
Do not release your hand from the switch while the switch is in the RESET position.



2. **Check that the ERR. LED flashes several times and then turns off.**



RUN/STOP/RESET switch

3. **Set the RUN/STOP/RESET switch to the STOP position.**
The switch automatically returns to the STOP position when your hand is released.

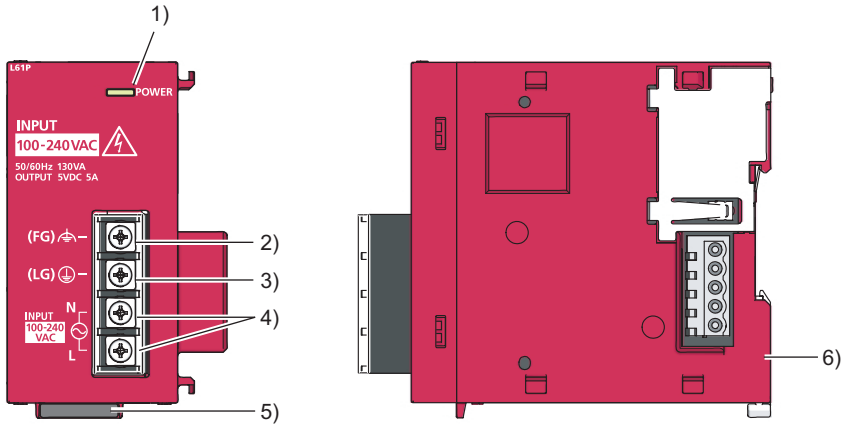
Point

Operate the RUN/STOP/RESET switch with your fingers. Use of a tool such as a screw driver may damage the switch.

CHAPTER 7 POWER SUPPLY MODULE

This chapter describes the specifications of a power supply module.

7.1 Part Names



No.	Name	Application
1)	POWER LED	Indicates the power supply status. On (green): The module is operating normally. Off: Power is not supplied, power has failed, or the hardware has failed.
2)	FG terminal	Ground terminal connected to the shield pattern of the printed-circuit board (M3.5)
3)	LG terminal	Ground terminal for the power supply filter For AC input, it has one-half the potential of the input voltage. (M3.5)
4)	Power input terminals	Input terminals for power (M3.5) For power to be connected, refer to Page 67, Section 7.2.1.
5)	Serial number display	Displays the serial number printed on the rating plate.
6)	DIN rail hook	A hook used to mount the module to a DIN rail

7.2 Specifications

7.2.1 Specification list

Item		L61P	L63P
Input power supply*1		100 to 240VAC (-15% to +10%)	24VDC (-35% to +30%)
Input frequency		50/60Hz (-5% to +5%)	—
Input voltage distortion		Within 5%	—
Maximum input apparent power		130VA	—
Maximum input power		—	45W
Inrush current*1		20A, within 8ms	100A, within 1ms (24VDC input)
Rated output current (5VDC)		5A	
External output voltage		—	
Overcurrent protection (DC5V)*1		5.5A or more	
Overvoltage protection*1		5.5 to 6.5V	
Efficiency		70% or more	
Allowable momentary power failure time*1		Within 10ms	Within 10ms (24VDC input)
Withstand voltage		2300VAC per minute (altitude 0 to 2000m) Between the input and LG batched terminal and the output and FG batched terminal	510VAC per minute (altitude 0 to 2000m) Between the input and LG batched terminal and the output and FG batched terminal
Insulation resistance		10MΩ or higher by 500VDC insulation resistance tester (Between the input and LG batched terminal and the output and FG batched terminal, between the input terminal and the LG terminal, between the output terminal and the FG terminal)	
Noise immunity		• By noise simulator of 1500Vp-p noise voltage, 1μs noise width, and 25 to 60Hz noise frequency • Noise voltage IEC 61000-4-4, 2KV	• By noise simulator of 500Vp-p noise voltage, 1μs noise width, and 25 to 60Hz noise frequency • Noise voltage IEC 61000-4-4, 2KV
Operation indication		LED (Normal: On (green), error: Off)	
Fuse		Built-in (User-unchangeable)	
Terminal screw size		M3.5	
Applicable wire size		0.75 to 2mm^2	
Applicable solderless terminal		RAV1.25-3.5, RAV2-3.5, thickness 0.8mm or less Two solderless terminals can be connected to one terminal.	
Applicable tightening torque		0.66 to 0.89N•m	
External dimensions	H	90mm	
	W	45mm	
	D	95mm	
Weight		0.32kg	0.29kg

*1 For details on the items, refer to ☞ Page 68, Section 7.2.2.

7.2.2 Details on items in specifications

This section describes details on the items in the specifications.

(1) Overcurrent protection

Overcurrent protection works as a protection function to shut off the circuit and stop the system when the current exceeding the specified value flows into the 5VDC circuit.
The POWER LED of the power supply module turns off due to no voltage supply when this function is activated.
To restart the system, shut off the power and remove the cause of the problem, such as insufficient current or short-circuit.
After the cause is removed, wait for a few minutes and then supply power to the system again. When the output current is back to normal, the system starts initially.

(2) Overvoltage protection

Overvoltage protection works as a protection function to shut off the circuit and stop the system when the voltage of 5.5VDC or higher is applied to the 5VDC circuit.
The POWER LED of the power supply module turns off when this function is activated.
To restart the system, shut off the power, wait for a few minutes, and then supply power to the system again. Then, the system starts initially.
If the system does not restart and the POWER LED remains off, replace the power supply module.

(3) Allowable momentary power failure time

The system detects an input voltage down and stops its operation when a momentary power failure occurs. Allowable momentary power failure time is the period of time that the system can continue its operation after power is restored.
If power fails exceeding this period of time, the system can either continue its operation or start initially, depending on the load of the power supply module. When the system continues its operation, the operation will be the same as that of the system returned within the allowable momentary power failure time.

(4) Inrush current

Inrush current is the maximum, instantaneous input current drawn into the circuits immediately after power-on.
If power is supplied to the system immediately after shut-off, an inrush current of more than the specified value may flow.
Wait for 5 or more seconds after shut-off and then supply power to the system again.
When selecting a fuse or breaker for the external circuit, consider blowouts, sensing property, and descriptions in this section.

(5) Input voltage

Input voltage is a voltage required for the power supply module to operate normally. If the input voltage is out of the specified range, an error is detected and the system may stop.

7.2.3 Precautions for power capacity

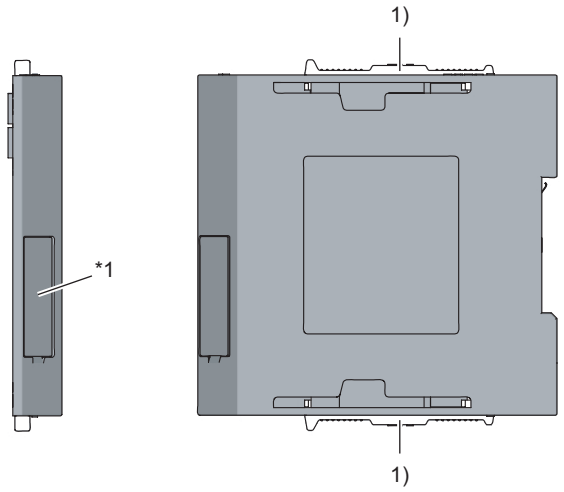
Select a power supply for the power supply module having enough power capacity.
(The power capacity should be twice or more as great as the current consumption of the power supply module.)

CHAPTER 8 END COVER

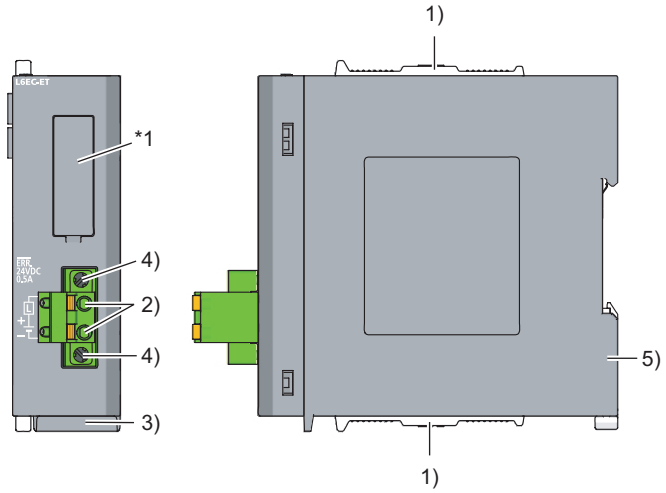
This chapter describes the specifications of an END cover.

8.1 Part Names

L6EC



L6EC-ET



*1 Do not remove this label because it is for maintenance.

No.	Name	Application
1)	Module joint levers	Levers for connecting two modules
2)	$\overline{\text{ERR.}}$ terminal	Contact output terminals for error detection Turns on when all systems run normally. Turns off (opens) when power is off or when a stop error occurs on the CPU module (including when a CPU module is reset).
3)	Serial number display	Displays the serial number printed on the rating plate.
4)	Terminal block mounting screw	A screw used to mount or remove a terminal block
5)	DIN rail hook	A hook used to mount the module to a DIN rail

Point

When the L6EC-ET is connected to an extension block, a system error cannot be detected using the $\overline{\text{ERR.}}$ terminal. (The $\overline{\text{ERR.}}$ terminal is always off.)

8.2 Specifications

(1) Performance specifications

Item		L6EC	L6EC-ET
$\overline{\text{ERR}}$. terminal		-	Available (☞ Page 69, Section 8.1)
	Rated switching voltage, current	-	24VDC, 0.5A
	Minimum switching load	-	5VDC, 1mA
	Response time	-	OFF to ON: 10ms or less ON to OFF: 12ms or less
	Life	-	Mechanical: 20 million or more Electrical: 100 thousand or more for rated switching voltage and current
	Surge suppressor	-	None
	Fuse	-	None
External connection system		-	Spring clamp terminal block
Applicable wire size		-	0.3 to 2.0mm^2 (AWG22 to 14) (Stranded wire/single wire)
External dimensions	H	90mm	90mm
	W	13mm	28.5mm
	D	95mm	95mm
Internal current consumption		0.04A	0.06A
Weight		0.06kg	0.11kg

(2) Applicable solderless terminals

The following table shows applicable solderless terminals for an $\overline{\text{ERR.}}$ terminal of the L6EC-ET.

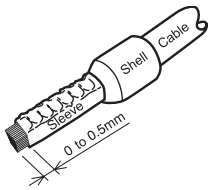
For wiring method, refer to ☞ Page 48, Section 4.3.3.

Product name	Model name	Applicable wire size	Manufacturer
Bar solderless terminal	FA-VTC125T9	0.3 to 1.65mm^2	Mitsubishi Electric System & Service Co., Ltd.
Tool dedicated for bar solderless terminal*1	FA-NH65A	-	
Bar solderless terminal	AI0.5-10WH	0.5mm^2	Phoenix Contact GmbH & Co. KG
	AI0.75-10GY	0.75mm^2	
	AI1-10RD	1.0mm^2	
Tool dedicated for bar solderless terminal*1	CRIMPFOX UD6-4	-	
Bar solderless terminal	TE0.5-10	0.3 to 0.5mm^2	NICHIFU TERMINAL INDUSTRIES CO.,LTD.
	TE0.75-10	0.75mm^2	
	TE1.0-10	1.0mm^2	
Tool dedicated for bar solderless terminal*1	NH-79	-	

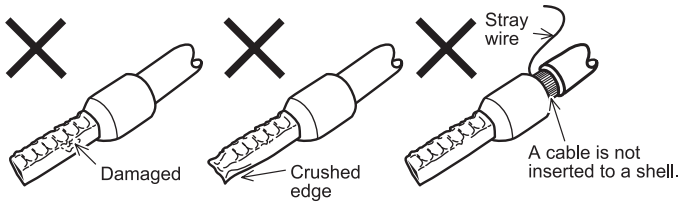
*1 Use the same manufacturer for the bar solderless terminal and the tool dedicated for bar solderless terminal.

(a) Precautions for processing the cable end

- To use the bar terminal type with cable cores sticking out of the sleeve, insert the cable so that cable cores stick out by approximately 0 to 0.5mm from the sleeve edge.



- Check an appearance of the bar terminal after crimping it. Do not use the bar terminal if it is not crimped properly or the side is damaged.

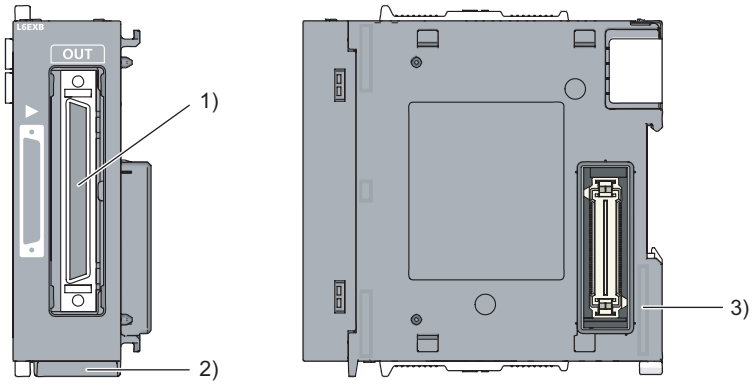


CHAPTER 9 BRANCH MODULE AND EXTENSION MODULE

This chapter describes the specifications of a branch module and an extension module.

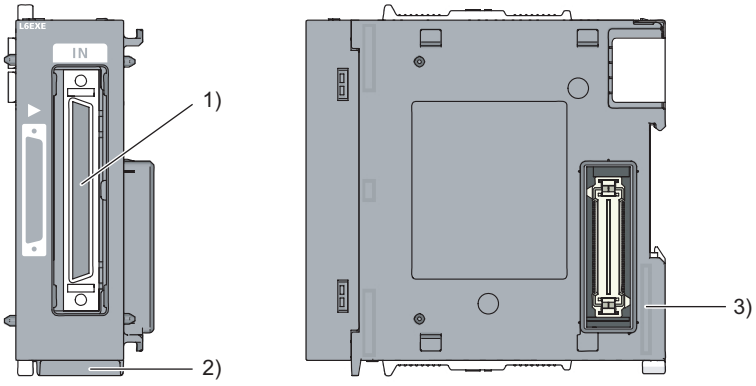
9.1 Part Names

(1) Branch module



No.	Name	Application
1)	Extension connector (OUT)	A connector for an extension cable (Signals are sent to and received from an extension module.)
2)	Serial number display	Displays the serial number printed on the rating plate.
3)	DIN rail hook	A hook used to mount the module to a DIN rail

(2) Extension module



No.	Name	Application
1)	Extension connector (IN)	A connector for an extension cable (Signals are sent to and received from a branch module.)
2)	Serial number display	Displays the serial number printed on the rating plate.
3)	DIN rail hook	A hook used to mount the module to a DIN rail

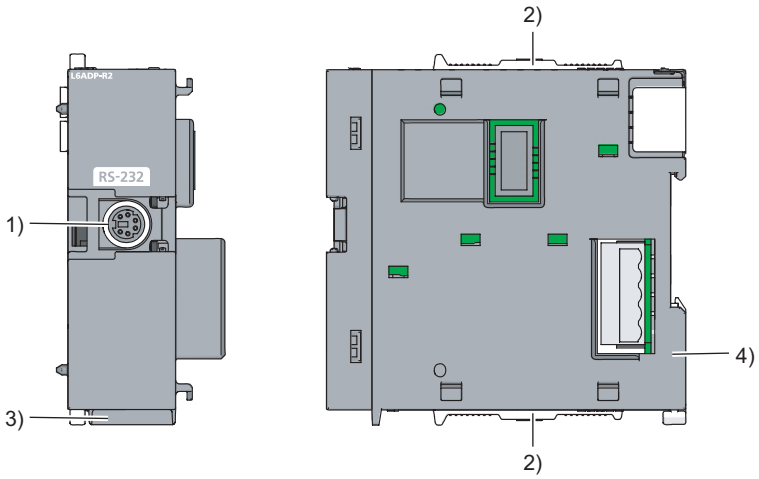
9.2 Specifications

Item		L6EXB	L6EXE
External dimensions	H	90mm	90mm
	W	28.5mm	28.5mm
	D	95mm	95mm
Internal current consumption		0.08A	0.08A
Weight		0.12kg	0.13kg

CHAPTER 10 RS-232 ADAPTER

This chapter describes the specifications of an RS-232 adapter.

10.1 Part Names



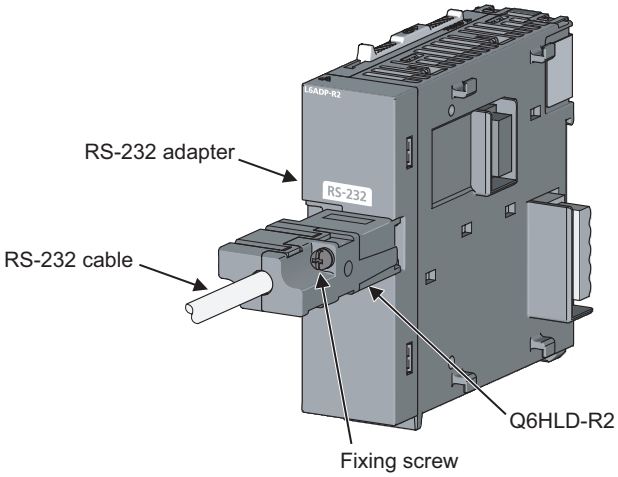
No.	Name	Application
1)	RS-232 connector	A connector for peripherals supporting RS-232
2)	Module joint levers	Levers for connecting two modules
3)	Serial number display	Displays the serial number printed on the rating plate.
4)	DIN rail hook	A hook used to mount the module to a DIN rail

10.2 Specifications

Item		L6ADP-R2
Maximum transmission speed		115.2kbps
External dimensions	H	90mm
	W	28.5mm
	D	95mm
Internal current consumption		0.02A
Weight		0.10kg

10.3 Connecting a RS-232 Cable at All Times

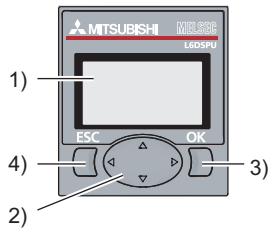
When connecting a cable to the RS-232 connector at all times, clamp the cable.
This prevents disconnection of the connector due to a swing or inadvertent pull of a dangling cable.
The connector disconnection prevention holder (Q6HLD-R2) is available as a clamp for the RS-232 connector.



CHAPTER 11 DISPLAY UNIT

This chapter describes the specifications of a display unit.

11.1 Part Names



No.	Name	Application
1)	LCD (liquid crystal display)	A screen for displaying menus, time, and monitoring data*1
2)	▲ button	These buttons are used to operate a display unit. For details, refer to the following. MELSEC-L CPU Module User's Manual (Function Explanation, Program Fundamentals)
	▼ button	
	▶ button	
	◀ button	
3)	OK button	
4)	ESC button	

*1 Dots may be displayed in the form of a line for several or several tens of seconds after power-off. However, this does not cause functionality problem.

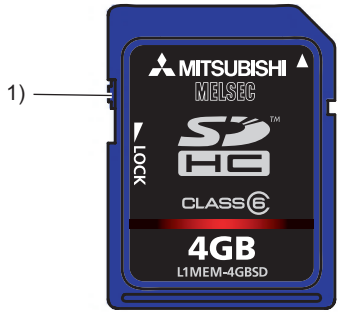
11.2 Specifications

Item		L6DSPU
Number of displayed characters		16 one-byte characters × 4 lines
Displayed characters		• Alphanumeric (two-byte/one-byte character) • Katakana (two-byte/one-byte character) • Hiragana (two-byte character) • Chinese character (two-byte character) • Symbol (two-byte/one-byte character)
Language		Japanese/English
Backlight		Green (normal), red (error)
External dimensions	H	50mm
	W	45mm
	D	15mm
Weight		0.03kg

Memo

CHAPTER 12 SD MEMORY CARD

This chapter describes the specifications of an SD memory card.



12.1 Part Names

No.	Name	Application
1)	Protect switch	A switch that disables deleting data from or overwriting data to the SD memory card (Set the switch in the LOCK position.)

12.2 Specifications

Item		L1MEM-2GBSD	L1MEM-4GBSD
Memory card type		SD memory card	SDHC memory card
Memory capacity		2GB	4GB
Number of files stored		511 files*1	65534 files*1
External dimensions	H	32mm	
	W	24mm	
	D	2.1mm	
Weight		2g	

*1 The number indicates the number of files can be stored in the root directory. In the subdirectory, 65533 files can be stored.

Point

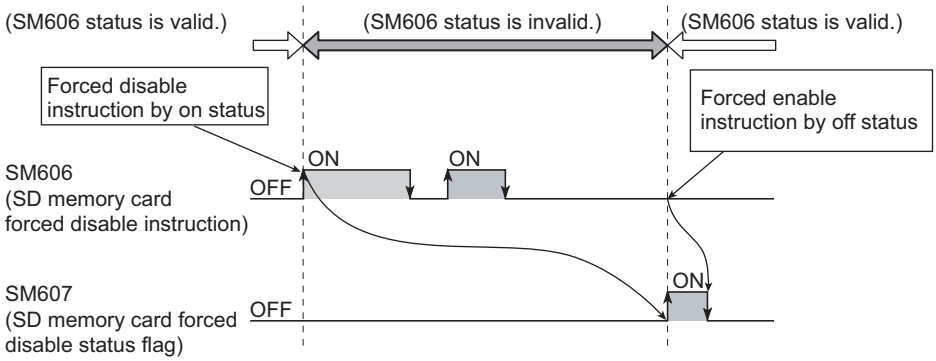
- Do not format an SD memory card or SDHC memory card using a personal computer.
- The L1MEM-2GBSD and L1MEM-4GBSD are compliant with IEC61131-2 when used in the MELSEC-L series CPU module.
- A SDHC memory card can be used only for the CPU module having an approved SDHC logo on the product or in the user's manual.
- If power is shut off, the CPU module is reset, or the SD memory card is removed during an access to the SD memory card, data in the SD memory card may corrupt. Stop accessing to an SD memory card, and then power off the CPU module, reset the CPU module, or remove an SD memory card. All of SD memory card operations can be disabled by SM606 (SD memory card forced disable instruction), and whether the SD memory card is disabled or not can be checked by SM607 (SD memory card forced disable status flag). (☞ Page 80, Section 12.3)
- It is recommended to back up important data at a regular basis by saving data to other media, such as CDs or DVDs.

12.3 Forced Disablement of SD Memory Card Note12.1

All of SD memory card operations can be disabled by SM606 (SD memory card forced disable instruction). This section describes the detailed specifications of SM606 (SD memory card forced disable instruction).

- By turning on SM606 (SD memory card forced disable instruction), an SD memory card installed on the CPU module can be disabled even when SD604 (Memory card use conditions) is on. Whether the SD memory card is forcibly disabled or not can be checked by SM607 (SD memory card forced disable status flag).
- To cancel the forced disable status of SD memory card, perform either of the following operations.
  - Power off, and then on the CPU module.
  - Reset the CPU module.
  - Turn off SM606 (SD memory card forced disable instruction).

- After the disable instruction by turning on SM606 (SD memory card forced disable instruction), instructions affected by the on/off status of SM606 (SD memory card forced disable instruction) are invalid until SM607 (SD memory card forced disable status flag) turns on.



- When accessing to an SD memory card by each function while the SD memory card is forcibly being disabled, a CPU module operates similarly as when an SD card is not installed. For FREAD/FWRITE/COMRD(P)/QCDSET(P) instructions, being different from when an SD card is installed, no processing is performed.
- When an SD memory card is installed, the SD memory card lock switch is slid up (SD memory card is not available), and SM606 (SD memory card forced disable instruction) is on, perform all of the following operations to make the SD card available.
  - Slide the SD memory card lock switch down. (Make the SD memory card available.)
  - Turn off SM606 (SD memory card forced disable instruction).

- If an SD memory card is forcibly disabled while writing a file from an external device, writing the file may fail. In this case, cancel the forced disable status of SD memory card. Then, write a file again.

Note12.1 LCPU

The forced disablement of SD memory card by SM606 is available on the CPU modules whose first five digits of serial No. is "12022" or later.

CHAPTER 13 BATTERY

This chapter describes the specifications of a battery.

13.1 Specifications

Item	Q6BAT	Q7BAT	Q7BAT-SET
Type	Manganese dioxide lithium primary battery		
Initial voltage	3.0V		
Nominal current	1800mAh	5000mAh	
Battery life when not used	Approximately 5 years (room temperature)		
Lithium content	0.49g	1.52g	
Application	To retain data in standard RAM and latch devices during power failure		
Accessory	—		Battery holder

Point

- For battery installation and replacement, refer to Page 86, Section 14.3.
- For battery life, refer to Page 377, Appendix 4.
- For handling of batteries in EU member states, refer to Page 404, Appendix 11.

Memo

CHAPTER 14 MAINTENANCE AND INSPECTION

This chapter describes items that must be maintained or inspected daily or periodically to properly use a programmable controller in optimal condition at all times.

14.1 Daily Inspection

This section describes items that must be inspected daily.

(1) Mounting and connecting status

Checkbox

- ☐ USB connector cover and SD memory card slot cover are securely closed.
- ☐ Modules are securely connected.
- ☐ Module joint levers are properly locked.
- ☐ Terminal screws of modules are properly tightened.
- ☐ Solderless terminals are physically out of contact and away from each other.
- ☐ Cable connectors are tightly connected.
- ☐ Terminal cover of the power supply module is securely attached.

(2) LED indication status

Checkbox

- ☐ Is the MODE LED of the CPU module lit green?
- ☐ Is the RUN LED of the CPU module lit green?
- ☐ Is the ERR. LED of the CPU module off?
- ☐ Is the USER LED of the CPU module off?
- ☐ Is the BAT. LED of the CPU module off?
- ☐ Is the I/O ERR. LED of the CPU module off?
- ☐ When an input signal is on, are all the corresponding LEDs on?
- ☐ When an output signal is on, are all the corresponding LEDs on?
- ☐ Is the RUN LED for CC-Link lit green?
- ☐ Is the ERR. LED for CC-Link off?
- ☐ Is the L RUN LED for CC-Link lit green?
- ☐ Is the L ERR. LED for CC-Link off?
- ☐ Is the POWER LED of the power supply module lit green?
- ☐ Are the indicators of the input module correctly lit when the input signal is on?
- ☐ Are the indicators of the output module correctly lit when the output signal is on?

When an LED indication error is detected, perform troubleshooting according to the error location.

Error location		Reference
CPU module	CPU (MODE, RUN, ERR., USER, and BAT.)	☞ Page 90, CHAPTER 15
	Built-in function (I/O ERR., X0 to XF, and Y0 to Y7)	
	CC-Link (RUN, ERR., L RUN, and L ERR.)	🕮 MELSEC-L CC-Link System Master/Local Module User's Manual
Power supply module, I/O module		☞ Page 90, CHAPTER 15

14.2 Periodic Inspection

This section describes items that must be inspected once or twice every 6 to 12 months.
The items must be inspected as well when the equipment has been relocated or modified, or wiring layout has been changed.

Checkbox

- ☐ Is the ambient temperature within 0 to 55℃?
- ☐ Is the ambient humidity within 5 to 95%RH?
- ☐ Is there no corrosive gas?
- ☐ Is the voltage across 100VAC terminals within 85 to 132VAC?
- ☐ Is the voltage across 200VAC terminals within 170 to 264VAC?
- ☐ Is the voltage across 24VDC terminals within 15.6 to 31.2VDC?
- ☐ Are the modules securely installed?
- ☐ Is there no dust or foreign matter?
- ☐ Is the BAT. LED of the CPU module off?
- ☐ Has the battery been used not exceeding five years?
- ☐ Are SM51 and SM52 off?
- ☐ Is an error history not updated?
- ☐ Are SD526 and SD527 (maximum scan time) values within the range specified for the system?

14.3 Battery Replacement Procedure

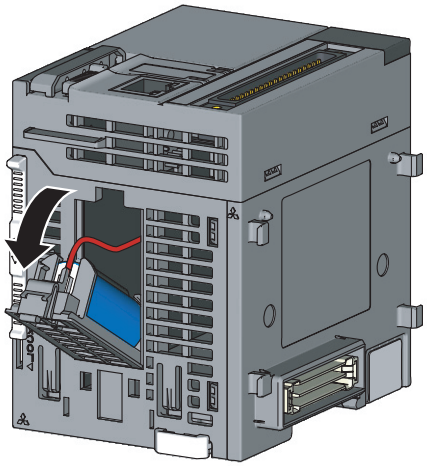
Data in the memory is backed up for a while by a capacitor even after the battery is removed from the CPU module. However, replace the battery quickly because the data may be erased after the backup power time (three minutes) is elapsed.

(1) Pre-procedure

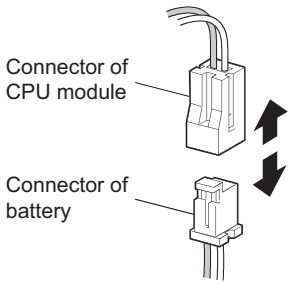
Perform the following before replacing the battery.

- Back up the program and data.
- Supply power to the CPU module for 10 minutes or longer.

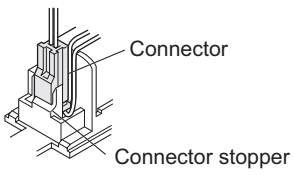
(2) Q6BAT replacement procedure



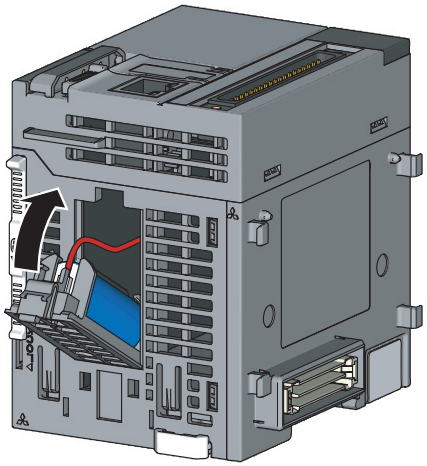
1. **Remove a CPU module from the DIN rail and open the battery holder located at the bottom of the CPU module.**



2. **Take out the battery from the battery holder.**
(The battery connector is disconnected at shipment.)

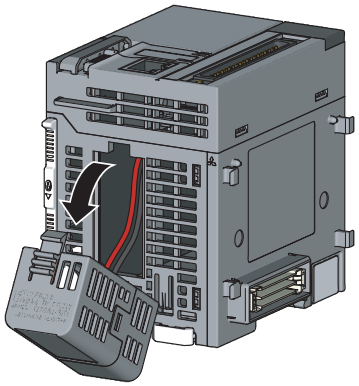


3. **Connect the lead connector of the new battery to that of the CPU module. Then, store them in the battery holder.**
Fix the connectors to the connector stopper of the holder.

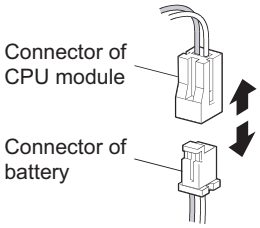


4. **Close the battery holder and mount the CPU module to the DIN rail.**

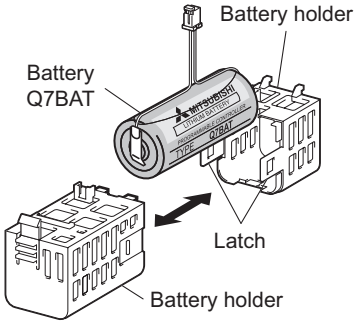
(3) Q7BAT replacement procedure



1. **Remove the CPU module from the DIN rail, and open the battery holder located at the bottom of the CPU module.**

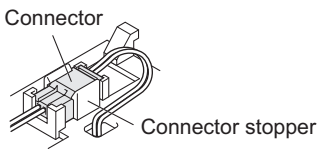


2. **Take out the battery from the holder.**

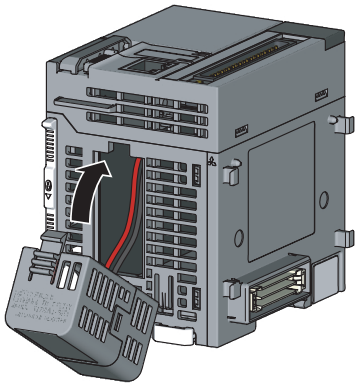


3. **Disengage the latches on the battery holder sides to open the holder, and remove the Q7BAT.**

4. **Put the new Q7BAT into the holder in correct orientation, and close the holder so that the battery cable is pulled out from the hole on the joint.**



5. **Connect the connector of the new battery to that of the CPU module. Then, store them in the battery holder.**
Fix the connectors to the connector stopper of the holder.



6. **Close the battery holder and mount the CPU module to the DIN rail.**

14.4 Operation Restart After Being Stored

When operation is restarted after the programmable controller has been stored under the following conditions, data in the standard RAM of the CPU module may be corrupted. Before restarting operation, format the standard RAM using a programming tool.
After that, write the backup data to the standard RAM.

- When stored without a battery installed
- When stored exceeding the guaranteed battery life

Remark

If the latch data backup (to standard ROM) function is used, latch data can be held without using a battery. For this reason, when programmable controller operation is restarted after being stored, the data before storage can be used.

For the formatting method of the standard RAM, refer to the following.

Operating manual for the programming tool used

Point

- Before storing a programmable controller, back up all data stored in each memory.
- A CPU module checks the status of the following data when the module is powered on or reset. When the module detects an error, data will be initialized.
  - Data in the standard RAM
  - Error history
  - Latch data (latch relay, devices in latch setting range set in the parameter, special relay (SM900 to SM999), and special register (SD900 to SD999))
  - Sampling trace data

CHAPTER 15 TROUBLESHOOTING

This chapter describes errors that may occur during system operation, how to identify the error cause, and error corrective actions.

When the system has a trouble, perform troubleshooting in the following order.

- Check the system visually. (☞ Page 90, Section 15.1)
- Check the error and take a corrective action. (☞ Page 94, Section 15.2)

When the CPU module has a functional problem, check the module visually before checking the functional problem. (☞ Page 99, Section 15.3)

Remark

Saving the program and devices at the time of an error helps to analyze the error cause.
(☞ Page 124, Section 15.5)

15.1 Checking the System Visually

Visually check the following items.

(1) LED status

Check if there is a hardware failure or not. Check the status of each LED in the following order.

For the module status corresponding to the LED indication, refer to the "Part Names" section of each module.

- CPU module (☞ Page 59, Section 6.1)
- Power supply module (☞ Page 66, Section 7.1)

1. **Power on the system. Check the POWER LED status of the power supply module.**

If the POWER LED does not turn on even when power is supplied, perform the following troubleshooting.
☞ Page 92, Section 15.1.1

2. **Check the MODE LED status of the CPU module.**

If the MODE LED does not turn on, perform the following troubleshooting.
☞ Page 92, Section 15.1.2

3. **Check the RUN LED status of the CPU module.**

If the RUN LED does not turn on, perform the following troubleshooting.
☞ Page 93, Section 15.1.3

4. **Check the I/O ERR. LED or ERR. LED status of the CPU module.**

If the I/O ERR. LED or ERR. LED is on or flashing, an error exists.
Check the error using a display unit or a programming tool.
(☞ Page 94, Section 15.2)

5. **Check the BAT.LED status of the CPU module.**

If the BAT.LED is on, the battery voltage is low.
Replace the battery. (☞ Page 99, Section 15.3)

(2) Communication cable and wiring

Check if any communication cable has a problem or not. Check also that connectors and terminal blocks are correctly mounted or wired. (☞ Page 44, Section 4.3)

15.1.1 When the POWER LED does not turn on

Check the following:

Check item	Action
The MODE LED of the CPU module is on.	The power supply module has failed. Replace the power supply module.
Power supply voltage is not appropriate.	Supply power voltage within the specified range. (☞ Page 67, Section 7.2)
The internal current consumption for the entire system exceeds the rated output current of the power supply module.	Reexamine the system configuration so that the internal current consumption does not exceed the rated output current. (☞ Page 401, Appendix 9)
The POWER LED turns on when power is supplied again to the system after all modules, except for the power supply module, were removed.	Repeatedly supply power to the system, returning the modules back to the system one by one. The last module mounted immediately before the POWER LED turned off is failed.

If the POWER LED does not turn on even after taking the above actions, the possible cause is a hardware failure. Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

15.1.2 When the MODE LED does not turn on

Check the following:

Check item	Action
The forced ON/OFF is set.	Cancel the forced ON/OFF registration.
The MODE LED turns on when power is supplied to the system again after the power supply module was replaced.	The original power supply module has a problem. Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
AC power is not supplied to the power supply module.	Supply AC power to the power supply module.
The MODE LED does not turn on even when power is supplied to the system again after the power supply module was replaced.	The CPU module or any other module mounted has a problem. Repeatedly supply power to the system, returning the modules back to the system one by one. The last module mounted immediately before the MODE LED turned off is failed.
A branch module is connected to another branch module using an extension cable.	Connection of the extension cable is incorrect. Connect the cable correctly.

If the MODE LED does not turn on even after taking the above actions, the possible cause is a hardware failure. Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

15.1.3 When the RUN LED does not turn on

Check the following:

Check item	Action
The ERR. LED of the CPU module is flashing.	An error exists. Check the error using a display unit or a programming tool. (☞ Page 94, Section 15.2)
The ERR. LED of the CPU module is on.	The module is affected by excessive noise. Take noise reduction measures. (☞ Page 383, Appendix 7)
The remote STOP operation, remote PAUSE operation or STOP instruction is being executed.	When the remote STOP or remote PAUSE operation is being executed, execute the remote RUN operation. When the STOP instruction is being executed, change the operating status of the CPU module from STOP to RUN.

If the RUN LED does not turn on even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

15.2 Checking the Error Details

Check the error cause and corresponding corrective action using either of the following:

- Display unit
- Programming tool

(1) Using a display unit

The error code, common information, and individual information of the error can be checked using the error display function of a display unit.

Check the error in the error code list and remove the error cause. (☞ Page 128, Appendix 1)

For the operation of a display unit, refer to the following.

MELSEC-L CPU Module User's Manual (Function Explanation, Program Fundamentals)

(2) Using a programming tool

The error details and cause can be checked by connecting a programming tool to the CPU module.

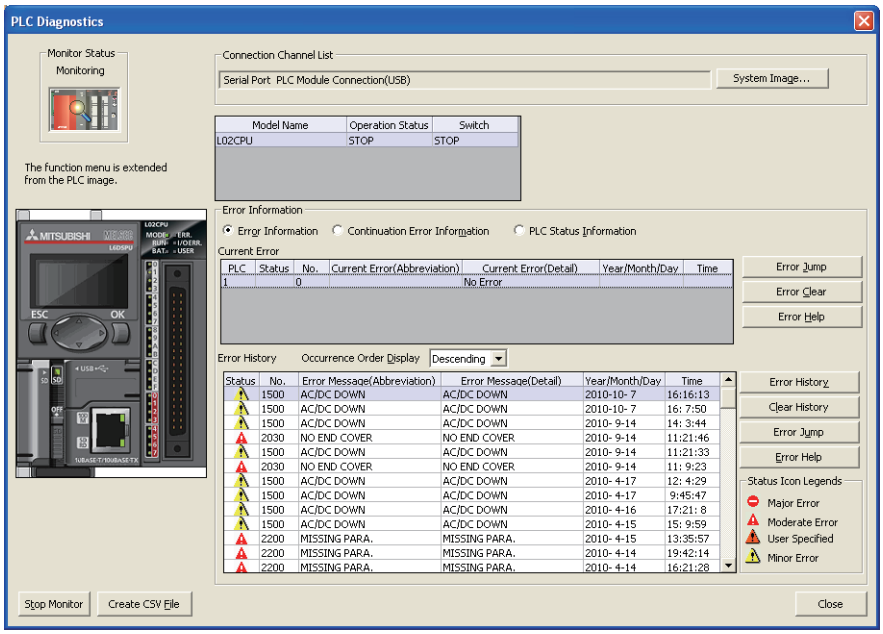
If the connection cannot be established, check that the settings in the programming tool are correct.

Operating manual for the programming tool used

(a) PLC diagnostics

When the ERR.LED turns on or flashes, check the error in the PLC diagnostics of the programming tool and eliminate the error cause.

[Diagnostics] ⇨ [PLC Diagnostics...]



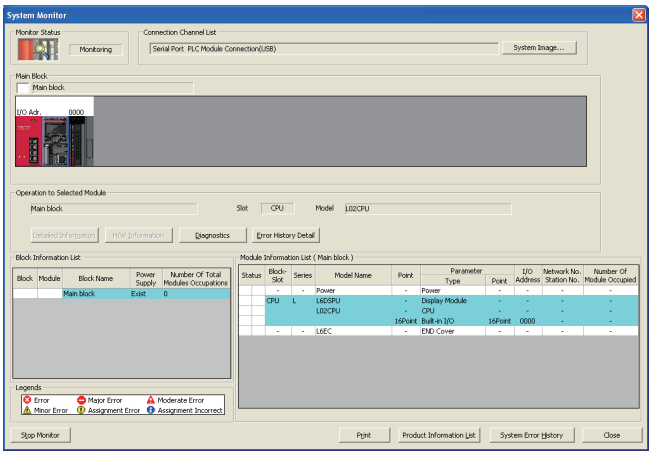
For details on the PLC diagnostics, refer to the following.

Operating manual for the programming tool used

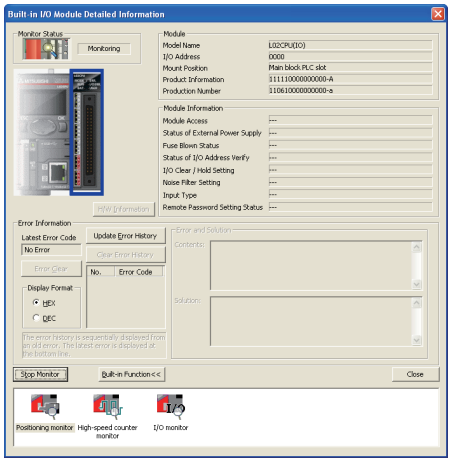
(b) Module detailed information

When the I/O ERR.LED turns on or an error occurs in any intelligent function module, check the error in the system monitor of the programming tool and remove the error cause.

[Diagnostics] ⇨ [System Monitor...]



1. Select the error module in "Main Block" and click the Detailed Information button.



2. Detailed information of the selected module is displayed.

For details on the module detailed information, refer to the following.

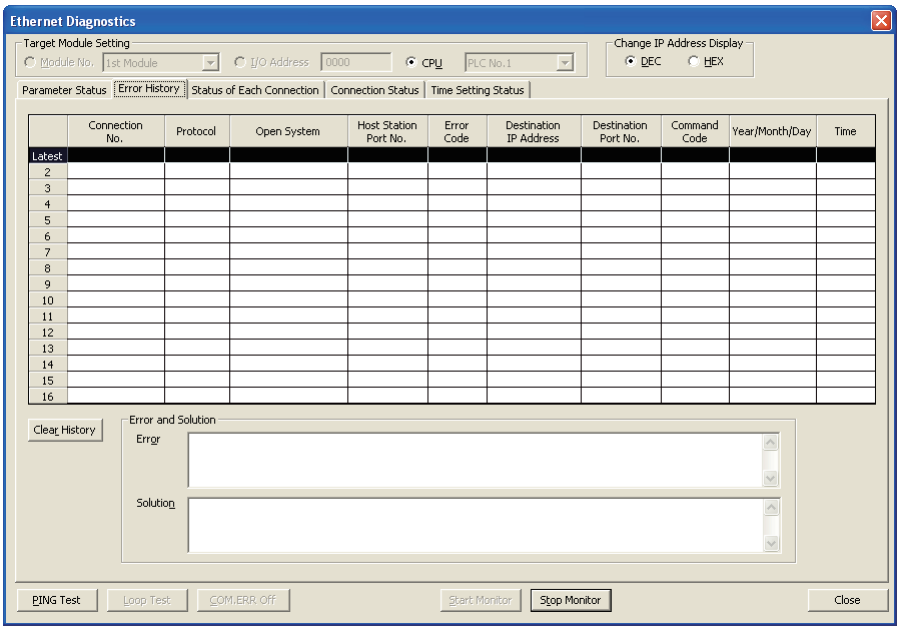
MELSEC-L CPU Module User's Manual (Built-In I/O Function)

User's manual for the intelligent function module used

(3) Ethernet diagnostics

When a programming tool is connected to the CPU module over Ethernet, check error details in the Ethernet Diagnostics dialog box, and remove the error cause.

[Diagnostics] ⇨ [Ethernet Diagnostics...]



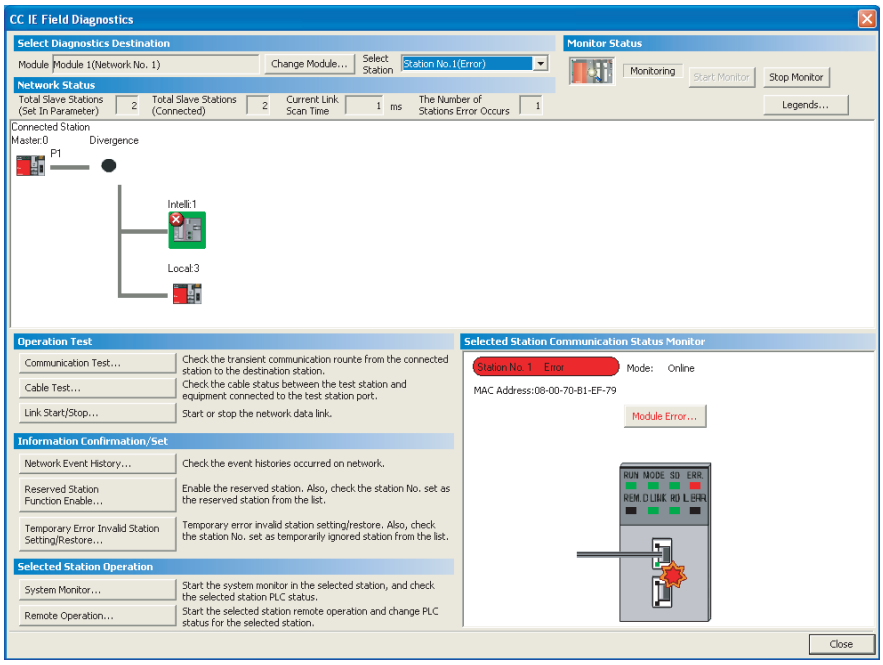
For details on Ethernet diagnostics, refer to the following.

Operating manual for the programming tool used

(4) CC IE Field diagnostics

When CC-Link IE Field Network is connected, check the error details in the CC IE Field diagnostics dialog box, and remove the error cause.

[Diagnostics]⇨[CC IE Field Diagnostics...]



For details on CC IE Field diagnostics, refer to the following.

MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual

15.3 Checking for Functional Errors

If the CPU module has a functional problem, check the following items and perform troubleshooting. If the ERR. LED or I/O ERR. LED of the CPU module is on or flashing, eliminate the error using a display unit or a programming tool. (☞ Page 94, Section 15.2)

Function	Error status	Reference
Write to PLC	Data cannot be written to the CPU module.	☞ Page 101, Section 15.3.1 (1)
Read from PLC	Data cannot be read from the CPU module.	☞ Page 101, Section 15.3.1 (2)
Boot operation	A boot operation cannot be performed from the memory card.	☞ Page 101, Section 15.3.2
Ethernet communication	Direct connection is not possible.	☞ Page 102, Section 15.3.3 (1)
	Ethernet communication is not possible when using a method other than direct connection.	☞ Page 103, Section 15.3.3 (2)
	Ethernet communication is not possible with the connected device.	☞ Page 103, Section 15.3.3 (3)
Socket communication function	The connected device cannot receive data.	☞ Page 106, Section 15.3.4 (1)
	Data cannot be received.	☞ Page 106, Section 15.3.4 (2)
	The open processing is not completed.	☞ Page 106, Section 15.3.4 (3)
General-purpose I/O function	An input signal does not turn on.	☞ Page 109, Section 15.3.6 (1)
	The OUT LED does not turn on.	☞ Page 109, Section 15.3.6 (2)
	An input signal does not turn off.	☞ Page 120, Section 15.4.1
	Noises are taken as inputs.	
	An output load momentarily turns on when the system is powered off.	☞ Page 122, Section 15.4.2
Interrupt input function	An interrupt does not occur.	☞ Page 109, Section 15.3.7
Pulse catch function	Pulses cannot be detected.	☞ Page 110, Section 15.3.8
Positioning function	A motor does not rotate.	☞ Page 110, Section 15.3.9
High-speed counter function (normal mode)	Pulses are not counted.	☞ Page 111, Section 15.3.10 (1)
	Pulses are not normally counted.	☞ Page 111, Section 15.3.10 (2)
	The current value cannot be replaced with the preset value.	☞ Page 112, Section 15.3.10 (3)
	Counter value coincidence (No.n) does not turn on.	☞ Page 112, Section 15.3.10 (4)
	Counter value coincidence (No.n) does not turn off.	☞ Page 112, Section 15.3.10 (5)
	Coincidence output signal No.n does not turn on while counter value coincidence (No.n) is on.	☞ Page 113, Section 15.3.10 (6)
	Coincidence detection interrupt does not occur.	☞ Page 113, Section 15.3.10 (7)
	The selected counter function does not start.	☞ Page 113, Section 15.3.10 (8)
	The latch counter function cannot be performed using the latch counter input terminal.	☞ Page 114, Section 15.3.10 (9)
High-speed counter function (frequency measurement mode)	A frequency is not measured.	☞ Page 114, Section 15.3.10 (10)
	A frequency is not normally measured.	☞ Page 115, Section 15.3.10 (11)

Function	Error status	Reference
High-speed counter function (rotation speed measurement mode)	A rotation speed is not measured.	☞ Page 115, Section 15.3.10 (12)
	A rotation speed is not normally measured.	☞ Page 116, Section 15.3.10 (13)
High-speed counter function (pulse measurement mode)	Pulses are not measured.	☞ Page 116, Section 15.3.10 (14)
	Pulses are not normally measured.	☞ Page 116, Section 15.3.10 (15)
High-speed counter function (PWM output mode)	PWM output is not normally performed.	☞ Page 117, Section 15.3.10 (16)
Display unit	The display unit behaves abnormally.	☞ Page 118, Section 15.3.11
Communication with external devices	It takes time to complete the communication with external devices.	☞ Page 118, Section 15.3.12
Operating status of the CPU module	It takes time for the CPU module to switch the operationg status.	☞ Page 118, Section 15.3.13
END cover with ERR terminal	The $\overline{\text{ERR.}}$ terminal is off (open) during operation.	☞ Page 119, Section 15.3.14
Extension system	I/O signals of an extension block do not turn on/off.	☞ Page 119, Section 15.3.15

15.3.1 Write to PLC and Read from PLC

(1) Write to PLC

If data cannot be written from the programming tool to the CPU module, check the following items.

Check item	Action
The data is password-protected.	Unlock the password with the programming tool.
The SD memory card is write-protected even though it has been specified as the data writing target.	Cancel the protection. (☞ Page 78, Section 12.1)
The SD memory card is not formatted even though it has been specified as the data writing target.	Format the SD memory card.
The size of data to be written is larger than the memory capacity.	• Secure sufficient free space in the memory. • Organize the target memory.

If data cannot be written to the CPU module even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(2) Read from PLC

If data cannot be read from the CPU module to the programming tool, check if the target memory has been correctly set.
After making sure that the target memory has been correctly set, reset the CPU module, and then read data from the CPU module again.

If data cannot read from the CPU module, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

15.3.2 Boot operation

If a boot operation cannot be performed from the SD memory card, check the following items.

Check item	Action
An error has occurred in the CPU module.	Remove the cause of the error. (☞ Page 94, Section 15.2)
The file has not been set in the Boot File tab in the parameter.	Set the file.
The file has not been set in the Program tab in the parameter.	
The file to be used has not been stored in the SD memory card.	Store the file to be used.

If a boot operation cannot be performed even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

15.3.3 Ethernet communication

(1) Direct connection is not possible.

If Ethernet communication is not possible through direct connection with the programming tool, check the following items.

Check item	Action
The CPU module is not directly connected to the programming tool with a single cable.	Directly connect the CPU module to the programming tool with a single cable.*1
The setting on the connected device (personal computer) is incorrect. • Ethernet port setting • Firewall setting • Communication setting of security software	Correct the setting on the connected device.
In the Transfer Setup setting of the programming tool, "Ethernet Port Direct Connection" is not selected for the PLC side I/F PLC Module.	Correct the Transfer Setup setting.
When parameters are read after switching to USB connection, "Disable direct connection to MELSOFT" is selected in the Built-in Ethernet Port Setting tab.	Correct the parameter.
In the Status of Each Connection tab in the Ethernet Diagnostics dialog box, MELSOFT Direct Connection is set to the forced deactivation status.	Disable the forced deactivation.
In the Error History tab in the Ethernet Diagnostics dialog box, an error for direct connection is detected.	Take corrective actions according to the error code. (☞ Page 221, Appendix 1.11)
In the Host Station Detailed Setting dialog box in the Transfer Setup setting, increasing the "Check at Communication Time" or "Retry Times" value enables communication.	• Adjust the "Check at Communication Time" or "Retry Times" value. • Check the condition of the cables, connected device (personal computer), and CPU module.
The connected device (personal computer) does not support the direct connection.	Connect a hub.

If Ethernet communication cannot be performed even after taking the above actions, the possible cause is a hardware failure.

Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

*1 When two or more Ethernet ports are enabled in the network connections setting on the personal computer, communication by direct connection is not possible. In the setting, leave only one Ethernet port enabled for direct connection and disable the other Ethernet ports.

(2) Ethernet communication is not possible when using a method other than direct connection.

If Ethernet communication is not possible when using a method other than direct connection with the programming tool, check the following items.

Check item	Action
IP addresses are duplicated.	• Check the duplicate IP addresses using the Find CPU function, and correct the IP address(es). • Correct the IP address of the programming tool (personal computer) so that it differs from the address of the CPU module. • Disconnect a device from the network and perform a PING test to the IP address of the disconnected device. If a response message is returned, the same IP address exists in the network. Correct the IP address(es).
The specified protocol is incorrect.	Correct the Transfer Setup setting.
"Ethernet Port Direct Connection" is selected.	
The specified IP address or host name is incorrect.	

If Ethernet communication cannot be performed even after taking the above actions, the possible cause is a failure of the connected device.
Refer to the check items in Page 103, Section 15.3.3 (3).

(3) Ethernet communication is not possible with the connected device.

If Ethernet communication is not possible with the connected device, check the following items.

Check item	Action
An error has occurred in a hub.	Remove the error from the hub.[*1]
The setting on the connected device (personal computer) is incorrect. • IP address setting • Ethernet port setting • Firewall setting • Communication setting in security software	Correct the setting on the connected device.
IP addresses are duplicated.	• Correct the IP address of the connected device so that it differs from the address of the CPU module. • Disconnect a device from the network and perform a PING test to the IP address of the disconnected device. If a response message is returned, the same IP address exists in the network. Correct the IP address(es).
The SD/RD LED of the CPU module is not flashing during communication.	Confirm the wiring.
The ERR.LED was turned on or flashing when power is reapplied.	Remove the cause of the error. (☞ Page 94, Section 15.2)
When parameters are read after switching to USB connection, the Built-in Ethernet Port Setting is incorrect.	Correct the parameter.
In the Status of Each Connection tab in the Ethernet Diagnostics dialog box, MELSOFT Direct Connection is set to the forced deactivation status.	Disable the forced deactivation.
In the Error History tab in the Ethernet Diagnostics dialog box, an error for direct connection is detected.	Take corrective actions according to the error code. (☞ Page 221, Appendix 1.11)

Check item	Action
The number of connections with devices (personal computers) exceeds the number set in parameter (the number of "MELSOFT connection" for each TCP and UDP in the open setting).	Connect devices (personal computers) within the number of connections set in parameter.
A device was powered off with the TCP/IP connection open.	The TCP/IP connection is left open. Perform the following: • Wait for a minute, and after it is closed by the alive check function of the CPU module, retry the communication. • Increase the number of connections in the setting to reserve a spare connection.
In the Host Station Detailed Setting dialog box in the Transfer Setup setting, increasing the "Check at Communication Time" or "Retry Times" value enables communication.	• Adjust the "Check at Communication Time" or "Retry Times" value. • Check the condition of the cables, connected device (personal computer), and CPU module.
Any of the following settings is incorrect on the CPU module or connected device side. • Network address • Default router IP address • Subnet mask pattern • Router IP address • Subnet mask	Correct the setting.
When a router is used, an error has occurred in the router.	Remove the error from the router.
When a router is used, the setting on the router is incorrect.	Correct the setting on the router.
A device such as the CPU module, connected device (personal computer), hub, or router on the network is replaced. (The devices before and after replacement have the same IP address.)	Reset all the devices on the network.*2
Communication is possible after replacement of the hub or router.	The hub or router may be faulty. Replace the hub or router.

If Ethernet communication cannot be performed even after taking the above actions, the possible cause is a hardware failure.

Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

*1 If the switching hub is reconnected to the personal computer or CPU module or is replaced with another, it will take time to read the MAC addresses.
In that case, retry after a little while, or reapply power to the hub. If a dummy UDP message is sent by the socket communication function, the switching hub may learn the MAC addresses again.

*2 Devices on the Ethernet network have the "ARP cache", which is the correspondence table of the IP address and MAC address.
When a device on the network is replaced with a device of the same IP address, their MAC addresses stored in each "ARP cache" become inconsistent. This may cause abnormal communication.
The "ARP cache" is updated when the device is reset or after a certain period of time has elapsed. The time required for update differs depending on devices.

(4) Communication is slow or unstable.

If communication is slow or unstable, check the following items.

Check item	Action
IP addresses are duplicated.	Correct the duplicate IP address(es). The duplicate IP addresses are checked in the following way. • By using the Find CPU function • By disconnecting a device from the network and performing a PING test to the IP address of the disconnected device. If a response message is returned, the same IP address exists in the network.
The number of UDP connections exceeds the number set in parameter (the number of "UDP" for each MELSOFT connection and MC protocol in the open setting).	Keep the number of UDP connections within the number set in parameter.
Data are communicated using UDP.	Communicate data using TCP.
Communication is not retried.	Retry communication. Increase the number of retries.
The hub, router, or cable is faulty.	Replace the hub, router, or cable.
Communication of devices other than the CPU module is not stable.	• Take noise reduction measures. • Check the amount of network traffic. If the traffic causes instability, reduce the amount of traffic.
Many of unnecessary broadcast data are received. (The broadcast data volume can be checked in "Connection Status" of Ethernet diagnostics.)	To reduce the Ethernet communication load of the CPU module, increase the service processing time in the service processing setting of the PLC parameter.
	Reduce the broadcast data volume on the network. • Identify a broadcasting device (such as a personal computer and a router), and restrict the broadcast data volume. • Filter broadcast data with a router and prevent the CPU module from receiving them. • Separate the network with frequent broadcasts from the network of the CPU module.
The Ethernet communication load of the CPU module is high.	• Increase the service processing time in the service processing setting of the PLC parameter. • Reduce the number of connected devices. • Reduce the communication frequency per connection and data volume.
An interrupt program is used.	Reduce the frequency and processing time of the interrupt program.

15.3.4 Socket communication function

For the details on the socket communication function, refer to the following.

MELSEC-L CPU Module User's Manual (Built-In Ethernet Function)

(1) The connected device cannot receive data.

If data were not delivered to the target device, check the following items.

Check item	Action
The connection has not been opened yet. (Check the corresponding bit in SD1282.)	Wait until the connection is completed.
An error was detected in Ethernet Diagnostics.	Remove the cause of the error.
A parameter or a setting data for SOCOPEN is incorrect.	Correct the parameter or setting data.
The SOCSND instruction was not executed. (Check the start contact and failure device.)	Correct the execution condition, or remove the cause of the error that is identified by the error code in the completion status area of the SOCSND instruction.
The connected device has an error.	Correct the error of the connected device.

(2) Data cannot be received.

If the CPU cannot receive data from the connected device, check the following items.

Check item	Action
The connection has not been opened yet. (Check the corresponding bit in SD1282.)	Wait until the connection is completed.
An error was detected in Ethernet Diagnostics.	Remove the cause of the error.
A parameter or a setting data for SOCOPEN is incorrect.	Correct the parameter or setting data.
The SOCRCV instruction was not executed. (Check the start contact and failure device.)	Correct the execution condition, or remove the cause of the error that is identified by the error code in the completion status area of the SOCOPEN instruction.
The connected device has an error.	Correct the error of the connected device.

(3) The open processing is not completed.

If the open processing is not completed, check the following items.

(a) Passive open

Check item	Action
The parameter is incorrect.	Correct the parameter.
The connected device has an error.	Correct the error of the connected device.

(b) Active open

Check item	Action
An error was detected in the Ethernet diagnostics.	Remove the cause of the error.
A parameter or a setting data for SOCOPEN is incorrect.	Correct the parameter or setting data.
The SOCRCV instruction was not executed. (Check the start contact and failure device.)	Correct the execution condition, or remove the cause of the error that is identified by the error code in the completion status area of the SOCRCV instruction.
The connected device has an error.	Correct the error of the connected device.

15.3.5 Simple PLC communication function

For details on the simple PLC communication function, refer to the following.

MELSEC-L CPU Module User's Manual (Built-In Ethernet Function)

(1) Communication with a communication target station is not possible.

If the specified device data cannot be communicated with a target station, check the following items.

Check item	Action
An error was detected in the simple PLC communication status diagnostics, or Ethernet diagnostics (simple PLC communication status).	Remove the cause of the error.
The simple PLC communication status does not change from "Preparing".	Check that the cable between the CPU module and the hub is connected properly and that the hub operates normally.
After the simple PLC communication setting was changed, the CPU module has not been powered off and on or has not been reset.	Power off and on or reset the CPU module to which the setting is written.
The communication retry has occurred in another simple PLC communication setting configured for communication with the same target station.	Wait until the communication retry in another simple PLC communication setting ends. (When two or more settings are communicated with a target station, do not perform communications of other settings while the communication of one setting is being retried.)
Communication was enabled when the settings for the retry count and time-out period were increased.	• Adjust the settings of the retry count and time-out period. • Check the status of devices (such as cables, hubs, and routers) on the Ethernet network, and confirm that the traffic on the communication line is not heavy.

If communication cannot be performed even after taking the above actions, the possible cause is a hardware failure.

Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(2) Communication with a communication target station is unstable.

If communication with a target station is unstable, check the following items.

Check item	Action
An error was detected in the simple PLC communication status diagnostics, or Ethernet diagnostics (simple PLC communication status).	Remove the cause of the error.
The communication retry has occurred.	Check the status of devices (such as cables, hubs, and routers) on the Ethernet network, and confirm that the traffic on the communication line is not heavy.

(3) Communication is not performed at preset intervals.

If communication is not performed at preset intervals, check the following items.

Check item	Action
The scan time is long in the communication source and/or destination CPU module(s) set for the simple PLC communication.	Use the COM instruction in a program. For details on the COM instruction, refer to the following. MELSEC-Q/L Programming Manual (Common Instruction)
Too many settings are configured for one communication target module in the simple PLC communication setting.	Reduce the number of settings or one communication target module. (Put several settings into one setting as much as possible.)
The time taken for communications other than the simple PLC communication is long in the communication source and/or destination CPU module(s) set for the simple PLC communication.	• Increase the service processing count and time.*1 • Increase the value in Time reserved for communication processing (SD315).*2 • Use more modules to process general data at a time.*3
The load of Ethernet communication is high.	Check the status of devices (such as cables, hubs, and routers) on the Ethernet network, and reduce the load or improve the communication quality.
The quality of Ethernet communication is low.	

*1 This applies to the LCPU and the Universal model QCPU.
*2 This applies to the Basic model QCPU, High Performance model QCPU, Process CPU, and Redundant CPU.
*3 This applies to the QnACPU.

15.3.6 General-purpose I/O function

(1) An input signal does not turn on.

If an input signal does not turn on, check the following items.

Check item	Action
The general-purpose input function is not set to the input signal.	Correct the parameter.
A voltage greater than or equal to the input on voltage is not applied between the input terminal and the COM terminal.	Check wiring with external devices and correct it.

If the input signal does not turn on even after taking the above actions, the possible cause is a hardware failure. Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(2) The OUT LED does not turn on.

If the OUT LED does not turn on, check the following items.

Check item	Action
The general-purpose output function is not set to the output signal.	Correct the parameter.
The device (Y) is not on in the monitor screen of a programming tool.	Correct the program.
The output number is incorrect.	Correct the output number.
When forced output is performed from a programming tool while the CPU module is in the STOP status, the OUT LED corresponding to the output turns on.	Correct the program.

If the OUT LED does not turn on even after taking the above actions, the possible cause is a hardware failure. Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

15.3.7 Interrupt input function

If an interrupt program does not run, check the following items.

Check item	Action
The interrupt input function is not set to the input signal.	Correct the parameter.
A voltage greater than or equal to the input on voltage is not applied between the input terminal and the COM terminal.	Check wiring with external devices and correct it.
The interrupt pointer (I) number is incorrect.	Correct the program.
The EI instruction is not executed.	
The interrupt program is set to be disabled by the IMASK instruction.	

If the interrupt program does not run even after taking the above actions, the possible cause is a hardware failure. Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

15.3.8 Pulse catch function

If pulses are not detected, check the following items.

Check item	Action
The pulse catch function is not set to the input signal.	Correct the parameter.
A voltage greater than or equal to the input on voltage is not applied between the input terminal and the COM terminal.	Check wiring with external devices and correct it.
The input response time is improperly set.	Set the input response time shorter than the pulse width.
Detectable pulses are not input.	If the pulse width is shorter than the minimum input response time, the pulse signals are not detected. Set the pulse width longer or use the high-speed counter function.

If pulses are not detected even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

15.3.9 Positioning function

The check items and actions in this section are described in the case of axis 1.
For special relay and special register for other channels, refer to the following.

- Special relay: ☞ Page 245, Appendix 2
- Special register: ☞ Page 291, Appendix 3

If a motor does not rotate, check the following items.

Check item	Action
The positioning function is not set to the output signal.	Correct the parameter.
Axis 1 axis operation status (SD1844) indicates "stopped" (1).	Review the program stopped.
Axis 1 current feed value (SD1840, SD1841) does not change after positioning control is performed.	Review the start program.
The pulse output mode setting does not meet the specifications of the drive unit.	Set the pulse output mode so that it can meet the specifications of the drive unit.
The logic of pulse output does not match with the one set for the drive unit.	Set the drive unit to negative logic.

If the motor does not rotate even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

15.3.10 High-speed counter function

The check items and actions in this section are described in the case of CH1.
For special relay and special register for other channels, refer to the following.

- Special relay: ☞ Page 245, Appendix 2
- Special register: ☞ Page 291, Appendix 3

(1) Pulses are not counted.

If pulses are not counted in normal mode, check the following items.

Check item	Action
When a voltage is applied to the pulse input terminal, the LED corresponding to the input does not turn on.	The possible cause is a hardware failure. Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
The count enable command remains off.	Turn on the count enable command.
The set pulse input mode differs from the actual pulse input method.	Correct the parameter.
Pulses are input at a speed faster than the speed configured at counting speed setting.	Input pulses at a speed slower than or equal to the speed configured at counting speed setting.

If pulses are not counted even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(2) Pulses are not normally counted.

If pulses are not normally counted in normal mode, check the following items.

Check item	Action
An input pulse waveform does not meet the performance specifications.	Input pulses meeting the performance specifications.
Shielded twisted pair cables are not used for pulse input wiring.	Change the cables with shielded twisted pair cables.
Noise reduction measures are not taken in the control panel or to adjacent devices.	Take noise reduction measures.
Distance between the power equipment and the pulse input cables is short.	Install the pulse input cables alone in a duct and wire the cables away from power cables by 100mm or more in the control panel.
In ring counter, the preset function is perfomed outside the count range.	Perform the preset function within the count range of the ring counter.
Pulses are input at a speed faster than the speed configured at counting speed setting.	Input pulses at a speed slower than or equal to the speed configured at counting speed setting.

If pulses are not normally counted even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(3) The current value cannot be replaced with the preset value.

If the current value is not preset in normal mode, check the following items.

(a) When not using the preset at coincidence output function

Check item	Action
The on width and off width of the preset command or time from when the preset value setting is changed until when the current value is replaced is within 2ms.	Correct the time to 2ms or more.
CH1 external preset (phase Z) request detection (SM1886) is on.	Turn off this relay by turning on CH1 external preset (phase Z) request detection reset command (SM1897).

If the current value cannot be replaced with the preset value even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(b) When using the preset at coincidence output function

Check item	Action
"Preset" is not selected for "Coincidence Output Time Preset Setting".	Correct the parameter.
CH1 external preset (phase Z) request detection (SM1886) is on.	Turn off this relay by turning on CH1 external preset (phase Z) request detection reset command (SM1897).
CH1 counter value coincidence (No.1) (SM1881) remains on.	Before the preset function is performed, turn off this relay by turning on CH1 coincidence signal No.1 reset command (SM1890).

If the current value cannot be replaced with the preset value even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(4) Counter value coincidence (No.n) does not turn on.

If CH1 counter value coincidence (No.n) (SM1881, SM1884) does not turn on in normal mode, check the following items.

Check item	Action
CH1 coincidence signal No.n reset command (SM1890, SM1891) is on.	Turn off this relay.
In ring counter, the coincidence output No.n point setting value is configured outside the count range.	Configure the coincidence output No.n point setting value within the count range by Coincidence output point write instruction.

If CH1 counter value coincidence (No.n) does not turn on even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(5) Counter value coincidence (No.n) does not turn off.

If CH1 counter value coincidence (No.n) (SM1881, SM1884) does not turn off in normal mode, check the on width of CH1 coincidence signal No.n reset command (SM1890, SM1891).
If the on width of CH1 coincidence signal No.n reset command is longer than or equal to 2ms and CH1 counter value coincidence (No.n) does not turn off, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(6) Coincidence output signal No.n does not turn on while counter value coincidence (No.n) is on.

If Coincidence output signal No.n does not turn on while CH1 counter value coincidence (No.n) (SM1881, CSM1884) is on in normal mode, check the following items.

Check item	Action
"Counter CH1 Coincidence Output No.n" is not selected in "Output Signal Function Selection".	Correct the parameter.
CH1 coincidence output enable command (SM1892) remains off.	Turn on this relay.

If Coincidence output signal No.n does not turn on even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(7) Coincidence detection interrupt does not occur.

If coincidence detection interrupt does not occur in normal mode, check the following items.

Check item	Action
"Used" is not selected for "Coincidence Detection Interrupt Setting".	Correct the parameter.
The usage of the program execution control instruction is incorrect.	Correct the program.
CH1 counter value coincidence (No.n) (SM1881, SM1884) remains on.	Before the preset function is performed, turn off this relay by turning on CH1 coincidence signal No.n reset command (SM1890, SM1891).

If coincidence detection interrupt does not occur even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(8) The selected counter function does not start.

If the selected counter function does not start in normal mode, check the following items.

(a) When using the selected counter function start command

Check item	Action
The selected counter function cannot be started by CH1 selected counter function start command (SM1896).	Start the selected counter function using the function input terminal.
When the selected counter function is started at the rise of CH1 selected counter function start command, the on width and off width of this relay is less than 2ms.	Set the on and off width of this relay to 2ms or more.
The function input terminal is on.	Turn off the function input terminal.

If the selected counter function does not start even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(b) When using a function input terminal

Check item	Action
"Function Input" is not selected in "Input Signal Function Selection".	Correct the parameter.
CH1 selected counter function start command (SM1896) is on.	Turn off this relay.

If the selected counter function does not start even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(9) The latch counter function cannot be performed using the latch counter input terminal.

If the latch counter function cannot be performed using the latch counter input terminal (LATCHn) in normal mode, check if "Latch Counter" is set in "Input Signal Function Selection" in the parameter.
If this item is selected, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(10) A frequency is not measured.

If a frequency is not measured in frequency measurement mode, check the following items.

Check item	Action
When a voltage is applied to the pulse input terminal, the LED corresponding to the input does not turn on.	The possible cause is a hardware failure. Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
The frequency measurement flag of CH1 (SD1882, b4) does not indicate "operating" (1).	Execute Frequency measurement instruction.
The set pulse input mode differs from the actual pulse input method.	Correct the parameter.
Pulses are input at a speed faster than the speed configured at counting speed setting.	Input pulses at a speed slower than or equal to the speed configured at counting speed setting.

If a frequency is not measured even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(11)A frequency is not normally measured.

If a frequency is not normally measured in frequency measurement mode, check the following items.

Check item	Action
An input pulse waveform does not meet the performance specifications.	Input pulses meeting the performance specifications.
Shielded twisted pair cables are not used for pulse input wiring.	Change the cables with shielded twisted pair cables.
Noise reduction measures are not taken in the control panel or to adjacent devices.	Take noise reduction measures.
Distance between the power equipment and the pulse input cables is short.	Install the pulse input cables alone in a duct and wire the cables away from power cables by 100mm or more in the control panel.
Pulses are input at a speed faster than the speed configured at counting speed setting.	Input pulses at a speed slower than or equal to the speed configured at counting speed setting.

If a frequency is not normally measured even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(12)A rotation speed is not measured.

If a rotation speed is not measured in rotation speed measurement mode, check the following items.

Check item	Action
When a voltage is applied to the pulse input terminal, the LED corresponding to the input does not turn on.	The possible cause is a hardware failure. Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.
The rotation speed measurement flag of CH1 (SD1882, b5) does not indicate "operating" (1).	Execute the rotation speed measurement instruction.
The set pulse input mode differs from the actual pulse input method.	Correct the parameter.
Pulses are input at a speed faster than the speed configured at counting speed setting.	Input pulses at a speed slower than or equal to the speed configured at counting speed setting.

If a rotation speed is not measured even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(13)A rotation speed is not normally measured.

If a rotation speed is not normally measured in rotation speed measurement mode, check the following items.

Check item	Action
An input pulse waveform does not meet the performance specifications.	Input pulses meeting the performance specifications.
Shielded twisted pair cables are not used for pulse input wiring.	Change the cables with shielded twisted pair cables.
Noise reduction measures are not taken in the control panel or to adjacent devices.	Take noise reduction measures.
Distance between the power equipment and the pulse input cables is short.	Install the pulse input cables alone in a duct and wire the cables away from power cables by 100mm or more in the control panel.
Pulses are input at a speed faster than the speed configured at counting speed setting.	Input pulses at a speed slower than or equal to the speed configured at counting speed setting.

If a rotation speed is not normally measured even after taking the above actions, the possible cause is a hardware failure.

Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(14)Pulses are not measured.

If pulses are not measured in pulse measurement mode, check if CH1 pulse measurement start command (SM1898) is on.

If pulses are not measured even if this relay is on, the possible cause is a hardware failure.

Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(15)Pulses are not normally measured.

If pulses are not normally measured in pulse measurement mode, check the following items.

Check item	Action
Shielded twisted pair cables are not used for pulse input wiring.	Change the cables with shielded twisted pair cables.
Noise reduction measures are not taken in the control panel or to adjacent devices.	Take noise reduction measures.
Distance between the power equipment and the pulse input cables is short.	Install the pulse input cables alone in a duct and wire the cables away from power cables by 100mm or more in the control panel.

If pulses are not normally measured even after taking the above actions, the possible cause is a hardware failure.

Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

(16)PWM output is not normally performed.

If PWM output is not normally performed in PWM output mode, check the following items.

Check item	Action
A cable is wired to the coincidence output No.2 terminal.	Wire the cable to the coincidence output No.1 terminal.
Other than a resistance load is connected to the coincidence output No.1 terminal.	Connect a resistance load to prevent distortion of an output waveform.
Shielded twisted pair cables are not used for PWM output wiring.	Change the cables with shielded twisted pair cables.
Noise reduction measures are not taken in the control panel or to adjacent devices.	Take noise reduction measures.
Distance between the power equipment and the pulse output cables is short.	Install the pulse output cables alone in a duct and wire the cables away from power cables by 100mm or more in the control panel.

Even after the above actions are taken, PWM output may not be performed according to the setting due to effect of the output circuit of the CPU module and connected devices.
However, if an output waveform significantly differs from set output waveform, the possible cause is a hardware failure. Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

15.3.11 Display unit

If the display unit behaves abnormally, check the following items.

Check item	Action
Nothing was displayed on the screen but the display came back on after a button is pressed.	The time set to keep the backlight on has elapsed. Check the setting.
"DISPLAY ERROR" (error code: 2900, 2901, 2902) has occurred in the CPU module.	Power off the system and check for connection. (MELSEC-L CPU Module User's Manual (Function Explanation, Program Fundamentals))
"DISPLAY UNIT ERROR" is displayed on the display unit.	
The character on the screen is incorrect even though the language setting is correct. Or any character that is not applicable has been displayed.	The possible cause is a hardware failure of the display unit. Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

If the display unit is not recovered even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

15.3.12 Transmission from an external device

If no response is returned from an external device, check the following items.

Check item	Action
More than one external device is communicating with the CPU module.	• Adjust the service processing time in the parameter setting. • Adjust the "Check at Communication Time" or "Retry Times" value. • Check the condition of the cables, connected device (personal computer), and CPU module.
The data logging function is used.	Refer to the troubleshooting section of the following manual. MELSEC-L CPU Module User's Manual (Data Logging Function)

If communication cannot be performed even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

15.3.13 Operating status of the CPU module

If it takes time for the CPU module to switch the operating status, check the following item.

Check item	Action
The data logging function is used.	Refer to the troubleshooting section of the following manual. MELSEC-L CPU Module User's Manual (Data Logging Function)

If it takes time for the CPU module to switch the operating status even after taking the above action, the possible cause is a hardware failure.
Please consult your local Mitsubishi sevice center or representative, explaining a detailed description of the problem.

15.3.14 END cover with ERR terminal

If the $\overline{\text{ERR.}}$ terminal is off (open) at power-on or during operation, check the following items.

Check item	Action
The ERR. LED of the CPU module is flashing.	An error exists. Check the error using a display unit or a programming tool. (Page 94, Section 15.2)
Power is not supplied.	Supply power.
Power supply voltage is not appropriate.	Supply power voltage within the specified range. (Page 67, Section 7.2)
The POWER LED of the power supply module turns off.	Perform troubleshooting for the power supply module. (Page 92, Section 15.1.1)

If the $\overline{\text{ERR.}}$ terminal is open even after taking the above actions, the possible cause is a hardware failure.
Please consult your local Mitsubishi service center or representative, explaining a detailed description of the problem.

15.3.15 Extension system

In an extension system, if I/O signals of an extension block do not turn on/off, check the following items.

Check item	Action
An extension cable is not connected correctly.	Securely connect the connector part of an extension cable to the module. (Insert the connector until it clicks.)

15.4 Troubleshooting for the Built-In I/O Function

This section describes possible problems with I/O circuits and their corrective actions.

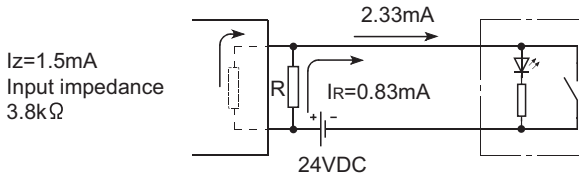
For troubleshooting for I/O modules, refer to the following.

MELSEC-L I/O Module User's Manual

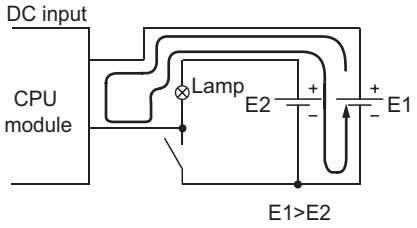
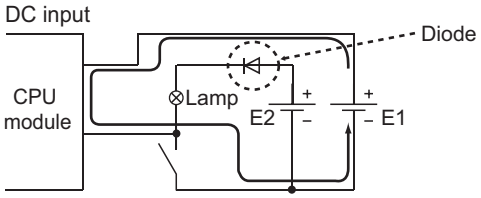
15.4.1 Troubleshooting for input circuit

(1) An input signal does not turn off.

(a) Case 1

Cause	A current exceeding the off current of the module leaks even after a switch with LED indicator is turned off.
Action	Connect an appropriate resistor so that a current across the module may become lower than the off current. 
Calculation example	The resistance value of a connected resistor is calculated by the following formula. **Ex.** A switch with LED indicator that generates a current leakage of 2.33mA when 24VDC is supplied is connected to the CPU module set to high-speed input. Check the following with the specifications of the module. • Off current: 1.5mA • Input resistance: 3.8kΩ I (Leakage current) = I_Z (Off current of the CPU module) + I_R (Current through the connected resistor) $I_R = I - I_Z = 2.33 - 1.5 = 0.83$ [mA] To hold the off current equal to or lower than 1.5mA, connect a resistor (R) so that a current across the resistor may be greater than or equal to 0.83mA. Calculate the resistance value (R) of a connected resistor as follows. I_R: I_Z = Z (Input impedance): R $R < \frac{I_Z}{I_R} \times Z\ (\text{Input impedance}) = \frac{1.5}{0.83} \times 3.8 = 6.87\ [k\Omega]$ → The resistance value R < 6.87kΩ must be met. <Checking a connected resistor by calculating the power capacity> When the resistor (R) is 6.2kΩ, for example, the power capacity (W) of the resistor (R) is calculated as follows. $W = \frac{(\text{Input voltage})^2}{R} = \frac{26.4^2}{6200} = 0.112\ [W]$ Since the resistor requires the power capacity of 3 to 5 times as large as the actual power consumption, the resistor connected to the terminal should be 6.2kΩ and 1/2 to 1W. Off voltage when the resistance (R) is connected is calculated as follows. $\frac{1}{\frac{1}{6.2\ [k\Omega]} + \frac{1}{3.8\ [k\Omega]}} \times 2.33\ [mA] = 5.49\ [V]$ This meets the condition: less than or equal to the off voltage of the CPU module, 8V.

(b) Case 2

Cause	By using two power supplies, a sneak path has been configured. 
Action	• Use one power supply. • To prevent a sneak path, connect a diode as shown below. 

(2) A signal incorrectly inputs data.

Cause	Noise has been taken as input data.
Action	Set the response time longer. **Ex.** 1ms → 5ms If this action is not effective, also take the following two measures. • To prevent excessive noise, avoid installing power cables together with I/O cables. • Connect surge absorbers to noise-generating devices such as relays and contactors using the same power supply or take other noise reduction measures.

Point

If excessive noise is periodically generated, setting the response time shorter may be effective.

Ex. 70ms → 20ms

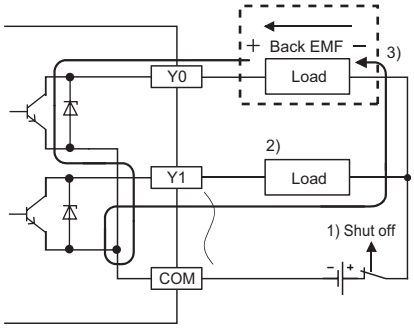
15.4.2 Troubleshooting for output circuit

(1) A load momentarily turns on from off when the system is powered off.

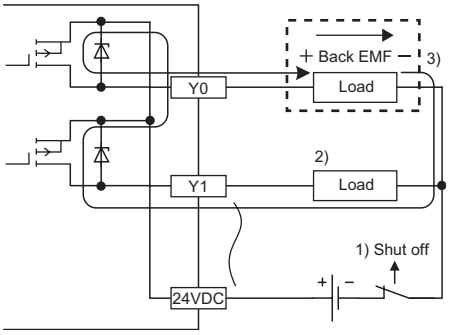
Cause

When an inductive load is connected, 2) Load may turn on from off due to a diversion of back EMF at 1) Shutoff.

• L02CPU, L26CPU-BT



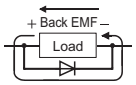
• L02CPU-P, L26CPU-PBT



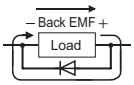
Action

To suppress the back EMF, connect a diode to 3) parallel to the load where back EMF is generated.

• L02CPU, L26CPU-BT

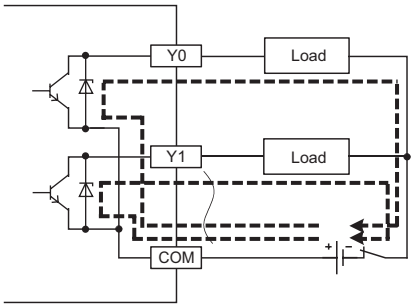
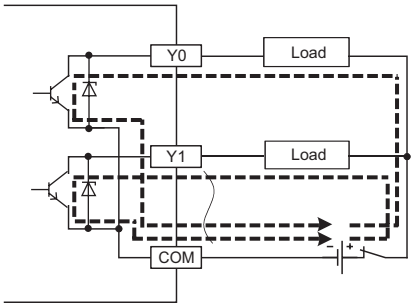


• L02CPU-P, L26CPU-PBT

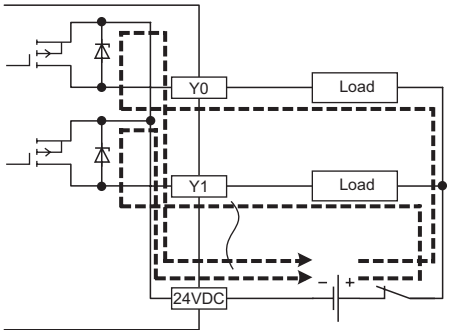
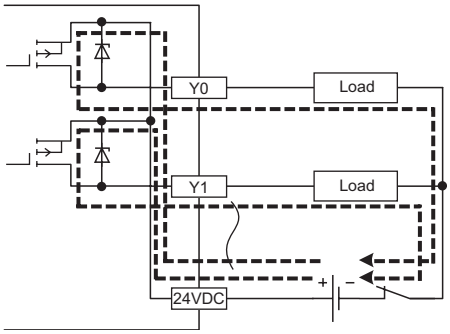


(2) All loads turn on.

(a) Case 1

Cause	External wiring for the L02CPU-P and L26CPU-PBT is performed to the L02CPU or L26CPU-BT. 
Action	Correctly perform the external wiring according to the module used. 

(b) Case 2

Cause	External wiring the L02CPU and L26CPU-BT is performed to the L02CPU-P or L26CPU-PBT. 
Action	Correctly perform the external wiring according to the module used. 

15.5 Saving Data

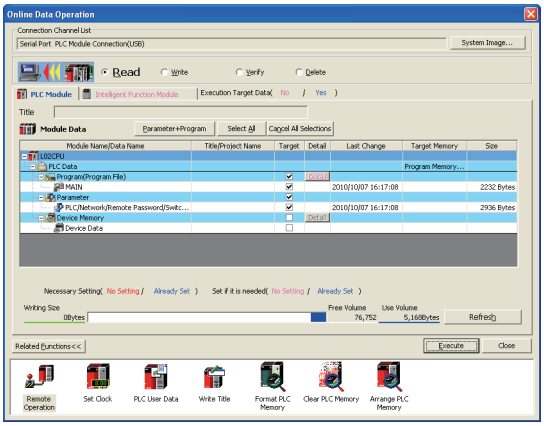
By saving the following data immediately after trouble arises, the data can be useful for analyzing the error cause.

- Programs and parameters
- Device data and buffer memory data
- System configuration data
- Error log

(1) Saving programs and parameters

The following describes a procedure for saving data.

[Online] ⇨ [Read from PLC...]



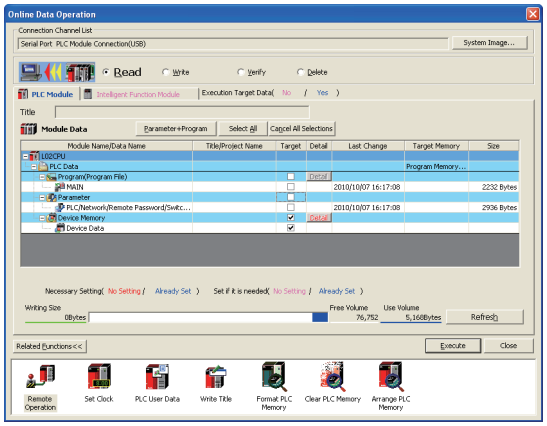
1. **Click the** Parameter+Program **button.**

2. **Click the** Execute **button to execute "Read from PLC".**

(2) Saving device data and buffer memory data

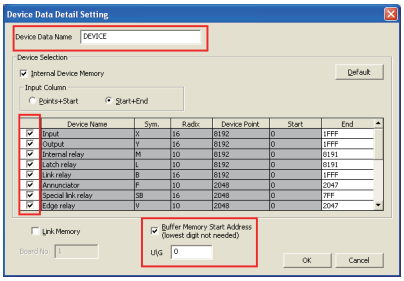
The following describes a procedure for saving data.

[Online] ⇨ [Read from PLC...]



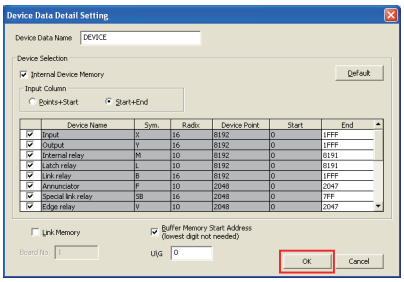
1. **Select "Device Memory".**

2. **Click the** Detail **button.**



3. **Enter the "Device Data Name" field and select the checkboxes of devices to be saved.**

4. **Enter the start I/O number in the "Buffer Memory Start Address" field.**



5. **Click the** OK **button, and then execute "Read from PLC".**

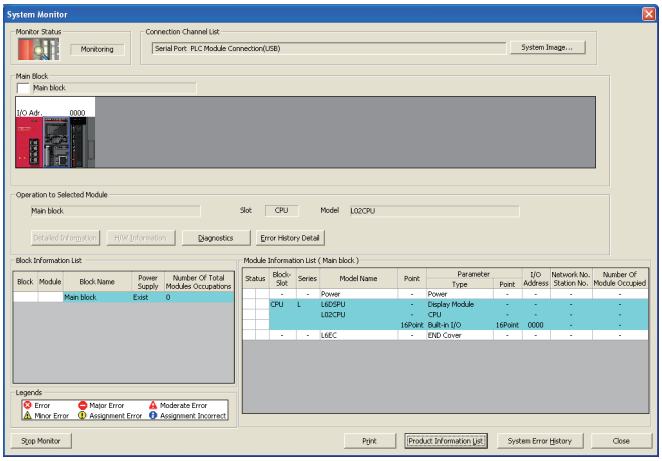
Point

When using a file register, also save file register data.

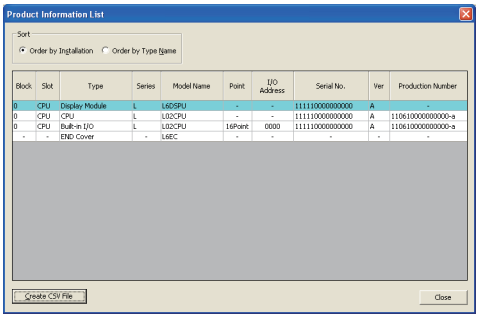
(3) Saving system configuration data

The following describes a procedure for saving data.

[Diagnostics] ⇨ [System Monitor...]



1. **Click the** Product Information List **button.**

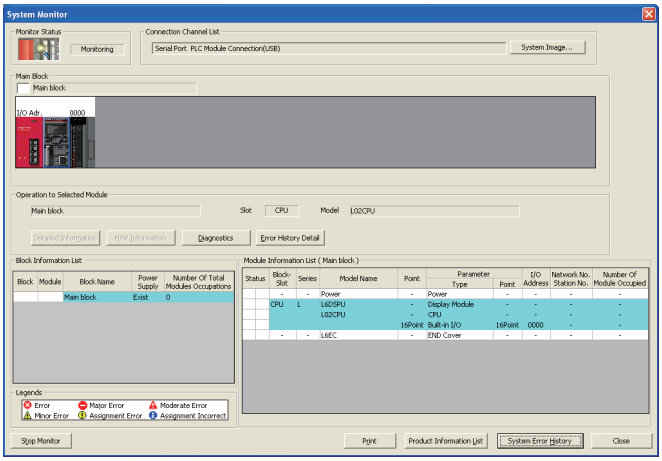


2. **Click the** Create CSV File **button.**

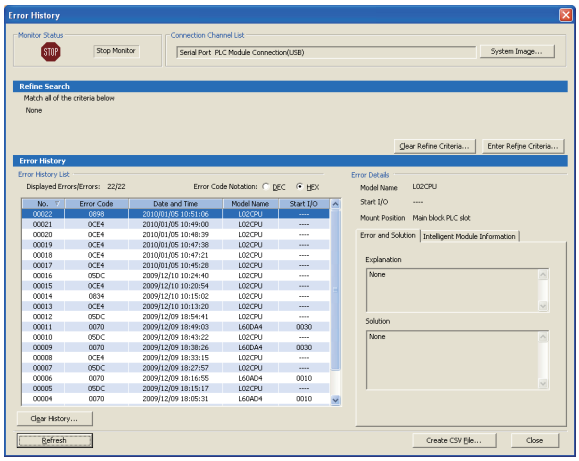
(4) Saving error log

The following describes a procedure for saving data.

[Diagnostics] ⇨ [System Monitor...]



1. **Click the** System Error History **button.**



2. **Click the** Create CSV File... **button.**

APPENDICES

Appendix 1 Error Code List

When an error occurs at power-on, at switching from STOP to RUN or during RUN, the CPU module indicates the error (LED indication and a message on a display device) by the self-diagnostic function and stores the error information in the special relay (SM) and special register (SD).
When an error occurs at communication request from a programming tool, intelligent function module, or network system to the CPU module, the CPU module returns the error code (4000_H to $4FFF_H$) to the request source.
This section describes errors that may occur in the CPU module and corrective actions for the errors.

(1) How to read the error code list

The following describes how to read Appendix 1.3 Error code list (1000 to 1999) to Appendix 1.9 Error code list (7000 to 10000). The list contains errors in QCPU and LCPU.

(a) Error code, common information, and individual information

The error code is stored in SD0. The common information is stored in SD5 to SD15. The individual information is stored in SD16 to SD26.

(b) Corresponding CPU

- QCPU: All the Q series CPU modules
- Q00J/Q00/Q01: Basic model QCPU
- Qn(H): High Performance model QCPU
- QnPH: Process CPU
- QnPRH: Redundant CPU
- QnU: Universal model QCPU
- Q00UJ/Q00U/Q01U: Q00UJCPU, Q00UCPU, and Q01UCPU
- LCPU: All the L series CPU modules
- CPU module model: Only the specified model (Example: Q02UCPU, L26CPU-BT)

Appendix 1.1 Error codes

There are two types of errors: errors detected by the self-diagnostic function of the CPU module and errors detected during communication with the CPU module.
The following table shows the relationship between the error detection pattern, error location, and error code.

Error detection pattern	Error location	Error code	Reference
By the self-diagnostic function of the CPU module	CPU module	1000 to 10000*1*2	Page 130, Appendix 1.3 to Page 216, Appendix 1.9
During communication with the CPU module	CPU module	4000_H to $4FFF_H$	Page 221, Appendix 1.11
	Serial communication module, etc.	7000_H to $7FFF_H$	User's manuals for the serial communication module, etc.
	CC-Link module (the built-in CC-Link function included)	$B000_H$ to $BFFF_H$	User's manuals for the CC-Link system master/local module
	Ethernet module (the built-in Ethernet function included)	$C000_H$ to $CFFF_H$	•User's manuals for the Ethernet interface module •QnUCPU User's Manual (Communication via Built-in Ethernet Port) •MELSEC-L CPU Module User's Manual (Built-In Ethernet Function)
	CC-Link IE Field Network module	$D000_H$ to $DFFF_H$	User's manual for the CC-Link IE Field Network module
	CC-Link IE Controller Network module	$E000_H$ to $EFFF_H$	CC-Link IE Controller Network Reference Manual
	MELSECNET/H network module	$F000_H$ to $FFFF_H$	•Q Corresponding MELSECNET/H Network System Reference Manual •For QnA/Q4AR MELSECNET/10 Network System Reference Manual

*1 Error codes are classified into three levels.
- Minor error: Errors that allow a CPU module to continue its operation, such as a battery error
- Moderate error: Errors that may cause a CPU module to stop its operation, such as a WDT error (Error code: 1300 to 10000)
- Major error: Errors that may cause a CPU module to stop its operation, such as a RAM error (Error code: 1000 to 1299)

Whether the CPU module continues or stops its operation can be checked in the CPU Status column of the Error code list (Page 130, Appendix 1.3 to Page 216, Appendix 1.9).

*2 If an error code not described in the list is detected, please consult your local Mitsubishi service center or representative.

Appendix 1.2 Reading error codes

Error codes can be read using a programming tool. For details on the operating method, refer to the following.

Operating manual for the programming tool used

Appendix 1.3 Error code list (1000 to 1999)

The following table shows the error messages, the error contents and causes, and the corrective actions for the error codes (1000 to 1999).

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
1000	**[MAIN CPU DOWN]** Runaway or failure of the CPU module • Malfunction due to noise or other causes • Hardware failure **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • Always	• Take noise reduction measures. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QCPU
	[CPU UNIT DOWN] Runaway or failure of the CPU module • Malfunction due to noise or other causes • Hardware failure **■Collateral information** • Common Information:- • Individual Information: Failure information **■Diagnostic Timing** • Always			LCPU
1001	**[MAIN CPU DOWN]** Runaway or failure of the CPU module • Malfunction due to noise or other causes • Hardware failure • The devices outside the range was accessed even though device checks are prohibited (SM237 is on). (This error occurs only when any of the BMOV, FMOV, or DFMOV instructions is executed. (Universal model QCPU only)) **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • Always	• Take noise reduction measures. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.) • Check the devices specified by BMOV, FMOV, and DFMOV instructions and correct the device settings. • (Universal model QCPU only)	RUN: Off ERR.: Flicker CPU Status: Stop	QCPU
	[CPU UNIT DOWN] Runaway or failure of the CPU module • Malfunction due to noise or other causes • Hardware failure • The devices outside the range was accessed even though device checks are prohibited (SM237 is on). (This error occurs only when any of the BMOV, FMOV, or DFMOV instruction is executed.) **■Collateral information** • Common Information:- • Individual Information: Failure information **■Diagnostic Timing** • Always	• Take noise reduction measures. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.) • Check the devices specified by BMOV, FMOV, or DFMOV instruction, and correct the device settings.		LCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
1002	**[MAIN CPU DOWN]** Runaway or failure of the CPU module • Malfunction due to noise or other causes • Hardware failure **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • Always	• Take noise reduction measures. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	QCPU
	[CPU UNIT DOWN] Runaway or failure of the CPU module • Malfunction due to noise or other causes • Hardware failure **■Collateral information** • Common Information:- • Individual Information: Failure information **■Diagnostic Timing** • Always			LCPU
1003	**[MAIN CPU DOWN]** Runaway or failure of the CPU module • Malfunction due to noise or other causes • Hardware failure **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • Always			QCPU
	[CPU UNIT DOWN] Runaway or failure of the CPU module • Malfunction due to noise or other causes • Hardware failure **■Collateral information** • Common Information:- • Individual Information: Failure information **■Diagnostic Timing** • Always			LCPU
1004	**[MAIN CPU DOWN]** Runaway or failure of the CPU module • Malfunction due to noise or other causes • Hardware failure **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • Always			QCPU
	[CPU UNIT DOWN] Runaway or failure of the CPU module • Malfunction due to noise or other causes • Hardware failure **■Collateral information** • Common Information:- • Individual Information: Failure information **■Diagnostic Timing** • Always			LCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
1005	**[MAIN CPU DOWN]** Runaway or failure of the CPU module • Malfunction due to noise or other causes • Hardware failure **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • Always	• Take noise reduction measures. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	QCPU
	[MAIN CPU DOWN] Boot operation was performed in the transfer destination without formatting. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on	• Before performing boot operation by the parameter, select "Clear program memory" to clear the program memory.		Qn(H) QnPH QnPRH
	[CPU UNIT DOWN] Runaway or failure of the CPU module • Malfunction due to noise or other causes • Hardware failure **■Collateral information** • Common Information:- • Individual Information: Failure information **■Diagnostic Timing** • Always	• Take noise reduction measures. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU
1006	**[MAIN CPU DOWN]** Runaway or failure of the CPU module • Malfunction due to noise or other causes • Hardware failure **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • Always			QCPU
	[CPU UNIT DOWN] Runaway or failure of the CPU module • Malfunction due to noise or other causes • Hardware failure **■Collateral information** • Common Information:- • Individual Information: Failure information **■Diagnostic Timing** • Always			LCPU
1007 1008	**[MAIN CPU DOWN]** Runaway or failure of the CPU module • Malfunction due to noise or other causes • Hardware failure **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • Always			Qn(H) QnPH QnPRH

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
1009	**[MAIN CPU DOWN]** • The voltage waveform that is outside the specification is applied to the power supply module, and an error is detected. • A failure was detected on the power supply module, CPU module, main base unit, extension base unit or extension cable. • When using the redundant base unit, the redundant power supply module failure in both systems and/or the redundant base unit failure are detected. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • Always	• Correct the voltage waveform applied to the power supply module. • Reset the CPU module and run it again. If the same error code is detected again, the cause is a failure of the power supply module, CPU module, main base unit, extension base unit, or extension cable. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	Q00J/Q00/Q01*8 Qn(H)*10 QnPH QnPRH QnU
	[CPU UNIT DOWN] • A failure was detected on the power supply module or CPU module. • The voltage waveform that is outside the specification is applied to the power supply module, and an error is detected. **■Collateral information** • Common Information:- • Individual Information: Failure information **■Diagnostic Timing** • Always	• Correct the voltage waveform applied to the power supply module. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the power supply module or CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU
1010	**[END NOT EXECUTE]** Entire program was executed without the execution of an END instruction. • When the END instruction is executed it is read as another instruction code, e.g. due to noise. • The END instruction has been changed to another instruction code somehow. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • When an END instruction executed	• Take noise reduction measures. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QCPU LCPU
1020	**[SFCP. END ERROR]** The SFC program cannot be normally terminated due to noise or other reason. • The SFC program cannot be normally terminated due to noise or any similar cause. • The SFC program cannot be normally terminated for any other reason. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • When SFC program is executed			Q00J/Q00/Q01*8 QnPH QnU LCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
1035	**[MAIN CPU DOWN]** Runaway or failure of the CPU module • Malfunction due to noise or other causes • Hardware failure **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • Always	• Take noise reduction measures. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	QnU
	[CPU UNIT DOWN] Runaway or failure of the CPU module • Malfunction due to noise or other causes • Hardware failure **■Collateral information** • Common Information:- • Individual Information: Failure information **■Diagnostic Timing** • Always			LCPU
1036	**[MAIN CPU DOWN]** Runaway or failure of the CPU module • Malfunction due to noise or other causes • Hardware failure **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on/At reset			Q50UDEHCPU Q100UDEHCPU
1040 1041 1042	**[CPU UNIT DOWN]** Runaway or failure of the CPU module (built-in I/O). • Malfunction due to noise or other causes • Hardware failure **■Collateral information** • Common Information:- • Individual Information: Failure information **■Diagnostic Timing** • Always	• Take noise reduction measures. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU
1045	**[CPU UNIT DOWN]** • The module (built-in I/O or built-in CC-Link) status differs from that obtained at power-on. • Runaway or failure of the CPU module (built-in I/O, built-in CC-Link) •Malfunction due to noise or other causes •Hardware failure **■Collateral information** • Common information: - • Individual information: Failure information **■Diagnostic Timing** • Always	• Take noise reduction measures. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU[*28]
1101	**[RAM ERROR]** The sequence program storing program memory in the CPU module is faulty. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on/At reset/When an END instruction executed	• Take noise reduction measures. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the a CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QCPU LCPU
1102	**[RAM ERROR]** • The work area RAM in the CPU module is faulty. • The standard RAM in the CPU module is faulty. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on/At reset/When an END instruction executed			QCPU LCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
1103	**[RAM ERROR]** The device memory in the CPU module is faulty. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on/At reset/When an END instruction executed	• Take noise reduction measures. • When indexing is performed, check the value of index register to see if it is within the device range. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the a CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	QCPU LCPU
	[RAM ERROR] • The device memory in the CPU module is faulty. • The device out of range is accessed due to indexing, and the device for system is overwritten. **■Collateral information** • Common Information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset/When an END instruction executed			Qn(H)*13 QnPH*13 QnPRH*15
1104	**[RAM ERROR]** The address RAM in the CPU module is faulty. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on/At reset	• Take noise reduction measures. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		Q00J/Q00/Q01 Qn(H) QnPH QnPRH
1105	**[RAM ERROR]** The CPU memory in the CPU module is faulty. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on/At reset			Q00J/Q00/Q01 QnU
	[RAM ERROR] The CPU shared memory in the CPU module is faulty. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on/At reset			Qn(H)*8 QnPH QnPRH QnU
1106	**[RAM ERROR]** The program memory was corrupted due to battery exhaustion. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • STOP→RUN/When an END instruction executed	• Check the battery to see if it is dead or not. If dead, replace the battery. • Take noise reduction measures. • Format the program memory, write all files to the PLC, then reset the CPU module, and RUN it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		Qn(H) QnPH*12 QnPRH

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
1107	**[RAM ERROR]** The work area RAM in the CPU module is faulty. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on/At reset	The cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	QnPRH
1108				Qn(H)*13 QnPH*13 QnPRH*15
1109	**[RAM ERROR]** The work area RAM in the CPU module is faulty. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • Always			
1110	**[TRK. CIR. ERROR]** A fault was detected by the initial check of the tracking hardware. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on/At reset			QnPRH
1111	**[TRK. CIR. ERROR]** A tracking hardware fault was detected. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on/At reset			
1112	**[TRK. CIR. ERROR]** • A tracking hardware fault was detected during running. • The tracking cable was disconnected and reinserted without the standby system being powered off or reset. • The tracking cable is not secured by the connector fixing screws. • The error occurred at a startup since the redundant system startup procedure was not followed. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • During running	• Start after checking that the tracking cable is connected. • If the same error code is displayed again, the cause is the hardware failure of the tracking cable or CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.) • Confirm the redundant system startup procedure, and execute a startup again. For details, refer to the QnPRHCPU User's Manual (Redundant System).		
1113				
1115	**[TRK. CIR. ERROR]** A fault was detected by the initial check of the tracking hardware. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on/At reset	The cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
1116	**[TRK. CIR. ERROR]** • A tracking hardware fault was detected during running. • The tracking cable was disconnected and reinserted without the standby system being powered off or reset. • The tracking cable is not secured by the connector fixing screws. • The error occurred at a startup since the redundant system startup procedure was not followed. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • During running	• Start after checking that the tracking cable is connected. If the same error code is displayed again, the cause is a hardware failure of the tracking cable or CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.) • Confirm the redundant system startup procedure, and execute a startup again. For details, refer to the QnPRHCPU User's Manual (Redundant System).	RUN: Off ERR.: Flicker CPU Status: Stop	QnPRH
1150	**[RAM ERROR]** The memory of the CPU module in the Multiple CPU high speed transmission area is faulty. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on/At reset	• Take noise reduction measures. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QnU*20
1160	**[RAM ERROR]** The program memory in the CPU module is overwritten. **■Collateral information** • Common Information:Program error location*27 • Individual Information:- **■Diagnostic Timing** • At program execution	• Take noise reduction measures. • Format the program memory, write all files to the CPU module, and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QnU LCPU
1161	**[RAM ERROR]** The data of the device memory built in the CPU module is overwritten. **■Collateral information** • Common Information:Program error location*27 • Individual Information:- **■Diagnostic Timing** • Always	Take noise reduction measures. If the same error code is displayed again, the cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		
1163	**[RAM ERROR]** Data in the program memory of the CPU module were overwritten. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • When instruction executed	• Take noise reduction measures. • For GX Works2, select "Transfer cache memory to program memory" in the Options dialog box. For GX Developer, select "Online change T/C setting value change program memory transfer settings" in the Options dialog box. • Format the program memory, write all files to the CPU module, and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QnU LCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
1164	**[RAM ERROR]** The destruction of the data stored in the standard RAM is detected. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • When instruction executed	Take noise reduction measures. If the same error code is displayed again, the cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	QnU*29 L26CPU-BT L26CPU-PBT
1166	**[RAM ERROR]** The internal memory in the CPU module is faulty. **■Collateral information** • Common Information:- • Common Information:- **■Diagnostic Timing** • Always			Q50UDEHCPU Q100UDEHCPU
1170	**[RAM ERROR]** The RAM of the CPU module (built-in I/O) is faulty. **■Collateral information** • Common Information:- • Common Information: Failure information **■Diagnostic Timing** • At power-on/At reset			LCPU
1171	**[RAM ERROR]** The RAM of the CPU module (built-in I/O) is faulty. **■Collateral information** • Common Information:- • Common Information: Failure information **■Diagnostic Timing** • Always			
1172	**[RAM ERROR]** The RAM of the CPU module (built-in I/O) is faulty. **■Collateral information** • Common Information:- • Individual information: Failure information **■Diagnostic Timing** • At power-on/At reset			
1200	**[OPE. CIRCUIT ERR.]** The operation circuit for index modification in the CPU module does not operate normally. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on/At reset	The cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QCPU LCPU
1201	**[OPE. CIRCUIT ERR.]** The hardware (logic) in the CPU module does not operate normally. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on/At reset			

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
1202	**[OPE. CIRCUIT ERR.]** The operation circuit for sequence processing in the CPU module does not operate normally. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on/At reset	The cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	QCPU LCPU
1203	**[OPE. CIRCUIT ERR.]** The operation circuit for index modification in the CPU module does not operate normally. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • When an END instruction executed			QnPRH
1204	**[OPE. CIRCUIT ERR.]** The hardware (logic) in the CPU module does not operate normally. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • When an END instruction executed			
1205	**[OPE. CIRCUIT ERR.]** The operation circuit for sequence processing in the CPU module does not operate normally. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • When an END instruction executed			
1300	**[FUSE BREAK OFF]** There is an output module with a blown fuse. **■Collateral information** • Common Information: Module No. (Slot No.) [For Remote I/O network] Network No./Station No. • Individual Information:- **■Diagnostic Timing** • Always	• Check FUSE. LED of the output modules and replace the module whose LED is lit. A blown fuse can also be located with the programming tool. Check SD1300 to SD1331 to ensure that the bit for the module with a blown fuse is "1". • 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 earth status of the GOT.	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue[*1]	Qn(H) QnPH QnPRH QnU
	[FUSE BREAK OFF] There is an output module with a blown fuse. **■Collateral information** • Common Information: Module No. (Slot No.) • [For Remote I/O network] Network No./Station No. • Individual Information:- **■Diagnostic Timing** • Always	Check ERR. LED of the output modules and replace the module whose LED is lit. (A blown fuse can be identified with the programming tool. Check SD130 to SD137 to ensure that the bit for the module with a blown fuse is "1".)		Q00J/Q00/Q01

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
1310	**[I/O INT. ERROR]** Although an interrupt request was detected, there is no interrupt factor. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • During interrupt	Any of the mounted modules is experiencing a hardware fault. Therefore, check the mounted modules and change the faulty module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	QCPU
	[I/O INT. ERROR] An interruption occurred although none of the modules can issue an interruption (including an interruption from the built-in I/O) **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • During interrupt	• Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU
1311	**[I/O INT. ERROR]** An interrupt request was detected from the module for which Interrupt Pointer Setting has not been configured in the PLC Parameter dialog box. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • During interrupt	• Correct the interrupt pointer setting in the PLC system setting of the PLC Parameter dialog box. • Take measures not to issue an interruption from the modules where the interrupt pointer setting is not configured in the PLC system setting of the PLC Parameter dialog box. • Correct the interrupt setting of the network parameter. • Correct the interrupt setting of the intelligent function module buffer memory. • Correct the basic program of the QD51.		Q00J/Q00/Q01[*7] QnPRH QnU
		• Correct the interrupt pointer setting in the PLC System tab of the PLC Parameter dialog box. • Take measures not to issue an interruption from the modules where the interrupt pointer setting is not configured in the PLC System tab of the PLC Parameter dialog box. • Correct the Interrupt Setting of the network parameter. • Correct the interrupt setting of the intelligent function module buffer memory. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU
1320 1321	**[LAN CTRL. DOWN]** The H/W self-diagnostics detected a LAN controller failure. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on/At reset	The cause is a failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QnU[*21] LCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
1401	**[SP. UNIT DOWN]** • There was no response from the intelligent function module/special function module in the initial processing. • The size of the buffer memory of the intelligent function module/special function module is invalid. • The unsupported module is mounted. **■Collateral information** • Common Information: Module No. (Slot No.) • Individual Information:- **■Diagnostic Timing** • At power-on/At reset/When intelligent function module is accessed	When the unsupported module is mounted, remove it. If the corresponding module is supported, this suggests the intelligent function module/special function module, CPU module and/or base unit is expecting a hardware fault (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue*6	QCPU
	[SP. UNIT DOWN] • There was no response from the intelligent function module in the initial processing. • The buffer memory size of the intelligent function module is invalid. • An unsupported module is connected. • The start I/O No. of the targeted intelligent function module is stored as a common information upon error. **■Collateral information** • Common information: Module No. (Slot No.) • Individual Information:- **■Diagnostic Timing** • At power-on/At reset/When intelligent function module is accessed	When an unsupported module is connected, disconnect the module. If the corresponding module is supported, reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU
1402	**[SP. UNIT DOWN]** The intelligent function module/special function module was accessed in the program, but there was no response. **■Collateral information** • Common Information: Module No. (Slot No.) • Individual Information: Program error location **■Diagnostic Timing** • When an intelligent function module access instruction is executed	The cause is a hardware failure of the intelligent function module/special function module, CPU module, or base unit. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QCPU
	[SP. UNIT DOWN] The intelligent function module was accessed by the program, but there was no response. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information: Program error location **■Diagnostic Timing** • When an intelligent function module access instruction is executed	• Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
1403	**[SP. UNIT DOWN]** • The unsupported module is mounted. **■Collateral information** • Common Information: Module No. (Slot No.) • Individual Information:- **■Diagnostic Timing** • When an END instruction executed	When the unsupported module is mounted, remove it. If the module supports the feature, the cause is a hardware failure of the intelligent function module, special function module, CPU module, or base unit. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue*6	QCPU
	[SP. UNIT DOWN] • There was no response from the intelligent function module/special function module when the END instruction is executed. • An error is detected at the intelligent function module/special function module. • The I/O module (intelligent function module/special function module) is nearly removed, completely removed, or mounted during running. **■Collateral information** • Common Information: Module No. (Slot No.) • Individual Information:- **■Diagnostic Timing** • Always	The cause is a failure of the CPU module, base unit, or the intelligent function module/special function module in the access destination. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		
	[SP. UNIT DOWN] • There was no response from the intelligent function module when the END instruction is executed. • An error is detected in the intelligent function module. • The I/O module (intelligent function module/special function module) is nearly removed, completely removed, or mounted during running. **■Collateral information** • Common Information: Module No. (Slot No.) • Individual Information:- **■Diagnostic Timing** • Always	• Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU
1411	**[CONTROL-BUS. ERR.]** When performing a parameter I/O allocation the intelligent function module/special function module could not be accessed during initial communications. (On error occurring, the head I/O number of the corresponding intelligent function module/special function module is stored in the common information.) **■Collateral information** • Common Information: Module No. (Slot No.) • Individual Information:- **■Diagnostic Timing** • At power-on/At reset	Reset the CPU module and run it again. If the same error code is displayed again, the cause is a failure of the intelligent function module/special function module, CPU module, or base unit. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	QCPU
1412	**[CONTROL-BUS. ERR.]** The FROM/TO instruction is not executable, due to a control bus error with the intelligent function module/special function module. (On error occurring, the program error location is stored in the individual information.) **■Collateral information** • Common Information: Module No. (Slot No.) • Individual Information: Program error location **■Diagnostic Timing** • During execution of FROM/TO instruction set			

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
1413	**[CONTROL-BUS. ERR.]** In a multiple CPU system, a CPU module incompatible with the multiple CPU system is mounted. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • Always	• Remove the CPU module from the main base unit if it does not support a multiple CPU system configuration. Alternatively, replace the CPU module that does not support a multiple system configuration with the one that does. • The cause is a failure of the intelligent function module, CPU module, or base unit. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	Q00J/Q00/Q01 *8 Qn(H)*8 QnPH
	[CONTROL-BUS. ERR.] • An error is detected on the system bus. • Self-diagnostic error in the system bus • Self-diagnostic error in the CPU module • In a multiple CPU system, the control CPU setting of other CPUs, configured in the I/O Assignment tab of the PLC Parameter dialog box, differs from that of CPU No.1. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • Always	• Reset the CPU module and run it again. If the same error code is displayed again, the cause is a failure of the intelligent function module, CPU module, or base unit. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.) • Reconfigure the control CPU setting of other CPUs so that it can be the same as that of CPU No.1.		QCPU
1414	**[CONTROL-BUS. ERR.]** • Fault of a loaded module was detected. • In a multiple CPU system, a CPU module incompatible with the multiple CPU system is mounted. **■Collateral information** • Common Information: Module No. (Slot No.) • Individual Information:- **■Diagnostic Timing** • Always	• Remove the CPU module from the main base unit if it does not support the multiple CPU system configuration. Or replace the CPU module that does not support a multiple system configuration with the one that does. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a failure of the intelligent function module, CPU module, or base unit. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		Q00J/Q00/Q01*8 Qn(H)*8 QnPH QnU
	[CONTROL-BUS. ERR.] An error is detected on the system bus. **■Collateral information** • Common Information: Module No. (Slot No.) • Individual Information:- **■Diagnostic Timing** • Always	Reset the CPU module and run it again. If the same error code is displayed again, the cause is a failure of the intelligent function module, CPU module, or base unit. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		Q00J/Q00/Q01*8 Qn(H) QnPH QnPRH QnU
1415	**[CONTROL-BUS. ERR.]** Fault of the main or extension base unit was detected. **■Collateral information** • Common Information: Module No. (Slot No.) • Individual Information:- **■Diagnostic Timing** • When an END instruction executed			Q00J/Q00/Q01 Qn(H)*8 QnPH QnPRH QnU
	[CONTROL-BUS. ERR.] Fault of the main or extension base unit was detected. **■Collateral information** • Common Information: Module No. (Slot No.) • Individual Information:- **■Diagnostic Timing** • At power-ON/At reset/When an END instruction executed			Qn(H)*13 QnPH*13

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
1416	**[CONTROL-BUS. ERR.]** An error was detected on the system bus. ■**Collateral information** • Common Information: Module No. (Slot No.) • Individual Information:- ■**Diagnostic Timing** • At power-on/At reset	Reset the CPU module and run it again. If the same error code is displayed again, the cause is a failure of the intelligent function module, CPU module, or base unit. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	Qn(H)*8 QnPH QnU
	[CONTROL-BUS. ERR.] An error was detected on the system bus in the multiple CPU system. ■**Collateral information** • Common Information: Module No. (Slot No.) • Individual Information:- ■**Diagnostic Timing** • At power-on/At reset			Q00CPU*8 Q01CPU*8 QnU
1417	**[CONTROL-BUS. ERR.]** A reset signal error was detected on the system bus. ■**Collateral information** • Common Information:- • Individual Information:- ■**Diagnostic Timing** • Always			QnPRH
1418	**[CONTROL-BUS.ERR.]** In the redundant system, the control system cannot access the extension base unit because it has failed to acquire an access right. ■**Collateral information** • Common Information:- • Individual Information:- ■**Diagnostic Timing** • At power-ON/At reset/At Switching execution	Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, Q6□WRB, or extension cable. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QnPRH*15
1430	**[MULTI-C.BUS ERR.]** The error of host CPU is detected in the Multiple CPU high speed bus. ■**Collateral information** • Common Information:- • Individual Information:- ■**Diagnostic Timing** • At power-on/At reset	Reset the CPU module and run it again. If the same error code is displayed again, the cause is a failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QnU*20
1431	**[MULTI-C.BUS ERR.]** The communication error with other CPU is detected in the Multiple CPU high speed bus. ■**Collateral information** • Common Information: Module No. (CPU No.) • Individual Information:- ■**Diagnostic Timing** • At power-on/At reset	• Take noise reduction measures. • Check the main base unit mounting status of the CPU module. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		
1432	**[MULTI-C.BUS ERR.]** The communication time out with other CPU is detected in the Multiple CPU high speed bus. ■**Collateral information** • Common Information: Module No. (CPU No.) • Individual Information:- ■**Diagnostic Timing** • At power-on/At reset	Reset the CPU module and run it again. If the same error code is displayed again, the cause is a failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
1433 1434 1435	**[MULTI-C.BUS ERR.]** The communication error with other CPU is detected in the Multiple CPU high speed bus. **■Collateral information** • Common Information: Module No. (CPU No.) • Individual Information:- **■Diagnostic Timing** • Always	• Take noise reduction measures. • Check the main base unit mounting status of the CPU module. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	QnU*20
1436	**[MULTI-C.BUS ERR.]** The error of the Multiple CPU high speed main base unit is detected. (The error of the Multiple CPU high speed bus is detected.) **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on/At reset:	Reset the CPU module and run it again. If the same error code is displayed again, the cause is a failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		
1437		• Take noise reduction measures. • Check the main base unit mounting status of the CPU module. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		
1439	**[MULTI-C.BUS ERR.]** An error of the multiple CPU high speed main base unit was detected. (An error of the multiple CPU high speed bus was detected.) **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • At power-on/At reset:	Reset the CPU module and run it again. If the same error code is displayed again, the cause is a failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		
1500	**[AC/DC DOWN]** • A momentary power supply interruption has occurred. • The power supply went off. **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • Always	Check the power supply.	RUN: On ERR.: Off CPU Status: Continue	QCPU LCPU
1510	**[SINGLE PS. DOWN]** The power supply voltage of either of redundant power supply modules on the redundant base unit dropped. **■Collateral information** • Common Information: Base No./Power supply No. • Individual Information:- **■Diagnostic Timing** • Always	Check the power supplied to the redundant power supply modules mounted on the redundant base unit.	RUN: On ERR.: On CPU Status: Continue	Qn(H)*10 QnPH*10 QnPRH QnU*17
1520	**[SINGLE PS. ERROR]** On the redundant base unit, the one damaged redundant power supply module was detected. **■Collateral information** • Common Information: Base No./Power supply No. • Individual Information:- **■Diagnostic Timing** • Always	The cause is a hardware failure of the redundant power supply module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		Qn(H)*10 QnPH*10 QnPRH QnU*17

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
1600	**[BATTERY ERROR[*3]]** • The battery voltage in the CPU module has dropped below stipulated level. • The lead connector of the CPU module battery is not connected. • The lead connector of the CPU module battery is not securely engaged. **■Collateral information** • Common Information: Drive Name • Individual Information:- **■Diagnostic Timing** • Always	• Change the battery. • Engage the battery connector when a program memory, standard RAM, or the back-up power function is used. • Check the lead connector of the CPU module for looseness. Firmly engage the connector if it is loose.	RUN: On ERR.: Off CPU Status Continue	QCPU LCPU
1601	**[BATTERY ERROR[*3]]** Voltage of the battery on memory card has dropped below stipulated level. **■Collateral information** • Common Information: Drive Name • Individual Information:- **■Diagnostic Timing** • Always	Change the battery.		Qn(H) QnPH QnPRH QnU[*19]
1610	**[FLASH ROM ERROR]** The number of writing to flash ROM (standard ROM and system securement area) exceeds 100,000 times. (Number of writings > 100,000 times) **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • When writing to ROM	Change the CPU module.	RUN: On ERR.: On CPU Status: Continue	QnU LCPU
1700	**[BUS TIMEOUT ERR.]** An error was detected on the system bus. • Self-diagnosis error of the system bus • Self-diagnosis error of the CPU module **■Collateral information** • Common Information:- • Individual Information:- **■Diagnostic Timing** • Always	Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	LCPU
1710	**[UNIT BUS ERROR]** • An error was detected on the system bus. • An error was detected in the connected module. **■Collateral information** • Common Information: Module No. (Slot No.) • Individual Information:- **■Diagnostic Timing** • Always	• Disconnect the extension block. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		
1720	**[END COVER ERR.]** A failure was detected on the END cover. **■Collateral information** • Common information: Module No. (Block No.) • Individual Information:- **■Diagnostic Timing** • At power-ON/At reset/When an END instruction executed	• Securely connect the connector part of an extension cable to the module. (Insert the connector until it clicks.) • Replace the END cover. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		
1730	**[SYSTEM RST ERR.]** • An extension cable is not securely connected. • An error was detected in the system bus. **■Collateral information** • Common information: Module No. (Block No.) • Individual Information:- **■Diagnostic Timing** • At power-ON/At reset			

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
1740	**[BRANCH UNIT ERR.]** An error was detected in the branch module. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information: - **■Diagnostic Timing** • Always	• Replace the branch module. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	LCPU*28
1750	**[EXTEND UNIT ERR.]** An error was detected in the extension module. **■Collateral information** • Common information: Module No. (Block No.) • Individual information: - **■Diagnostic Timing** • At power-ON/At reset	• Replace the extension module. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		

*1 CPU operations when an error occurred can determined with a parameter. (LED indication varies according to the status of the CPU module)
*3 The BAT. LED turns on or flashes if the BATTERY ERROR occurs.
*6 Intelligent function module operations when an error occurred can be selected with a parameter from either to stop or continue.
*7 This applies when the function version is A or later.
*8 This applies when the function version is B or later.
*10 This applies when the first five digits of the serial number is "04101" or later.
*12 This applies when the first five digits of the serial number is "07032" or later.
*13 This applies when the first five digits of the serial number is "08032" or later.
*15 This applies when the first five digits of the serial number is "09012" or later.
*17 This applies when the first five digits of the serial number is "10042" or later.
*19 This applies to the Universal model QCPU except for the Q00UJCPU, Q00UCPU, and Q01UCPU.
*20 This applies to the Universal model QCPU except for the Q00UJCPU, Q00UCPU, Q01UCPU, and Q02UCPU.
*21 This applies to the Built-in Ethernet port QCPU.
*27 This applies to the Universal model QCPU whose serial number (first five digits) is "13042" or later.
*28 This applies when the first five digits of the serial number is "13072" or later.
*29 This applies to the Q10UD(E)HCPU, Q13UD(E)HCPU, Q20UD(E)HCPU, and Q26UD(E)HCPU.

Appendix 1.4 Error code list (2000 to 2999)

The following table shows the error messages, the error contents and causes, and the corrective actions for the error codes (2000 to 2999).

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2000	**[UNIT VERIFY ERR.]** In a multiple CPU system, a CPU module incompatible with the multiple CPU system is mounted. **■Collateral information** • Common information: Module No.(Slot No.) • Individual information:- **■Diagnostic Timing** • When an END instruction executed	Replace the CPU module incompatible with the multiple CPU system with a CPU module compatible with the multiple CPU system.	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue*1	Qn(H)*8 QnPH
	[UNIT VERIFY ERR.] The I/O module status is different from the I/O module information at power ON. • I/O module (or intelligent function module) is not installed properly or installed on the base unit. **■Collateral information** • Common information: Module No. (Slot No.) [For Remote I/O network] • Network No./Station No. • Individual information:- **■Diagnostic Timing** • When an END instruction executed	• Read common information of the error using the programming tool to identify the numeric value (module No.). Check the module corresponding to the value and replace it as necessary. • Monitor SD150 to SD157 using the programming tool to identify the module whose data bit it is "1". Then check the module and replace it as necessary.		Q00J/Q00/Q01
	[UNIT VERIFY ERR.] I/O module information power ON is changed. • I/O module (or intelligent function module/special function module) not installed properly or installed on the base unit. **■Collateral information** • Common information: Module No. (Slot No.)[For Remote I/O network]Network No./Station No. • Individual information:- **■Diagnostic Timing** • Always	• Read common information of the error using the programming tool to identify the numeric value (module No.). Check the module corresponding to the value and replace it as necessary. • Monitor SD1400 to SD1431 with the programming tool to identify the module whose data bit it is "1". Then check the module and replace it as necessary. • 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.		Qn(H) QnPH QnPRH QnU
2001	**[UNIT VERIFY ERR.]** During operation, a module was mounted on the slot where the empty setting of the CPU module was made. **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • Always	During operation, do not mount a module on the slot where the empty setting of the CPU module was made.	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue*6	Q00J/Q00/Q01*8 QnU
2010	**[BASE LAY ERROR]** • More than applicable number of extension base units have been used. • When a GOT was bus-connected, the CPU module was reset while the power of the GOT was OFF. **■Collateral information** • Common information: Base No. • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Use the allowable number of extension base units or less. • Power on the programmable controller and GOT again.	RUN: Off ERR.: Flicker CPU Status: Stop	Q00J/Q00/Q01*8 QnPRH Q00UJ Q00UCPU Q01UCPU Q02UCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2011	**[BASE LAY ERROR]** The QA1S3□B, QA1S5□B, QA1S6□B, QA6□B, or QA6ADP+A5□B/A6□B was used as the base unit. **■Collateral information** • Common information: Base No. • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Do not use the QA1S3□B, QA1S5□B, QA1S6□B, QA6□B, or QA6ADP+A5□B/A6□B as the base unit.	RUN: Off ERR.: Flicker CPU Status: Stop	Q00J/Q00/Q01*8 QnPH QnPRH QnU
2012	**[BASE LAY ERROR]** The GOT is bus-connected to the main base unit of the redundant system. The following errors were detected in the redundant system. • The base unit other than the Q6□WRB is connected to the extension stage No.1. • The base unit is connected to any one of the extension stages No.2 to No.7, although the Q6□WRB does not exist in the extension stage No.1. • The other system CPU module is incompatible with the extension base unit. • The Q5□B, QA1S5□B, QA1S6□B, QA6□B or QA6ADP+A5□B/A6□B is connected. • The number of slots of the main base unit for both systems is different. • Information of the Q6□WRB cannot be read correctly. **■Collateral information** • Common information: Base No. • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Remove the bus connection cable for the GOT connected to the main base unit. • Use the Q6□WRB (fixed to the extension stage No.1) • Use the redundant CPU compatible with the extension base unit for the other system. • Do not use the Q5□B, QA1S5□B, QA1S6□B, QA6□B or QA6ADP+A5□B/A6□B for the base unit. • Use the main base unit which has the same number of slots. • The cause is a hardware failure of the Q6□WRB. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QnPRH*15
2013	**[BASE LAY ERROR]** Stage number of the Q6□WRB is recognized as other than extension stage No.1 in the redundant system. **■Collateral information** • Common information: Base No. • Individual information:- **■Diagnostic Timing** • At power-on/At reset	The cause is a hardware failure of the Q6□WRB. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		
2020	**[EXT.CABLE ERR.]** The following errors were detected in the redundant system. • At power-on/reset, the standby system has detected the error in the path between the control system and the Q6□WRB. • The standby system detected an error in the path to the Q6□WRB in the END processing. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset/When an END instruction executed	Check to see if the extension cable between the main base unit and the Q6□WRB is connected correctly. If not, connect it after turning OFF the main base unit where the extension cable will be connected. If the cable is properly connected, the cause is a hardware failure of the CPU module, Q6□WRB, or extension cable. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2030	**[NO END COVER]** No END cover. **■Collateral information** • Common information: Module No. (Block No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Attach an END cover. • Check that the modules are properly connected with referring to the System Monitor dialog box. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	LCPU
2031	**[NO END COVER]** No END cover. **■Collateral information** • Common information: Module No. (Block No.) • Individual information:- **■Diagnostic Timing** • When an END instruction executed			
2040	**[UNIT BAD CONNECT]** • The I/O module status is different from that obtained at power-on. • The I/O module (including the intelligent function module) is nearly disconnected or is completely disconnected during running. • An extension cable is not securely connected. • Runaway or failure of the CPU module (built-in I/O, built-in CC-Link) •Malfunction due to noise or other causes •Hardware failure **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • Always	• Read common information of the error using the programming tool to identify the numeric value (module No.). Check the module corresponding to the value and replace it as necessary. • Monitor SD1400 to SD1431 using the programming tool to identify the module of which data bit is "1". Check the module and replace it as necessary. • Securely connect the connector part of an extension cable to the module. (Insert the connector until it clicks.) • Take noise reduction measures. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		
2050	**[EXT. CABLE ERR.]** An extension cable is disconnected. **■Collateral information** • Common information: Module No. (Block No.) • Individual information: - **■Diagnostic Timing** • When an END instruction executed	• Connect the extension cable. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU*28
2100	**[SP. UNIT LAY ERR.]** The slot where the QI60 is mounted was assigned as other than an intelligent function module or interrupt module in the I/O assignment tab of the PLC parameter dialog box. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Make setting again to match the PLC parameter I/O assignment with the actual loading status.		Qn(H)*8 QnPH QnPRH

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2100	**[SP. UNIT LAY ERR.]** • In the I/O Assignment tab of the PLC parameter dialog box, "Intelligent" (intelligent function module) is set for the slot where an I/O module is mounted, and vice versa. • In the I/O Assignment tab of the PLC parameter dialog box, a module other than a CPU module or empty is set for the slot where a CPU module is mounted, and vice versa. • In the I/O assignment setting of the PLC parameter, switch setting was made to the module that has no switch setting. • In the I/O assignment setting of the PLC parameter dialog box, the number of points assigned to the intelligent function module is less than the number of points of the mounted module. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Set the I/O assignment again so that the setting matches with the mounting status of the intelligent function module or the CPU module. • Delete the switch setting in the I/O assignment setting of the PLC parameter.	RUN: Off ERR.: Flicker CPU Status: Stop	Qn(H) QnPH QnPRH QnU
	[SP. UNIT LAY ERR.] • In the I/O Assignment tab of the PLC parameter dialog box, "Intelligent" (intelligent function module) is set for the slot where an I/O module is mounted, and vice versa. • In the I/O Assignment tab of the PLC parameter dialog box, a module other than a CPU module or empty is set for the slot where a CPU module is mounted, and vice versa. • In the I/O assignment setting of the PLC parameter dialog box, the number of points assigned to the intelligent function module is less than the number of points of the mounted module. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Set the I/O assignment again so that the setting matches with the mounting status of the intelligent function module or the CPU module.		Q00J/Q00/Q01
	[SP. UNIT LAY ERR.] • In the I/O Assignment tab of the PLC parameter dialog box, "Intelligent" (intelligent function module) or a branch module is set for the position where an I/O module is connected. • In the I/O Assignment tab of the PLC parameter dialog box, "Input" (input module), "Output" (output module), or a branch module is set for the position where an intelligent function module is connected. • In the I/O Assignment tab of the PLC parameter dialog box, "Input" (input module), "Output" (output module), or "Intelligent" (intelligent function module) is set for the position where a branch module is connected. • In the I/O Assignment tab of the PLC parameter dialog box, switch settings are configured for the module that does not support the setting. • In the I/O Assignment tab of the PLC Parameter dialog box, the number of points assigned to the intelligent function module is less than that of the mounted module. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Set the I/O assignment again so that the setting matches with the mounting status of the intelligent function module, CPU module, or branch module. • Delete the switch setting. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2101	**[SP. UNIT LAY ERR.]** 13 or more A-series special function modules (except for the A1SI61/AI61(-S1)) that can initiate an interrupt to the CPU module have been installed. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Reduce the A series special function modules (except the A1SI61/AI61(-S1)) that can make an interrupt start to the CPU module to 12 or less.	RUN: Off ERR.: Flicker CPU Status: Stop	Qn(H) QnU*31
2102	**[SP. UNIT LAY ERR.]** Total of 7 or more MELSECNET, MELSECNET/B local station data link module (A1SJ71AP23Q, A1SJ71AR23Q, A1SJ71AT23BQ), A/QnA intelligent communication module (A1SD51, AD51(H)(-S3)), A/QnA JEMANET(JPCN-1) master module (A1SJ71J92-S3, AJ71J92-S3), A/QnA external failure diagnostics module (AD51FD-S3), and Q/QnA paging interface module (A1SD21-S1) have been installed. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Reduce the total number of MELSECNET, MELSECNET/B local station data link module, A/QnA intelligent communication module, A/QnA JEMANET(JPCN-1) master module, A/QnA external failure diagnostics module, and Q/QnA paging interface module that have been installed to six or fewer.		
2103	**[SP. UNIT LAY ERR.]** • Two or more QI60/A1SI61/AI61(-S1) modules are mounted in a single CPU system. • Two or more QI60/A1SI61/AI61(-S1) modules are set to the same control CPU in a multiple CPU system. • Two or more A1SI61/AI61(-S1) modules are loaded in a multiple CPU system. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Reduce the number of QI60/A1SI61/AI61(-S1) modules mounted in the single CPU system to one. • Reduce the number of the A1SI61/AI61(-S1) modules mounted in the single CPU system to one, and do interrupt pointer setting to the QI60. • Change the number of QI60/A1SI61/AI61(-S1) modules set to the same control CPU to only one in the multiple CPU system. • Reduce the number of A1SI61/AI61(-S1) modules to only one in the multiple CPU system.		Qn(H)*8 QnPH QnU*31
	[SP. UNIT LAY ERR.] Two or more QI60, A1SI61 interrupt modules have been mounted. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Install only 1 QI60, A1SI61 module.		Qn(H) QnPRH
	[SP. UNIT LAY ERR.] Two or more QI60 modules are mounted. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Reduce the QI60 modules to one.		Q00J/Q00/Q01*10
	[SP. UNIT LAY ERR.] Two or more QI60 modules where interrupt pointer setting has not been made are mounted. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Reduce the QI60 modules to one. • Make interrupt pointer setting to the second QI60 module and later.		Q00J/Q00/Q01*8 QnU

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2106	**[SP. UNIT LAY ERR.]** • Two or more MELSECNET/H and CC-Link IE controller network modules in total are mounted in the entire system. • Two or more Ethernet modules are mounted in the entire system. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Use either MELSECNET/H module or CC-Link IE controller network module by one in the entire system. • Reduce the number of Ethernet modules to one.	RUN: Off ERR.: Flicker CPU Status: Stop	Q00UJCPU
	[SP. UNIT LAY ERR.] • Two or more MELSECNET/H and CC-Link IE controller network modules in total are mounted in the entire system. • Two or more Ethernet modules are mounted in the entire system. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Reduce the number of MELSECNET/H and CC-Link IE controller network modules to one in total in the entire system. • Reduce the number of Ethernet modules to one in the entire system.		Q00UCPU Q01UCPU
	[SP. UNIT LAY ERR.] • Three or more MELSECNET/H and CC-Link IE controller network modules in total are mounted in the entire system. • Three or more Ethernet interface modules are mounted in the entire system. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Reduce the MELSECNET/H and CC-Link IE controller network modules up to two or less in the entire system. • Reduce the Ethernet interface modules up to two or less in the entire system.		Q02UCPU
	[SP. UNIT LAY ERR.] • Five or more MELSECNET/H and CC-Link IE controller network modules in total are mounted in the entire system. • Five or more Ethernet interface modules are mounted in the entire system. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Reduce the MELSECNET/H and CC-Link IE controller network modules up to four or less in the entire system. • Reduce the Ethernet interface modules up to four or less in the entire system.		QnU*20
	[SP. UNIT LAY ERR.] • Three or more CC-Link IE controller network modules are mounted in the entire system. • Five or more MELSECNET/H and CC-Link IE controller network modules in total are mounted in the entire system. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Reduce the CC-Link IE controller network modules up to two or less in the entire system. • Reduce the total number of the MELSECNET/H and CC-Link IE controller network modules up to four or less in the entire system.		Qn(H)*15 QnPH*17 QnPRH*17
	[SP. UNIT LAY ERR.] • Five or more MELSECNET/H modules have been installed. • Five or more Ethernet interface modules have been installed. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Reduce the number of MELSECNET/H modules to four or less. • Reduce the number of Ethernet modules to four or less.		Qn(H) QnPH QnPRH

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2106	**[SP. UNIT LAY ERR.]** • Two or more MELSECNET/H modules were installed. • Two or more Ethernet modules were installed. • Three or more CC-Link modules were installed. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Reduce the MELSECNET/H modules to one or less. • Reduce the Ethernet modules to one or less. • Reduce the CC-Link modules to two or less.	RUN: Off ERR.: Flicker CPU Status: Stop	Q00J/Q00/Q01
	[SP. UNIT LAY ERR.] • The same network number or same station number is duplicated in the MELSECNET/H network system. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Check the network number and station number.		Q00J/Q00/Q01 Qn(H) QnPH QnPRH
2107	**[SP. UNIT LAY ERR.]** The start X/Y set in the PLC parameter's I/O assignment settings is overlapped with the one for another module. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Make the PLC parameter's I/O assignment setting again so it is consistent with the actual status of the intelligent function module/special function modules.		QCPU
	[SP. UNIT LAY ERR.] The start X/Y configured in the I/O Assignment tab of the PLC Parameter dialog box is overlapped with that for another module. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Configure the start X/Y again in the I/O Assignment tab of the PLC Parameter dialog box according to the intelligent function module and I/O modules connected. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU
2108	**[SP. UNIT LAY ERR.]** • Network module A1SJ71LP21, A1SJ71BR11, A1SJ71AP21, A1SJ71AR21, or A1SJ71AT21B dedicated for the A2USCPU has been installed. • Network module A1SJ71QLP21 or A1SJ71QBR11 dedicated for the Q2ASCPU has been installed. • Network module AJ71LP21, AJ71LP21G, AJ71BR11, AJ71AP21, AJ71AR21, or AJ71AT21B dedicated for the A2UCPU has been installed. • Network module AJ71QLP21,AJ71QLP21S, AJ71QLP21G or AJ71QBR11 dedicated for the Q2ACPU has been installed. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Replace the network module for the A2USCPU, Q2ASCPU, A2UCPU, or Q2ACPU with the MELSECNET/H module.		Qn(H) QnU*31

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2110	**[SP. UNIT ERROR]** • The location designated by the FROM/TO instruction set is not the intelligent function module/special function module. • The module that does not include buffer memory has been specified by the FROM/TO instruction. • The intelligent function module/special function module, Network module being accessed is faulty. • Station not loaded was specified using the instruction whose target was the CPU share memory. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information: Program error location **■Diagnostic Timing** • When instruction executed	• Read the individual information of the error using the programming tool to identify the numeric value (program error location). Correct the FROM/TO instruction corresponding to the value as necessary. • The cause is a hardware fault of the intelligent function module/special function module in the access destination. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue[*1]	Q00J/Q00/Q01 Qn(H)[*8] QnPH QnPRH QnU
	[SP. UNIT ERROR] • A module other than intelligent function modules is specified with the FROM/TO instruction. • The module specified with the FROM/TO instruction does not have the buffer memory. • The intelligent function module being accessed is faulty. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information: Program error location **■Diagnostic Timing** • When instruction executed	• Read the individual information of the error using the programming tool to identify the numeric value (program error location). Correct the FROM/TO instruction corresponding to the value as necessary. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU
2111	**[SP. UNIT ERROR]** • The location designated by a link direct device (J□\□) is not a network module. • The I/O module (intelligent function module/special function module) was nearly removed, completely removed, or mounted during running. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information: Program error location **■Diagnostic Timing** • When instruction executed	• Read the individual information of the error using the programming tool to identify the numeric value (program error location). Correct the FROM/TO instruction corresponding to the value as necessary. • The cause is a hardware fault of the intelligent function module/special function in the access destination. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QCPU
	[SP. UNIT ERROR] • The location designated by a link direct device (J□\□) is not a network module. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information: Program error location **■Diagnostic Timing** • When instruction executed/STOP→RUN	• Read the individual information of the error using the programming tool to identify the numeric value (program error location). Correct the FROM/TO instruction corresponding to the value as necessary. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU [*26]

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2112	**[SP. UNIT ERROR]** • The module other than intelligent function module/special function module is specified by the intelligent function module/special function module dedicated instruction. Or, it is not the corresponding intelligent function module/special function module. • There is no network No. specified by the network dedicated instruction. Or the relay target network does not exit. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information: Program error location **■Diagnostic Timing** • When instruction executed/STOP→RUN	Read the individual information of the error using the programming tool to identify the numeric value (program error location). Check the intelligent function module/special function module dedicated instruction (instruction for a network) corresponding to the value and correct it as necessary.	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue[*1]	QCPU
	[SP. UNIT ERROR] • The module other than intelligent function module was specified with an intelligent function module dedicated instruction. Or there is no relevant intelligent function module. • There is no network No. specified by the network dedicated instruction. Or the relay target network does not exit. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information: Program error location **■Diagnostic Timing** • When instruction executed/STOP→RUN	• Read the individual information of the error using the programming tool to identify the numeric value (program error location). Check the intelligent function module dedicated instruction corresponding to the value and correct it as necessary. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU
2113	**[SP. UNIT ERROR]** The module other than network module is specified by the network dedicated instruction. **■Collateral information** • Common information: $FFFF_H$ (fixed) • Individual information: Program error location **■Diagnostic Timing** • When instruction executed/STOP→RUN	Read the individual information of the error using the programming tool to identify the numeric value (program error location). Check the intelligent function module/special function module dedicated instruction (instruction for a network) corresponding to the value and correct it as necessary.		Qn(H) QnPH
2114	**[SP. UNIT ERROR]** An instruction, which on execution specifies other stations, has been used for specifying the host CPU. (An instruction that does not allow the host CPU to be specified). **■Collateral information** • Common information: Module No. (Slot No.) • Individual information: Program error location **■Diagnostic Timing** • When instruction executed/STOP→RUN	Read individual information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value and correct it as necessary.	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/Continue	Q00J/Q00/Q01 [*8] Qn(H) [*8] QnPH QnU

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2115	**[SP. UNIT ERROR]** An instruction, which on execution specifies the host CPU, has been used for specifying other CPUs. (An instruction that does not allow other stations to be specified). **■Collateral information** • Common information: Module No. (Slot No.) • Individual information: Program error location **■Diagnostic Timing** • When instruction executed/STOP→RUN	Read individual information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value and correct it as necessary.	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/Continue	Q00J/Q00/Q01 *8 Qn(H) *8 QnPH
2116	**[SP. UNIT ERROR]** • An instruction that does not allow the under the control of another CPU to be specified is being used for a similar task. • Instruction was executed for the A or QnA module under control of another CPU. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information: Program error location **■Diagnostic Timing** • When instruction executed/STOP→RUN			Q00J/Q00/Q01 *8 Qn(H) *8 QnPH QnU
2117	**[SP. UNIT ERROR]** A CPU module that cannot be specified in the instruction dedicated to the multiple CPU system was specified. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information: Program error location **■Diagnostic Timing** • When instruction executed/STOP→RUN			Q00J/Q00/Q01 *8 Qn(H) *8 QnPH QnU
2118	**[SP. UNIT ERROR]** When the online module change setting is set to be "enabled" in the PLC parameter in a multiple CPU system, intelligent function module controlled by other CPU using the FROM instruction/intelligent function module device (U□\G□) is specified. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information: Program error location **■Diagnostic Timing** • When instruction executed	• When performing the online module change in a multiple CPU system, correct the program so that access will not be made to the intelligent function module controlled by the other CPU. • When accessing the intelligent function module controlled by the other CPU in a multiple CPU system, set the online module change setting to be "disabled" by parameter.		Qn(H)*8 QnPH QnU*20
2120	**[SP. UNIT LAY ERR.]** • The Q5□B and Q6□B, or the QA1S5□B, QA1S6□B, QA6□B and QA6ADP+A5□B/A6□B are connected in the wrong order and the setting of the base number setting connector is wrong. • I/O numbers are assigned for Q series modules and A series modules in the wrong order. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Check the connection order of the base units and the setting of the base number setting connector. • Assign I/O numbers in an order of: Q series modules → A series modules or A series modules → Q series modules.	RUN: off ERR.: Flicker CPU Status: Stop	Q00J/Q00/Q01*7 Qn(H) QnPH QnU*31
2121	**[SP. UNIT LAY ERR.]** The CPU module is installed to other than the CPU slot and slots 0 to 2. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Check the loading position of the CPU module and reinstall it at the correct slot.		Qn(H) QnPH

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2122	**[SP. UNIT LAY ERR.]** The QA1S3□B is used as the main base unit. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Replace the main base unit with a usable one.	RUN: Off ERR.: Flicker CPU Status: Stop	Qn(H) QnPH QnPRH QnU*31
2124	**[SP. UNIT LAY ERR.]** • A module is mounted on the 65th slot or later slot. • A module is mounted on the slot whose number is greater than the number of slots specified at [Slots] in [Standard setting] of the base setting. • A module is mounted on the slot whose number of I/O points exceeds 4096 points. • A module is mounted on the slot whose number of I/O points strides 4096 points. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Remove the module mounted on the 65th slot or later slot. • Remove the module mounted on the slot whose number is greater than the number of slots specified at [Slots] in [Standard setting] of the base setting. • Remove the module mounted on the slot whose number of I/O points exceeds 4096 points. • Replace the module with the one whose number of occupied points does not exceed 4096 points.		Qn(H) QnPH QnPRH QnU*20
	[SP. UNIT LAY ERR.] • A module is mounted on after the 25th slot (on after the 17th slot for the Q00UJ). • A module is mounted on the slot whose number is later than the one set in the "Base setting" on the I/O assignment tab of PLC parameter in GX Developer. • A module is mounted on the slot for which I/O points greater than 1024 (greater than 256 for the Q00UJ) is assigned. • A module is mounted on the slot for which I/O points is assigned from less than 1024 to greater than 1024 (from less than 256 to greater than 256 for the Q00UJ). **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Remove the module mounted on after the 25th (on after the 17th slot for the Q00UJ). • Remove the module mounted on the slot whose number is later than the one set in the "Base setting" on the I/O assignment tab of PLC parameter in GX Developer. • Remove the module mounted on the slot for which I/O points greater than 1024 (greater than 256 for the Q00UJ) is assigned. • Replace the end module with the one whose number of occupied points is within 1024 (within 256 for the Q00UJ).		Q00UJ/Q00U/Q01U
	[SP. UNIT LAY ERR.] • A module is mounted on the 37th slot or later slot. • A module is mounted on the slot whose number is greater than the number of slots specified at [Slots] in [Standard setting] of the base setting. • A module is mounted on the slot whose number of I/O points exceeds 2048 points. • A module is mounted on the slot whose number of I/O points strides 2048 points. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Remove the module mounted on the 37th slot or later slot. • Remove the module mounted on the slot whose number is greater than the number of slots specified at [Slots] in [Standard setting] of the base setting. • Remove the module mounted on the slot whose number of I/O points exceeds 2048 points. • Replace the module with the one whose number of occupied points does not exceed 2048 points.		Q02UCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2124	**[SP. UNIT LAY ERR.]** • A module is mounted on the 25th slot or later slot. (The 17th slot or later slot for the Q00J.) • A module is mounted on the slot whose number is greater than the number of slots specified at [Slots] in [Standard setting] of the base setting. • A module is mounted on the slot whose number of I/O points exceeds 1024 points. (256 points for the Q00J.) • A module is mounted on the slot whose number of I/O points strides 1024 points. (256 points for the Q00J.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Remove the module mounted on the 25th slot or later slot. (The 17th slot or later slot for the Q00J.) • Remove the module mounted on the slot whose number is greater than the number of slots specified at [Slots] in [Standard setting] of the base setting. • Remove the module mounted on the slot whose number of I/O points exceeds 1024 points (greater than or equal to 256 points for the Q00J). • Replace the module with the one whose number of occupied points does not exceed 1024 points (within 256 points for the Q00J).	RUN: Off ERR.: Flicker CPU Status: Stop	Q00J/Q00/Q01
	[SP. UNIT LAY ERR.] • The number of connectable modules has exceeded 10. • A module is installed exceeding the I/O points of 4096. • A module is installed crossing the I/O points of 4096. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Reduce the number of connectable modules to 10. • Remove the module whose number of points exceeds 4096 points. • Replace the module to installed at end with the one whose number of occupied points does not exceed 4096 points. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		L26CPU-BT L26CPU-PBT
	[SP. UNIT LAY ERR.] • The number of connectable modules has exceeded 40. • A module is installed exceeding the I/O points of 4096. • A module is installed crossing the I/O points of 4096. **■Collateral information** • Common information: - • Individual information: - **■Diagnostic Timing** • At power-on/At reset	• Reduce the number of connectable modules to 40 or less. • Remove the module whose number of points exceeds 4096 points. • Replace the last module with the one whose number of occupied points does not exceed 4096 points. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		L26CPU-BT*28 L26CPU-PBT*28

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2124	**[SP. UNIT LAY ERR.]** • The number of connectable modules has exceeded 10. • A module is installed exceeding the I/O points of 1024. • A module is installed crossing the I/O points of 1024. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Reduce the number of connectable modules to 10. • Remove the module whose number of points exceeds 1024 points. • Replace the module with the one whose number of occupied points does not exceed 1024 points. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	L02CPU L02CPU-P
	[SP. UNIT LAY ERR.] • The number of connectable modules has exceeded 30. • A module is installed exceeding the I/O points of 1024. • A module is installed crossing the I/O points of 1024. **■Collateral information** • Common information: - • Individual information: - **■Diagnostic Timing** • At power-on/At reset	• Reduce the number of connectable modules to 30 or less. • Remove the module whose number of points exceeds 1024 points. • Replace the last module with the one whose number of occupied points does not exceed 1024 points. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		L02CPU[*28] L02CPU-P[*28]
2125	**[SP. UNIT LAY ERR.]** • A module which the QCPU cannot recognise has been installed. • There was no response from the intelligent function module/special function module. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Install a usable module. • The intelligent function module/special function module is experiencing a hardware fault. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QCPU
	[SP. UNIT LAY ERR.] • A module which the LCPU cannot recognize has been connected. • There was no response from the intelligent function module. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Connect an applicable module. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU
2126	**[SP. UNIT LAY ERR.]** The CPU module configuration in the multiple CPU system is either of the following. • There are empty slots between the QCPU and QCPU/motion controller. • A module other than the High Performance model QCPU/Process CPU (including the motion controller) is mounted on the left-hand side of the High Performance model QCPU/Process CPU. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Mount modules on the available slots so that the empty slots will be located on the right-hand side of the CPU module. • Remove the modules mounted on the left of the High Performance model QCPU or Process CPU. Mount a High Performance model QCPU or Process CPU on those slots. Mount the motion CPU on the right-hand side of the High Performance model QCPU/Process CPU.		Qn(H)[*8] QnPH

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2128	**[SP.UNIT LAY ERR.]** The unusable module is mounted on the extension base unit in the redundant system. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Remove the unusable module from the extension base unit.	RUN: Off ERR.: Flicker CPU Status: Stop	QnPRH*15
2150	**[SP. UNIT VER. ERR.]** In a multiple CPU system, the control CPU of the intelligent function module incompatible with the multiple CPU system is set to other than CPU No.1. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset/At writing to programmable controller	• Change the intelligent function module for the one compatible with the multiple CPU system (function version B). • Change the setting of the control CPU of the intelligent function module incompatible with the multiple CPU system to CPU No.1.		Q00J/Q00/Q01 QnPH QnU*18
2151	**[SP. UNIT VER. ERR.]** Either of the following modules incompatible with the redundant system has been mounted in a redundant system. • MELSECNET/H modules • Ethernet modules • CC-Link IE Controller Network modules **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset/At writing to programmable controller	Ensure that the module supports the use in a redundant system when using any of the following modules. • MELSECNET/H modules • Ethernet modules • CC-Link IE Controller Network modules		QnPRH
2170	**[SYSTEM LAY ERR.]** A module which the LCPU cannot recognize is connected. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** At power-on/At reset	• Disconnect the module that cannot be recognized. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a hardware failure of the CPU module, I/O module, intelligent function module, END cover, branch module, or extension module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU
2171	**[SYSTEM LAY ERR.]** • The branch module is not connected on the right of the CPU module or the extension module. • The branch module is not connected on the left of the END cover. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information: - **■Diagnostic Timing** • At power-on/At reset	• Connect the branch module on the right of the CPU module or the extension module. • Connect the branch module on the left of the END cover.		LCPU*28
2172	**[SYSTEM LAY ERR.]** More than one branch module is connected on the same block. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information: - **■Diagnostic Timing** • At power-on/At reset	• Disconnect branch modules other than the first one.		

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2173	**[SYSTEM LAY ERR.]** • The number of modules connected in the main block exceeds 10. • The number of modules connected in the extension blocks exceeds 11. **■Collateral information** • Common information: Module No. (Block No.) • Individual information: - **■Diagnostic Timing** • At power-on/At reset	• Reduce the number of modules connected in the main block to 10 or less. • Reduce the number of modules connected in the extension blocks to 11 or less.	RUN: Off ERR.: Flicker CPU Status: Stop	LCPU*28
2174	**[SYSTEM LAY ERR.]** The number of extension blocks exceeds 3. **■Collateral information** • Common information: Module No. (Block No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Reduce the number of extension blocks to 3 or less.		L26CPU-BT*28 L26CPU-PBT*28
	[SYSTEM LAY ERR.] The number of extension blocks exceeds 2. **■Collateral information** • Common information: Module No. (Block No.) • Individual information: - **■Diagnostic Timing** • At power-on/At reset	• Reduce the number of extension blocks to 2 or less.		L02CPU*28 L02CPU-P*28
2175	**[SYSTEM LAY ERR.]** An END cover that does not support an extension system is connected in an extension system. **■Collateral information** • Common information: Module No. (Block No.) • Individual information: - **■Diagnostic Timing** • At power-on/At reset	• Replace the END cover with one that supports an extension system.		LCPU*28
2176	**[SYSTEM LAY ERR.]** An extension cable is connected to the branch module during operation. **■Collateral information** • Common information: Module No. (Block No.) • Individual information: - **■Diagnostic Timing** • Always	• Disconnect the extension cable connected during operation.		

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2200	**[MISSING PARA.]** There is no parameter file in the drive specified as valid parameter drive by the DIP switches. **■Collateral information** • Common information: Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Check and correct the valid parameter drive settings made by the DIP switches. • Set the parameter file to the drive specified as valid parameter drive by the DIP switches.	RUN: off ERR.: Flicker CPU Status: Stop	Qn(H) QnPH QnPRH
	[MISSING PARA.] There is no parameter file at the program memory. **■Collateral information** • Common information: Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Set the parameter file to the program memory.		Q00J/Q00/Q01
	[MISSING PARA.] Parameter file does not exist in all drives where parameters will be valid. **■Collateral information** • Common information: Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Set a parameter file in a drive to be valid.		QnU
	[MISSING PARA.] There is no parameter file in the program memory. • When using a parameter file in an SD memory card, the SD memory card is being disabled by SM606 (SD memory card forced disable instruction). **■Collateral information** • Common information: Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Write parameter files to the program memory of the CPU module. • Cancel the SD memory card forced disable instruction.		LCPU
2210	**[BOOT ERROR]** The contents of the boot file are incorrect. **■Collateral information** • Common information: Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Check the boot setting.		Q00J/Q00/Q01*8 Qn(H) QnPH QnPRH QnU LCPU
2211	**[BOOT ERROR]** File formatting is failed at a boot. **■Collateral information** • Common information: Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Reboot. • The cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		Qn(H) QnPRH QnU LCPU
2213	**[BOOT ERROR]** The file was booted from the SD memory card to the program memory or standard ROM but it was not booted to the CPU module due to either of the following reasons. • The passwords for the password 32 do not match between transfer source file and destination file. • The password 32 is not configured for the transfer source file while it is configured for the destination file. **■Collateral information** • Common information: File name/Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Check the setting of the password 32 for the transfer source file and destination files. • Delete the boot setting from the parameter file of the SD memory card.		LCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2220	**[RESTORE ERROR]** • The device information (number of points) backed up by the device data backup function is different from that configured in the PLC Parameter dialog box. Perform a restoration per power-on and reset until the number of device points is identical to the value set in the PLC Parameter dialog box or until the backup data are deleted. **■Collateral information** • Common information: File name/Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Set the number of device points at the time of backup to be identical to the device point value set in the PLC Parameter dialog box. Then turn on from off or reset the power supply. • Delete the backed up data, turn the power supply from off to on, and reset.	RUN: Off ERR.: Flicker CPU Status: Stop	QnU LCPU
2221	**[RESTORE ERROR]** • The device information backuped by the device data backup function is incomplete. (The power may have been off or the CPU module may have been reset during performing the backup.) Do not return the data when this error occurs. Also, delete the incomplete device information at the time of this error occurrence. **■Collateral information** • Common information: File name/Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Reset the CPU module and run it again.		
2225	**[RESTORE ERROR]** The model name of the restoration destination CPU module is different from the one of the backup source CPU module. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Execute a restore for the CPU module whose name is same as the backup source CPU module.		QnU*19 LCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2226	**[RESTORE ERROR]** • The backup data file is corrupted.(The backup data file does not match the check code.) • Reading the backup data from the SRAM card did not end successfully. • Since the write protect switch of the SRAM card is set to on (write inhibited), the checked "Restore for the first time only" setting cannot be performed. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Execute a restore of other backup data because the backup data may be corrupted. • Set the write protect switch of the SRAM card to off (write enabled).	RUN: Off ERR.: Flicker CPU Status: Stop	QnU*19
	[RESTORE ERROR] • The backup data file is corrupted. (The backup data file does not match the check code.) • Reading the backup data from the SD memory card did not end successfully. • The "Restore for the first time only" setting cannot be enabled because the write protect switch of the SD memory card has been set to on (write-prohibited). **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Restore with any other backup data because the backup data may have been corrupted. • Set the write protect switch of the SD memory card to off (write-enabled).		LCPU
2227	**[RESTORE ERROR]** Writing the backup data to the restoration destination drive did not end successfully. **■Collateral information** • Common information: File name/Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Execute a restore for the other CPU module too because the CPU module may be damaged.		QnU*19 LCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2300	**[ICM. OPE. ERROR]** • A memory card was removed without turning on SM609 (Memory card remove/insert enable flag). • A memory card was removed while SM600 (Memory card usable flags) is on. **■Collateral information** • Common information: Drive name • Individual information:- **■Diagnostic Timing** • When memory card is inserted or removed	• Turn on SM609 (Memory card remove/insert enable flag) and then remove the memory card. • Check that SM600 (Memory card usable flags) is off and then remove the memory card.	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue*1	Qn(H) QnPH QnPRH QnU*19
	[ICM. OPE. ERROR] • A memory card was removed without turning off the SD memory card lock switch. **■Collateral information** • Common information: Drive name • Individual information:- **■Diagnostic Timing** • When memory card is inserted or removed	• Turn off the SD memory card lock switch first and then remove the memory card.		LCPU
2301	**[ICM. OPE. ERROR]** • The memory card has not been formatted. • Memory card format status is incorrect. **■Collateral information** • Common information: Drive name • Individual information:- **■Diagnostic Timing** • When memory card is inserted or removed	• Format memory card. • Reformat memory card. If the memory card is a flash card, write data to the flash card in any of the following methods. 1)Write program memory to the ROM 2)Write data to the CPU module (flash ROM) 3) Back up data to the flash card 4)Write image data to an external device, such as a memory card writer. If the same error code is displayed again, the cause is a failure of the memory card. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		Qn(H) QnPH QnPRH QnU*19 LCPU
	[ICM. OPE. ERROR] • The QCPU file does not exist in the Flash card. **■Collateral information** • Common information: Drive name • Individual information:- **■Diagnostic Timing** • When memory card is inserted or removed	• Write the QCPU file the Flash card		Qn(H) QnPH QnPRH QnU*19
	[ICM. OPE. ERROR] • SRAM card failure is detected. (It occurs when automatic format is not set.) • Writing parameters was performed during setting file registers. **■Collateral information** • Common information: Drive name • Individual information:- **■Diagnostic Timing** • When memory card is inserted or removed/When writing to the memory card	• Format SRAM card after changing battery of SRAM card. • Before operation, set the parameter for the file register to "Not available" and write it to the CPU module.		QnU*19
2302	**[ICM. OPE. ERROR]** A memory card that cannot be used with the CPU module has been installed. **■Collateral information** • Common information: Drive name • Individual information:- **■Diagnostic Timing** • When memory card is inserted or removed	• Format the memory card. • Reformat the memory card. • Check the memory card.		Qn(H) QnPH QnPRH QnU*19 LCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2400	**[FILE SET ERROR]** Automatic write to standard ROM was performed on the CPU module that is incompatible with automatic write to standard ROM. (Memory card where automatic write to standard ROM was selected in the boot file was fitted and the parameter enable drive was set to the memory card.) **■Collateral information** • Common information: File name/Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Execute automatic write to standard ROM on the CPU module which is compatible with automatic write to standard ROM. • Write parameters and programs to the standard ROM using the programming tool. • Change the memory card for the one where automatic write to standard ROM has not been set, and perform boot operation from the memory card.	RUN: Off ERR.: Flicker CPU Status: Stop	Qn(H)*8 QnPH QnPRH
	[FILE SET ERROR] The file specified with a parameter does not exist. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/At writing to programmable controller/STOP→RUN	Read the individual information of the error using the programming tool to identify the numeric value (parameter No.). Check the drive name and file name of the parameter corresponding to the value, and correct it as necessary. Create the specified file and write it to the CPU module.		QCPU
	[FILE SET ERROR] • The file specified with a parameter does not exist. • When using a file in an SD memory card, the SD memory card is being disabled by SM606 (SD memory card forced disable instruction). **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/At writing to programmable controller/STOP→RUN	• Read the individual information of the error using the programming tool to identify the numeric value (parameter No.). Check the drive name and file name of the parameter corresponding to the value, and correct it as necessary. Create the specified file and write it to the CPU module. • Cancel the SD memory card forced disable instruction.		LCPU
2401	**[FILE SET ERROR]** Program memory capacity was exceeded by performing boot operation or automatic write to standard ROM. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/At writing to programmable controller	• Check and correct the parameters (boot setting). • Delete unnecessary files in the program memory. • Choose "Clear program memory" for boot in the parameter so that boot is started after the program memory is cleared.		Qn(H)*8 QnPH QnPRH
	[FILE SET ERROR] Program memory capacity was exceeded by performing boot operation. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/At writing to programmable controller			QnU LCPU
	[FILE SET ERROR] The file specified by parameters cannot be made. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/At writing to programmable controller/STOP→RUN	• Read the individual information of the error using the programming tool to identify the numeric value (parameter No.). Check the drive name and file name of the parameter corresponding to the value, and correct it as necessary. • Format the drive. • Delete unnecessary files on the drive to increase free space.		QCPU LCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2401	**[FILE SET ERROR]** • Although setting is made to use the device data storage file, there is no empty capacity required for creating the device data storage file in the standard ROM. • When the latch data backup function (to standard ROM) is used, there is no empty capacity required for storing backup data in standard ROM. (The parameter number "$FFFF_H$" is displayed for the individual information of the error.) **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/At writing to programmable controller/STOP→RUN	Secure the empty capacity of the standard ROM.	RUN: Off ERR.: Flicker CPU Status: Stop	QnU LCPU
	[FILE SET ERROR] • Standard RAM capacity is insufficient that error history of the module cannot be stored. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/At writing to programmable controller/STOP→RUN	Secure sufficient space in the standard RAM.		
2406	**[FILE SET ERROR]** When the extended data register and extended link register are configured in the File Register Extended Setting in the Device tab of the PLC Parameter dialog box, the size of the file register file is smaller than that specified in the PLC File tab. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • STOP→RUN	• Correct the size for the file register file in the PLC File tab of the PLC Parameter dialog box. • Correct the setting for the File Register Extended Setting in the Device tab of the PLC Parameter dialog box.		
2410	**[FILE OPE. ERROR]** • The specified program does not exist in the program memory. • This error may occur when the ECALL, EFCALL, PSTOP, PSCAN, POFF or PLOW instruction is executed. • The specified file does not exist. • A required file is not set in the PLC File tab of the PLC Parameter dialog box. **■Collateral information** • Common information: File name/Drive name • Individual information: Program error location **■Diagnostic Timing** • When instruction executed	• Read individual information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value and correct it as necessary. Create the specified file and write it to the CPU module. • If the specified file does not exist, write the file to the target memory. Or correct the file specification by a instruction. • Set the required file in the PLC File tab of the PLC Parameter dialog box.	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue[*1]	Qn(H) QnPH QnPRH QnU LCPU
2411	**[FILE OPE. ERROR]** • The file cannot be specified by the program, such as comment file. • The specified program exists in the program memory, but has not been registered in the program setting of the PLC Parameter dialog box. This error may occur when the ECALL, EFCALL, PSTOP, PSCAN, POFF or PLOW instruction is executed. **■Collateral information** • Common information: File name/Drive name • Individual information: Program error location **■Diagnostic Timing** • When instruction executed	Read individual information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value and correct it as necessary.		

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2412	**[FILE OPE. ERROR]** This SFC program file cannot be specified with the program. **■Collateral information** • Common information: File name/Drive name • Individual information: Program error location **■Diagnostic Timing** • When instruction executed	Read individual information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value and correct it as necessary.	RUN: Off/On ERR.: Flicker/On	Qn(H) QnPH QnPRH QnU LCPU
2413	**[FILE OPE. ERROR]** The file specified in the program was not written. **■Collateral information** • Common information: File name/Drive name • Individual information: Program error location **■Diagnostic Timing** • When instruction executed	Read individual information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value and correct it as necessary. Check to ensure that the designated file has not been write protected.	CPU Status: Stop/ Continue*1	Qn(H) QnPH QnPRH
2500	**[CAN'T EXE. PRG.]** • Any of the program files are using a device that is out of the range configured in the Device tab of the PLC Parameter dialog box. • After changing the device setting in the PLC Parameter dialog box, only the parameters were written to the CPU module. • Although an SFC program exists, the step relay points is set to "0" in the Device tab of the PLC Parameter dialog box. **■Collateral information** • Common information: File name/Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Read the common information of the error using the programming tool to identify the numeric value (file name). Verify the device assignments of the program file corresponding to the value with its parameter setting, and correct them as necessary. • Whenever a device setting is changed, write both the parameter and program file to the CPU module. • To use the SFC program, set the step relay points to 8 k.	RUN: Off ERR.: Flicker CPU Status: Stop	QCPU LCPU
	[CAN'T EXE. PRG.] After changing the index modification setting in the PLC Parameter dialog box, only the parameters were written to the CPU module. **■Collateral information** • Common information: File name/Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Whenever an index modification setting is changed in the PLC Parameter dialog box, batch-write the parameter and program file to the CPU module.		QnU LCPU
2501	**[CAN'T EXE. PRG.]** More than one program files exist although no program name is entered in the Program tab of the PLC Parameter dialog box. **■Collateral information** • Common information: File name/Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Enter the program names in the Program tab of the PLC Parameter dialog box. Or delete unnecessary programs.		Qn(H) QnPH QnPRH QnU LCPU
	[CAN'T EXE. PRG.] • There are three or more program files. • The program name differs from the program contents. **■Collateral information** • Common information: File name/Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Delete unnecessary program files. • Match the program name with the program contents.		Q00J/Q00/Q01

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2502	**[CAN'T EXE. PRG.]** The program file is incorrect. Or the contents of the file are not programs. **■Collateral information** • Common information: File name/Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Ensure that the program version is ***.QPG and the file contents are programs.	RUN: Off ERR.: Flicker CPU Status: Stop	QCPU LCPU
	[CAN'T EXE. PRG.] The program file is not the one for the redundant CPU. **■Collateral information** • Common information: File name/Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Create a program with GX Developer or PX Developer specifying the redundant CPU (Q12PRH/Q25PRH) as the PLC type, and write it to the CPU module.		QnPRH
2503	**[CAN'T EXE. PRG.]** There are no program files at all. **■Collateral information** • Common information: File name/Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Check program configuration. • Check parameters and program configuration.		QCPU LCPU
2504	**[CAN'T EXE. PRG.]** Two or more SFC normal programs or control programs have been designated. **■Collateral information** • Common information: File name/Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Check program configuration. • Check parameters and program configuration.		Qn(H) QnPH QnPRH QnU LCPU
	[CAN'T EXE. PRG.] There are two or more SFC programs. **■Collateral information** • Common information: File name/Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Reduce the SFC programs to one.		Q00J/Q00/Q01[*8]
2700	**[REMOTE PASS.FAIL]** The count of remote password mismatches reached the upper limit. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • Always	Check for illegal accesses. If any illegal access is identified, take actions such as disabling communication of the connection. If it was identified not illegal, clear the error and perform the following. (Clearing the error also clears the remote password mismatch counts.) • Check if the remote password sent is correct. • Check if the remote password has been locked. • Check if concurrent access was made from multiple devices to one connection by UDP. • Check if the upper limit of the remote password mismatch count is too low.	RUN: On ERR.: On CPU Status: Continue	QnU[*21] LCPU
2710	**[SNTP OPE.ERROR]** Time setting failed when the programmable controller was powered ON or reset. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • When time setting function is executed	• Check if the time setting function is set up correctly. • Check if the specified SNTP server is operating normally, or if any failure has occurred on the network connected to the specified SNTP server computer.	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue[*1]	

Error Code	Error Contents and Cause	Corrective Action	LED Status, CPU Status	Corresponding CPU
2900	**[DISPLAY ERROR]** The display unit was attached or detached while the CPU module is on. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • Always	• Do not detach the display unit during operation. • Ensure that the display unit is securely attached to the CPU module. • Reset the CPU module and run it again. If the same error is displayed again, the CPU module or display unit is faulty. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: On ERR.: On CPU Status: Continue	LCPU
2901	**[DISPLAY ERROR]** A failure was detected in the display unit. (in a initial processing) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Ensure that the display unit is securely attached to the CPU module. • Reset the CPU module and run it again. If the same error code is displayed again, the cause is a failure of the CPU module or display unit. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		
2902	**[DISPLAY ERROR]** A failure was detected in the display unit. (during operation) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • Always			

*1 CPU operations when an error occurred can be determined with a parameter. (LED indication varies according to the CPU status.)

*6 Intelligent function module operations when an error occurred can be selected with a parameter from either to stop or continue.

*7 This applies when the function version is A or later.

*8 This applies when the function version is B or later.

*10 This applies when the first five digits of the serial number is "04101" or later.

*15 This applies when the first five digits of the serial number is "09102" or later.

*17 This applies when the first five digits of the serial number is "10042" or later.

*18 This applies to the Universal model QCPU except for the Q00UJCPU.

*19 This applies to the Universal model QCPU except for the Q00UJCPU, Q00UCPU, and Q01UCPU.

*20 This applies to the Universal model QCPU except for the Q00UJCPU, Q00UCPU, Q01UCPU, and Q02UCPU.

*21 This applies to the Built-in Ethernet port QCPU.

*26 This applies when the first five digits of the serial number is "13012" or later.

*28 This applies when the first five digits of the serial number is "13072" or later.

*31 This applies when the first five digits of the serial number is "13102" or later.

Appendix 1.5 Error code list (3000 to 3999)

The following table shows the error messages, the error contents and causes, and the corrective actions for the error codes (3000 to 3999).

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
3000	**[PARAMETER ERROR]** In a multiple CPU system, the intelligent function module under control of another CPU is specified in the interrupt pointer setting of the PLC parameter. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	• Specify the head I/O number of the intelligent function module under control of the host CPU. • Delete the interrupt pointer setting of the parameter.	RUN: Off ERR.: Flicker CPU Status: Stop	Qn(H)*8 QnPH QnU*18
	[PARAMETER ERROR] The PLC parameter settings for timer time limit setting, the RUN-PAUSE contact, the common pointer number, general data processing, number of empty slots, system interrupt settings, baud rate setting, and service processing setting are outside the range for the CPU module. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	• Read the individual information of the error using the programming tool to identify the numeric value (parameter No.). Check the parameters corresponding to the value, and correct them as necessary. • Rewrite corrected parameters to the CPU module, reload the CPU power supply and/or reset the module. • If the same error occurs, the cause is a hardware failure. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QCPU
	[PARAMETER ERROR] In a program memory check, the check capacity has not been set within the range applicable for the CPU module. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller			QnPH QnPRH*12
	[PARAMETER ERROR] The parameter setting in the individual information of the error (SD16) is invalid. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller			QCPU LCPU
	[PARAMETER ERROR] The ATA card is set to the memory card slot when the specified drive for the file register is set to "memory card (ROM)" and [Use the following file] or [Use the same file name as the program] (either one is allowed) is set in the PLC file setting. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller			QnU*19

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
3000	**[PARAMETER ERROR]** Any of the values for the Timer Limit Setting, RUN-PAUSE Contacts, Common Pointer No., Points Occupied by Empty Slot, System Interrupt Setting, or Service Processing Setting option configured in the PLC Parameter dialog box are outside the range of the CPU module. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	• Read the individual information of the error using the programming tool to identify the numeric value (parameter No.). Check the parameters corresponding to the value, and correct them as necessary. • If the error occurs even after correcting the parameters, the cause is a failure of the program memory of the CPU module, standard RAM, or SD memory card. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU
3001	**[PARAMETER ERROR]** The parameter settings are corrupted. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	• Read the individual information of the error using the programming tool to identify the numeric value (parameter No.). Check the parameters corresponding to the value, and correct them as necessary. • Rewrite corrected parameters to the CPU module, reload the CPU power supply and/or reset the module. • If the same error occurs, the cause is a hardware failure. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	QCPU LCPU
3002	**[PARAMETER ERROR]** When "Use the following file" is selected for the file register in the PLC file setting of the PLC parameter dialog box, the specified file does not exist although the file register capacity has been set. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller			Qn(H) QnPH QnPRH
	[PARAMETER ERROR] When "Use the following file" is selected for File Register in the PLC File tab of the PLC Parameter dialog box and "Capacity" is not set, the file register file does not exist in the specified memory. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller			QnU[*18] LCPU
	[PARAMETER ERROR] When "Use the following file" is selected for a device data storage file in the PLC File tab of the PLC Parameter dialog box and "Capacity" is not set, the device data storage file does not exist in the specified memory. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller			QnU LCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
	[PARAMETER ERROR] The automatic refresh range of the multiple CPU system exceeded the file register capacity. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • When an END instruction executed	Change the file register file for the one refresh-enabled in the whole range.		Qn(H)*8 QnPH QnU*18
3003	**[PARAMETER ERROR]** The number of device points set in the Device tab of the PLC Parameter dialog box is outside the range of the specifications of the CPU module. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	• Read the individual information of the error using the programming tool to identify the numeric value (parameter No.). Check the parameters corresponding to the value, and correct them as necessary. • If the error still occurs after correcting the parameter settings, the cause is a failure of the program memory of the CPU module or memory card. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QCPU LCPU
3004	**[PARAMETER ERROR]** The parameter file is incorrect. Alternatively, the contents of the file are not parameters. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	Ensure that the parameter file version is ***.QPA and the file contents are parameters.	RUN: Off ERR.: Flicker	
3005	**[PARAMETER ERROR]** The contents of the parameter are broken. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Read the individual information of the error using the programming tool to identify the numeric value (parameter No.). Check the parameters corresponding to the value, and correct them as necessary. • Write the modified parameter items to the CPU module again, and power-on the programmable controller or reset the CPU module. • If the same error occurred, the cause is a hardware failure. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	CPU Status: Stop	Qn(H)*15 QnPH*17 QnPRH*17
3006	**[PARAMETER ERROR]** • The high speed interrupt is set in a Q02CPU. • The high speed interrupt is set in a multiple CPU system. • The high speed interrupt is set when a QA1S6□B or QA6□B is used. • No module is installed at the I/O address designated by the high speed interrupt. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	• Delete the setting of the Q02CPU' s high speed interrupt. To use high speed interrupts, change the CPU module to one of the Q02H/Q06H/Q12H/Q25HCPU. • To use a multiple CPU system, delete the setting of the high-speed interrupt. To use high speed interrupts, change the system to a single CPU system. • To use either the QA1S6□B or QA6□B, delete the setting of the high speed interrupt. • To use high speed interrupts, do not use the QA1S6□B/QA6□B. • Re-examine the I/O address designated by the high speed interrupt setting.		Qn(H)*16

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
3007	**[PARAMETER ERROR]** The parameter file in the drive specified as valid parameter drive by the DIP switches is inapplicable for the CPU module. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	Create parameters using the programming tool and write them to the drive specified as a parameter-valid drive by the DIP switches.	RUN: Off ERR.: Flicker CPU Status: Stop	QnPRH
3009	**[PARAMETER ERROR]** In a multiple CPU system, the modules for AnS, A, Q2AS and QnA have been set to multiple control CPUs. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	Re-set the parameter I/O assignment to control them under one CPU module. (Change the parameters of all CPUs in the multiple CPU system.)		Qn(H)*8 QnU*31
3010	**[PARAMETER ERROR]** The parameter-set number of CPU modules differs from the actual number in a multiple CPU system. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	The number of CPU modules in the multiple CPU system must be the same as the value derived as follows: (the number of CPU modules set in the multiple CPU setting) - (the number of PLC (empty) slots set in the I/O assignment).		Qn(H)*8 QnPH
3012	**[PARAMETER ERROR]** Multiple CPU setting or control CPU setting differs from that of the reference CPU settings in a multiple CPU system. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	Match the multiple CPU setting or control CPU setting in the PLC parameter with that of the reference CPU (CPU No.1) settings.		Q00/Q01*8 Qn(H)*8 QnU

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
3013	**[PARAMETER ERROR]** Multiple CPU auto refresh setting is any of the followings in a multiple CPU system. • When a bit device is specified as a refresh device, a number other than a multiple of 16 is specified for the refresh-starting device. • The device specified is other than the one that may be specified. • The number of send points is an odd number. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	Check the following for the refresh setting in the Multiple CPU settings dialog box, and correct it. • When specifying the bit device, specify a multiple of 16 for the refresh starting device. • Specify the device that may be specified for the refresh device. • Set the number of send points to an even number.	RUN: Off ERR.: Flicker CPU Status: Stop	Qn(H)*8 QnPH
	[PARAMETER ERROR] In a multiple CPU system, the multiple CPU auto refresh setting is any of the following. • The total number of transmission points is greater than the maximum number of refresh points. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	Check the following for the refresh setting in the Multiple CPU settings dialog box, and correct it. • The total number of transmission points is within the maximum number of refresh points.		Q00/Q01*8
	[PARAMETER ERROR] In a multiple CPU system, the multiple CPU auto refresh setting is any of the following. • The device specified is other than the one that may be specified. • The number of send points is an odd number. • The total number of send points is greater than the maximum number of refresh points. • The setting of the refresh range crosses over the boundary between the internal user device and the extended data register (D) or extended link register (W). • No device is set in the host CPU send range. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	Check the following in the refresh setting in the Multiple CPU settings dialog box, and correct the setting. • Specify the device that may be specified for the refresh device. • Set the number of send points to an even number. • Set the total number of send points within the range of the maximum number of refresh points. • Set the refresh range so that it does not cross over the boundary between the internal user device and the extended data register (D) or extended link register (W). • For the send range of the host CPU, refresh target device must be specified. If a send range is not necessary, delete the applicable send range.		QnU*18

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
3014	**[PARAMETER ERROR]** • In a multiple CPU system, the online module change parameter (multiple CPU system parameter) settings differ from those of the reference CPU. • In a multiple CPU system, the online module change setting is enabled although the CPU module mounted does not support online module change parameter. • In a multiple CPU system, online module change parameter was corrected and then it was written to the CPU module. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	• Match the online module change parameter with that of the reference CPU. • If the CPU module that does not support online module change is mounted, replace it with the CPU module that supports online module change.	RUN: Off ERR.: Flicker CPU Status: Stop	Qn(H) QnPH QnU*20
3015	**[PARAMETER ERROR]** In a multiple CPU system configuration, the CPU verified is different from the one set in the parameter setting. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number/CPU No. **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	Read the individual information of the error using the programming tool to identify the numeric value (parameter No./CPU No.). Check the parameters and its configuration corresponding to the value, and correct them as necessary.		QnU*20
3016	**[PARAMETER ERROR]** The CPU module incompatible with multiple CPU synchronized boot-up is set as the target for the synchronized boot-up in the [Multiple CPU synchronous startup setting]. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number/CPU No. **■Diagnostic Timing** • At power-on/At reset/At writing to programmable controller	Delete the CPU module incompatible with multiple CPU synchronized boot-up from the setting.		
3040	**[PARAMETER ERROR]** The parameter file is damaged. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Write the parameters configured in the PLC parameter and Network parameter dialog boxes and remote password to a parameter-valid drive, and power on the system again or reset the CPU module. If the same error occurs, the cause is a hardware failure. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		Qn(H)*12 QnPH*12 QnPRH*12
3041	**[PARAMETER ERROR]** Parameter file of intelligent function module is damaged. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Write the intelligent function module parameter to the parameter-valid drive, and power on the system again or reset the CPU module. If the same error occurs, the cause is a hardware failure. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
3042	**[PARAMETER ERROR]** The system file that have stored the remote password setting information is damaged. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Write the parameters configured in the PLC parameter and Network parameter dialog boxes and remote password to a parameter-valid drive, and power on the system again or reset the CPU module. If the same error occurs, the cause is a hardware failure. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.) • When a valid drive for parameter is set to other than [program memory], set the parameter file (PARAM) at the boot file setting to be able to transmit to the program memory. Write the PLC parameter, network parameter, and remote password to a parameter-valid drive, and power on the system again or reset the CPU module. If the same error occurs, the cause is a hardware failure. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	Qn(H)*12 QnPH*12 QnPRH*12
3100	**[LINK PARA. ERROR]** In a multiple CPU system, the CC-Link IE module controlled by another CPU is specified as the head I/O number of the CC-Link IE module. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Delete the network parameter of the CC-Link IE module controlled by another CPU. • Change the setting to the head I/O number of the CC-Link IE module controlled by host CPU.	RUN: Off ERR.: Flicker CPU Status: Stop	Qn(H)*15 QnPRH*17 QnU
	[LINK PARA. ERROR] The network parameter of the CC-Link IE operating as the normal station is overwritten to the control station. Alternatively, the network parameter for the CC-Link IE module that is operating as a normal station has been changed to the control station. (The network parameter is updated on the module by resetting.) **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Reset the CPU module.		Qn(H)*15 QnPH*17 QnPRH*17 QnU LCPU*26
	[LINK PARA. ERROR] • The number of modules actually mounted is different from that is set in Network parameter for the CC-Link IE module. • The head I/O number of the actually mounted module is different from the one set in the network parameter of the CC-Link IE. • Parameter-set data cannot be used. • The network type of CC-Link IE is overwritten during power-on. (When changing the network type, switch RESET to RUN.) **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Check the network parameters and actual mounting status, and if they differ, make them matched. If any of the network parameters is corrected, write it to the CPU module. • Check the set number of extension base units. • Check the connection status of the extension base units and extension cables. Check the connection of the GOT if it is bus-connected to the main base unit or extension base unit. If an error occurs even after taking the above measures, the cause is a hardware failure. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
3100	**[LINK PARA. ERROR]** • The CC-Link IE module is specified for the head I/O number of network parameter in the MELSECNET/H. • The MELSECNET/H module is specified for the head I/O number of network parameter in the CC-Link IE. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Check the network parameters and actual mounting status, and if they differ, make them matched. If any of the network parameters is corrected, write it to the CPU module. • Check the set number of extension base units. • Check the connection status of the extension base units and extension cables. Check the connection of the GOT if it is bus-connected to the main base unit or extension base unit. If an error occurs even after taking the above measures, the cause is a hardware failure. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	Qn(H)[*15] QnPH[*17] QnPRH[*17] QnU
	[LINK PARA. ERROR] • Although the CC-Link IE module is mounted, network parameter for the CC-Link IE module is not set. • Although the CC-Link IE and MELSECNET/H modules are mounted, network parameter for the MELSECNET/H module is not set. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Check the network parameters and actual mounting status, and if they differ, make them matched. If any of the network parameters is corrected, write it to the CPU module. • Check the set number of extension base units. • Check the connection status of the extension base units and extension cables. Check the connection of the GOT if it is bus-connected to the main base unit or extension base unit. If an error occurs even after taking the above measures, the cause is a hardware failure. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		
	[LINK PARA. ERROR] Although the CC-Link IE module is mounted, network parameter for the CC-Link IE module is not set. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Check the network parameters and actual mounting status, and if they differ, make them matched. If any of the network parameters is corrected, write it to the CPU module. If an error occurs even after taking the above measures, the cause is a hardware failure. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		LCPU[*26]
	[LINK PARA. ERROR] In a multiple CPU system, the MELSECNET/H under control of another CPU is specified as the head I/O number in the network setting parameter of the MELSECNET/H. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Delete the MELSECNET/H network parameter of the MELSECNET/H under control of another CPU. • Change the setting to the head I/O number of the MELSECNET/H under control of the host CPU.		Q00/Q01[*8] Qn(H)[*8] QnPH QnU[*18]
	[LINK PARA. ERROR] The network parameter of the MELSECNET/H operating as the normal station is overwritten to the control station. Or, the network parameter of the MELSECNET/H operating as the control station is overwritten to the normal station. (The network parameter is updated on the module by resetting.) **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Reset the CPU module.		Qn(H)[*8] QnPH QnPRH QnU

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
3100	**[LINK PARA. ERROR]** • The number of modules actually mounted is different from that is set in Network parameter for MELSECNET/H. • The head I/O number of actually installed modules is different from that designated in the network parameter of MELSECNET/H. • Parameter-set data cannot be used. • The network type of MELSECNET/H is overwritten during power-on. (When changing the network type, switch RESET to RUN.) • The mode switch of MELSECNET/H module*12 is outside the range. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Check the network parameters and actual mounting status, and if they differ, make them matched. If any of the network parameters is corrected, write it to the CPU module. • Check the set number of extension base units. • Check the connection status of the extension base units and extension cables. Check the connection of the GOT if it is bus-connected to the main base unit or extension base unit. If an error occurs even after taking the above measures, the cause is a hardware failure. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.) • Set the mode switch of MELSECNET/H module*12 within the range.	RUN: Off ERR.: Flicker CPU Status: Stop	QCPU
3101	**[LINK PARA. ERROR]** The link refresh range exceeded the file register capacity. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • When an END instruction executed	Change the file register file for the one that enables entire range refresh.		Qn(H)*8 QnPH QnPRH QnU*18 LCPU*26
	[LINK PARA. ERROR] • When the station number of the MELSECNET/H module is 0, the PLC-to-PLC network parameter has been set. • When the station number of the MELSECNET/H module is other than 0, the remote master parameter setting has been made. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Correct the type or station number of the MELSECNET/H module in the network parameter to meet the used system.		Qn(H)*8 QnPH QnPRH QnU
	[LINK PARA. ERROR] The refresh parameter for the CC-Link IE module is outside the range. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Set the refresh parameter within the range of device setting.		Qn(H)*15 QnPH*17 QnPRH*17 QnU LCPU*26

<table>
<tr><th>Error Code</th><th>Error Contents and Cause</th><th>Corrective Action</th><th>LED Status
CPU Status</th><th>Corresponding CPU</th></tr>
<tr><td rowspan="4">3101</td><td>[LINK PARA. ERROR]
• The refresh parameter of MELSECNET/H and MELSECNET/10 is outside the setting range.
• The setting of the network refresh range crosses over the boundary between the internal user device and the extended data register (D) or extended link register (W).
■Collateral information
• Common information: File name/Drive name
• Individual information: Parameter number
■Diagnostic Timing
• At power-on/At reset/STOP→RUN</td><td>• Set the refresh parameter within the range of device setting.
• Set the network refresh range so that it does not cross over the boundary between the internal user device and the extended data register (D) or extended link register (W).</td><td rowspan="4">RUN:
Off
ERR.:
Flicker

CPU Status:
Stop</td><td>QCPU</td></tr>
<tr><td>[LINK PARA. ERROR]
A multi-remote I/O network was configured using a module that does not support the MELSECNET/H multi-remote I/O network.
■Collateral information
• Common information: File name/Drive name
• Individual information: Parameter number
■Diagnostic Timing
• At power-on/At reset/STOP→RUN</td><td>Use a module that supports the MELSECNET/H multi-remote I/O network.</td><td>QnPH</td></tr>
<tr><td>[LINK PARA. ERROR]
• The system A of the MELSECNET/H remote master station has been set to other than Station No. 0.
• The system B of the MELSECNET/H remote master station has been set to Station No. 0.
■Collateral information
• Common information: File name/Drive name
• Individual information: Parameter number
■Diagnostic Timing
• At power-on/At reset/STOP→RUN</td><td>• Set the system A of the MELSECNET/H remote master station to Station No. 0.
• Set the system B of the MELSECNET/H remote master station to any of Station No. 1 to 64.</td><td>QnPRH</td></tr>
<tr><td>[LINK PARA. ERROR]
Since the number of points of the B/W device set in [Device] of the PLC parameter is lower than the number of B/W refresh device points shown in the following table when parameters of the MELSECNET/H are not set, the refresh between the CPU module and the MELSECNET/H cannot be performed.
<table><tr><th colspan="2">Refresh device</th><th>No. of refresh device points of B device</th><th>No. of refresh device points of W device</th></tr><tr><td rowspan="4">No. of mounted network modules</td><td>1</td><td>8192 points (8192 points×1 module)</td><td>8192 points (8192 points×1 module)</td></tr><tr><td>2</td><td>8192 points (4096 points×2 modules)</td><td>8192 points (4096 points×2 modules)</td></tr><tr><td>3</td><td>6144 points (2048 points×3 modules)</td><td>6144 points (2048 points×3 modules)</td></tr><tr><td>4</td><td>8192 points (2048 points×4 modules)</td><td>8192 points (2048 points×4 modules)</td></tr></table>■Collateral information
• Common information: File name/Drive name
• Individual information: Parameter number
■Diagnostic Timing
• At power-on/At reset/STOP→RUN</td><td>Set the refresh parameter of the MELSECNET/H in accordance with the number of points of B/W devices set in [Device] of the PLC parameter.</td><td>Qn(H)*14
QnPH*14
QnPRH*14
QnU</td></tr>
</table>

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
3101	**[LINK PARA. ERROR]** The setting of the network refresh range crosses over the boundary between the internal user device and the extended data register (D) or extended link register (W). **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Set the network refresh range so that it does not cross over the boundary between the internal user device and the extended data register (D) or extended link register (W).		QnU LCPU*26
3102	**[LINK PARA. ERROR]** A CC-Link IE module parameter error was detected. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Correct and write the network parameters. • If the error occurs after correction, it suggests a hardware fault. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	Qn(H)*15 QnPH*17 QnPRH*17 QnU LCPU*26
	[LINK PARA. ERROR] • The network module detected a network parameter error. • A MELSECNET/H network parameter error was detected. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN			QCPU
	[LINK PARA. ERROR] The station No. specified in pairing setting are not correct. • The stations are not numbered consecutively. • Pairing setting has not been made for the CPU module at the normal station. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Refer to the troubleshooting of the network module, and if the error is due to incorrect pairing setting, reexamine the pairing setting of the network parameter.		QnPRH
	[LINK PARA. ERROR] The CC-Link IE Controller Network module whose first 5 digits of serial No. is "09041" or earlier is mounted. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Mount the CC-Link IE Controller Network module whose first 5 digits of serial No. is "09042" or later.		QnU
	[LINK PARA. ERROR] • Different network types are set between the control station and the normal station (CC IE Control Ext. Mode/Normal Mode). • The parameter in which “CC IE Control Ext. Mode” is set for “Network Type” was transferred to the CPU module that does not support the send points expansion function. • The parameter in which “CC IE Control Ext. Mode” is set was backed up to a memory card or GOT and then restored to the CPU module that does not support the send points expansion function. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Set the same network type (CC IE Control Ext. Mode/Normal Mode) for the control station and the normal station. • Do not use the parameter in which “CC IE Control Ext. Mode” is set for “Network Type” for the CPU module that does not support the send points expansion function. Or, use the CPU module and the CC-Link IE Controller Network module that support the send points expansion function in the same network.		QnU

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
3102	**[LINK PARA. ERROR]** Group cyclic function in CC-Link IE Controller Network that does not correspond to group cyclic function is set. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Set group cyclic function in function version D or later of CC-Link IE Controller Network.	RUN: Off ERR.: Flicker CPU Status: Stop	QnU*10
	[LINK PARA. ERROR] Paring setting in CC-Link IE Controller Network modules installed in CPUs except for redundant CPUs was performed. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Examine the paring setting for the network parameter in the control station.		Q00J/Q00/Q01 Qn(H)*17 QnPH*17 QnU*17
	[LINK PARA. ERROR] • LB/LW own station send range at LB/LW4000 or later was set. • LB/LW setting (2) was performed. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Correct the network range assignments of the network parameter for the control station.		Q00J/Q00/Q01
3103	**[LINK PARA. ERROR]** In a multiple CPU system, Ethernet interface module under control of another station is specified to the start I/O number of the Ethernet network parameter. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Delete the Ethernet network parameter of Ethernet interface module under control of another station. • Change the setting to the start I/O number of Ethernet interface module under control of the host station.		Q00/Q01*8 Qn(H)*8 QnPH QnU*18
	[LINK PARA. ERROR] • Although the number of modules has been set to one or greater number in the Ethernet module count parameter setting, the number of actually mounted module is zero. • The start I/O No. of the Ethernet network parameter differs from the I/O No. of the actually mounted module. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Correct and write the network parameters. • If the error occurs after correction, it suggests a hardware fault. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QCPU
	[LINK PARA. ERROR] • In the redundant system, although "Ethernet (Main base)" is selected for Network type, the Ethernet module is mounted on the extension base unit. • In the redundant system, although "Ethernet (Extension base)" is selected for Network type, the Ethernet module is mounted on the main base unit. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN			QnPRH*15

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
3104	**[LINK PARA. ERROR]** • The Ethernet, MELSECNET/H and MELSECNET/10 use the same network number. • The network number, station number or group number set in the network parameter is out of range. • The specified I/O number is outside the range of the used CPU module. • The Ethernet-specific parameter setting is not normal. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Correct and write the network parameters. • If the error occurs after correction, it suggests a hardware fault. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	QCPU
3105	**[LINK PARA. ERROR]** In a multiple CPU system, the CC-Link module under control of another station is specified as the head I/O number of the CC-Link network parameter. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Delete the CC-Link network parameter of the CC-Link module under control of another station. • Change the setting to the start I/O number of the CC-Link module under control of the host station.		Q00/Q01[*8] Qn(H)[*8] QnPH QnU[*18]
	[LINK PARA. ERROR] • Although one or more CC-Link modules were configured in the Network Parameter dialog box, no CC-Link modules are installed in the system. The start I/O number in the common parameters is different from that of the actually mounted module. • The station type of the CC-Link module count setting parameters is different from that of the actually mounted station. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Correct and write the network parameters. • If the error occurs after correction, it suggests a hardware fault. (Please consult your local Mitsubishi representative, explaining the detailed description of the problem.)		QCPU L02CPU L02CPU-P
	[LINK PARA. ERROR] • Although two or more CC-Link modules were configured in the Network Parameter dialog box, only one CC-Link modules are installed in the system. The start I/O number of the common parameter specified in the Network Parameter dialog box does not correspond to the system. • The station type specified in the Network Parameter dialog box for CC-Link does not correspond to the system. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** At power-on/At reset/STOP→RUN			L26CPU-BT L26CPU-PBT
	[LINK PARA. ERROR] • CC-Link module whose station type is set to "master station (compatible with redundant function)" is mounted on the extension base unit in the redundant system. • CC-Link module whose station type is set to "master station (extension base)" is mounted on the main base unit in the redundant system. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN			QnPRH[*15]

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
3106	**[LINK PARA. ERROR]** The CC-Link link refresh range exceeded the file register capacity. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • When an END instruction executed	Change the file register file for the one refresh-enabled in the whole range.	RUN: Off ERR.: Flicker CPU Status: Stop	Qn(H)[*8] QnPH QnPRH QnU LCPU
	[LINK PARA. ERROR] The network refresh parameter for CC-Link is out of range. **■Collateral information** • Common information: File name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Check the parameter setting.		QCPU LCPU
	[LINK PARA. ERROR] The setting of the network refresh range crosses over the boundary between the internal user device and the extended data register (D) or extended link register (W). **■Collateral information** • Common information: File name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Set the network refresh range so that it does not cross over the boundary between the internal user device and the extended data register (D) or extended link register (W).		QnU LCPU
3107	**[LINK PARA. ERROR]** • The CC-Link parameter setting is incorrect. • The set mode is not allowed for the version of the mounted CC-Link module. **■Collateral information** • Common information: File name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Check the parameter setting.		QCPU LCPU
3150	**[LINK PARA. ERROR]** • When the CC-Link IE Field Network is used, the network number set in "Network Parameter" and "Switch Setting" is duplicated. • No "Network Parameter" and "Switch Setting" are configured, or the CC-Link IE Field Network module with an incorrect switch setting is mounted. **■Collateral information** • Common information: File name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset	• Check the parameter setting. • Configure "Network Parameter" and "Switch Setting", and then write network parameters and the switch setting to the module.		QnU[*25] LCPU[*26]

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
3200	**[SFC PARA. ERROR]** The parameter setting is illegal. • The block 0 does not exist although "Autostart Block 0" was selected in the SFC tab in the PLC Parameter dialog box. **■Collateral information** • Common information: File name • Individual information: Parameter number **■Diagnostic Timing** • STOP→RUN	Read the individual information of the error using the programming tool to identify the numeric value (parameter No.). Check the parameters corresponding to the value, and correct them as necessary.	RUN: Off ERR.: Flicker CPU Status: Stop	Q00J/Q00/Q01[*8] Qn(H) QnPH QnPRH QnU LCPU
3201	**[SFC PARA. ERROR]** The block parameter setting is illegal. **■Collateral information** • Common information: File name • Individual information: Parameter number **■Diagnostic Timing** • STOP→RUN			Qn(H) QnPH QnPRH
3202	**[SFC PARA. ERROR]** The number of step relays specified in the device setting of the PLC parameter dialog box is less than that used in the program. **■Collateral information** • Common information: File name • Individual information: Parameter number **■Diagnostic Timing** • STOP→RUN			
3203	**[SFC PARA. ERROR]** Other than "Scan" and "Wait" is set for "Execute Type" in the Program tab of the PLC Parameter dialog box. **■Collateral information** • Common information: File name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN[*5]			Qn(H) QnPH QnPRH QnU LCPU
3300	**[SP. PARA ERROR]** The start I/O number in the intelligent function module parameter set on GX Configurator differs from the actual I/O number. **■Collateral information** • Common information: File name • Individual information: Parameter number[*4] **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	Check the parameter setting.		QCPU LCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
3301	**[SP. PARA ERROR]** • The refresh setting of the intelligent function module exceeded the file register capacity. • The intelligent function module set in GX Configurator differs from the actually mounted module. **■Collateral information** • Common information: File name • Individual information: Parameter number[*4] **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	• Change the file register file for the one which allows refresh in the whole range. • Check the parameter setting. • Check the auto refresh setting.	RUN: Off ERR.: Flicker CPU Status: Stop	Q00J/Q00/Q01 Qn(H)[*8] QnPH QnPRH QnU LCPU
	[SP. PARA ERROR] The intelligent function module's refresh parameter setting is outside the available range. **■Collateral information** • Common information: File name • Individual information: Parameter number[*4] **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	• Check the parameter setting. • Check the auto refresh setting.		QCPU LCPU
	[SP. PARA ERROR] The setting of the refresh parameter range crosses over the boundary between the internal user device and the extended data register (D) or extended link register (W). **■Collateral information** • Common information: File name • Individual information: Parameter number[*4] **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	Set the refresh parameter range so that it does not cross over the boundary between the internal user device and the extended data register (D) or extended link register (W).		QnU LCPU
3302	**[SP. PARA ERROR]** The intelligent function module's refresh parameter are abnormal. **■Collateral information** • Common information: File name • Individual information: Parameter number[*4] **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	Check the parameter setting.		QCPU LCPU
3303	**[SP. PARA ERROR]** In a multiple CPU system, the automatic refresh setting or other parameter setting was made to the intelligent function module under control of another station. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	• Delete the automatic refresh setting or other parameter setting of the intelligent function module under control of another CPU. • Change the setting to the automatic refresh setting or other parameter setting of the intelligent function module under control of the host CPU.		Q00/Q01[*8] Qn(H)[*8] QnPH QnU[*18]

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
3400	**[REMOTE PASS. ERR.]** The head I/O number of the target module of the remote password is set to other than 0_H to $0FF0_H$. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Change the head I/O number of the target module to be within the 0_H to $0FF0_H$ range.	RUN: Off ERR.: Flicker CPU Status: Stop	Qn(H)[*8] QnPH QnPRH QnU[*15] LCPU
	[REMOTE PASS. ERR.] The head I/O number of the target module of the remote password is set to other than 0_H to $07E0_H$. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Change the head I/O number of the target module to be within the 0_H to $07E0_H$ range.		Q02UCPU
	[REMOTE PASS. ERR.] For the start I/O number of the module targeted by the remote password, the value outside the following range is specified. Q00JCPU: 0_H to $1E0_H$ Q00CPU/Q01CPU: 0_H to $3E0_H$ **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Correct the start I/O number value of the module targeted by the remote password within the following range. • Q00JCPU: 0_H to $1E0_H$ • Q00CPU/Q01CPU: 0_H to $3E0_H$		Q00J/Q00/Q01[*8]
3401	**[REMOTE PASS. ERR.]** Position specified as the head I/O number of the remote password file is incorrect due to one of the following reasons: • Module is not loaded. • Other than a the intelligent function module (I/O module) • The intelligent function module installed is other than a serial communication module or Ethernet module. • The function version of the serial communication module and Ethernet module installed is A. • The intelligent function module where remote password is available is not mounted. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Install the serial communication module or Ethernet module of function version B or later in the position specified with the start I/O No. of the remote password.		Qn(H)[*8] QnPH QnPRH QnU
	[REMOTE PASS. ERR.] The position specified with the start I/O number of the remote password is invalid due to one of the following reasons: • No module • The intelligent function module installed is other than a serial communication module. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	In a position specified with a start I/O number of the remote password, install the intelligent function module where the remote password is available.		LCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
3401	**[REMOTE PASS. ERR.]** Any of the following modules is not mounted on the slot specified for the head I/O number of the remote password. • Serial communication module of function version B or later • Ethernet module of function version B or later **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Mount the following modules according to the position specified with the start I/O number of the remote password. • Serial communication module of function version B or later • Ethernet module of function version B or later	RUN: Off ERR.: Flicker CPU Status: Stop	Q00J/Q00/Q01*8
	[REMOTE PASS. ERR.] Serial communication module or Ethernet module of function version B or later controlled by another CPU was specified in a multiple CPU system. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	• Change it for the Ethernet module of function version B or later connected by the host CPU. • Delete the remote password setting.		Qn(H)*8 QnPH QnU*18

*4 The parameter No. can be derived by "dividing the start I/O number of the intelligent function module set by GX Configurator" by 10_H.

*5 The diagnostic timing of CPU modules except for Universal QCPU and LCPU can be performed only when switching the CPU module status from STOP to RUN.

*8 The function version is B or later.

*12 This applies when the first five digits of the serial number is "07032" or later.

*14 This applies when the first five digits of the serial number is "08102" or later.

*15 This applies when the first five digits of the serial number is "09102" or later.

*16 This applies when the first five digits of the serial number is "09082" or later.

*17 This applies when the first five digits of the serial number is "10042" or later.

*18 The Universal model QCPU except the Q00UJCPU.

*19 This applies to the Universal model QCPU except for the Q00UJCPU, Q00UCPU, and Q01UCPU.

*20 This applies to the Universal model QCPU except for the Q00UJCPU, Q00UCPU, Q01UCPU, and Q02UCPU.

*25 This applies when the first five digits of the serial number is "12012" or later.

*26 This applies when the first five digits of the serial number is "13012" or later.

*31 This applies when the first five digits of the serial number is "13102" or later.

Appendix 1.6 Error code list (4000 to 4999)

The following table shows the error messages, the error contents and causes, and the corrective actions for the error codes (4000 to 4999).

Error Code (SD0)	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
4000	**[INSTRCT. CODE ERR]** • The program contains an instruction code that cannot be decoded. • An unusable instruction is included in the program. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/When instruction executed • When instruction executed (SFC program)	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.	RUN: Off ERR.: Flicker CPU Status: Stop	QCPU LCPU
4001	**[INSTRCT. CODE ERR]** The program contains a dedicated instruction for SFC although it is not an SFC program. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/When instruction executed			Q00J/Q00/Q01[*8] Qn(H) QnPH QnPRH QnU LCPU
4002	**[INSTRCT. CODE ERR]** • The name of dedicated instruction specified by the program is incorrect. • The dedicated instruction specified by the program cannot be executed by the specified module. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/When instruction executed • When instruction executed (SFC program)			QCPU LCPU
4003	**[INSTRCT. CODE ERR]** The number of devices for the dedicated instruction specified by the program is incorrect. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/When instruction executed • When instruction executed (SFC program)			
4004	**[INSTRCT. CODE ERR]** The device which cannot be used by the dedicated instruction specified by the program is specified. **■CollateralCollateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/When instruction executed • When instruction executed (SFC program)			

Error Code (SD0)	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
4010	**[MISSING END INS.]** There is no END (FEND) instruction in the program. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.	RUN: Off ERR.: Flicker CPU Status: Stop	QCPU LCPU
4020	**[CAN'T SET(P)]** • The total points of the pointers used in the program exceeded 4096 points. • The total points of the local pointers used in the program exceeded the start number of the common pointer. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN			Qn(H) QnPH QnPRH QnU[*19] LCPU
	[CAN'T SET(P)] • The total points of the pointers used in the program exceeded 512 points. • The total points of the local pointers used in the program exceeded the start number of the common pointer. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN			Q00UJ/Q00U/Q01U
4021	**[CAN'T SET(P)]** • The common pointer Nos. assigned to files overlap. • The local pointer Nos. assigned to files overlap. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN			QCPU LCPU
4030	**[CAN'T SET(I)]** The allocation pointer Nos. assigned by files overlap. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN			

Error Code (SD0)	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
4100	**[OPERATION ERROR]** The instruction cannot process the contained data. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue[*1]	QCPU LCPU
	[OPERATION ERROR] An error occurred on the SP.FREAD or SP.FWRITE instruction during accessing the ATA or SD memory card. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	• Take measurements against noise. • Reset and restart the CPU module. If the same error code is displayed again, the cause is a hardware failure of the ATA card or SD memory card. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		Qn(H) QnPH QnPRH QnU[*19] LCPU
	[OPERATION ERROR] The file being accessed by other functions with SP.FWRITE instruction was accessed. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	• Stop the file accessed with other functions to execute SP.FWRITE instruction. • Stop the access with other functions and the SP.FWRITE instruction to execute at same time.		QnU[*21] LCPU
4101	**[OPERATION ERROR]** • The number of setting data dealt with the instruction exceeds the applicable range. • The storage data and constant of the device specified by the instruction exceeds the applicable range. • When writing to the host CPU shared memory, the write prohibited area is specified for the write destination address. • The range of storage data of the device specified by the instruction is duplicated. • The device specified by the instruction exceeds the range of the number of device points. • The interrupt pointer No. specified by the instruction exceeds the applicable range. • A link direct device, intelligent function module device, and cyclic transmission area device are specified for both (S) and (D) with the BMOV instruction. • The target station's network No. specified by the network dedicated instruction does not exist. • There are no link direct devices (J□\□) **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.		QCPU LCPU
	[OPERATION ERROR] • Data stored in the file register specified by an instruction exceeds the applicable range. • A file register has not been set. Or the set file register does not store a file. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed			QnU[*18] LCPU

Error Code (SD0)	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
4101	**[OPERATION ERROR]** • The block data that crosses over the boundary between the internal user device and the extended data register (D) or extended link register is specified (including 32-bit binary, real number (single precision, double precision), indirect address, and control data). **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue[*1]	QnU LCPU
4102	**[OPERATION ERROR]** In a multiple CPU system, the link direct device (J□\□) was specified for the network module under control of another station. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	• Delete from the program the link direct device which specifies the network module under control of another CPU. • Using the link direct device, specify the network module controlled by the own station.		Q00/Q01[*8] Qn(H)[*8] QnPH QnU[*18]
	[OPERATION ERROR] • The module No./network No. /station No. specified for the dedicated instruction is wrong. • The link direct device (J□\□) setting is incorrect. • The module No./network No./number of character strings exceeds the range that can be specified. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue[*1]	QCPU LCPU
	[OPERATION ERROR] The character string (" ") specified by a dedicated instruction cannot be used for the character string. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed			QnU LCPU
4103	**[OPERATION ERROR]** The configuration of the PID dedicated instruction is incorrect. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed			Q00J/Q00/Q01[*8] Qn(H) QnPRH QnU LCPU
4105	**[OPERATION ERROR]** PLOADP/PUNLOADP/PSWAPP instructions were executed while setting program memory check. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	• Delete the setting for the program memory check. • When using the program memory check, delete PLOADP/PUNLOADP/PSWAPP instructions.	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/Continue	QnPH[*12]
4107	**[OPERATION ERROR]** 33 or more multiple CPU dedicated instructions were executed from one CPU module. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Using the multiple CPU dedicated instruction completion bit, provide interlocks to prevent one CPU module from executing 33 or more multiple CPU dedicated instructions.	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue[*1]	Q00/Q01[*8] Qn(H)[*8] QnPH Q00UCPU Q01UCPU Q02UCPU

Error Code (SD0)	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
4109	**[OPERATION ERROR]** With high speed interrupt setting PR, PRC, UDCNT1, UDCNT2, PLSY or PWM instruction is executed. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Delete the high-speed interrupt setting. When using high-speed interrupt, delete the PR, PRC, UDCNT1, UDCNT2, PLSY and PWM instructions.	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue*1	Qn(H)*21
4111	**[OPERATION ERROR]** An attempt was made to perform write/read to/from the CPU shared memory write/read disable area of the own station CPU module with the instruction. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue*1	Q00/Q01*8 QnU
4112	**[OPERATION ERROR]** The CPU module that cannot be specified with the multiple CPU dedicated instruction was specified. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed			Q00/Q01*8 QnU*18
4113	**[OPERATION ERROR]** • When the SP.DEVST instruction is executed, the number of writing to the standard ROM of the day exceeds the value specified by SD695. • The value outside the specified range is set to SD695. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	• Check that the number of execution of the SP.DEVST instruction is proper. • Execute the SP.DEVST instruction again on or after the following day. Or change the value in SD695. • Correct the value of SD695 so that it does not exceed the range.	RRUN: Off/On ERR.: Flicker/On CPU Status: Stop/Continue	QnU LCPU
4116	**[OPERATION ERROR]** A built-in I/O instruction that is disabled with a parameter was executed. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	• Enable the built-in I/O function with parameters. • Prohibit executions of a built-in I/O instruction that is disabled with a parameter.		LCPU
4120	**[OPERATION ERROR]** Since the manual system switching enable flag (SM1592) is off, a manual system switching cannot be executed by the control system switching instruction (SP. CONTSW). **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	To execute control system switching by the SP. CONTSW instruction, turn on the manual system switching enable flag (SM1592).	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue*1	QnPRH
4121	**[OPERATION ERROR]** • In the separate mode, the control system switching instruction (SP. CONTSW) was executed in the standby system CPU module. • In the debug mode, the control system switching instruction (SP. CONTSW) was executed. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	• Reexamine the interlock signal for the SP. CONTSW instruction, and make sure that the SP. CONTSW instruction is executed in the control system only. (Since the SP. CONTSW instruction cannot be executed in the standby system, it is recommended to provide an interlock using the operation mode signal or like.) • As the SP. CONTSW instruction cannot be executed in the debug mode, reexamine the interlock signal related to the operation mode.		

Error Code (SD0)	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
4122	**[OPERATION ERROR]** • The dedicated instruction was executed to the module mounted on the extension base unit in the redundant system. • The instruction for accessing the intelligent function module mounted on the extension base unit from the standby system at separate mode was executed. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	• Delete the dedicated instruction for the module mounted on the extension base unit. • Delete the instruction for accessing the intelligent function module mounted on the extension base unit from the standby system.	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/Continue	QnPRH[*15]
4130	**[OPERATION ERROR]** Instructions to read SFC step comment (S(P).SFCSCOMR) and SFC transition condition comment (S(P).SFCTCOMR) are executed for the comment file in ATA card. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed/When an END instruction executed	Target comment file is to be other than the comment file in ATA card.		Qn(H)[*11] QnPH[*12] QnPRH QnU[*22]
4131	**[OPERATION ERROR]** The SFC program is started up by the instruction while the other SFC program has not yet been completed. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Check the SFC program specified by the instruction. Or, check the executing status of the SFC program.		QnU LCPU
4140	**[OPERATION ERROR]** An Operation was performed with special values of input data (-0, unnormalized number, nonnumeric, ± ∞) is performed. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read the individual information of the error using the programming tool to identify the numeric value (program error location). Check the intelligent function module dedicated instruction corresponding to the value and correct it as necessary.		
4141	**[OPERATION ERROR]** Overflow occurs at operation. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed			

Error Code (SD0)	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
4200	**[FOR-NEXT ERROR]** The NEXT instruction was not executed although a FOR instruction has been executed. Alternatively, there are fewer NEXT instructions than FOR instructions. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read the individual information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding the value and correct it as necessary.	RUN: Off ERR.: Flicker CPU Status: Stop	QCPU LCPU
4201	**[FOR-NEXT ERROR]** The NEXT instruction was executed although no FOR instruction has been executed. Alternatively, there are more NEXT instructions than FOR instructions. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed			
4202	**[FOR-NEXT ERROR]** More than 16 nesting levels are programmed. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Keep nesting levels at 16 or under.		
4203	**[FOR-NEXT ERROR]** A BREAK instruction was executed although no FOR instruction has been executed prior to that. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.	RUN: Off ERR.: Flicker CPU Status: Stop	QCPU LCPU
4210	**[CAN'T EXECUTE(P)]** The CALL instruction is executed, but there is no subroutine at the specified pointer. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed			
4211	**[CAN'T EXECUTE(P)]** There was no RET instruction in the executed subroutine program. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed			
4212	**[CAN'T EXECUTE(P)]** The RET instruction exists before the FEND instruction of the main routine program. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed			

Error Code (SD0)	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
4213	**[CAN'T EXECUTE(P)]** More than 16 nesting levels are programmed. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Keep nesting levels at 16 or under.	RUN: Off ERR.: Flicker CPU Status: Stop	QCPU LCPU
4220	**[CAN'T EXECUTE(I)]** Though an interrupt input occurred, the corresponding interrupt pointer does not exist. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.		
4221	**[CAN'T EXECUTE(I)]** An IRET instruction does not exist in the executed interrupt program. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed			
4223	**[CAN'T EXECUTE(I)]** The IRET instruction exists before the FEND instruction of the main routine program. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed **[CAN'T EXECUTE(I)]** • The IRET instruction was executed in the fixed scan execution type program. • The STOP instruction was executed in the fixed scan execution type program. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.		
4225	**[CAN'T EXECUTE(I)]** The interrupt pointer for the module mounted on the extension base unit is set in the redundant system. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Delete the setting of interrupt pointer for the module mounted on the extension base unit, since it cannot be used.		QnPRH[*12]
4230	**[INST. FORMAT ERR.]** The number of CHK and CHKEND instructions is not equal. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.		Qn(H) QnPH

Error Code (SD0)	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
4231	**[INST. FORMAT ERR.]** The number of IX and IXEND instructions is not equal. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.		QCPU
4235	**[INST. FORMAT ERR.]** The configuration of the check conditions for the CHK instruction is incorrect. Alternatively, a CHK instruction has been used in a low speed execution type program. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed			Qn(H) QnPH
4350	**[MULTI-COM. ERROR]** • The multiple CPU high-speed transmission dedicated instruction used in the program specifies the wrong CPU module. Or, the setting in the CPU module is incompatible with the multiple CPU high-speed transmission dedicated instruction. • The reserved CPU is specified. • The uninstalled CPU is specified. • The head I/O number of the target CPU/16 (n1) is outside the range of 3E0H to 3E3H. • The CPU module where the instruction cannot be executed is specified. • The instruction is executed in a single CPU system. • The host CPU is specified. • The instruction is executed without setting the "Use multiple CPU high speed communication". **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.	RUN: Off ERR.: Flicker CPU Status: Stop	QnU*20
4351	**[MULTI-COM. ERROR]** • The multiple CPU high-speed transmission dedicated instruction specified by the program cannot be executed to the specified target CPU module. • The instruction name is wrong. • The instruction unsupported by the target CPU module is specified. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed			
4352	**[MULTI-COM. ERROR]** The number of devices for the multiple CPU high-speed transmission dedicated instruction specified by the program is wrong. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed			

Error Code (SD0)	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
4353	**[MULTI-COM. ERROR]** The device which cannot be used for the multiple CPU high-speed transmission dedicated instruction specified by the program is specified. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.	RUN: Off ERR.: Flicker CPU Status: Stop	QnU*20
4354	**[MULTI-COM. ERROR]** The character string which cannot be handled by the multiple CPU high-speed transmission dedicated instruction is specified. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed			
4355	**[MULTI-COM. ERROR]** The number of read/write data (number of request/ receive data) for the multiple CPU high-speed transmission dedicated instruction specified by the program is not valid. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed			
4400	**[SFCP. CODE ERROR]** No SFCP or SFCPEND instruction in SFC program. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • STOP→RUN	Write the program to the CPU module again using the programming tool.		Qn(H) QnPH QnPRH
4410	**[CAN'T SET(BL)]** The block number designated by the SFC program exceeds the range. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN			Q00J/Q00/Q01*8 Qn(H) QnPH QnPRH QnU LCPU
4411	**[CAN'T SET(BL)]** Block number designations overlap in SFC program. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN			
4420	**[CAN'T SET(S)]** A step number designated in an SFC program exceeds the range. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN			

Error Code (SD0)	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
4421	**[CAN'T SET(S)]** The number of steps in the SFC program exceeds the total number of step relays. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Correct the program so that the number of steps in the SFC program may not exceed the total number of step relays.	RUN: Off ERR.: Flicker CPU Status: Stop	Q00J/Q00/Q01*8 Qn(H) QnPH QnPRH QnU LCPU
		Increase the total number of step relays in the Device tab of the PLC Parameter dialog box.		QnU*22
4422	**[CAN'T SET(S)]** Step number designations overlap in SFC program. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Write the program to the CPU module again using the programming tool.		Q00J/Q00/Q01*8 Qn(H) QnPH QnPRH QnU LCPU
4423	**[CAN'T SET(S)]** The total number of (maximum step No.+1) of each block exceeds the total number of step relays. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Correct the total number of step relays so that it does not exceed the total number of (maximum step No.+1) of each block.		Q00J/Q00/Q01*8 QnU LCPU
		Increase the total number of step relays in the Device tab of the PLC Parameter dialog box.		QnU*22
4430	**[SFC EXE. ERROR]** The SFC program cannot be executed. • The data of the block data setting is illegal. • The SFC data device of the block data setting is beyond the device setting range set in the PLC Parameter dialog box. **■Collateral information** • Common information: File name/Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/When SFC program is executed	• Write the program to the CPU module again using the programming tool. • After correcting the setting of the SFC data device, write it to the CPU module. • Correct the device setting range in the PLC Parameter dialog box, and write it to the CPU module.		Q00J/Q00/Q01*8 QnU LCPU
4431	**[SFC EXE. ERROR]** The SFC program cannot be executed. • The block parameter setting is abnormal. **■Collateral information** • Common information: File name/Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN	Write the program to the CPU module again using the programming tool.		
4432	**[SFC EXE. ERROR]** The SFC program cannot be executed. • The structure of the SFC program is illegal. **■Collateral information** • Common information: File name/Drive name • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN			

Error Code (SD0)	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
4500	**[SFCP. FORMAT ERR.]** The numbers of BLOCK and BEND instructions in an SFC program are not equal. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • STOP→RUN	Write the program to the CPU module again using the programming tool.	RUN: Off ERR.: Flicker CPU Status: Stop	Qn(H) QnPH QnPRH
4501	**[SFCP. FORMAT ERR.]** The configuration of the STEP* to TRAN* to TSET to SEND instructions in the SFC program is incorrect. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • STOP→RUN			
4502	**[SFCP. FORMAT ERR.]** The structure of the SFC program is illegal. • STEPI* instruction does not exist in the block of the SFC program. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • At power-on/At reset/STOP→RUN			Q00J/Q00/Q01*8 Qn(H) QnPH QnPRH QnU LCPU
4503	**[SFCP. FORMAT ERR.]** The structure of the SFC program is illegal. • The step specified in the TSET instruction does not exist. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • STOP→RUN	• Write the program to the CPU module again using the programming tool. • Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.		Qn(H) QnPH QnPRH
	[SFCP. FORMAT ERR.] The structure of the SFC program is illegal. • The step specified in the TSET instruction does not exist. • In jump transition, the host step number was specified as the destination step number. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When SFC program is executed			Q00J/Q00/Q01*8 QnU LCPU
4504	**[SFCP. FORMAT ERR.]** The structure of the SFC program is illegal. • The step specified in the TAND instruction does not exist. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When SFC program is executed	Write the program to the CPU module again using the programming tool.		Q00J/Q00/Q01*8 Qn(H) QnPH QnPRH QnU LCPU
4505	**[SFCP. FORMAT ERR.]** The structure of the SFC program is illegal. • In the operation output of a step, the SET Sn/BLmSn or RST Sn/BLmSn instruction was specified for the host step. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.		Q00J/Q00/Q01*8 QnU LCPU

Error Code (SD0)	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
4506	**[SFCP. FORMAT ERR.]** The structure of the SFC program is illegal. • In a reset step, the host step number was specified as the destination step. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read common information of the error using the programming tool, check error step corresponding to its numerical value (program error location), and correct the problem.	RUN: Off ERR.: Flicker CPU Status: Stop	Q00J/Q00/Q01[*8] QnU LCPU
4600	**[SFCP. OPE. ERROR]** The SFC program contains data that cannot be processed. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed		RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue[*1]	Qn(H) QnPH QnPRH
4601	**[SFCP. OPE. ERROR]** Exceeds device range that can be designated by the SFC program. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed			
4602	**[SFCP. OPE. ERROR]** The START instruction in an SFC program is preceded by an END instruction. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.	RUN: Off/On ERR.: Flicker/On CPU Status: Stop/ Continue[*1]	Qn(H) QnPH QnPRH
4610	**[SFCP. EXE. ERROR]** The active step information at presumptive start of the SFC program is incorrect. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • STOP→RUN	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary. The program is automatically subjected to an initial start.	RUN: On ERR.: On CPU Status: Continue	Qn(H) QnPH QnPRH
4611	**[SFCP. EXE. ERROR]** Key-switch was reset during RUN when presumptive start was designated for SFC program. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • STOP→RUN			

Error Code (SD0)	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
4620	**[BLOCK EXE. ERROR]** Startup was executed at a block in the SFC program that was already started up. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.	RUN: Off ERR.: Flicker CPU Status: Stop	Qn(H) QnPH QnPRH QnU*22
4621	**[BLOCK EXE. ERROR]** Startup was attempted at a block that does not exist in the SFC program. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	• Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary. • Turn on SM321 if it is off.		Q00J/Q00/Q01*8 Qn(H) QnPH QnPRH QnU LCPU
4630	**[STEP EXE. ERROR]** The step specified in the SFC program is already activated. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.		Qn(H) QnPH QnPRH
4631	**[STEP EXE. ERROR]** • Startup was attempted at the step that does not exist in the SFC program. Or, the step that does not exist in the SFC program was specified for end. • Forced transition was executed based on the transition condition that does not exit in the SFC program. Or, the transition condition for forced transition that does not exit in the SFC program was canceled. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	• Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary. • Turn on SM321 if it is off.		Q00J/Q00/Q01*8 Qn(H) QnPH QnPRH QnU LCPU
4632	**[STEP EXE. ERROR]** There were too many simultaneous active steps in blocks that can be designated by the SFC program. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed	Read common information of the error using the programming tool to identify the numeric value (program error location). Check the error step corresponding to the value, and correct it as necessary.		Qn(H) QnPH QnPRH QnU LCPU
4633	**[STEP EXE. ERROR]** There were too many simultaneous active steps in all blocks that can be designated. **■Collateral information** • Common information: Program error location • Individual information:- **■Diagnostic Timing** • When instruction executed			

*1 CPU operations when an error occurred can be determined with a parameter. (LED indication varies according to the CPU module status.)
*8 This applies if the function version is B or later.
*10 This applies when the first five digits of the serial number is "04101" or later.
*11 This applies when the first five digits of the serial number is "07012" or later.
*12 This applies when the first five digits of the serial number is "07032" or later.
*15 This applies when the first 5 digits of the serial No. is "09102" or later
*18 This applies to the Universal model QCPU except for the Q00UJCPU.
*19 This applies to the Universal model QCPU except for the Q00UJCPU, Q00UCPU, and Q01UCPU.
*20 This applies to the Universal model QCPU except for the Q00UJCPU, Q00UCPU, Q01UCPU, and Q02UCPU.
*21 This applies to the Built-in Ethernet port QCPU.
*22 This applies when the first five digits of the serial number is "12052" or later.

Appendix 1.7 Error code list (5000 to 5999)

The following table shows the error messages, the error contents and causes, and the corrective actions for the error codes (5000 to 5999).

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
5000	**[WDT ERROR]** • The scan time of the initial execution type program exceeded the initial execution monitoring time specified in the PLC RAS tab of the PLC Parameter dialog box. **■Collateral information** • Common information: Time (value set) • Individual information: Time (value actually measured) **■Diagnostic Timing** • Always	• Read the individual information of the error using the programming tool to identify the numeric value (time). Check the value and shorten the scan time. • Change the initial execution monitoring time or the WDT value in the PLC RAS tab of the PLC Parameter dialog box. • Resolve the endless loop caused by jump transition. • If the error persists even after the actions mentioned above are taken, the possible cause is a hardware failure of the system. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	Qn(H) QnPH QnPRH QnU LCPU
	[WDT ERROR] • The power supply of the standby system is turned OFF. • The tracking cable is disconnected or connected without turning off or resetting the standby system. • The tracking cable is not secured by the connector fixing screws. **■Collateral information** • Common information: Time (value set) • Individual information: Time (value actually measured) **■Diagnostic Timing** • Always	• Since power-off of the standby system increases the control system scan time, reset the WDT value, taking the increase of the control system scan time into consideration. • If the tracking cable was disconnected during operation, securely connect it and restart the CPU module. If the same error code is displayed again, the cause is a hardware failure of the tracking cable or CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QnPRH
5001	**[WDT ERROR]** • The scan time of the program exceeded the WDT value specified in the PLC RAS tab of the PLC Parameter. **■Collateral information** • Common information: Time (value set) • Individual information: Time (value actually measured) **■Diagnostic Timing** • Always	• Read the individual information of the error using the programming tool to identify the numeric value (time). Check the value and shorten the scan time. • Change the initial execution monitoring time or the WDT value in the PLC RAS tab of the PLC Parameter. • Check the execution number of the interrupt program, and reduce the occurrence number of interruption. • If the error persists even after the actions mentioned above are taken, the possible cause is a hardware failure of the system. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QCPU LCPU
	[WDT ERROR] • The power supply of the standby system is turned OFF. • The tracking cable is disconnected or connected without turning off or resetting the standby system. • The tracking cable is not secured by the connector fixing screws. **■Collateral information** • Common information: Time (value set) • Individual information: Time (value actually measured) **■Diagnostic Timing** • Always	• Since power-off of the standby system increases the control system scan time, reset the WDT value, taking the increase of the control system scan time into consideration. • If the tracking cable was disconnected during operation, securely connect it and restart the CPU module. If the same error code is displayed again, the cause is a hardware failure of the tracking cable or CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QnPRH

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
5010	**[PRG. TIME OVER]** • The program scan time exceeded the constant scan time specified in the PLC RAS tab of the PLC Parameter dialog box. **■Collateral information** • Common information: Time (value set) • Individual information: Time (value actually measured) **■Diagnostic Timing** • Always	• Review the constant scan setting time. • To secure sufficient excess time, correct the value for "Constant scanning" and "Low Speed Program Execution Time" in the PLC Parameter dialog box.	RUN: On ERR.: On CPU Status: Continue	Qn(H) QnPH QnPRH QnU LCPU
	[PRG. TIME OVER] • The low speed program execution time specified in the PLC RAS setting of the PLC parameter exceeded the excess time of the constant scan. **■Collateral information** • Common information: Time (value set) • Individual information: Time (value actually measured) **■Diagnostic Timing** • Always			Qn(H) QnPH QnPRH
	[PRG. TIME OVER] The program scan time exceeded the constant scan setting time specified in the PLC RAS setting of the PLC parameter. **■Collateral information** • Common information: Time (value set) • Individual information: Time (value actually measured) **■Diagnostic Timing** • Always	• Review the constant scan setting time in the PLC parameter so that the excess time of constant scan can be fully secured.		Q00J/Q00/Q01
5011	**[PRG. TIME OVER]** The scan time of the low speed execution type program exceeded the low speed execution watch time specified in the PLC RAS setting of the PLC parameter dialog box. **■Collateral information** • Common information: Time (value set) • Individual information: Time (value actually measured) **■Diagnostic Timing** • Always	Read the individual information of the error using the programming tool to identify the numeric value (time). Check the value and shorten the scan time. Change the low speed execution watch time in the PLC RAS setting of the PLC parameter dialog box.		Qn(H) QnPH

Appendix 1.8 Error code list (6000 to 6999)

The following table shows the error messages, the error contents and causes, and the corrective actions for the error codes (6000 to 6999).

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
6000	**[FILE DIFF.]** In a redundant system, the control system and standby system do not have the same programs and parameters. The file type detected as different between the two systems can be checked by the file name of the error common information. • The program is different. (File name = ********.QPG) • The PLC parameters/network parameters/ redundant parameters are different. (File name = PARAM.QPA) • The remote password is different. (File name = PARAM.QPA) • The intelligent function module parameters are different. (File name = IPARAM.QPA) • The device initial values are different. (File name = ********.QDI) • The size of the area, which is used for enabling writing multiple program blocks to the CPU module during running, do not match. (File name = MBOC.QMB) (This can be detected from the standby system of the redundant system.) **■Collateral information** • Common information: File name • Individual information:- **■Diagnostic Timing** • At power-on/At reset/At tracking cable connection/At changing to backup mode/At completion of write during RUN/At system switching/At switching both systems into RUN	• Match the programs and parameters of the control system and standby system. • Verify the CPU module by either of the following procedures 1) or 2) to clarify the differences between the files of both systems. Correct wrong files and write them to the CPU module again. 1) After reading the programs and parameters of System A using GX Developer or PX Developer, verify them with those of System B. 2) Verify the programs and parameters of GX Developer or PX Developer saved in the offline environment with those written to the CPU modules of both systems. • When the size of the area, which is used for enabling writing multiple program blocks to the CPU module during running, do not match, perform either of corrective actions 1) or 2). 1) Using the memory copy function, copy the program memory from the control system to the standby system. 2) Format the CPU module program memories of both systems. (For both systems, specify the same values for the size of the area, which is used for enabling writing multiple program blocks to the CPU module during running.)	RUN: Off ERR.: Flicker CPU Status: Stop	QnPRH
6001	**[FILE DIFF.]** In the redundant system, the valid-parameter drive setting (SW2, SW3) set by the DIP switches differs between the control system and standby system. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset/At tracking cable connection/At operation mode change	Match the valid-parameter drive settings (SW2, SW3) for both the control and standby systems using the DIP switches.		
6010	**[OPE. MODE DIFF.]** The operational status of the control system and standby system in the redundant system is not the same. (This can be detected from the standby system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • Always	Synchronise the operation statuses of the control system and standby system.	RUN: On ERR.: On CPU Status: Continue	

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
6020	**[OPE. MODE DIFF.]** At power-on/reset, the RUN/STOP switch settings of the control system and standby system are not the same in a redundant system. (This can be detected from the control system or standby system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Set the RUN/STOP switches of the control system and standby system to the same setting.	RUN: Off ERR.: Flicker CPU Status: Stop	QnPRH
6030	**[UNIT LAY. DIFF.]** • In a redundant system, the module configuration differs between the control system and standby system. • The network module mode setting differs between the two systems. (This can be detected from the control system or standby system of the redundant system.) **■Collateral information** • Common information: Module No. • Individual information:- **■Diagnostic Timing** • At power-on/At reset/At tracking cable connection/At operation mode change	• Match the module configurations of the control system and standby system. • In the redundant setting of the network parameter dialog box, match the mode setting of System B to that of System A.		
6035	**[UNIT LAY. DIFF.]** In a redundant system, the CPU module model name differs between the control system and standby system. (This can be detected from the standby system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset/At tracking cable connection/At operation mode change	Match the model names of the control system and standby system.		
6036	**[UNIT LAY. DIFF.]** A difference in the remote I/O configuration of the MELSECNET/H multiplexed remote I/O network between the control system and standby system of a redundant system was detected. (This can be detected from the control system or standby system of the redundant system.) **■Collateral information** • Common information: Module No. • Individual information:- **■Diagnostic Timing** • Always	Check the network cables of the MELSECNET/H multiplexed remote I/O network for disconnection.		
6040	**[CARD TYPE DIFF.]** In the redundant system, the memory card insertion status (inserted/not inserted) differs between the control system and standby system. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Match the memory card insertion status (inserted/not inserted) of the control system and standby system.		
6041	**[CARD TYPE DIFF.]** In the redundant system, the memory card type differs between the control system and standby system. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Match the memory card types of the control system and standby system.		

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
6050	**[CAN'T EXE. MODE]** The function inexecutable in the debug mode or operation mode (backup/separate mode) was executed. (This can be detected from the control system or standby system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • Always	Execute the function executable in the debug mode or operation mode (backup/separate mode).	RUN: On ERR.: On CPU Status: Continue	QnPRH
6060	**[CPU MODE DIFF.]** In a redundant system, the operation mode (backup/separate) differs between the control system and standby system. (This can be detected from the standby system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset/At tracking cable connection	Match the operation modes of the control system and standby system.	RUN: Off ERR.: Flicker CPU Status: Stop	
6061	**[CPU MODE DIFF.]** In a redundant system, the operation mode (backup/separate) differs between the control system and standby system. (This can be detected from the standby system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • When an END instruction executed			
6062	**[CPU MODE DIFF.]** Both System A and B are in the same system status (control system). (This can be detected from the system B of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset/At tracking cable connection	Power the CPU module (System B) which resulted in a stop error, OFF and then ON.		
6100	**[TRK. TRANS. ERR.]** • An error (e.g. retry limit exceeded) occurred in tracking data transmission. (This error may be caused by tracking cable removal or other system power-off (including reset).) • The error occurred at a startup since the redundant system startup procedure was not followed. **■Collateral information** • Common information: Tracking transmission data classification • Individual information:- **■Diagnostic Timing** • Always	• Check the CPU module or tracking cable. If the error still occurs, this indicates the CPU module or tracking cable is faulty. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.) • Confirm the redundant system startup procedure, and execute a startup again.	RUN: On ERR.: On CPU Status: Continue	

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
6101	**[TRK. TRANS. ERR.]** • A timeout error occurred in tracking (data transmission). (This error may be caused by tracking cable removal or other system power-off (including reset).) • The error occurred at a startup since the redundant system startup procedure was not followed. (This can be detected from the control system or standby system of the redundant system.) **■Collateral information** • Common information: Tracking transmission data classification • Individual information:- **■Diagnostic Timing** • Always	• Check the CPU module or tracking cable. If the error still occurs, this indicates the CPU module or tracking cable is faulty. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.) • Confirm the redundant system startup procedure, and execute a startup again.	RUN: On ERR.: On CPU Status: Continue	QnPRH
6102	**[TRK. TRANS. ERR.]** A data sum value error occurred in tracking (data reception). (This can be detected from the control system or standby system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • Always			
6103	**[TRK. TRANS. ERR.]** • A data error (other than sum value error) occurred in tracking (data reception). • (This error may be caused by tracking cable removal or other system power-off (including reset).) • The error occurred at a startup since the redundant system startup procedure was not followed. (This can be detected from the control system or standby system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • Always			
6105	**[TRK. TRANS. ERR.]** • An error (e.g. retry limit exceeded) occurred in tracking (data transmission). (This error may be caused by tracking cable removal or other system power-off (including reset).) • The error occurred at a startup since the redundant system startup procedure was not followed. (This can be detected from the control system or standby system of the redundant system.) **■Collateral information** • Common information: Tracking transmission data classification • Individual information:- **■Diagnostic Timing** • Always			

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
6106	**[TRK. TRANS. ERR.]** • A timeout error occurred in tracking (data transmission). (This error may be caused by tracking cable removal or other system power-off (including reset).) • The error occurred at a startup since the redundant system startup procedure was not followed. (This can be detected from the control system or standby system of the redundant system.) **■Collateral information** • Common information: Tracking transmission data classification • Individual information:- **■Diagnostic Timing** • Always	• Check the CPU module or tracking cable. If the error still occurs, this indicates the CPU module or tracking cable is faulty. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.) • Confirm the redundant system startup procedure, and execute a startup again.	RUN: On ERR.: On CPU Status: Continue	QnPRH
6107	**[TRK. TRANS. ERR.]** A data sum value error occurred in tracking (data reception). (This can be detected from the control system or standby system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • Always			
6108	**[TRK. TRANS. ERR.]** • A data error (other than sum value error) occurred in tracking (data reception). (This error may be caused by tracking cable removal or other system power-off (including reset).) • The error occurred at a startup since the redundant system startup procedure was not followed. (This can be detected from the control system or standby system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • Always	• Check the CPU module or tracking cable. If the error still occurs, this indicates the CPU module or tracking cable is faulty. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.) • Confirm the redundant system startup procedure, and execute a startup again.		
6110	**[TRK. SIZE ERROR]** The tracking capacity exceeded the allowed range. (This can be detected from the control system or standby system of the redundant system.) **■Collateral information** • Common information: Reason(s) for tracking size excess error • Individual information:- **■Diagnostic Timing** • When an END instruction executed	Reexamine the tracking capacity.		
6111	**[TRK. SIZE ERROR]** The control system does not have enough file register capacity for the file registers specified in the tracking settings. (This can be detected from the control system or standby system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • When an END instruction executed	Switch to the file registers of which capacity is greater than the file registers specified in the tracking settings.		

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
6112	**[TRK. SIZE ERROR]** File registers greater than those of the standby system were tracked and transmitted from the control system. (This can be detected from the standby system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • When an END instruction executed	Switch to the file registers of which capacity is greater than the file registers specified in the tracking settings.	RUN: On ERR.: On CPU Status: Continue	QnPRH
6120	**[TRK. CABLE ERR.]** • A start was made without the tracking cable being connected. • A start was made with the tracking cable faulty. • As the tracking hardware on the CPU module side was faulty, communication with the other system could not be made via the tracking cable. (This can be detected from the control system or standby system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Make a start after connecting the tracking cable. If the same error still occurs, this indicates the tracking cable or CPU module side tracking transmission hardware is faulty. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	
6130	**[TRK. DISCONNECT]** • The tracking cable was removed. • The tracking cable became faulty while the CPU module is running. • The CPU module side tracking hardware became faulty. (This can be detected from the control system or standby system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • Always	• If the tracking cable was removed, connect the tracking cable to the connectors of the CPU modules of the two systems. • When the error is not resolved after connecting the tracking cable to the connectors of the CPU modules of the two systems and resetting the error, the tracking cable or CPU module side tracking hardware is faulty. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: On ERR.: On CPU Status: Continue	
6140	**[TRK.INIT. ERROR]** • The other system did not respond during initial communication at power-on/reset. • The error occurred at a startup since the redundant system startup procedure was not followed. (This can be detected from the control system or standby system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Power off and then on or reset the CPU module where the error occurred. If the same error still occurs, this indicates the CPU module is faulty. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.) • Confirm the redundant system startup procedure, and execute a startup again.	RUN: Off ERR.: Flicker CPU Status: Stop	

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
6200	**[CONTROL EXE.]** The standby system has been switched to the control system in a redundant system. (Detected by the CPU that was switched from the standby system to the control system.) Since this error code does not indicate the error information of the CPU module but indicates its status, the error code and error information are not stored into SD0 to 26, but are stored into the error log every system switching. (To check the error information, obtain the error log using the programming tool.) **■Collateral information** • Common information: Reason(s) for system switching • Individual information:- **■Diagnostic Timing** • Always	-	RUN: On ERR.: Off CPU Status: No error	QnPRH
6210	**[STANDBY]** The control system has been switched to the standby system in a redundant system. (Detected by the CPU that was switched from the control system to the standby system.) Since this error code does not indicate the error information of the CPU module but indicates its status, the error code and error information are not stored into SD0 to 26, but are stored into the error log every system switching. (To check the error information, obtain the error log using the programming tool.) **■Collateral information** • Common information: Reason(s) for system switching • Individual information:- **■Diagnostic Timing** • Always	-	RUN: On ERR.: Off CPU Status: No error	

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
6220	**[CAN'T SWITCH]** The system cannot be switched due to a standby system error, tracking cable failure, or online module change being executed in the separate mode. Causes for switching system at control system are as follows: • System switching by SP.CONTSW instruction • System switching request from network module **■Collateral information** • Common information: Reason(s) for system switching • Individual information: Reason(s) for system switching failure **■Diagnostic Timing** • At switching execution	• Check the status of the standby system and resolve the error. • Complete the online module change.	RUN: On ERR.: On CPU Status: Continue	QnPRH
6300	**[STANDBY SYS. DOWN]** Any of the following errors was detected in the backup mode. • The standby system has not started up in the redundant system. • The standby system has developed a stop error in the redundant system. • The CPU module in the debug mode was connected to the operating control system. (This can be detected from the control system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • Always	• Check whether the standby system is on or not, and if it is not on, power it on. • Check whether the standby system has been reset or not, and if it has been reset, unreset it. • Check whether the standby system has developed a stop error or not, and if it has developed the error, remove the error factor and restart it. • When the CPU module in the debug mode was connected to the control system operating in the backup mode, make connection so that the control system and standby system are combined correctly.		
6310	**[CONTROL SYS. DOWN]** Any of the following errors was detected in the backup mode. • The control system has not started up in the redundant system. • The control system has developed a stop error in the redundant system. • The CPU module in the debug mode was connected to the operating standby system. • The error occurred at a startup since the redundant system startup procedure was not followed. (This can be detected from the standby system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • Always	• The standby system exists but the control system does not exist. • Check whether the system other than the standby system is on or not, and if it is not on, power it on. • Check whether the system other than the standby system has been reset or not, and if it is has been reset, unreset it. • Check whether the system other than the standby system has developed a stop error or not, and if has developed the error, remove the error factor, set the control system and standby system to the same operating status, and restart. • When the CPU module in the debug mode was connected to the control system operating in the backup mode, make connection so that the control system and control system are combined correctly. • Confirm the redundant system startup procedure, and execute a startup again.	RUN: Off ERR.: Flicker CPU Status: Stop	
6311 6312	**[CONTROL SYS. DOWN]** • As consistency check data has not transmitted from the control system in a redundant system, the other system cannot start as a standby system. • The error occurred at a startup since the redundant system startup procedure was not followed. (This can be detected from the standby system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Replace the tracking cable. If the same error still occurs, this indicates the CPU module is faulty. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.) • Confirm the redundant system startup procedure, and execute a startup again.		

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
6313	**[CONTROL SYS. DOWN]** The control system detected the error of the system configuration and informed it to the standby system (host system) in the redundant system. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Restart the system after checking that the connection between base unit and the system configuration (type/number/parameter of module) are correct.	RUN: Off ERR.: Flicker CPU Status: Stop	QnPRH*15
6400	**[PRG. MEM. CLEAR]** The memory copy from control system to standby system was executed, and the program memory was cleared. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At execution of the memory copy from control system to standby system	After the memory copy from the control system to the standby system is completed, turn off and then on or reset the system.		QnPRH
6410	**[MEM. COPY EXE.]** The memory copy from control system to standby system was executed. (This can be detected from the control system of the redundant system.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At execution of the memory copy from control system to standby system	-	RUN: On ERR.: On CPU Status: Continue	
6500	**[TRK. PARA. ERROR]** The file register file specified in the tracking setting of the PLC parameter dialog box does not exist. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset	Read the individual information of the error using the programming tool. Check the drive name and file name and correct them.	RUN: Off ERR.: Flicker CPU Status: Stop	QnPRH
6501	**[TRK. PARA. ERROR]** The file register range specified in the device detail setting of the tracking setting of the PLC parameter dialog box exceeded the specified file register file capacity. **■Collateral information** • Common information: File name/Drive name • Individual information: Parameter number **■Diagnostic Timing** • At power-on/At reset	Read the individual information of the error using the programming tool, and increase the file register capacity.		

*15 This applies when the first five digits of the serial number of the CPU module is "09102" or later.

Appendix 1.9 Error code list (7000 to 10000)

The following table shows the error messages, the error contents and causes, and the corrective actions for the error codes (7000 to 10000).

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
7000	**[MULTI CPU DOWN]** • In the operating mode of a multiple CPU system, a CPU error occurred at the CPU where "All station stop by stop error of CPU " was selected. • In a multiple CPU system, a CPU module incompatible with the multiple CPU system was mounted. • Any CPU module other than CPU No.1 was disconnected from the base unit during operation. Or any CPU module other than CPU No.1 was reset. **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • Always	• Read the individual information of the error using the programming tool. Check the error in the CPU module, and remove the error. • Remove the CPU module from the main base unit if it does not support the multiple CPU system configuration. • Check the mounting status of CPU modules other than CPU No.1 and whether the CPU modules were reset.	RUN: Off ERR.: Flicker CPU Status: Stop	Q00/Q01*8 Qn(H)*8 QnPH QnU*18
	[MULTI CPU DOWN] In a multiple CPU system, CPU other than CPU No.1 cannot be started up due to stop error of the CPU No.1 at power-on, which occurs to CPU No.2 to No.4. **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Read the individual information of the error using the programming tool. Check the error in the CPU module, and remove the error.		
7002	**[MULTI CPU DOWN]** • There is no response from the target CPU module in a multiple CPU system during initial communication. • In a multiple CPU system, a CPU module incompatible with the multiple CPU system was mounted. **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Reset the CPU module and RUN it again. If the same error is displayed again, this suggests the hardware fault of any of the CPU modules. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.) • Remove the CPU module from the main base unit if it does not support the multiple CPU system configuration. Or, replace the CPU module incompatible with the multiple CPU system with the compatible one.		Q00/Q01*8 Qn(H)*8 QnPH
	[MULTI CPU DOWN] There is no response from the target CPU module in a multiple CPU system during initial communication. **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Reset the CPU module and RUN it again. If the same error is displayed again, this suggests the hardware fault of any of the CPU modules. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QnU*18
7003	**[MULTI CPU DOWN]** There is no response from the target CPU module in a multiple CPU system at initial communication stage. **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset			Q00/Q01*8 Qn(H)*8 QnPH QuU*31

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
7004	**[MULTI CPU DOWN]** In a multiple CPU system, a data error occurred in communication between the CPU modules. **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • Always	• Check the system configuration to see if modules are mounted in excess of the number of I/O points. • When there are no problems in the system configuration, this indicates the CPU module hardware is faulty. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)	RUN: Off ERR.: Flicker CPU Status: Stop	Q00/Q01*8 QnU*18
7010	**[MULTI EXE. ERROR]** • In a multiple CPU system, a faulty CPU module was mounted. • In a multiple CPU system, a CPU module incompatible with the multiple CPU system was mounted. (The CPU module compatible with the multiple CPU system was used to detect an error.) • In a multiple CPU system, any of the CPU No. 2 to 4 was reset with power ON. (The CPU whose reset state was cancelled was used to detect an error.) **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Read the individual information of the error using the programming tool and replace the faulty CPU module. • Replace the CPU module with the one compatible with the multiple CPU system. • Do not reset any of the No. 2 to 4 CPU modules. • Reset CPU No. 1 and restart the multiple CPU system.		Q00/Q01*8 Qn(H)*8 QnPH QnU*18
	[MULTI EXE. ERROR] In a multiple CPU system, the version of the software package (PPC-DRV-01)*23 for the PC CPU module is 1.06 or earlier. **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Change the software package (PPC-DRV-01)*23 for the PC CPU module to the version 1.07 or later.		Q00/Q01*8
	[MULTI EXE. ERROR] The Q172(H)CPU(N) or Q173(H)CPU(N) is mounted on the multiple CPU high-speed main base unit (Q3□DB). (This may result in a module failure.) **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Replace the Q172(H)CPU(N) and Q173(H)CPU(N) with the Motion CPU compatible with the multiple CPU high-speed main base unit.		Qn(H)*9 QnPH*9
	[MULTI EXE. ERROR] The Universal model QCPU (except Q02UCPU) and Q172(H)CPU(N) are mounted on the same base unit. (This may result in a module failure.) **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Check the QCPU and Motion CPU that can be used in a multiple CPU system, and change the system configuration.		

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
7011	**[MULTI EXE. ERROR]** Either of the following settings was made in a multiple CPU system. • Multiple CPU automatic refresh setting was made for the inapplicable CPU module. • "I/O sharing when using multiple CPUs" setting was made for the inapplicable CPU module. **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Correct the multiple CPU automatic refresh setting. • Correct the "I/O sharing when using multiple CPUs" setting.	RUN: Off ERR.: Flicker CPU Status: Stop	Q00/Q01*8 QnU*18
	[MULTI EXE. ERROR] The system configuration for using the Multiple CPU high speed transmission function is not met. • The QnUCPU is not used for the CPU No.1. • The Multiple CPU high speed main base unit (Q3□DB) is not used. • Points other than 0 is set to the send range for the CPU module incompatible with the multiple CPU high speed transmission function. Points other than 0 is set to the send range for the CPU module incompatible with the multiple CPU. **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Change the system configuration to meet the conditions for using the Multiple CPU high speed transmission function. • Set the send range of CPU, that does not correspond to multiple CPU compatible area, at 0 point, when performing automatic refreshing in multiple CPU compatible area.		QnU*20
7013	**[MULTI EXE. ERROR]** The Q172(H)CPU(N) or Q173(H)CPU(N) is mounted to the CPU slot or slots 0 to 2. (This may result in a module failure.) **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Check the QCPU and Motion CPU that can be used in a multiple CPU system, and change the system configuration. • Remove the Motion CPU incompatible with the multiple CPU system.		QnU
7020	**[MULTI CPU ERROR]** In a multiple CPU system, an error occurred in the CPU module where "All station stop by stop error of CPU" was not selected in the operating mode setting. (The CPU module where no error occurred was used to detect an error.) **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • Always	Read the individual information of the error using the programming tool. Check the error in the CPU module, and remove the error.	RUN: On ERR.: On CPU Status: Continue	Q00/Q01*8 Qn(H)*8 QnPH QnU*18
7030	**[CPU LAY ERROR]** An assignment error occurred in the CPU-mountable slot (CPU slot, I/O slot 0, 1) in excess of the number of CPU modules specified in the multiple CPU setting of the PLC parameter dialog box. **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Set the same value to the number of CPU modules specified in the multiple CPU setting of the PLC parameter dialog box and the number of mounted CPU modules (including CPU (empty)). • Make the type specified in the I/O assignment setting of the PLC parameter dialog box consistent with the CPU module configuration.	RUN: Off ERR.: Flicker CPU Status: Stop	Q00J/Q00/Q01*8 QnU

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
7031	**[CPU LAY ERROR]** An assignment error occurred within the range of the number of CPUs specified in the multiple CPU setting of the PLC parameter dialog box. **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Set the same value to the number of CPU modules specified in the multiple CPU setting of the PLC parameter dialog box and the number of mounted CPU modules (including CPU (empty)). • Make the type specified in the I/O assignment setting of the PLC parameter dialog box consistent with the CPU module configuration.	RUN: Off ERR.: Flicker CPU Status: Stop	Q00J/Q00/Q01*8 QnU
7032	**[CPU LAY ERROR]** The number of CPU modules mounted in a multiple CPU system is wrong. **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Configure a system so that the number of mountable modules of each CPU module does not exceed the maximum number of mountable modules specified in the specification.		Q00J/Q00/Q01*8 QnU*18
7035	**[CPU LAY ERROR]** The CPU module has been mounted on the inapplicable slot. **■Collateral information** • Common information: Module No. (Slot No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Mount the CPU module on the applicable slot. • Remove the CPU module from the slot where a CPU module cannot be mounted.		Q00J/Q00/Q01*8 QnPRH QnU
7036	**[CPU LAY ERROR]** The host CPU No. set by the multiple CPU setting and the host CPU No. determined by the mounting position of the CPU module are not the same. **■Collateral information** • Common information: Module No. (CPU No.) • Individual information:- **■Diagnostic Timing** • At power-on/At reset	• Mount the mounting slot of the CPU module correctly. • Correct the host CPU No. set by the multiple CPU setting to the CPU No. determined by the mounting position of the CPU module.		QnU*20
8031	**[INCORRECT FILE]** The error of stored file (enabled parameter file) is detected. **■Collateral information** • Common information:- • Individual information: File diagnostic information **■Diagnostic Timing** • At power-on/At reset/STOP→RUN/At writing to programmable controller	Write the files shown in SD17 to SD22 (individual information) to the drive shown in SD16 (L) (individual information). Turn off and then on or reset the CPU module. If the same error code is displayed again, the cause is a hardware failure of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)		QnU LCPU
9000	**[F****]** Annunciator (F) turned on.*24*30 (The "*****" portion of the error message indicates an annunciator number.) **■Collateral information** • Common information: Program error location • Individual information: Annunciator number **■Diagnostic Timing** • When instruction executed	Read the individual information of the error using the programming tool to identify the numeric value (annunciator number). Check the program corresponding to the value.	RUN: On ERR.: On/Off*2 CPU Status: Continue	QCPU LCPU

Error Code	Error Contents and Cause	Corrective Action	LED Status CPU Status	Corresponding CPU
9010	**[<CHK>ERR ***-***]** Error detected by the CHK instruction.*30 (The "****" portion of the error message indicates the numbers of contact and coil that have been detected.) **■Collateral information** • Common information: Program error location • Individual information: Failure No. **■Diagnostic Timing** • When instruction executed	Read the individual information of the error using the programming tool to identify the numeric value (error number). Check the program corresponding to the value.	RUN: On ERR.: Off CPU Status: Continue	Qn(H) QnPH QnPRH
9020	**[BOOT OK]** Storage of data onto ROM was completed normally in automatic write to standard ROM. (BOOT LED also flickers.) **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • At power-on/At reset	Use the DIP switches to set the valid parameter drive to the standard ROM. Then, switch power on again, and perform boot operation from the standard ROM.	RUN: Off ERR.: Flicker CPU Status: Stop	Qn(H)*8 QnPH QnPRH
10000	**[CONT. UNIT ERROR]** In the multiple CPU system, an error occurred in the CPU module other than the Process CPU and High Performance model QCPU. **■Collateral information** • Common information:- • Individual information:- **■Diagnostic Timing** • Always	To check the details of the error, connect a programming tool to the corresponding CPU module.	RUN: Off ERR.: Flicker CPU Status: Continue	Qn(H)*8 QnPH

*2 For the Basic model QCPU, it can be turned on and off by the LED control function. (For the High Performance model CPU, Process CPU, Redundant CPU, Universal model QCPU, and LCPU, it can only turned on.)

The manual of the CPU module used (function explanation, program fundamentals)

*8 This applies if the function version is B or later.

*9 This applies to the CPU modules when the first five digits of the serial number is "04012".

*18 This applies to the Universal model QCPU except for the Q00UJCPU.

*20 This applies to the Universal model QCPU except for the Q00UJCPU, Q00UCPU, Q01UCPU, and Q02UCPU.

*23 The product name is the Bus interface driver software package of MELSEC-Q series compatible PC CPU module

*24 The Basic model QCPU does not have the USER LED.

*30 USER LED turns on.

*31 This applies when the first five digits of the serial number is "13102" or later.

Appendix 1.10 Clearing an error

An error can be cleared as far as the CPU module continues its operation regardless of the error.

1. **Remove the error cause.**
2. **Store the error code to be cleared in SD50.**
3. **Turn on SM50.**
4. **The error is cleared.**

When the error in the CPU module is cleared, the special relay and special register or LEDs relating to the error return to the status before the error. If the same error occurs after clearing the error, the error will be registered to the error history again.

When multiple annunciators are detected, only the first annunciator detected can be cleared. For details on clearing errors, refer to the following.

User's manual (Function Explanation, Program Fundamentals) for the CPU module used

Appendix 1.11 Error codes returned to request source during communication with CPU module

If an error occurs at communication request from a programming tool, intelligent function module, or network system, the CPU module returns an error code to the request source.
This error code is not stored in SD0 because the error is not the one detected by the self-diagnostic function of the CPU module.
When the request source is a programming tool, a message and an error code are displayed on the programming tool.
When the request source is an intelligent function module or network system, the CPU module returns an error code corresponding to the requested processing.

Error code (Hexadecimal)	Error item	Error details	Corrective action
4000H	Common error	Serial communication sum check error	• Connect the serial communication cable correctly. • Take noise reduction measures.
4001H		Unsupported request was executed.	• Check the command data of the MC protocol, etc. • Check the CPU module model name selected in the programming tool.
4002H		Unsupported request was executed.	• Check the command data of the MC protocol, etc. • Check the CPU module model name selected in the programming tool.
4003H		Command for which a global request cannot be performed was executed.	Check the command data of the MC protocol, etc.
4004H		Any operation for the CPU module is prohibited by the system protect function provided against the following events. • The system protect switch is ON. • The CPU module is starting.	• Set the system protect switch of the CPU module to OFF. • Perform operation again after the CPU module has completed starting.
4005H		The volume of data handled according to the specified request is too large.	Check the command data of the MC protocol, etc.
4006H		Initial communication failed.	• When using serial communication, inquire of the external device manufacturer for support conditions. • When using serial communication, check the CPU module model name selected in the programming tool. • When using Ethernet communication, change the start timing of the communication.
4008H		The CPU module is BUSY. (The buffer is not vacant).	After the free time has passed, reexecute the request.
4010H	CPU mode error	Since the CPU module is running, the request contents cannot be executed.	Execute after setting the CPU module to STOP status.
4013H		Since the CPU module is not in a STOP status, the request contents cannot be executed.	Execute after setting the CPU module to STOP status.
4021H	CPU file related error	The specified drive memory does not exist or there is an error.	• Check the specified drive memory status. • After backing up the data in the CPU module, execute programmable controller memory format.
4022H		The file with the specified file name or file No. does not exist.	Check the specified file name and file No.
4023H		The file name and file No. of the specified file do not match.	Delete the file and then recreate the file.
4024H		The specified file cannot be handled by a user.	Do not access the specified file.
4025H		The specified file is processing the request from another programming tool.	Forcibly execute the request. Alternatively, complete the current processing and then send the request again.

Error code (Hexadecimal)	Error item	Error details	Corrective action
4026H	CPU file related error	Any of the file password, drive keyword, or file password 32 set in advance to the target drive (memory) must be specified.	Specify any of the file password, drive keyword, or file password 32 set in advance to the target drive (memory) and then access.
4027H		The specified range is larger than the file size range.	Check the specified range and access within that range.
4028H		The same file already exists.	Forcefully execute the request forcibly. Or reexecute after changing the file name.
4029H		The specified file capacity cannot be obtained.	Revise the specified file contents. Or reexecute after cleaning up and reorganizing the specified drive memory.
402AH		The specified file is abnormal.	After backing up the data in the CPU module, execute programmable controller memory format.
402BH		The request contents cannot be executed in the specified drive memory.	Execute again after setting the CPU module to the STOP status. Execute programmable controller memory arrangement to increase the continuous free space of the drive (memory).
402CH		The requested operation cannot be executed currently.	Execute again after a while.
4030H	CPU device specified error	• The specified device name cannot be handled. • The device number of 65536 or greater is specified for the CPU module that does not support extended data register (D) and extended link register (W).	• Check the specified device name. • Use a CPU module that supports extended data register (D) and extended link register (W).
4031H		The specified device No. is outside the range.	• Check the specified device No. • Check the device assignment parameters of the CPU module.
4032H		There is a mistake in the specified device qualification. The unusable device name (TS,TC,SS,SC,CS,CC) must be specified in MC protocol random reading, random writing (word), monitor registration and monitor command.	• Check the specified device qualification method. • Check the specified device name.
4033H		Writing cannot be done because the specified device is for system use.	Do not write the data in the specified device, and do not turn on or off.
4034H		Cannot be executed since the completion device for the dedicated instruction cannot be turned ON.	Since the completion device for the target station CPU module cannot be turned ON by the SREAD instruction/ SWRITE instruction, execute again after setting the operating status of the target station CPU module to the RUN status.
4040H	Intelligent function module specification error	The request contents cannot be executed in the specified intelligent function module.	Check whether the specified module is the intelligent function module having the buffer memory.
4041H		The access range exceeds the buffer memory range of the specified intelligent function module.	Check the header address and access number of points and access using a range that exists in the intelligent function module.
4042H		The specified intelligent function module cannot be accessed.	• Check that the specified intelligent function module is operating normally. • Check the specified module for a hardware fault.
4043H		The intelligent function module does not exist in the specified position.	Check the I/O No. of the specified intelligent function module.
4044H		A control bus error occurred during access to the intelligent function module.	Check the specified intelligent function module and other modules and base units for a hardware fault.

Error code (Hexadecimal)	Error item	Error details	Corrective action
4050H	Protect error	The request contents cannot be executed because the memory card write protect switch is on.	Turn off the memory card write protect switch.
4051H		The specified device memory cannot be accessed.	Check the following and make it countermeasures. • Is the memory one that can be used? • Is the specified drive memory correctly installed?
4052H		The specified file attribute is read only so the data cannot be written.	Do not write data in the specified file. Or change the file attribute.
4053H		An error occurred when writing data to the specified drive memory.	Check the specified drive memory. Or reexecute write after changing the corresponding drive memory.
4054H		An error occurred when deleting the data in the specified drive memory.	Check the specified drive memory. Or re-erase after replacing the corresponding drive memory.
4060H	Online registration error	The online debug function (such as online change, sampling trace, and monitoring condition setting) and the data logging function are being executed with another programming tool.	• Finish the operation of another programming tool and then execute the function. • If the operation of another programming tool is on hold, resume with that programming tool to complete the operation, and then execute the function again.
4061H		Communication of the online debug function was unsuccessful.	• Register an online debug function (such as online change, sampling trace, and monitoring condition setting) and then establish a communication. • Execute again after checking the communication route such as the communication cable.
4063H		The registered number of locked files exceeded the maximum value.	Finish the file access from another programming tool, and then execute again.
4064H		Settings for the online debug function (such as online change, sampling trace, and monitoring condition setting) and for the data logging function are incorrect.	• Check the settings for the online debug function (such as online change, sampling trace, and monitoring condition setting) and data logging function. • Execute again after checking the communication route such as the communication cable.
4065H		The device allocation information differs from the parameter.	Check the device assignment parameters of the CPU module or the device assignment of the request data.
4066H		The specified drive keyword, file password, or file password 32 is incorrect.	• Correct the drive keyword of the specified drive. • Correct the file password of the specified file. • Correct the file password 32 of the specified file.
4067H		Monitor communication was unsuccessful.	• Check the system area capacity of the user setting specified for programmable controller memory format. • Execute again after checking the communication route such as the communication cable.
4068H		Operation is disabled because it is being performed with another programming tool.	Finish the operation of another programming tool and then execute again.
406AH		The drive (memory) number that cannot be handled (other than 0 to 4) was specified.	Check the specified drive and specify the correct drive.
4070H	Circuit inquiry error	The program not yet corrected and the one corrected by online program change are different.	Read the program from the CPU module to match it with that of the programming tool, and then execute online change again.

Error code (Hexadecimal)	Error item	Error details	Corrective action
4080H	Other errors	Request data error	Check the request data that has been specified.
4081H		The sort subject cannot be detected.	Check the data to be searched.
4082H		The specified command is executing and therefore cannot be executed.	Complete the processing for a request from another programming tool and then execute the command again.
4083H		An attempt was made to perform operation for the program not registered to the parameters.	Register the program to the parameters.
4084H		The specified pointer P, I did not exist.	Check the pointer P, I in the specified data.
4085H		Pointer P, I cannot be specified because the program is not specified in the parameter.	Specify pointer P, I after registering the program to be executed in the parameter.
4086H		Pointer P, I has already been added.	Check the pointer No. to be added and make correction.
4087H		Trying to specify too many pointer P, I.	Check the specified pointer P, I and make a correction.
4088H		• The specified step number is not at the head of the instruction. • The program differs from that stored in the CPU module.	• Check and correct the specified step No. • Read the program from the CPU module to match it with that of the programming tool, and then execute online change again.
4089H		An attempt was made to insert/delete the END instruction by online program change.	• Check the specified program file contents. • Write the program after setting the CPU module to the STOP status.
408AH		The file capacity was exceeded by the write during Run.	• Check the capacity of the specified program file. • Write the program after setting the CPU module to the STOP status.
408BH		The remote request cannot be executed.	• Reexecute after the CPU module is in a status where the mode request can be executed. • For remote operation, set the parameter to "Enable remote reset".
408CH		An attempt was made to remote-start the program, which uses the CHK instruction, as a low speed program.	• The program including the CHK instruction cannot be executed at low speed. Execute again after checking the program.
408DH		The instruction code that cannot be handled exists.	• Check whether the model of the used CPU module is correct or not. • The program where online change was attempted includes the instruction that cannot be handled by the CPU module specified for the project. Check the program and delete the instruction.
408EH		• The write step is illegal. • The program differs from that stored in the CPU module.	• Write the program after setting the CPU module to the STOP status. • The starting position of online program change is not specified with the correct program step No. Check whether the programming tool supports the model and version of the CPU module that is specified for the project. • Read the program from the CPU module to match it with that of the programming tool, and then execute online change again.
40A0H	SFC device specification error	A block No. outside the range was specified.	Check the setting contents and make a correction.
40A1H		A number of blocks that exceeds the range was specified.	Check the number of settings and make a correction.
40A2H		A step No. that is outside the range was specified.	Check the setting contents and make a correction.
40A3H		Step range limit exceeded	Check the number of settings and make a correction.
40A4H		The specified sequence step No. is outside the range.	Check the setting contents and make a correction.
40A5H		The specified device is outside the range.	Check the number of settings and make a correction.
40A6H		The block specification pattern and step specification pattern were wrong.	Check the setting contents and make a correction.

Error code (Hexadecimal)	Error item	Error details	Corrective action
40B0H	SFC file related error	The drive (memory) specified in SFC file operation is wrong.	Check the setting contents and make a correction.
40B1H		The SFC program specified in SFC file operation does not exist.	Check the specified file name and make a correction.
40B2H		The program specified in SFC file operation is not an SFC program.	Check the specified file name and make a correction.
40B3H		Using online program change of SFC, an attempt was made to execute rewrite operation of the "SFC dedicated instruction", such as the "STEP start instruction or transition start instruction", that shows an SFC chart. (SFC dedicated instruction cannot be written during RUN.)	Write the program after setting the CPU module to the STOP status.
4100H	Other errors	CPU module hardware fault	Change the CPU module.
4101H		Serial communication connection was executed for a different CPU module series.	Check the CPU module series.
4102H		An attempt was made to erase the Flash ROM during use of the file register.	Execute again after setting the CPU module to the STOP status.
4103H		The instruction written during RUN is wrong or illegal.	Execute online program change again, or write the program after setting the CPU module to the STOP status.
4105H		CPU module internal memory hardware fault	Change the CPU module.
4106H		The command cannot be executed since the CPU module is performing system initialization processing.	Execute the operation again after the CPU module has started.
4107H		An attempt was made to perform the operation of the function unavailable for the target CPU module model name.	Do not execute the function unsupported by the target CPU module.
4108H		Operation cannot be made normally by device monitor/test.	Execute device monitor/test again. Before execution, check that access is not made to the access prohibited area.
4109H		The specified operation cannot be executed since the monitoring, set the condition for other application in same computer, is in execution.	Execute the request again after deregistering the monitoring condition on the same screen.
410AH		The specified command cannot be executed because of online program change.	Execute the request again after the online program change.
410BH		The registration of monitoring condition was canceled because of online program change.	Execute the registration of monitoring condition again after the online program change.
410DH		When the program cache memory was read, it was detected that the program memory data had been overwritten.	• Write the file containing the overwritten data to the program cache memory again. • Turn off and then on or reset the system, and transfer the program memory data to the program cache memory.
4110H	CPU module error	Since the CPU module is in a stop error status, it cannot execute the request.	Execute the request again after resetting the CPU module.
4111H		The requested operation cannot be performed since the other CPU modules have not yet started in the multiple CPU system.	Execute the request again after the other CPU modules have started.

Error code (Hexadecimal)	Error item	Error details	Corrective action
4121H	File-related errors	The specified drive (memory) or file does not exist.	Execute again after checking the specified drive (memory) or file.
4122H		The specified drive (memory) or file does not exist.	Execute again after checking the specified drive (memory) or file.
4123H		The specified drive (memory) is abnormal.	Execute programmable controller memory format to make the drive (memory) normal. In the case of the Flash ROM, check the data to be written to the Flash ROM, and write them to the Flash ROM.
4124H		The specified drive (memory) is abnormal.	Execute programmable controller memory format to make the drive (memory) normal. In the case of the Flash ROM, check the data to be written to the Flash ROM, and write them to the Flash ROM.
4125H		The specified drive (memory) or file is performing processing.	Execute again after a while.
4126H		The specified drive (memory) or file is performing processing.	Execute again after a while.
4127H		File password mismatch	Execute again after checking the file password.
4128H		File password mismatch with copy destination	Execute again after checking the file password.
4129H		Cannot be executed since the specified drive (memory) is ROM.	Execute again after changing the target drive (memory).
412AH		Cannot be executed since the specified drive (memory) is ROM.	Execute again after changing the target drive (memory).
412BH		The specified drive (memory) is write-inhibited.	Execute again after changing the write inhibit condition or drive (memory).
412CH		The specified drive (memory) is write-inhibited.	Execute again after changing the write inhibit condition or drive (memory).
412DH		The specified drive (memory) does not have enough free space.	Execute again after increasing the free space of the drive (memory).
412EH		The specified drive (memory) does not have enough free space.	Execute again after increasing the free space of the drive (memory).
412FH		The drive (memory) capacity differs between the drive (memory) copy destination and copy source.	Execute again after checking the drive (memory) copy destination and copy source.
4130H		The drive (memory) type differs between the drive (memory) copy destination and copy source.	Execute again after checking the drive (memory) copy destination and copy source.
4131H		The file name of the file copy destination is the same as that of the copy source.	Execute again after checking the file names.

Error code (Hexadecimal)	Error item	Error details	Corrective action
4132H	File-related errors	The specified number of files does not exist.	Execute again after checking the specified data.
4133H		The specified drive (memory) has no free space.	Execute again after increasing the free space of the drive (memory).
4134H		The attribute specification data of the file is wrong.	Execute again after checking the specified data.
4135H		The date/time data of the peripheral device (personal computer) is beyond the range.	Execute again after checking the clock setting of the peripheral device (personal computer).
4136H		The specified file already exists.	Execute again after checking the specified file name.
4137H		The specified file is read-only.	Execute again after changing the condition of the specified file.
4138H		Simultaneously accessible files exceeded the maximum.	Execute again after decreasing file operations.
4139H		The size of the specified file has exceeded that of the existing file.	Execute again after checking the size of the specified file.
413AH		The specified file has exceeded the already existing file size.	Execute again after checking the size of the specified file.
413BH		The same file was simultaneously accessed from different programming tools.	Execute again after a while.
413CH		The specified file is write-inhibited.	Execute again after changing the file condition.
413DH		The specified file capacity cannot be secured.	Execute again after increasing the capacity of the specified drive (memory).
413EH		Operation is disabled for the specified drive (memory).	Execute again after changing the target drive (memory).
413FH		The file is inhibited from write to the standard RAM.	Execute again after changing the specified drive (memory).
414AH	Intelligent function module specification error	Operation was executed for the intelligent function module of the non-control group in the multiple CPU system.	Execute the operation again from the control CPU of the target module.
414CH		The I/O address of the specified CPU module is wrong.	Execute again after checking the I/O address of the specified CPU module.
4150H	File-related errors	An attempt was made to format the drive protected by the system.	Do not format the target drive (memory) as it cannot be formatted.
4151H		An attempt was made to delete the file protected by the system.	Do not delete the target file as it cannot be deleted.

Error code (Hexadecimal)	Error item	Error details	Corrective action
4160_H	Online registration error	The registered number of forced inputs/ outputs exceeded the maximum value.	Deregister the unused forced inputs/outputs.
4165_H		The multiple-block online change system file does not exist.	Execute again after securing the area that enables multiple-block online change at the time of programmable controller memory format.
4166_H		Online change (files) is disabled because it is being executed from the same source.	Due to unsuccessful online change (files) previously occurred for some reason (example: communication failure), the processing is kept incomplete. Forcibly perform another online change (files).
4167_H		Online change (files) is disabled because it is being performed from another source.	Due to unsuccessful online change (files) from another source previously occurred for some reason (example: communication failure), the processing is kept incomplete. If online change (files) is not being performed by any other programming tool, forcibly perform another online change (files).
4168_H		The registered number of device test with executing condition exceeds 32.	Deregister the device test with executing condition in CPU module, or decrease the number of registering device test with executing condition at one time.
4169_H		The device test with executing condition has never been registered.	Deregister the device test with executing condition after checking the registered number of device test with executing condition in CPU module.
$416A_H$		The specified executing condition does not exist. (Device test with executing condition)	Check whether the specified executing conditions (program, step No. operation timing, device name) in deregistering are registered.
$416B_H$		The specified program is SFC program. (Device test with executing condition)	Check the specifying program name in de/registering the device test with executing condition.

Error code (Hexadecimal)	Error item	Error details	Corrective action
4170H	Ethernet I/F Error	The password is wrong.	Check the specified remote password, then execute the lock/unlock processing of the remote password again.
4171H		The port for communication use is at remote password locking status.	Execute communication after unlocking the remote password processing.
4174H		Requested for a wrong module to unlock remote password.	• Stop transmitting from several modules simultaneously when setting a remote password and using User Datagram Protocol (UDP) in MELSOFT connection. • The MELSOFT connection can be used with Transmission Control protocol (TCP) when setting a remote password.
4176H		Communication error occurred in direct connection.	• Do not specify the direct connection when using other connection setting. • Do not turn off the CPU power during communication, reset the power, and plug out the cable in direct connection.
4178H		• File operation is disabled because the File Transfer Protocol (FTP) function is in operation. • Online operation requiring a file access is performed with a programming tool while the File Transfer Protocol (FTP) function is in operation.	Retry after the operation for FTP function is completed.
4180H		System error.(The setting data in OS is abnormal.)	• Ensure that the power supply module and the CPU module are properly installed to the base unit. • Ensure that the operating environment for the system meets the general specifications of the CPU module. • Check whether the power capacity is sufficient. • Reset the CPU module. If the same error code is displayed again, the cause is a hardware failure of the CPU module. Please consult your local Mitsubishi representative, explaining a detailed description of the problem.
4181H		Transmission to the receiving modules is unsuccessful.	• Check the receiving module operation. • Check the status of the lines, such as cables, hubs and routes, connected to receiving modules. • Some line packets may be engaged. Retry to communicate a little while later. • The receiving module may have no free space in receive area (TCP window size is small). Check whether the receiving module processes receive data, or whether the CPU module does not send unnecessary data. • Check whether the settings of the subnet mask pattern and the default router IP address of the CPU module and the receiving modules are correct, or whether the class of the IP address is correct.
4182H		Communication with receiving modules caused a time-out error.	• Check the receiving module operation. • Check the status of the lines such as a cable, a hub and a route to receiving modules. • Some line packets may be engaged. Retry to communicate a little while later.
4183H		Communication with receiving modules was interrupted.	• Check the receiving module operation. • Check the status of the lines such as cables, hubs and routes connected to receiving modules.

Error code (Hexadecimal)	Error item	Error details	Corrective action
4184_H	Ethernet I/F Error	• Communication processing buffer has run out of space due to consecutive reception of request messages using the MC protocol. • Communication processing buffer has ran out of space because received data read is not performed or cannot keep up with the volume. • Communication processing is disabled due to insufficient space in the communication processing buffer.	• For MC protocol, send a request after receiving a response to the previous request. • For socket communication, enable received data read. • For socket communication, decrease the number of data sent from the target device.
4185_H		• Connection to the target device is disconnected before sending a response using the MC protocol. • Connection to the target device is disconnected during communication.	• For MC protocol, keep the connection until a response is sent. • Keep the connection until a sequence of communication is completed. • Other error such as 4184H may be the cause. If any other error has occurred, take corrective action of that error.
4186_H		System error (The argument data in OS is abnormal.)	• Check whether the power supply module and the CPU module are properly installed to the base unit. • Ensure that the operating environment for the system meets the general specifications of the CPU module. • Check whether the power capacity is sufficient. • Reset the CPU module. If the same error code is displayed again, the cause is a hardware failure of the CPU module. Please consult your local Mitsubishi representative, explaining a detailed description of the problem.
4187_H		System error (The wait processing in OS is abnormal.)	
4188_H		System error (The data length in OS is abnormal.)	
4189_H		System error (The protocol information in OS is abnormal.)	
$418A_H$		System error (The address data of communicating module in OS is abnormal.)	
$418B_H$		System error (The protocol information in OS is abnormal.)	
$418C_H$		System error (The protocol specification processing in OS is abnormal.)	
$418D_H$		System error (The typed data in OS is abnormal.)	
$418E_H$		System error (The expedited data processing in OS is abnormal.)	
$418F_H$ 4190_H		System error (The protocol information in OS is abnormal.)	
4191_H		System error (The address data of communicating module in OS is abnormal.)	
4192_H		System error (The host module address processing in OS is abnormal.)	
4193_H to 4196_H		System error (The transmission processing in OS is abnormal.)	
4197_H 4198_H		System error (The connection processing in OS is abnormal.)	
4199_H		System error (The connection termination processing is abnormal.)	
$419A_H$		System error (The connection processing in OS is abnormal.)	
$419B_H$		System error (The connection termination processing is abnormal.)	
$419C_H$ $419D_H$		System error (The processing order in OS is abnormal.)	

Error code (Hexadecimal)	Error item	Error details	Corrective action
419E$_H$	Ethernet I/F Error	Connection to the module was unsuccessful or interrupted.	• Check the receiving module operation. • Check the cable and devices such as a hub and router on the line to the target device. • Retry to connect a little while later, if the error occurred in communication.
419F$_H$		System error (The I/O control processing is abnormal.)	• Check whether the power supply module and the CPU module are properly installed to the base unit. • Ensure that the operating environment for the system meets the general specifications of the CPU module. • Check whether the power capacity is sufficient. • Reset the CPU module. If the same error code is displayed again, the cause is a hardware failure of the CPU module. Please consult your local Mitsubishi representative, explaining a detailed description of the problem.
41A1$_H$		The port number setting for the CPU module is incorrect.	Correct the port number.
41A2$_H$		The port number setting for the target device is invalid.	
41A4$_H$		• For UDP/IP, the same Host station port No. is specified as MC protocol. • For UDP/IP, the specified host station No. is duplicated.	• Specify a port number that is not duplicated with that of MC protocol. • Correct the port number of the CPU module to avoid duplication.
41A5$_H$		The IP address setting of the target device for OPEN processing is invalid.	Correct the IP address. Specify A, B, or C for the class.
41A6$_H$		Connection was not established in OPEN processing for TCP connection.	• Check the behavior of the target device. • Check OPEN processing of the target device. • Correct the port number of the CPU module and the IP address, port number, and open processing method of the target device. • Check whether the cables are securely connected.
41A8$_H$		Data length is out of permissible range (2046 bytes for the Built-in Ethernet port QCPU whose serial number (first five digits) is "12051" or earlier and 10238 bytes for "12052" or later)	• Correct the data length. • If the data is longer than the range, split the data and send them. • When the data length is 2047 to 10238 bytes, use the Built-in Ethernet port QCPU whose serial number (first five digits) is "12052" or later.
41AB$_H$		Transmission failed due to timeout of retransmission.	• Review the IP address and Ethernet address of the target device. • Check whether the target device has the ARP function. If not, communicate with the one that has the ARP function. • Check the behavior of the target device. • The line may be congested with packets. Resend data after a while. • Check the cable and devices such as a hub and router on the line to the target device. • Check that the target device completes initial processing and open processing. • Check that a binary code is set for the communication data code of the target device.

Error code (Hexadecimal)	Error item	Error details	Corrective action
$41AC_H$	Ethernet I/F Error	• The target device cannot be found. • The TCP connection is disconnected by the target device. • The Fullpassive device rejects the communication and the TCP connection is disconnected.	• Check the behavior of the target device. • Check whether the cables are securely connected. • Check whether the target IP address setting of the Fullpassive device and the IP address of the Active device are matched.
$41AD_H$		Data cannot be send due to no connection or disconnection of the cable.	• Check whether the cables are securely connected. • Check the line status by PING test from the target device. • Check the CPU module for error by conducting a self-diagnostic test (resetting the CPU module). • Send data again.
$41AE_H$		Connection of the control port to the FTP server failed.	• Correct "IP address" in the Built-in Ethernet port tab. • Correct "FTP server name" in the "FTP setting" dialog box. • Check connection with the FTP server.
$41AF_H$		Disconnection of the control port to the FTP server failed.	• Correct the settings in the "FTP setting" dialog box. • Check connection with the FTP server.
$41B0_H$		Login to the FTP server failed.	• Correct "Login user name" and "Login password" in the "FTP setting" dialog box. • Check the FTP server software settings (login user name and login password). • Check communication logs of the FTP server software.
$41B1_H$		Execution of the FTP command to the FTP server failed.	• Correct "Directory path" and "Data transfer mode" in the "FTP setting" dialog box. • Check that you have the write permission for the destination FTP server. • Check that the directory path set in the "FTP setting" dialog box exists. • Correct the FTP server software settings. • Check communication logs of the FTP server software.
$41B2_H$		Connection of the data transfer port to the FTP server failed.	• Check connection with the FTP server. • Correct "Data transfer mode" in the "FTP setting" dialog box. • When a firewall is active or the proxy server is on the connection path, consult the network administrator about the settings.
$41B3_H$		Disconnection of the data transfer port to the FTP server failed.	
$41B4_H$		The connection number setting is invalid.	• Specify the connection No. within 1 to 16. • Check whether "Socket communication" is selected for "Open system" parameter.
$41B6_H$		The specified connection has already completed OPEN processing.	Perform CLOSE processing and then OPEN processing.
$41B7_H$		The specified connection has not completed OPEN processing.	Reexecute after OPEN processing is completed.
$41B8_H$		When "MELSEC-A (Ethernet Module)" was specified in "Destination" of the simple PLC communication function, the function was executed while CPU exchange timing setting (SW7) of the Ethernet module is off and the CPU module on the destination is in the RUN status.	• Turn on CPU exchange timing setting (SW7) of the destination. • Set the CPU module on the destination to STOP and execute the function again.

Error code (Hexadecimal)	Error item	Error details	Corrective action
$41B9_H$	Ethernet I/F Error	• Contents of control data is not correct. • Open instruction was executed through open settings parameter even though parameters are not set for "Open settings".	• Correct the contents of the control data. • Configure the open settings parameters or execute the OPEN instruction through control data.
$41BA_H$		An error occurred during file transfer to the FTP server.	• Delete unnecessary files on the FTP server to increase free space. • Check the connection status of the FTP server.
$41BC_H$		When "MELSEC-A (Ethernet Module)" was specified in "Destination" of the simple PLC communication function, communications between the CPU module and the Ethernet module failed. (After the Ethernet module normally receives a request from another node, communications between the CPU module and the Ethernet module failed due to a noise or other causes.	• Ensure that the operating environment for the system meets the general specifications of the CPU module. • Reset the CPU module. If the same error code is displayed again, the cause is a hardware failure of the CPU module. Please consult your local Mitsubishi representative, explaining a detailed description of the problem.
$41BD_H$		When "MELSEC-A (Ethernet Module)" is specified in "Destination" of the simple PLC communication function, an incorrect device is specified.	• Check the specified device name. • Check the specified device No. • Check the device assignment parameters of the CPU module (destination).
$41BE_H$		When "MELSEC-A (Ethernet Module)" was specified in "Destination" of the simple PLC communication function, a system error occurred. (The possible cause is malfunction due to noise or other causes or hardware failure).	• Check that the power supply module and the CPU module are correctly mounted/connected. • Ensure that the operating environment for the system meets the general specifications of the CPU module. • Check whether the power capacity is sufficient. • Reset the CPU module. If the same error code is displayed again, the cause is a hardware failure of the CPU module. Please consult your local Mitsubishi representative, explaining a detailed description of the problem.
$41BF_H$		When "MELSEC-A (Ethernet Module)" was specified in "Destination" of the simple PLC communication function, a system error occurred. (The possible cause is malfunction due to noise or other causes or hardware failure).	• Check that the power supply module and the CPU module are correctly mounted/connected. • Ensure that the operating environment for the system meets the general specifications of the CPU module. • Check whether the power capacity is sufficient. • Reset the CPU module. If the same error code is displayed again, the cause is a hardware failure of the CPU module. Please consult your local Mitsubishi representative, explaining a detailed description of the problem.

Error code (Hexadecimal)	Error item	Error details	Corrective action
41C1H	File-related errors	The format information data of the specified drive (memory) is abnormal.	The file information data may be corrupted. After backing up the data in the CPU module, execute programmable controller memory format.
41C2H		File open specification data for file access is wrong.	Execute again after checking the specification data.
41C3H		Simultaneously accessible files exceeded the maximum.	Execute again after decreasing file operations.
41C4H		Simultaneously accessible files exceeded the maximum.	Execute again after decreasing file operations.
41C5H		The specified file does not exist.	Execute again after checking the file.
41C7H		The specified file or drive (memory) does not exist.	Execute again after checking the file or drive (memory).
41C8H		The size of the specified file has exceeded that of the existing file.	Execute again after checking the size of the specified file. If the error recurs after re-execution, the file information data may be corrupted. After backing up the data in the CPU module, execute programmable controller memory format.
41C9H		Access to the file sector was unsuccessful. The format information data of the target drive (memory) is abnormal.	After backing up the data in the CPU module, execute programmable controller memory format.
41CAH		Access to the file sector was unsuccessful. The format information data of the target drive (memory) is abnormal.	After backing up the data in the CPU module, execute programmable controller memory format.
41CBH		The file name is specified in a wrong method.	Execute again after checking the file name.
41CCH		The specified file or subdirectory does not exist.	Execute again after checking the name of the file and subdirectory.
41CDH		Access to the file is inhibited by the system.	Do not access the specified file.
41CEH		The file cannot be written because the specified file is read-only.	The specified file is write-protected. Execute again after checking the attribute.
41CFH		The specified drive (memory) has been used exceeding the capacity.	Execute again after checking the drive (memory) capacity.
41D0H		The specified drive (memory) has no free space. Or the number of files in the directory of the specified drive (memory) has exceeded the maximum.	• Execute again after increasing the free space of the drive (memory). • Execute again after deleting file(s) in the drive (memory).

Error code (Hexadecimal)	Error item	Error details	Corrective action
41D1H	File-related errors	• The file name is specified in a wrong method. • The SD memory card is being disabled by SM606 (SD memory card forced disable instruction).	• Execute again after checking the file name. If the error recurs after re-execution, the file information data may be corrupted. After backing up the data in the CPU module, format the CPU module memory. • Cancel the SD memory card forced disable instruction.
41D4H		The size of the specified file has exceeded that of the existing file.	Execute again after checking the size of the specified file. If the error recurs after re-execution, the file information data may be corrupted. After backing up the data in the CPU module, execute programmable controller memory format.
41D5H		The file of the same name exists.	Forcibly execute the request, or execute after changing the file name.
41D6H		The format information data of the specified drive (memory) is abnormal.	The file information data may be corrupted. After backing up the data in the CPU module, execute programmable controller memory format.
41D7H		The format information data of the specified drive (memory) is abnormal.	The file information data may be corrupted. After backing up the data in the CPU module, execute programmable controller memory format.
41D8H		The specified file is being accessed.	Execute again after a while.
41DFH		The specified drive (memory) is write-protected.	Execute again after canceling the write protect of the specified drive (memory).
41E0H		The specified drive (memory) is abnormal or does not exist.	• Execute again after checking whether the memory card has been installed. • After backing up the data, execute programmable controller memory format.
41E1H		Access to the flash ROM was unsuccessful.	• After backing up the data, execute write to PLC (Flash ROM). • Execute again after checking whether the specified drive is the Flash ROM card and whether the memory card size is correct.
41E4H		Access to the memory card was unsuccessful.	• Execute again after checking whether the memory card has been installed. • Execute again after replacing the memory card. • After backing up the data, execute programmable controller memory format.
41E7H		The format information data of the specified drive (memory) is abnormal.	The file information data may be corrupted. After backing up the data in the CPU module, execute programmable controller memory format.
41E8H		The format information data of the specified drive (memory) is abnormal.	The file information data may be corrupted. After backing up the data in the CPU module, execute programmable controller memory format.
41E9H		The specified file is being accessed.	Execute again after some time.
41EBH		The file name is specified in a wrong method.	Execute again after checking the file name.
41ECH		The file system of the specified drive (memory) is logically corrupted.	The file information data may have been corrupted. After backing up the data in the CPU module, execute programmable controller memory format.
41EDH		The specified drive (memory) does not have continuous free space. (The free space for file is sufficient but the continuous free space is insufficient.)	Execute again after deleting unnecessary files or executing programmable controller memory arrangement.
41EFH		Creation of power failure backup for the specified drive (memory) was unsuccessful.	Execute again after checking whether the memory card has been installed.

Error code (Hexadecimal)	Error item	Error details	Corrective action
$41F0_H$	File-related errors	The power failure backup data of the specified drive (memory) are corrupted.	Execute again after checking whether the memory card has been installed.
$41F1_H$		The power failure backup for the specified drive (memory) has a repair command.	Execute again after checking whether the memory card has been installed.
$41F2_H$		Operation cannot be performed since the specified drive (memory) is Flash ROM.	Execute again after checking the specified drive (memory). When performing operation for the Flash ROM, use write to PLC (Flash ROM).
$41F3_H$		The file size is larger than the following: The value to be acquired when 2byte is subtracted from 4Gbyte	Specify a smaller value for the file size when creating a file or changing the file size. Alternatively, divide the file so that each file size is smaller.
$41F4_H$		Since the operation prohibited by the system is performed, the requested processing cannot be performed.	Since the operation is prohibited by the system, the file operation is not performed.
$41F8_H$		The data is being accessed from another programming tool.	PLC write to the program memory or transfer to the backup memory is in execution. Access the data again after checking that the above-mentioned function has been completed.
$41F9_H$		The data is being accessed from another programming tool.	Another device data saving was executed during execution. Access the data again after the current one is completed.
$41FA_H$		Program was written beyond the area where the program can be executed.	Execute again after reducing either the already written program or newly written program.
$41FB_H$		The specified file is already being manipulated from the programming tool.	Execute again after the currently performed operation is completed.
$41FC_H$		An attempt was made to erase the drive (memory) being used.	The specified drive (memory) is being used and cannot be erased.
$41FD_H$		There are no data written to the Flash ROM.	Write a file by executing write to PLC (Flash ROM).
$41FE_H$		• The memory card has not been inserted. • Or the SD memory card lock switch is not slid down. • The SD memory card is being disabled by SM606 (SD memory card forced disable instruction).	• Insert or re-insert the memory card. • Slide the SD memory card lock switch down. • Cancel the SD memory card forced disable instruction.
$41FF_H$		The memory card type differs.	Check the memory card type.

Error code (Hexadecimal)	Error item	Error details	Corrective action
4200H	Online module change-related error	The requested processing cannot be performed because online module change is disabled by parameter setting.	Do not send the request where this error occurred. Alternatively, enable online module change by parameter setting and send the request again.
4201H		The requested processing cannot be performed because online module change is enabled by parameter setting.	Do not send the request where this error occurred. Alternatively, disable online module change by parameter setting and send the request again.
4202H		The requested processing cannot be performed since an online module change is being performed.	Make a request again after completion of the online module change.
4203H		The module mounted on the main base unit cannot be replaced online since the extension base unit is mounted.	Take following procedures to replace the module mounted on the main base unit. • Switch the system where the target module to be replaced is mounted to the standby system. • Turn OFF power supply of the standby system. • Replace the target module.
4204H		The specified module of the extension base unit cannot be replaced online since it is connected to the standby system.	Change the connection destination to the control system and perform the online module change again. (This corrective action can be made to the module mounted on the extension base unit only.)
4210H		The specified head I/O number is outside the range.	When making a request, specify the head I/O number of the module that will be changed online.
4211H		An online module change request is abnormal.	Check the command used to make a request.
4212H		An online module change is already being made for other equipment.	Make a request again after completion of the online module change, or continue after changing the connection path.
4213H		The specified head I/O number differs from the one registered for online module change.	When making a request, specify the head I/O number of the module being changed online.
4214H		The specified module differs from the one changed online.	Make a request again after mounting the module that is the same as the one changed online.
4215H		The specified module does not exist.	When making a request, specify the head I/O number of the module that will be changed online, or make a request again after mounting the module.
4216H		The specified module is faulty.	Make a request again after changing the module.
4217H		There is no response from the specified module.	Continue the online module changing operation.
4218H		The specified module is incompatible with online module change.	Do not make a request where an error occurred, or make a request again to the module compatible with online module change.
4219H		The specified module is mounted on the extension base unit of the type that requires no power supply module.	Do not make a request to any modules mounted on the extension base unit of the type that requires no power supply module and the main base unit.
421AH		The specified module is not in a control group.	Make a request to the CPU module that controls the specified module.
421BH		An error occurred in the setting of the initial setting parameter of the intelligent function module.	Resume processing after checking the contents of the intelligent function module buffer memory.
421CH		Cannot be executed as the parameter file has been rewritten.	Operation cannot be performed. Operation is interrupted.
421DH		System switching occurs during the online module change.	Connect the programming tool to the new control system to check the status of the online module change. According to the status of online module change, take procedures for it.

Error code (Hexadecimal)	Error item	Error details	Corrective action
$421E_H$	Online module change-related error	The information of the online module change cannot be sent to the standby system. When the system switching occurs during the online module change, the online module change may not be continued.	The tracking cable may be faulty or the standby system may have an error. • Check the mounting status of the tracking cable or replace the tracking cable. • Check the status of the standby system. When a stop error was detected by the standby system, perform troubleshooting.
$421F_H$		The module mounted on the extension base unit cannot be replaced online when the connection destination is set to the standby system in the separate mode.	• Set the connection destination of a programming tool to the present control system. • Perform the online module change to the module mounted on the extension base unit again.
4240_H	Redundant system-related error	Any of the following unsupported operations was executed for the standby system. • Operation mode change • System switching • Memory copy from control system to standby system	Execute the operation again after changing the transfer setup to the control system.
4241_H		Communication cannot be made since the standby system has been powered off or reset or is in a user watchdog timer error or CPU module hardware fault status.	Request communication after powering on the standby system or setting its Reset switch to the neutral position.
4242_H		Communication with the standby system cannot be made since the tracking cable is faulty or disconnected.	Cannot be executed since the tracking cable is disconnected or faulty. Execute again after checking the tracking cable for disconnection or changing it for a normal one.
4243_H		The command cannot be executed since the standby system is in stop error.	Execute again after removing the stop error of the standby system.
4244_H		The command cannot be executed since the operation status differs from that of the standby system.	Execute again after placing the standby system in the same operation status (RUN/STOP) as the control system.
4245_H		Other system CPU module status error	Check that the other system CPU module has normally started up and that the tracking cable is connected.
4246_H		The command cannot be executed since operation mode (separate/backup) change or system (control/standby system) switching is being executed.	Execute again after the operation mode change or system switching being executed is completed.
4247_H		Memory copy from control system to standby system is already being executed.	Execute again after memory copy from control system to standby system is completed. Check the following and take corrective action. • Is SM1596 of the control system or standby system ON? (ON: Memory copy being executed) Execute again after SM1596 has turned OFF since it is turned OFF by the system on completion of memory copy. • Is SM1597 of the control system ON? (ON: Memory copy completed) Execute again after turning OFF SM1597 of the control system.
4248_H		• Communication was made during system switching. • The system specified in the transfer setup (request destination module I/O number) does not exist.	• Execute again after system switching. • After checking whether the specified system exists or not, restart communication.

Error code (Hexadecimal)	Error item	Error details	Corrective action
4249H	Redundant system-related error	The redundant system is not established. (Control system/standby system or System A/ System B not yet definite)	• Normally start the system as the redundant system. (Make communication again after establishing the system.) • Execute again after changing the transfer setup (request destination module I/O number) to "No settings have been made" (03FFH).
424AH		The command that could not be processed was executed when the transfer setup (request destination module I/O number) is Control system/Standby system/System A/ System B.	Execute again after changing the transfer setup (request destination module I/O number) to "No settings have been made" (03FFH).
424BH		The command cannot be executed since system switching is inhibited by the manual system switching enable flag (SM1592).	Manual system switching is inhibited by the manual system switching enable flag (SM1592). Execute again after turning ON SM1592.
424CH		The specified command cannot be executed during online program change operation.	Execute again after the online program change operation is finished.
424DH		The transfer setup or function unavailable for the debug mode was used.	• Execute again after changing to the backup mode. • Execute again after changing the transfer setup (request destination module I/O number) to System A or control system.
424EH		The control system/standby system specifying method is not supported.	This function cannot be executed since it is not supported.
424FH		System switching was executed by the other condition during execution of system switching by the programming tool.	Although system switching was executed from the programming tool, system switching was executed first by the other condition. Check the system for any problem and execute the operation again as necessary.
4250H		Sum check error occurred in tracking communication.	Execute communication again after changing the tracking cable. If the same error recurs after the tracking cable is changed, the cause is the hardware fault of the CPU module. (Please consult your local Mitsubishi representative, explaining a detailed description of the problem.)
4251H		The command cannot be executed in the separate mode.	Execute again after changing to the backup mode.
4252H		System switching was not executed since an error occurred in the redundant system compatible network module of the standby system.	By monitoring SD1690 (other system network module No. that issued system switching request), identify the faulty redundant-compatible intelligent module of the standby system, then remove the module fault, and execute again.
4253H		Since a communication error or system switching occurred during online program change to the control system CPU module, online program change to the standby CPU module cannot be executed.	Since a communication error or system switching occurred during execution of online program change to the control system CPU module, online program change redundant tracking was suspended. Execute online program change again after confirming that communication with the control system CPU module and standby system CPU module can be normally made. If it takes time for the communication between the programming tool and either the control system CPU module or standby system CPU module, change the value in SD1710 (standby system online start waiting time) so that errors may be avoided.

Error code (Hexadecimal)	Error item	Error details	Corrective action
4254_H	Redundant system-related error	The command cannot be executed since an error was detected in the tracking communication hardware.	The tracking cable may not be connected correctly, or the tracking communication hardware of the CPU module may be faulty. Check the connection status of the tracking cable. If the condition is not restored to normal after the cable connection status is corrected, the possible cause is the hardware fault of the CPU module.
4255_H		The command cannot be executed since tracking communication is being prepared.	Tracking communication is being prepared when it is connected. Execute the operation again after a while (about 1 second).
4256_H		The command cannot be executed since a time-out error occurred in tracking communication.	The tracking cable may not be connected correctly, or the tracking communication hardware of the CPU module may be faulty. Check the connection status of the tracking cable. If the condition is not restored to normal after the cable connection status is corrected, the possible cause is the hardware fault of the CPU module.
4257_H		The command cannot be executed since the host system CPU module is in a watchdog timer error or CPU module hardware fault status.	The command cannot be executed since the host system is in a watchdog timer error or CPU module hardware fault status. Execute again after checking the host system status.
4258_H		Operation mode being changed (from backup mode to separate mode)	Execute again after completing the operation mode change by changing the status from STOP to RUN using the RUN/STOP switch of the CPU module whose RUN LED is flickering or remote operation.
4259_H		Operation mode is being changed with another programming tool in the communication route different from the one currently used.	Execute again in the same communication route as the one where the operation mode change was executed.
$425B_H$		Although the communication was made via the intelligent function module mounted on the extension base unit, the combination of the connection destination specification (Redundant CPU specification) and the command is unsupported.	Change the combination of the connection destination specification and the command to the supported combination.
$425C_H$		System switching cannot be made since the module mounted on the extension base unit is being replaced online.	Switch systems after the online module change has been completed.
$425D_H$		Operation mode cannot be changed since the module mounted on the extension base unit is being replaced online.	Change the operation mode after the online module change has been completed.
4270_H	Data logging[*1]	Data logging is being performed (logging, saving the logging data, completing, on hold, or in error) with a different memory.	Register the data logging to the memory where a data logging is being performed. Alternatively, stop the data logging being performed and register again.
4271_H		The specified data logging is already being performed (logging, saving the logging data, completing, on hold, or in error).	Stop the data logging. Alternatively, write, delete, or register to the setting number where no data logging is being performed.
4272_H		The trigger logging with "Device" specified as a trigger condition is being performed (logging, saving the logging data, completing, on hold, or in error).	Change the trigger condition. Alternatively, stop the trigger logging being performed (logging, saving the logging data, completing, on hold, or in error) with "Device" specified as the trigger condition, and then register.
4273_H		The data logging function cannot be executed because the sampling trace function is being performed.	Hold the sampling trace to register the data logging.

Error code (Hexadecimal)	Error item	Error details	Corrective action
4274H	Data logging*1	Trigger loggings have registered exceeding the number of trigger loggings collectable in the data logging buffer.	• Increase the capacity of the data logging buffer. • Reduce the number of records set for the trigger logging.
4275H		Auto logging is being performed.	After the auto logging, replace the SD memory card and execute again.
4276H		The specified command cannot be executed because the data logging function is being performed (i.e. logging, saving the logging data, completing, on hold, or in error).	Stop the data logging and then execute the command.
4277H		The number of stored files has exceeded the value set in advance.	The number of files stored in the storage destination memory has exceeded the setting value. Delete files or change the storage destination and then register.
4278H		The number of stored files has reached to the maximum.	The number of stored files has reached to the maximum of FFFFFFFF. Delete files or change the storage destination and then register.
427AH		Common setting file does not exist.	• Write the common settings to the target memory. • Register the data logging to the memory where the common settings are stored.
427BH		A data logging is being performed (logging in execution, logging data are being saved, completing, on hold, or in error) in the same file storage destination.	Stop the data logging destined for the same storage and then register. Alternatively, change the storage destination of the file and then register.
427CH		• Data logging file transfer function settings are mistaken. • A data logging setting file is corrupt.	• Check settings of the data logging file transfer function. • Write the settings with LCPU Logging Configuration Tool again.
427DH		• A data logging file to be transferred was deleted during transfer by file switching. • Reading of a data logging file failed. • A data logging file was accessed while the SD memory card has been forcibly set to be disabled.	• Correct "File switching timing" and "Number of saved files" in the "Save" screen. • Check that data logging files are not deleted using LCPU Logging Configuration Tool. • Check that an SD memory card is inserted. • When the SD memory card lock switch is on the upper position, slide it down, and check that the SD LED turns on. • If the SD memory card has been forcibly disabled, cancel the setting.
427EH		• Since a file was switched before file transfer, a new data logging file is saved. • Since a file was switched during a retry, a new data logging file is saved.	• Correct "File switching timing" in the "Save" screen to reduce the frequency of file switching. • Correct the number of sampled data and "Sampling interval" in the "Sampling" screen to reduce the number of sampled data. • Correct the settings in the "CSV output" screen to reduce the file size. • Check connection with the FTP server.
427FH		File transfer failed due to the stop operation of file transfer.	Check that data logging is not started from LCPU Logging Configuration Tool before file transfer is completed.
4280H		A file transfer test was executed from another LCPU Logging Configuration Tool during execution of a file transfer test.	Execute the file transfer test again after the ongoing test is completed.

Error code (Hexadecimal)	Error item	Error details	Corrective action
4330H	Maintenance	The processing is being executed from the same source.	Ensure that the CPU module change function (backup/restoration) with SD memory card is not being performed from the same source, and then execute again.
4332H		The specified command cannot be executed because the CPU module change function (backup/restoration) with SD memory card is being performed.	Finish the CPU module change function (backup/restoration) with SD memory card, and then execute again.
4333H		Not ready for backup.	Complete the preparation for backup and then execute again.
4334H		Backup file does not exist.	Insert a memory card with a backup file stored and then execute again.
4335H		The specified function cannot be executed because latch data are being backed up.	Complete the latch data backup function and then execute again.
4336H		The specified function cannot be executed because a FTP client is being FTP-connected to the CPU module via the built-in Ethernet port.	Disconnect all FTP connections to the CPU module and then execute again.
4337H		Module error collection file does not exist.	Power off and then on or reset the CPU module and then execute again.
4338H		Readout of module error collection data has been failed when opening the screen to display the data or when updating the data.	• Retry the operation. • Increase the number of module error collections to be stored.
4339H		Readout of module error collection data was failed because the function is disabled by parameter settings.	Enable the module error collection function by parameter settings and then execute again.
4400H	Security	The file protected by a password 32 has been opened without using the password.	Configure a correct password, authorize it, and then access.
4401H		• Password authorization for the file password 32 has failed in accessing when it is required for reading. • The password format for the password 32 is incorrect.	• Configure a correct password for reading, authorize it, and then access. • Access the file with the method that is applicable to the file password 32.
4402H		• Password authorization for the file password 32 has failed in accessing when it is required for writing. • The password format for the password 32 is incorrect.	• Configure a correct password for writing, authorize it, and then access. • Access the file with the method that is applicable to the file password 32.
4403H		Both passwords for reading and for writing that are set upon Create, Change, Delete, or Disable do not match the previous ones.	Configure a correct password for both reading and for writing, authorize them, and then access.
4404H		A file error was detected before or after performing Create, Change, or Delete.	• Format the drive including the target file by formatting the CPU module memory. • Write the target file to the CPU module again, and then register or cancel the file password 32 again.

Error code (Hexadecimal)	Error item	Error details	Corrective action
4900H	Other errors	After the values in "Device" of PLC Parameter of the CPU module, where the simple PLC communication function had been set, were changed, the parameters were written to the CPU module from the "Write to PLC" window.	Power off and on the CPU module. Or reset the CPU module.
4901H		The file register used for the simple PLC communication function became out of range due to the block number change of the file register.	Correct the device number of the file register. And power off and on the CPU module or reset the module.
4902H		The communication was stopped because an error occurred at the other setting No., for which the same destination device of the corresponding setting No. had been set.	Remove the error cause.
4903H		The communication was stopped because a stop error occurred in the CPU module where the simple PLC communication function had been set.	Power off and on the CPU module. Or reset the CPU module.
4A00H	Link-related error	• Access to the specified station cannot be made since the routing parameters are not set to the start source CPU module and/or relay CPU module. • For routing via a multiple CPU system, the control CPU of the network module for data routing has not started. • When System A/System B is not yet identified in a redundant system configuration, communication was made with the other station via the network module.	• Set to the related stations the routing parameters for access to the specified station. • Retry after a while, or start communication after confirming that the system for data routing has started. • In a redundant system configuration, connect the tracking cable, start System A/System B normally, and then restart communication.
4A01H		• The network of the No. set to the routing parameters does not exist. • The specified CPU module cannot be communicated through the network that is not supported by the CPU module.	• Check and correct the routing parameters set to the related stations. • Set communication through the network that is supported by the specified CPU module.
4A02H		Access to the specified station cannot be made.	• Check the network module and the data link module for error or check that the modules are not in offline. • Check to see if the network number/PC number setting has no mistake.
4A03H		A request for network test was issued.	Check the request data of the MC protocol, etc.
4B00H	Target-related error	An error occurred in the access destination or relay station, or the specified transfer setup (request destination module I/O number) is illegal.	• Take corrective action after checking the error that occurred at the specified access destination or the relay station to the accessed station. • Check the transfer setup (request destination module I/O number or programmable controller number) in the request data of the MC protocol, etc.
4B01H		The target is not the No. 1 CPU of the multiple CPU system.	Execute the request for the No. 1 CPU of the multiple CPU system.
4B02H		The request is not addressed to the CPU module.	Perform operation for the module that can execute the specified function.
4B03H		• The specified route is not supported by the specified CPU module version. • The communication target CPU module is not mounted.	• Check whether the specified route is supported or not. • Check whether the CPU module is mounted/ connected or not.
4B04H		The specified transfer setup (request destination module I/O number) is not supported.	In the target setup, an illegal value is set as the head I/O number of the target module.

Error code (Hexadecimal)	Error item	Error details	Corrective action
$4C00_H$	Multiple CPU-related error	The specified device is unavailable for the motion CPU or outside the device range.	Check the request data contents.
$4C08_H$		There are a total of 33 or more DDWR and DDRD requests.	Execute again after reducing the number of DDWR and DDRD requests to be executed simultaneously.
$4C09_H$		The specification of the requested CPU module No. is illegal.	Check the request data contents.

*1 To check logging status, use LCPU Logging Configuration Tool. For operation, refer to the following.

MELSEC-L CPU Module User's Manual (Data Logging Function)

Appendix 2 Special Relay List

The special relay (SM) is an internal relay whose application is fixed in the programmable controller. For this reason, the special relay cannot be used in the same way as other internal relays are used in sequence programs. However, the bit of the special relay can be turned on or off as needed to control the CPU module.
The following table shows how to read the special relay list.

Item	Description
Number	Special relay number
Name	Special relay name
Meaning	Contents of special relay
Explanation	Detailed description of special relay
Set by (When Set)	Set side and set timing of special relay <Set by> • S: Set by system • U: Set by user (using a program, programming tool, GOT, or test operation from other external devices) • S/U: Set by both system and user <When Set> The following shows the set timing when the special relay is set by system. • Every END processing: Set during every END processing • Initial: Set during initial processing (after power-on or status change from STOP to RUN) • Status change: Set when the operating status is changed • Error: Set if an error occurs • Instruction execution: Set when an instruction is executed • Request: Set when requested by a user (using the special relay) • When system is switched: Set when the system is switched (between the control system and the standby system)
Corresponding CPU	CPU module supporting the special relay • QCPU: All the Q series CPU modules • Q00J/Q00/Q01: Basic model QCPU • Qn(H): High Performance model QCPU • QnPH: Process CPU • QnPRH: Redundant CPU • QnU: Universal model QCPU • Q00UJ/Q00U/Q01U: Q00UJCPU, Q00UCPU, and Q01UCPU • LCPU: All the L series CPU modules • CPU module model: Only the specified model (Example: Q02UCPU, L26CPU-BT)
Corresponding ACPU M9□□□	• Special relay (M9□□□) supported by the ACPU ("M9□□□ format change" indicates the one whose application has been changed. Incompatible with the Q00J/Q00/Q01 and QnPRH.) • "New" indicates the one added for the QCPU or LCPU.

For details on the following items, refer to the following.

- For network related items: 📖 Manuals for each network module
- For SFC programs: 📖 MELSEC-Q/L/QnA Programming Manual (SFC)

Point

Do not change the values of special relay set by system using a program or by test operation.
Doing so may result in system down or communication failure.

(1) Diagnostic information

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU M9□□□	Corresponding CPU
SM0	Diagnostic errors	OFF : No error ON : Error	• This relay turns on if an error is detected by diagnostics. (Also turns on if an error is detected by an annunciator or the CHK instruction.) • This relay remains on even after the system returns to normal.	S (Error)	New	Qn(H) QnPH QnPRH
			• This relay turns on if an error is detected by diagnostics. (Also turns on if an error is detected by an annunciator.) • This relay remains on even after the system returns to normal.			Q00J/Q00/Q01 QnU LCPU
SM1	Self-diagnostic error	OFF : No self-diagnosis errors ON : Self-diagnosis	• This relay turns on if an error is detected by self-diagnostics. (Remains off if an error is detected by an annunciator or the CHK instruction.) • This relay remains on even after the system returns to normal.		M9008	Qn(H) QnPH QnPRH
			• This relay turns on if an error is detected by self-diagnostics. (Remains off if an error is detected by an annunciator.) • This relay remains on even after the system returns to normal.		New	Q00J/Q00/Q01 QnU LCPU
SM5	Error common information	OFF : No error common information ON : Error common information	This relay turns on if error common information data exists when SM0 turns on.			QCPU LCPU
SM16	Error individual information	OFF : No error individual information ON : Error individual information	This relay turns on if error individual information data exists when SM0 turns on.			
SM50	Error reset	OFF→ON: Error reset	Conducts error reset operation	U		
SM51	Battery low latch	OFF : Normal ON : Battery low	• This relay turns on if the battery voltage of the CPU module or the memory card drops below the rated value. • This relay remains on even after the battery voltage returns to normal. • Synchronizes with the BAT. LED.	S (Error)	M9007	Qn(H) QnPH QnPRH QnU LCPU
			• This relay turns on if the battery voltage of the CPU module drops below the rated value. • This relay remains on even after the battery voltage returns to normal. • Synchronous with the ERR. LED.		New	Q00J/Q00/Q01
SM52	Battery low	OFF : Normal ON : Battery low	• This relay has the same specifications as those of SM51 except that this relay turns off after the battery voltage returns to normal.		M9006	QCPU LCPU

Number	Name	Meaning	Explanation		Set by (When Set)	Corresponding ACPU M9□□□	Corresponding CPU
SM53	AC/DC DOWN detection	OFF : AC/DC DOWN not detected ON : AC/DC DOWN detected	This relay turns on if a momentary power failure within 20ms occurs during use of an AC power supply module. This relay is reset when the CPU module is powered off and then on.		S (Error)	M9005	QCPU
			This relay turns on if a momentary power failure within 10ms occurs during use of an AC power supply module. This relay is reset when the CPU module is powered off and then on.				LCPU
			This relay turns on if a momentary power failure within 10ms occurs during use of a DC power supply module. This relay is reset when the CPU module is powered off and then on.				QCPU LCPU
SM56	Operation error	OFF : Normal ON : Operation error	• This relay turns on if an operation error occurs. • This relay remains on even after the system returns to normal.			M9011	
SM60	Blown fuse detection	OFF : Normal ON : Module with blown fuse	• Turns on if there is at least one output module whose fuse has blown. • This relay remains on even after the system returns to normal. • Output modules on remote I/O stations are also checked.			M9000	QCPU
SM61	I/O module verify error	OFF : Normal ON : Error	• This relay turns on if the status of the I/O module differs from that registered at power-on. • This relay remains on even after the system returns to normal. • I/O modules on remote I/O stations are also checked.			M9002	QCPU LCPU
SM62	Annunciator detection	OFF : Not detected ON : Detected	This relay turns on if at least one annunciator (F) turns on.		S (Instruction execution)	M9009	
SM80	CHK detection	OFF : Not detected ON : Detected	• This relay turns on if an error is detected by the CHK instruction. • This relay remains on even after the system returns to normal.			New	Qn(H) QnPH QnPRH
SM84	Error clear	OFF→ON: Error clear	This relay is turned on to clear an error set to SD84 and SD85.		U		LCPU
SM90	Startup of monitoring timer for step transition (Enabled only when SFC program exists)	OFF : Not started (monitoring timer reset) ON : Started (monitoring timer started)	Corresponds to SD90	• Goes ON when measurement of step transition monitoring timer is commenced. • Resets step transition monitoring timer when it goes OFF.		M9108	Qn(H) QnPH QnPRH
SM91			Corresponds to SD91			M9109	
SM92			Corresponds to SD92			M9110	
SM93			Corresponds to SD93			M9111	
SM94			Corresponds to SD94			M9112	
SM95			Corresponds to SD95			M9113	
SM96			Corresponds to SD96			M9114	
SM97			Corresponds to SD97			New	
SM98			Corresponds to SD98				
SM99			Corresponds to SD99				

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corresponding CPU
SM100	Serial communication function using flag	OFF : Serial communication function is not used. ON : Serial communication function is used.	Stores the information of the serial communication setting configured in the PLC parameter dialog box.	S (Power-on or reset)	New	Q00/Q01 QnU*2
SM101	Communication protocol status flag	OFF : Programming tool ON : MC protocol communication device	This relay stores whether a device communicating via RS-232 interface is a programming tool or MC protocol communication device.	S (RS232 communication)		Q00/Q01 QnU*2
		Communication with programming tool	This relay is always off. (communication with a programming tool)			LCPU
SM110	Protocol error	OFF : Normal ON : Abnormal	• Turns on if a failed protocol was used to make communication in the serial communication function. • This relay remains on even after the protocol returns to normal.	S (Error)		Q00/Q01 QnU*2
SM111	Communication status	OFF : Normal ON : Abnormal	• Turns on if the mode used to make communication was different from the mode set in the serial communication function. • This relay remains on even after the system returns to normal.			
SM112	Error information clear	ON : Cleared	This relay is turned on to clear error codes stored in SM110, SM111, SD110, and SD111. The error codes are cleared when this relay is turned on.	U		
SM113	Overrun error	OFF : Normal ON : Abnormal	This relay turns on if an overrun error occurs in communication using the serial communication function.	S (Error)		
SM114	Parity error	OFF : Normal ON : Abnormal	This relay turns on if a parity error occurs in communication using the serial communication function.			
SM115	Framing error	OFF : Normal ON : Abnormal	This relay turns on if a flaming error occurs in communication using the serial communication function.			
SM165	Program memory batch transfer execution status	OFF : Completed ON : Not being executed or Not completed	• This relay turns on when data are written to the program cache memory. • This relay turns off when program memory batch transfer is completed. • This relay remains on when data written to the program cache memory are not batch-transferred to the program memory.	S (Status change)		QnU*1 LCPU

*1 The relevant modules are as follows:
- The Universal model QCPU whose serial number (first five digits) is "10012" or later.
- Q13UDHCPU, Q26UDHCPU

*2 The following lists the relevant modules having RS-232 connector.
- Universal model QCPU whose serial number (first five digits) is "13062" or later (Q02UCPU whose serial number (first five digits) is "10102" or later
- Q00UJCPU, Q00UCPU, Q01UCPU

(2) System information

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU M9□□□	Corresponding CPU
SM202	LED OFF command	OFF→ON : LED OFF	When this relay turns on from off, the LED corresponding to each bit in SD202 turns off.	U	New	Qn(H) QnPH QnPRH QnU LCPU
SM203	STOP contact	STOP status	This relay is on when the module is in the STOP status.	S (Status change)	M9042	QCPU LCPU
SM204	PAUSE contact	PAUSE status	This relay is on when the module is in the PAUSE status.		M9041	
SM206	PAUSE enable coil	OFF : PAUSE disabled ON : PAUSE enabled	PAUSE status is entered if this relay is ON when the PAUSE contact goes ON	U	M9040	
SM210	Clock data set request	OFF : Ignored ON : Set request	Clock data stored in SD210 to SD213 are written to the CPU module after the END instruction execution in the scan where this relay is turned on.		M9025	
SM211	Clock data error	OFF : No error ON : Error	This relay turns on if an error occurs in the clock data (SD210 to SD213), and is off while there is no error.	S (Request)	M9026	
SM213	Clock data read request	OFF : Ignored ON : Read request	This relay is turned on to read clock data and store them as BCD values into SD210 to SD213.	U	M9028	
SM220	CPU No.1 preparation completed	OFF : CPU No.1 preparation uncompleted ON : CPU No.1 preparation completed	Turns on when an access to CPU No.1 from another CPU becomes possible after power-on or reset operation. This relay is used as an interlock for accessing CPU No.1 when the multiple CPU synchronous setting is set to asynchronous.	S (When status changed)	New	QCPU
SM221	CPU No.2 preparation completed	OFF : CPU No.2 preparation uncompleted ON : CPU No.2 preparation completed	Turns on when an access to CPU No.2 from another CPU becomes possible after power-on or reset operation. This relay is used as an interlock for accessing CPU No.2 when the multiple CPU synchronous setting is set to asynchronous.			QnU[*7]
SM222	CPU No.3 preparation completed	OFF : CPU No.3 preparation uncompleted ON : CPU No.3 preparation completed	Turns on when an access to CPU No.3 from another CPU becomes possible after power-on or reset operation. This relay is used as an interlock for accessing CPU No.3 when the multiple CPU synchronous setting is set to asynchronous.			
SM223	CPU No.4 preparation completed	OFF : CPU No.4 preparation uncompleted ON : CPU No.4 preparation completed	Turns on when an access to CPU No.4 from another CPU becomes possible after power-on or reset operation. This relay is used as an interlock for accessing CPU No.4 when the multiple CPU synchronous setting is set to asynchronous.			QnU[*5]
SM235	Online module change flag	OFF : Online module change is not in progress ON : Online module change in progress	This relay is on during online module change. (for host CPU)	S (During online module change)		QnPH
SM236	Online module change complete flag	OFF : Online module change incomplete ON : Online module change complete	• This relay is on only for one scan after completion of online module change. • This relay can be used only in the scan execution type program. (for host CPU)	S (When online module change is complete)		

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corre-sponding CPU
SM237	Device range check inhibit flag	OFF : Device range checked ON : Device range not checked	Selects whether to check a device range during execution of the BMOV, FMOV or DFMOV instruction (only when the conditions for subset processing are established).	U		QnU[*6] LCPU
SM240	No. 1 CPU reset flag	OFF : No. 1 CPU reset cancel ON : No. 1 CPU resetting	• Turns off when CPU No.1 is reset. • Turns on while CPU No.1 is being reset (including the case where the CPU module is removed from the base unit). The other CPUs are also put in reset status.	S (Status change)	New	Q00/Q01[*1] Qn(H)[*1] QnPH QnU[*7]
	No. 1 CPU reset flag	Reset status	• This relay is always off. (reset status)			LCPU
SM241	No. 2 CPU reset flag	OFF : No. 2 CPU reset cancel ON : No. 2 CPU resetting	• Turns off when CPU No.2 is reset. • Turns on while CPU No.2 is being reset (including the case where the CPU module is removed from the base unit). "MULTI CPU DOWN" (error code: 7000) is detected on the other CPUs.			Q00/Q01[*1] Qn(H)[*1] QnPH QnU[*7]
SM242	No. 3 CPU reset flag	OFF : No. 3 CPU reset cancel ON : No. 3 CPU resetting	• Turns off when CPU No.3 is reset. • Turns on while CPU No.3 is being reset (including the case where the CPU module is removed from the base unit). "MULTI CPU DOWN" (error code: 7000) is detected on the other CPUs.			
SM243	No. 4 CPU reset flag	OFF : No. 4 CPU reset cancel ON : No. 4 CPU resetting	• Turns off when CPU No.4 is reset. • Turns on while CPU No.4 is being reset (including the case where the CPU module is removed from the base unit). "MULTI CPU DOWN" (error code: 7000) is detected on the other CPUs.			Qn(H)[*1] QnPH QnU[*5]
SM244	No. 1 CPU error flag	OFF : No. 1 CPU normal ON : No. 1 CPU during stop error	• This relay is off when CPU No.1 is normal (including the case where a continuation error has occurred). • This relay is on when CPU No.1 has a stop error.			Q00/Q01[*1] Qn(H)[*1] QnPH QnU[*7] LCPU
SM245	No. 2 CPU error flag	OFF : No. 2 CPU normal ON : No. 2 CPU during stop error	• This relay is on when CPU No.2 is normal (including the case where a continuation error has occurred). • This relay is on when CPU No.2 has a stop error.			Q00/Q01[*1] Qn(H)[*1] QnPH QnU[*7]
SM246	No. 3 CPU error flag	OFF : No. 3 CPU normal ON : No. 3 CPU during stop error	• This relay is off when CPU No.3 is normal (including the case where a continuation error has occurred). • This relay is on when CPU No.3 has a stop error.			
SM247	No. 4 CPU error flag	OFF : No. 4 CPU normal ON : No. 4 CPU during stop error	• This relay is off when CPU No.4 is normal (including the case where a continuation error has occurred). • This relay is on when CPU No.4 has a stop error.			Qn(H)[*1] QnPH QnU[*5]

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corre-sponding CPU
SM250	Max. loaded I/O read	OFF : Ignored ON : Read	When this relay turns on from off, the largest I/O number among those of the mounted modules is read into SD250.	U	New	Qn(H) QnPH QnPRH
SM254	All stations refresh command	OFF : Refresh arrival station ON : Refresh all stations	• Effective for the batch refresh (also effective for the low speed cyclic) • Designate whether to receive arrival stations only or to receive all slave stations in the MELSECNET/H.			
			• Effective for the batch refresh (also effective for the low speed cyclic) • Designate whether to receive arrival stations only or to receive all slave stations in the CC-Link IE Controller Network .			Qn(H)*2 QnPH QnPRH
			• Effective for the batch refresh (also effective for the low speed cyclic) • Specify whether to receive only arrival station or all stations in the MELSECNET/H or CC-Link IE Controller Network.			QnU
SM255	MELSECNET/10, MELSECNET/H module 1 information	OFF : Operative network ON : Standby network	Turns on when it belongs to the standby network. (If no specification has been made, it is set to the operative network.)	S (Initial)		Qn(H) QnPH QnPRH
SM256		OFF : Reads ON : Does not read	For refresh from the network module to the CPU module, set whether to read data from the network module to a device (such as B and W) or not.	U		
SM257		OFF : Writes ON : Does not write	For refresh from the CPU module to the network module, set whether to write data in a device (such as B and W) to the network module or not.			
SM260	MELSECNET/10, MELSECNET/H module 2 information	OFF : Operative network ON : Standby network	Turns on when it belongs to the standby network. (If no specification has been made, it is set to the operative network.)	S (Initial)		
SM261		OFF : Reads ON : Does not read	For refresh from the network module to the CPU module, set whether to read data from the network module to a device (such as B and W) or not.	U		
SM262		OFF : Writes ON : Does not write	For refresh from the CPU module to the network module, set whether to write data in a device (such as B and W) to the network module or not.			
SM265	MELSECNET/10, MELSECNET/H module 3 information	OFF : Operative network ON : Standby network	Turns on when it belongs to the standby network. (If no specification has been made, it is set to the operative network.)	S (Initial)		
SM266		OFF : Reads ON : Does not read	For refresh from the network module to the CPU module, set whether to read data from the network module to a device (such as B and W) or not.	U		
SM267		OFF : Writes ON : Does not write	For refresh from the CPU module to the network module, set whether to write data in a device (such as B and W) to the network module or not.			
SM270	MELSECNET/10, MELSECNET/H module 4 information	OFF : Operative network ON : Standby network	Turns on when it belongs to the standby network. (If no specification has been made, it is set to the operative network.)	S (Initial)		
SM271		OFF : Reads ON : Does not read	For refresh from the network module to the CPU module, set whether to read data from the network module to a device (such as B and W) or not.	U		
SM272		OFF : Writes ON : Does not write	For refresh from the CPU module to the network module, set whether to write data in a device (such as B and W) to the network module or not.			
SM280	CC-Link error	OFF : Normal ON : Error	Turns on if a CC-Link error is detected in any of the CC-Link modules installed. Turns off when the condition returns to normal.	S (Status change)		

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corre-sponding CPU
SM310	RS-232 adapter	OFF : Not connected ON :Connected	This relay stores information on whether an RS-232 adapter is connected or not. Connection of an RS-232 adapter is checked at the time of initialization, and if it is connected, this relay turns on. The on/off status set during initialization is held until the power is turned off and on again or the system is reset.	S (Initial)		LCPU
SM315	Communication reserved time delay enable/ disable flag	OFF : Without delay ON : With delay	• This flag is enabled when the time reserved for communication processing is set in SD315. • Turns ON to delay the END processing by the time set in SD315 in order to perform communication processing. (The scan time increases by the period set in SD315.) • Turns OFF to perform the END processing without a delay of the time set in SD315 when there is no communication processing. (Defaults to OFF)	U	New	Q00J/Q00/ Q01
SM319	Automatic CC-Link start	OFF : Not activated ON : Activated	• This relay indicates whether the CC-Link module is started and all the data are refreshed by the automatic CC-Link start function. • This relay is on when all the data are refreshed by the automatic CC-Link start function. • Then the automatic CC-Link start function is not activated, or when the refresh device range is insufficient, this relay is turned off. (If the refresh device range set for the automatic CC-Link start function is insufficient, all of the refresh is stopped.)	S (Initial processing and status change)		LCPU
SM320	Presence/ absence of SFC program	OFF : SFC program absent ON : SFC program present	• This relay is on if an SFC program is registered. • This relay turns off if no SFC program is registered.	S (Initial)	M9100	Q00J/Q00/ Q01*1 Qn(H) QnPH QnPRH QnU LCPU
SM321	Start/stop SFC program	OFF : SFC program not executed (stop) ON : SFC program executed (start)	• The same value as in SM320 is set as the initial value. (This relay turns on when an SFC program is registered.) • Turning off this relay stops SFC program execution. • Turning on this relay restarts SFC program execution.	S (Initial)/U	M9101 format change	
SM322	SFC program start status	OFF : Initial start ON : Resume start	In the SFC setting of the PLC Parameter dialog box, Initial start is set for the SFC program start mode. • At initial start: OFF • At continued start: ON		M9102 format change	
SM323	Presence/ absence of continuous transition for entire block	OFF : Continuous transition not effective ON : Continuous transition effective	Set the presence/absence of continuous transition for the block where "Continuous transition bit" of the SFC data device has not been set.	U	M9103	
SM324	Continuous transition prevention flag	OFF : When transition is executed ON : When no transition	• This relay is off while the module is in the continuous transition mode or during continuous transition, and is on when continuous transition is not executed. • This relay is always on while the CPU module is operating not in the continuous transition mode.	S (Instruction execution)	M9104	
				S (Status change)	New	Q00J/Q00/ Q01*1 Qn(H) QnPH QnPRH QnU

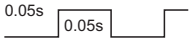
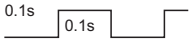
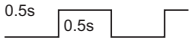
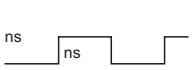
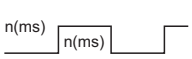
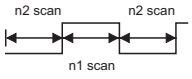
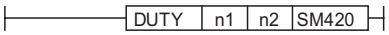
Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corre-sponding CPU
SM325	Output mode at block stop	OFF : OFF ON : Preserves	Select whether the coil outputs of the active steps are held or not at the time of a block stop. • The initial value is set to off when the output mode at a block stop is off in the parameter setting, and it is set to on when the coil outputs are set to be held. • When this relay is turned off, all coil outputs are turned off. • When this relay is turned on, the coil output state is held.	S (Initial)/U	M9196	Q00J/Q00/ Q01*1 Qn(H) QnPH QnPRH QnU LCPU
SM326	SFC device clear mode	OFF : Clear device ON : Preserves device	Select the device status at the time of switching from STOP to program write, and then to RUN. (All devices except the step relay)	U	New	
SM327	Output during end step execution	OFF : Hold step output turned OFF (cleared) ON : Hold step output held	If this relay is off, the coil output turns off when the step held after transition (SC, SE, or ST) reaches the end step.	S (Initial)/U		Qn(H) QnPH QnPRH QnU LCPU
				U		Q00J/Q00/ Q01*1
SM328	Clear processing mode when end step is reached	OFF : Clear processing is performed. ON : Clear processing is not performed.	Select whether clear processing will be performed or not if active steps other than the ones being held exist in the block when the end step is reached. • When this relay turns OFF, all active steps are forcibly terminated to terminate the block. • When this relay is ON, the execution of the block is continued as-is. • If active steps other than the ones being held do not exist when the end step is reached, the steps being held are terminated to terminate the block.			Q00J/Q00/ Q01*1 QnU LCPU
SM329	Online change (inactive block) status flag	OFF : Not executed ON : Being executed	This relay is on while online change (inactive block) is executed.	S (Status change)		QnU*8
SM330	Operation mode for low speed execution type program	OFF : Asynchronous mode ON : Synchronous mode	Select whether the low speed execution type program will be executed in the asynchronous mode or in the synchronous mode. • Asynchronous mode (this relay is turned off.) The operation of the low-speed execution type program is performed continuously within an excess time. • Synchronous mode (this relay is turned on.) The operation of the low-speed execution type program is not performed continuously, but performed from the next scan, even if there is excess time.	U		Qn(H) QnPH
SM331	Normal SFC program execution status	OFF : Not executed ON : Being executed	• This relay stores the information on whether the normal SFC program is in execution or not. • Used as an interlock for execution of the SFC control instruction.	S (Status change)		Qn(H)*3 QnPH*4 QnPRH
SM332	Program execution management SFC program execution status	OFF : Not executed ON : Being executed	• This relay stores the information on whether the SFC program for program execution management is in execution or not. • Used as an interlock for execution of the SFC control instruction.			
SM390	Access execution flag	ON indicates completion of intelligent function module access	• This relay stores the status information on the intelligent function module access instruction that was just executed. (This data is overwritten if the intelligent function module access instruction is executed again.) • Used by the user in a program as a completion bit.			Qn(H) QnPH QnPRH

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corre-sponding CPU
SM391	GINT instruction execution completion flag	OFF : Not executed ON : Execution completed	Stores the execution status of the S(P).GINT instruction. • Turns off before execution of the instruction. • Turns on after completion of the instruction.	S (Instruction execution)	New	QnU

*1 This applies to the CPU of function version B or later.
*2 The module whose first 5 digits of serial No. is "09012" or later.
*3 The module whose first 5 digits of serial No. is "04122" or later.
*4 The module whose first 5 digits of serial No. is "07032" or later.
*5 The Universal model QCPU except the Q00UJCPU, Q00UCPU, Q01UCPU, and Q02UCPU.
*6 The relevant modules are as follows:
• The Universal model QCPU whose serial number (first five digits) is "10012" or later.
• Q13UDHCPU, Q26UDHCPU
*7 The Universal model QCPU except the Q00UJCPU.
*8 This applies when the first five digits of the serial number is "12052" or later.

(3) System clock/counter

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU M9□□□	Corresponding CPU
SM400	Always ON	ON OFF	This relay is always on.	S (Every END processing)	M9036	QCPU LCPU
SM401	Always OFF	ON OFF	This relay is always off.		M9037	
SM402	After RUN, ON for 1 scan only	ON OFF 1 scan	• This relay turns on for one scan after the CPU module enters the RUN status. • This relay can be used only in a scan execution type program. • When an initial execution type program is used, this relay turns off at the END processing of the scan execution type program in the first scan after the CPU module enters the RUN status. ON/OFF: Initial execution type program | 1 scan of scan execution type program		M9038	Qn(H) QnPH QnPRH QnU LCPU
			This relay turns on for one scan after the CPU module enters the RUN status.		New	Q00J/Q00/Q01
SM403	After RUN, OFF for 1 scan only	ON OFF 1 scan	• This relay turns off for one scan after the CPU module enters the RUN status. • This relay can be used only in a scan execution type program. • When an initial execution type program is used, this relay turns on at the END processing of the scan execution type program in the first scan after the CPU module enters the RUN status. ON/OFF: Initial execution type program | 1 scan of scan execution type program		M9039	Qn(H) QnPH QnPRH QnU LCPU
			This relay turns off for one scan after the CPU module enters the RUN status.		New	Q00J/Q00/Q01
SM404	Low speed execution type programON for 1 scan only after RUN	ON OFF 1 scan	• This relay turns on for one scan after the CPU module enters the RUN status. • This relay can be used only in a low-speed execution type program.			Qn(H) QnPH
SM405	Low speed execution type programAfter RUN, OFF for 1 scan only	ON OFF 1 scan	• This relay turns off for one scan after the CPU module enters the RUN status. • This relay can be used only in a low-speed execution type program.			
SM409	0.01 second clock	0.005s 0.005s	• This relay repeatedly turns on and off at 5-ms interval. • This relay starts with off at power-on or reset of the CPU module. (Note if the specified time has elapsed, on/off status will change even during program execution.)	S (Status change)		Qn(H) QnPH QnPRH QnU LCPU

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corresponding CPU
SM410	0.1 second clock		• This relay repeatedly turns on and off at the specified interval. • This relay starts with off at power-on or reset of the CPU module. (Note if the specified time has elapsed, on/off status will change even during program execution.)	S (Status change)	M9030	QCPU LCPU
SM411	0.2 second clock				M9031	
SM412	1 second clock				M9032	
SM413	2 second clock				M9033	
SM414	2n second clock		• This relay repeatedly turns on and off at the interval specified in SD414 (unit: second). • This relay starts with off at power-on or reset of the CPU module. (Note if the specified time has elapsed, on/off status will change even during program execution.)		M9034 format change	
SM415	2n (ms) clock		• This relay repeatedly turns on and off at the interval specified in SD415 (unit: ms). • This relay starts with off at power-on or reset of the CPU module. (Note if the specified time has elapsed, on/off status will change even during program execution.)		New	Qn(H) QnPH QnPRH QnU LCPU
SM420	User timing clock No.0		• This relay repeatedly turns on and off at the specified scan intervals. • This relay starts with off at power-on or reset of the CPU module. (For the redundant CPU, however, this relay will become always off after system switching.) • The on/off scan intervals are set by the DUTY instruction.  • n1: On scan interval • n2: Off scan interval	S (Every END processing)	M9020	QCPU LCPU
SM421	User timing clock No.1				M9021	
SM422	User timing clock No.2				M9022	
SM423	User timing clock No.3				M9023	
SM424	User timing clock No.4				M9024	
SM430	User timing clock No.5		For use with SM420 to SM424 low speed programs		New	Qn(H) QnPH
SM431	User timing clock No.6					
SM432	User timing clock No.7					
SM433	User timing clock No.8					
SM434	User timing clock No.9					

(4) Scan information

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corresponding CPU
SM510	Low speed program execution flag	OFF : Completed or not executed ON : Execution under way.	This relay is on while a low-speed execution type program is being executed.	S (Every END processing)	New	Qn(H) QnPH
SM551	Reads module service interval	OFF : Ignored ON : Read	When this relay is turned on, the service interval of the module specified by SD550 is read to SD551 and SD552.	U	New	Qn(H) QnPH QnPRH

(5) I/O refresh

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corresponding CPU
SM580	Program to program I/O refresh	OFF : Not refreshed ON : Refreshed	When this relay is turned on, I/O refresh is performed after execution of the first program, and then the next program is executed. When a sequence program and a SFC program are to be executed, the sequence program is executed, I/O refresh is performed, and then the SFC program is executed.	U	New	Q00J/Q00/Q01*1

*1 This applies to the CPU of function version B or later.

(6) Drive information

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corresponding CPU
SM600	Memory card usable flags	OFF : Unusable ON : Use enabled	This relay turns on when the memory card becomes ready for use.	S (Status change)	New	Qn(H) QnPH QnPRH QnU*1
			This relay turns on when the SD memory card becomes ready for use. (This relay turns on when a compatible SD memory card is inserted and set to be enabled with the SD memory card lock switch.)			LCPU
SM601	Memory card protect flag	OFF : No protect ON : Protect	This relay is on while the write-protect switch of the memory card is on.			Qn(H) QnPH QnPRH QnU*1 LCPU
SM602	Drive 1 flag	OFF : No drive 1 ON : Drive 1 present	This relay is on while a RAM is being inserted.			Qn(H) QnPH QnPRH QnU*1
SM603	Drive 2 flag	OFF : No drive 2 ON : Drive 2 present	This relay is on while a ROM is being inserted.			Qn(H) QnPH QnPRH QnU*1
			This relay is on while a SD memory card is being inserted. (This relay is on while a SD memory card is being inserted, regardless of the availability and the type of the card.)			LCPU
SM604	Memory card in-use flag	OFF : Not used ON : In use	This relay is on while a memory card is being used.	S (Status change)		Qn(H) QnPH QnPRH QnU*1 LCPU
SM605	Memory card remove/insert prohibit flag	OFF : Remove/insert enabled ON : Remove/insert prohibited	This relay is turned on to disable the insertion and removal of a memory card.	U		Qn(H) QnPH QnPRH QnU*1
			This relay is turned on to disable the insertion and removal of a memory card. (This relay turns on when a compatible SD memory card is inserted and set to be enabled with the SD memory card lock switch. This relay does not turn on while "ICM.OPE.ERROR" occurs.)	S (Status change)		LCPU
SM606	SD memory card forced disable instruction	OFF : SD memory card forced disable cancel instruction ON : SD memory card forced disable instruction	• This relay is turned on to execute the SD memory card forced disable instruction. When there are any functions accessing to an SD memory card, the process of disablement is held until it is completed. • This relay is turned off to cancel the SD memory card forced disable instruction.	U		LCPU
SM607	SD memory card forced disable status flag	OFF : Not being disabled by SD emory card orced disable instruction ON : Being disabled by SD memory card forced disable instruction	• This relay turns on when an SD memory card is disabled by turning on SM606 (SD memory card forced disable instruction). • This relay turns off when the forced disable status of SD memory card is canceled by turning off SM606 (SD memory card forced disable instruction).	S (Status change)		LCPU

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU M9□□□	Corresponding CPU
SM609	Memory card remove/insert enable flag	OFF : Remove/insert prohibited ON : Remove/insert enabled	• This relay is turned on to enable the insertion and removal of a memory card. • Turned OFF by the system after the memory card is removed. • This relay can be used while both SM604 and SM605 are off.	S/U	New	Qn(H) QnPH QnPRH QnU*1
SM620	Drives 3 and 4 usable flags	OFF : Unusable ON : Use enabled	This relay is always on.	S (Initial)		QCPU LCPU
SM621	Drives 3 and 4 protection flag	OFF : Not protected ON : Protected	This relay is always off.			
SM622	Drive 3 flag	OFF : No drive 3 ON : Drive 3 present	This relay is always on.			Q00J/Q00/Q01 Qn(H) QnPH QnPRH QnU*2 LCPU
SM623	Drive 4 flag	OFF : No drive 4 ON : Drive 4 present	This relay is always on.			QCPU LCPU
SM624	Drive 3/4 in-use flag	OFF : Not used ON : In use	This relay is on while a file stored in the drive 3 (standard RAM) or the drive 4 (standard ROM) is being used.	S (Status change)		Qn(H) QnPH QnPRH QnU LCPU
SM640	File register use	OFF : File register not used ON : File register in use	This relay is on while a file register is being used.			Q00J/Q00/Q01 Qn(H) QnPH QnPRH QnU*2 LCPU
SM650	Comment use	OFF : File register not used ON : File register in use	This relay is on while a comment file is being used.			Qn(H) QnPH QnPRH QnU LCPU
SM660	Boot operation	OFF : Internal memory execution ON : Boot operation in progress	• This relay is on during boot operation. • This relay turns off when the boot specification switch is turned off.			Qn(H) QnPH QnPRH
		OFF : Program memory execution ON : Boot operation in progress	This relay is on during boot operation.			Q00J/Q00/Q01 QnU*3 LCPU
SM671	Latch data backup to standard ROM completion flag	OFF : Not completed ON : Completed	• This relay turns on when latch data backup to the standard ROM is completed. • Time when the backup is completed is stored in SD672 or later.			QnU LCPU

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corresponding CPU
SM672	Memory card file register access range flag	OFF : Within access range ON : Outside access range	• This relay turns on when an area outside a file register range in a memory card is accessed. (This relay is set at END processing.) • This relay is reset from a program.	S/U		Qn(H) QnPH QnPRH
SM675	Error completion of latch data backup to standard ROM	OFF : No Error ON : Error	• This relay turns on if latch data backup to the standard ROM is not completed. • This relay turns off when the backup is completed.	S		
SM676	Specification of restration repeated execution	OFF : Not specified ON : Specified	• When latch data are backed up while this relay is on, the backup data will be restored at every power-on of the CPU module. • The backup data will be restored at every power-on until the latch data are deleted or the latch data are backed up again.	U		
SM680	Program memory write error	ON : Write error OFF : Write not executed/normal	This relay turns on if a write error is detected during writing to the program memory (flash ROM). This relay turns off when a write command is given.	S (At write)		
SM681	Program memory writing flag	ON : During writing OFF : Write not executed	This relay is on during writing to the program memory (flash ROM) and turns off when the writing is completed.			
SM682	Program memory overwrite count error flag	ON : Overwrite count is 100,000 or more OFF : Overwrite count is less than 100,000	This relay turns on when overwrite count of the program memory (flash ROM) reaches to 100,000. (It is necessary to change CPU module.)			QnU LCPU
SM685	Standard ROM write error	ON : Write error OFF : Write not executed/normal	This relay turns on if a write error is detected during writing to the standard ROM (flash ROM). This relay turns off when a write command is given.		New	
SM686	Standard ROM writing flag	ON : During overwriting OFF : Overwrite not executed	This relay is on during writing to the standard ROM (flash ROM) and turns off when the writing is completed.			
SM687	Standard ROM overwrite count error flag	ON : Overwrite count is 100,000 or more OFF : Overwrite count is less than 100,000	This relay turns on when overwrite count of the standard ROM (flash ROM) reaches to 100,000. (It is necessary to change CPU module.)			
SM691	Backup start preparation status flag	OFF : Backup start preparation not completed ON : Backup start preparation completed	Turns on when the backup preparation is completed.	S (Status change)		QnU*1 LCPU
SM692	Restoration complete flag	OFF : Restoration not completed ON : Restoration completed	This relay turns on when backup data in a memory card has been restored.			

*1 The modules whose serial number (first five digits) is "10102" or later are the relevant models. (Except the Q00UJCPU, Q00UCPU, and Q01UCPU)

*2 The Universal model QCPU except the Q00UJCPU.

*3 The Universal model QCPU except the Q00UJCPU, Q00UCPU, and Q01UCPU.

(7) Instruction-related relay

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU M9□□□	Corresponding CPU
SM700	Carry flag	OFF : Carry OFF ON : Carry ON	Carry flag used in application instruction	S (Instruction execution)	M9012	QCPU LCPU
SM701	Number of output characters selection	OFF : Output until NULL code encountered ON : 16 characters output	Used for the PR, PRC, BINDA, DBINDA, BINHA, DBINHA, BCDDA, DBCDDA, or COMRD instruction	U	M9049	Qn(H) QnPH QnPRH QnU LCPU
SM702	Search method	OFF : Search next ON : 2-part search	• Designates method to be used by search instruction. • Data must be arranged for 2-part search.		New	QCPU LCPU
SM703	Sort order	OFF : Ascending order ON : Descending order	The sort instruction is used to designate whether data should be sorted in ascending order or in descending order.			
SM704	Block comparison	OFF : Non-match found ON : All match	This relay turns on when all data conditions are met for the BKCMP instruction.	S (Instruction execution)		
			This relay turns on when all data conditions are met for the DBKCMP instruction.			QnU*2 LCPU
SM709	DT/TM instruction improper data detection flag	OFF : Improper data not detected ON : Improper data detected	This relay turns on when the data to be compared by the DT or TM instruction cannot be recognized as date or time data, when the device (three words) to be compared is exceeding the specified device range.	S (Instruction execution)/U		
SM710	CHK instruction priority ranking flag	OFF : Conditions priority ON : Pattern priority	• Remains as originally set when OFF. • Priority for the CHK instruction is changed when on.	S (Instruction execution)		Qn(H) QnPH QnPRH
SM715	EI flag	OFF : During DI ON : During EI	This relay is on while the EI instruction is being executed.			QCPU LCPU
SM716	Block comparison (Except an interrupt program)	OFF : Mismatch found ON : No mismatch	This relay turns on when all data conditions are met for the DBKCMP instruction. (Initial execution type program and scan execution type program or standby type program executed from initial execution type program or scan execution type program)			QnU*2 LCPU
SM717	Block comparison (Interrupt program)	OFF : Mismatch found ON : No mismatch	This relay turns on when all data conditions are met for the DBKCMP instruction. (Interrupt program, fixed scan execution type program, or standby type program executed from interrupt program or fixed scan execution type program)			
SM718	Block comparison (Interrupt program (I45))	OFF : Mismatch found ON : No mismatch	This relay turns on when all data conditions are met for the DBKCMP instruction. (Interrupt program (I45) or standby type program that was executed from interrupt program (I45))			QnU*3
SM720	Comment read completion flag	OFF : Comment read not completed ON : Comment read completed	This relay turns on only during first scan after the processing of the COMRD or PRC instruction is completed.	S (Status change)		Qn(H) QnPH
			This relay turns on only during first scan after the processing of the COMRD instruction is completed.			QnPRH QnU LCPU

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corresponding CPU
SM721	File being accessed	OFF : File not accessed ON : File being accessed	This relay is on while a file is being accessed by the SP. FWRITE, SP. FREAD, COMRD, PRC, or LEDC instruction.	S (Status change)	New	Qn(H) QnPH
			This relay is on while a file is being accessed by the SP. FWRITE, SP. FREAD, COMRD, or LEDC instruction.			Qn(H) QnPH QnPRH
			This relay is on while a file is being accessed by the SP. FWRITE, SP. FREAD, COMRD, or SP.DEVST instruction.			QnU
			• This relay is on while a file is being accessed by the SP. FWRITE, SP. FREAD, COMRD, or SP.DEVST instruction. • This relay is on while a SD memory card or the standard ROM is being accessed.			LCPU
			This relay is on while an ATA card or the standard ROM is being accessed.			QnU*4
			This relay is on while the S(P).SFCSCOMR or the S(P).SFCTCOMR instruction is executed.			QnU*11
SM722	BIN/DBIN instruction error disabling flag	OFF : Error detection performed ON : Error detection not performed	Turned ON when "OPERATION ERROR" is suppressed for BIN or DBIN instruction.	U		QCPU LCPU
SM734	XCALL instruction execution condition designation	OFF : Not executed by execution condition risen ON : Executed by execution condition risen	• During OFF, XCALL instructions will not be executed even if execution condition is risen. • During ON, XCALL instructions will be executed when execution condition is risen.			Qn(H)*4
SM735	SFC comment readout instruction in execution flag	OFF : SFC comment readout instruction is inactivated. ON : SFC comment readout instruction is activating.	This relay turns on while a SFC step comment readout instruction (S(P).SFCSCOMR) or SFC transmission condition comment readout instruction (S(P). SFCTCOMR) is being executed.	S (Status change)		Qn(H)*5 QnPH*6 QnPRH*6 QnU*11
SM738	MSG instruction reception flag	OFF : Instruction not executed ON : Instruction execution	This relay turns on when the MSG instruction is executed.	S (Instruction execution)		Qn(H) QnPRH
SM740	Display unit availability flag	OFF : Not usable ON : Usable	This relay is on while the display unit can be used.	S (Initial/Status change)		LCPU
SM750	Scaling instruction search method setting	OFF : Search next ON : 2-part search	Determines a search method when the scaling instruction is executed.	U		QnU*2 LCPU
SM774	PID bumpless processing (for complete derivative)	OFF : Matched ON : Not matched	Specifies whether to match the set value (SV) with the process value (PV) or not in the manual mode.			Q00J/Q00/Q01*1 Qn(H) QnPRH QnU LCPU

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU M9□□□	Corresponding CPU
SM775	Selection of refresh processing during COM/CCOM instruction execution	OFF : Performs link refresh ON : Performs no link refresh	Select whether link refresh processing will be performed or not when only communication with the CPU module is made at the execution of the COM instruction.	U	New	Q00J/Q00/Q01 Qn(H) QnPH
		OFF : Performs refresh processes other than an I/O refresh ON : Performs refresh set by SD778	Select whether to perform refresh processes other than an I/O refresh set by SD778 when the COM or CCOM instruction is executed.			Q00J/Q00/Q01*1 Qn(H)*7 QnPH*4 QnPRH QnU LCPU
SM776	Enable/disable local device at CALL	OFF : Local device disabled ON : Local device enabled	Set whether the local device of the subroutine program called at execution of the CALL instruction is valid or invalid.			Qn(H) QnPH QnPRH QnU*10 LCPU
SM777	Enable/disable local device in interrupt program	OFF : Local device disabled ON : Local device enabled	Set whether the local device at execution of the interrupt program is valid or invalid.			
SM794	PID bumpless processing(for incomplete derivative)	OFF : Matched ON : Not matched	Specifies whether to match the set value (SV) with the process value (PV) or not in the manual mode.			Q00J/Q00/Q01*1 Qn(H)*8 QnPRH QnU LCPU
SM796	Block information using multiple CPU high-speed transmission dedicated instruction (for CPU No.1)	OFF : Block is secured ON : Block set by SD796 cannot be secured	This relay turns on when the number of the remaining blocks in the dedicated instruction transmission area used for the multiple CPU high-speed transmission dedicated instruction (target CPU= CPU No.1) is less than the number of blocks specified in SD796. This relay is on when an instruction is executed, and is off while an END processing is being executed or when free space is available in the area.	S (When instruction/END processing executed)		QnU*9
SM797	Block information using multiple CPU high-speed transmission dedicated instruction (for CPU No.2)	OFF : Block is secured ON : Block set by SD797 cannot be secured	This relay turns on when the number of the remaining blocks in the dedicated instruction transmission area used for the multiple CPU high-speed transmission dedicated instruction (target CPU= CPU No.2) is less than the number of blocks specified in SD797. This relay is on when an instruction is executed, and is off while an END processing is being executed or when free space is available in the area.			
SM798	Block information using multiple CPU high-speed transmission dedicated instruction (for CPU No.3)	OFF : Block is secured ON : Block set by SD798 cannot be secured	This relay turns on when the number of the remaining blocks in the dedicated instruction transmission area used for the multiple CPU high-speed transmission dedicated instruction (target CPU= CPU No.3) is less than the number of blocks specified in SD798. This relay is on when an instruction is executed, and is off while an END processing is being executed or when free space is available in the area.			

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corresponding CPU
SM799	Block information using multiple CPU high-speed transmission dedicated instruction (for CPU No.4)	OFF : Block is secured ON : Block set by SD799 cannot be secured	This relay turns on when the number of the remaining blocks in the dedicated instruction transmission area used for the multiple CPU high-speed transmission dedicated instruction (target CPU= CPU No.) is less than the number of blocks specified in SD799. This relay is on when an instruction is executed, and is off while an END processing is being executed or when free space is available in the area.	S (When instruction/END processing executed)	New	QnU*9

*1 This applies to the CPU module of function version B or later.
*2 The relevant modules are as follows:
•The Universal model QCPU whose serial number (first five digits) is "10102" or later.
•Q00UJCPU, Q00UCPU, Q01UCPU
*3 The relevant modules are as follows:
•The Universal model QCPU whose serial number (first five digits) is "10102" or later.
•Q00UCPU, Q01UCPU
*4 The module whose first 5 digits of serial No. is "07032" or later.
*5 The module whose first 5 digits of serial No. is "06082" or later.
*6 The module whose first 5 digits of serial No. is "07012" or later.
*7 The module whose first 5 digits of serial No. is "04012" or later.
*8 The module whose first 5 digits of serial No. is "05032" or later.
*9 The Universal model QCPU except the Q00UJCPU, Q00UCPU, Q01UCPU, and Q02UCPU.
*10 The Universal model QCPU except the Q00UJCPU.
*11 This applies when the first five digits of the serial number is "12052" or later.

(8) Debugging

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corresponding CPU
SM800	Trace preparation	OFF : Not ready ON : Ready	Turns on when the trace preparation is completed.	S (Status change)	New	Qn(H) QnPH QnPRH QnU*1 LCPU
SM801	Trace start	OFF : Suspend ON : Start	• When this relay is turned on while the CPU module is set to RUN, a trace will be started. • When this relay is turned off, a trace is stopped. (The related special relays will all turn off)	S (Status change)/U	M9047	
SM802	Trace execution in progress	OFF : Suspend ON : Start	This relay is on while a trace is being executed.	S (Status change)	M9046	
SM803	Trace trigger	OFF→ON: Start	• This relay turns on when the specified trigger condition is met. • This relay is turned on to meet the trigger condition.	S (Status change)/U	New	
SM804	After trace trigger	OFF : Not after trigger ON : After trigger	Turns on after trace is triggered.	S (Status change)		
SM805	Trace completed	OFF : Not completed ON : End	This relay turns on when a trace is completed.		M9043	
SM826	Trace error	OFF : Normal ON : Errors	This relay turns on if an error occurs during trace.		New	
SM829	Forced registration specification of trace setting	ON : Forced registration enabled OFF : Forced registration disabled	When this relay is turned on and a sampling trace setting is registered using a programming tool, the sampling trace setting can be registered with the CPU module even when the trigger condition has been met.	U		QnU*1 LCPU
SM841	Auto logging	ON : Auto logging OFF : No auto logging	This relay is on while auto logging is being executed. This relay turns off when auto logging is completed and the SD memory card lock switch is slid toward the module top to stop access to the SD memory card.	S (Status change)		LCPU

*1 The Universal model QCPU except the Q00UJCPU.

(9) Conversion from A series to Q or L series

The special relay (M9000 to M9255) for ACPU corresponds to the special relay (SM1000 to SM1255) for QCPU or LCPU after the A to Q/L conversion. (Note that the Basic model QCPU and Redundant CPU do not support the A to Q/L conversion.) All bits in this area of the special relay are turned on or off by system (cannot be turned on or off by user using a program). To turn on or off the bit by user, correct the program using the special relay for QCPU or LCPU. The special relay (M9084, M9200 to M9255), however, includes the areas that can be turned on or off by user. For those areas, the bit can be turned on or off by user in the converted special relay (SM1084, SM1200 to SM1255) as well. For details on the special relay for ACPU, refer to the following.

User's manual for the CPU module used

Type MELSECNET, MELSECNET/B Data Link System Reference Manual

Point

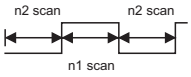
To use the converted special relay in the High Performance model QCPU, Process CPU, Universal model QCPU, or LCPU, check "Use special relay/special register from SM/SD1000" under "A-PLC Compatibility Setting".

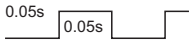
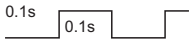
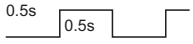
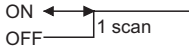
Project window ⇨ [Parameter] ⇨ [PLC Parameter] ⇨ [PLC System]
Note that the processing time will increase when the converted special relay is used.

[How to read the Special Relay for Modification column]

- If the special relay number for QCPU or LCPU is provided, correct the program using it.
- — means that the converted special relay can be used.
- ☒ means that the special relay cannot be used in QCPU or LCPU.

ACPU Special Relay	Special Relay after Conversion	Special Relay for Modification	Name	Meaning	Details	Corresponding CPU
M9000	SM1000	-	Fuse blown	OFF : Normal ON : Module with blown fuse	• Turns on if there is at least one output module whose fuse has blown. • This relay remains on even after the condition returns to normal. • Output modules on remote I/O stations are also checked for blown fuse.	Qn(H) QnPH QnU*1
M9002	SM1002	-	I/O module verify error	OFF : Normal ON : Error	• This relay turns on if the status of the I/O module differs from that registered at power-on. • This relay remains on even after the system returns to normal. • I/O modules on remote I/O stations are also checked. • This relay is reset only when SD1116 to SD1123 are reset.	Qn(H) QnPH QnU*1 LCPU
M9005	SM1005	-	AC DOWN detection	OFF : AC DOWN not detected ON : AC DOWN detected	• This relay turns on if a momentary power failure within 20ms occurs during use of an AC power supply module. • This relay is reset when the CPU module is powered off and then on.	Qn(H) QnPH QnU*1
					• This relay turns on if a momentary power failure within 10ms occurs when using an AC power supply module. • This relay is reset when the CPU module is powered off and then on.	LCPU
					• This relay turns on if a momentary power failure within 10ms occurs during use of a DC power supply module. • This relay is reset when the CPU module is powered off and then on.	Qn(H) QnPH QnU*1 LCPU

ACPU Special Relay	Special Relay after Conversion	Special Relay for Modification	Name	Meaning	Details	Corre-sponding CPU
M9006	SM1006	-	Battery low	OFF : Normal ON : Battery low	• This relay turns on when the battery voltage drops to or below the specified. • It turns off when the battery voltage returns to normal.	Qn(H) QnPH QnU*1 LCPU
M9007	SM1007	-	Battery low latch	OFF : Normal ON : Battery low	• This relay turns on when the battery voltage drops to or below the specified. • This relay remains on even after the battery voltage returns to normal.	
M9008	SM1008	SM1	Self-diagnosis error	OFF : No error ON : Error	This relay turns on if an error is detected by self-diagnostics.	
M9009	SM1009	SM62	Annunciator detection	OFF : No F number detected ON : F number detected	• This relay turns on when the OUT F or SET F instruction is executed. • It turns off when the SD1124 value is cleared to zero.	
M9011	SM1011	SM56	Operation error flag	OFF : No error ON : Error	• This relay turns on when an operation error occurs during execution of an application instruction. • This relay remains on even after the system returns to normal.	Qn(H) QnPH QnU*1
M9012	SM1012	SM700	Carry flag	OFF : Carry OFF ON : Carry ON	Carry flag used in application instruction.	Qn(H) QnPH
M9016	SM1016	×	Data memory clear flag	OFF : Ignored ON : Output claered	When SM1016 turns on and remote RUN mode is activated from a computer, all the data memory including the latch range (except for the special relay and special register) is cleared.	
M9017	SM1017	×	Data memory clear flag	OFF : Ignored ON : Output claered	When SM1017 turns on and remote RUN mode is activated from a computer, all the data memory that is not latched (except for the special relay and special register) is cleared.	
M9020	SM1020	-	User timing clock No.0		• This relay repeatedly turns on and off at the specified scan intervals. • When the CPU module is powered on or reset, this relay is set to on from off to start the clock. Set the intervals of on/off by DUTY instruction.  •n1: On scan interval •n2: Off scan interval When SM1020 to SM1024 are specified for the DUTY instruction in programs, if the CPU type is changed from the High Performance model QCPU or Process CPU to the Universal model QCPU or LCPU, they are replaced with SM420 to SM424. (For the Universal model QCPU and LCPU, SM1020 to SM1024 cannot be specified.)	Qn(H) QnPH QnU*1 LCPU
M9021	SM1021	-	User timing clock No.1			
M9022	SM1022	-	User timing clock No.2			
M9023	SM1023	-	User timing clock No.3			
M9024	SM1024	-	User timing clock No.4			
M9025	SM1025	-	Clock data set request	OFF : Ignored ON : Set request present used	Clock data stored in SD1025 to SD1028 are written to the CPU module after the END instruction execution in the scan where SM1025 is turned on.	
M9026	SM1026	-	Clock data error	OFF : No error ON : Error	This relay turns on if an error occurs in the clock data (SD1025 to SD1028), and is off while there is no error.	
M9028	SM1028	-	Clock data read request	OFF : Ignored ON : Read request	This relay is turned on to read clock data and store them as BCD values into SD1025 to SD1028.	
M9029	SM1029	×	Batch processing of data communications requests	OFF : Batch processing not conducted ON : Batch processing conducted	• When this relay is turned on in the program, all the data communication requests accepted during one scan are processed in the END processing of that scan. • The batch processing of data communication requests can be turned on or off during running. • The default is OFF (processed one at a time for each END processing in the order in which data communication requests are accepted).	Qn(H) QnPH

ACPU Special Relay	Special Relay after Conversion	Special Relay for Modification	Name	Meaning	Details	Corre-sponding CPU
M9030	SM1030	-	0.1 second clock		• 0.1-, 0.2-, 1-, and 2-second clocks are generated. • The relay turns on or off not for each scan, but also during a scan if the time has elapsed. • When the CPU module is powered on or reset, this relay is set to on from off to start the clock.	Qn(H) QnPH QnU*1 LCPU
M9031	SM1031	-	0.2 second clock			
M9032	SM1032	-	1 second clock			
M9033	SM1033	-	2 second clock			
M9034	SM1034	-	2n minute clock(1 minute clock)*2		• This relay repeatedly turns on and off according to the number of seconds specified in SD414. (Default: n = 30) • The relay turns on or off not for each scan, but also during a scan if the time has elapsed. • When the CPU module is powered on or reset, this relay is set to on from off to start the clock.	
M9036	SM1036	-	Always ON		• This relay is used for initialization or as a dummy contact of application instructions in the program. • SM1036 and SM1037 are turned on or off regardless of the key switch setting on the front face of the CPU module. The states of SM1038 and SM1039 change depending on the key switch setting.When it is set to STOP, the relay is off.When it is set to other than STOP, SM1038 is on for one scan only and SM1039 is off for one scan only.	
M9037	SM1037	-	Always OFF			
M9038	SM1038	-	ON for 1 scan only after RUN			
M9039	SM1039	-	RUN flag(After RUN, OFF for 1 scan only)			
M9040	SM1040	SM206	PAUSE enable coil	OFF : PAUSE disabled ON : PAUSE enabled	This relay is on when the CPU module is in PAUSE status or when the PAUSE contact is on.	Qn(H) QnPH
M9041	SM1041	SM204	PAUSE status contact	OFF : PAUSE not in effect ON : PAUSE in effect		Qn(H) QnPH QnU*1 LCPU
M9042	SM1042	SM203	STOP status contact	OFF : STOP not in effect ON : STOP in effect	This relay turns on when the RUN key switch or RUN/STOP switch is set to STOP.	
M9043	SM1043	SM805	Sampling trace completed	OFF : Sampling trace in progress ON : Sampling trace completed	This relay turns on after execution of the TRACE instruction and upon completion of sampling trace performed the number of times preset by the parameter. Reset when TRACER instruction is executed.	
M9045	SM1045	×	Watchdog timer (WDT) reset	OFF : Does not reset WDT ON : Resets WDT	If SM1045 is turned on, the watchdog timer is reset when the ZCOM instruction and batch processing of data communication requests are executed. (Use this when scan time exceeds 200ms.)	Qn(H) QnPH

ACPU Special Relay	Special Relay after Conversion	Special Relay for Modification	Name	Meaning	Details	Corresponding CPU
M9046	SM1046	SM802	Sampling trace	OFF : Trace not in progress ON : Trace in progress	This relay is on during execution of sampling trace.	Qn(H) QnPH QnU[*1] LCPU
M9047	SM1047	SM801	Sampling trace preparations	OFF : Sampling trace suspended ON : Sampling trace started	Sampling trace is not executed unless SM1047 is turned ON. Sampling trace is cancelled when SM1047 turns off.	Qn(H) QnPH
M9049	SM1049	SM701	Switching the number of output characters	OFF : Output until NULL code encountered ON : 16 characters output	• When SM1049 is off, characters up to NULL (00_H) code are output. • When SM1049 is ON, ASCII codes of 16 characters are output.	
M9051	SM1051	×	CHG instruction execution disable	OFF : Enabled ON : Disable	• Switched ON to disable the CHG instruction. • Turn this on when requesting program transfer. It is automatically turned off upon completion of the transfer.	
M9052	SM1052	×	SEG instruction switch	OFF : 7-SEG segment display ON : I/O partial refresh	When SM1052 is on, the SEG instruction is used as an I/O part refresh instruction. When SM1052 is off, the SEG instruction is used as a 7-SEG display instruction.	
M9056	SM1056	×	Main side P, I set request	OFF : Other than when P, I set being requested ON : P, I set being requested	While a program is running, upon completion of transfer of another program (for example, a subprogram when the main program is running), a P and I set request is turned on. This relay automatically turns off upon completion of P and I setting.	
M9057	SM1057	×	Sub side P, I set request	OFF : Other than when P, I set being requested ON : P, I set being requested		
M9058	SM1058	×	Main side P, I set completion	Momentarily ON at P, I set completion	This relay turns on for a moment upon completion of P and I setting, and immediately turns off.	
M9059	SM1059	×	Sub program P, I set completion	Momentarily ON at P, I set completion		
M9060	SM1060	×	Sub program 2 P, I set request	OFF : Other than when P, I set being requested ON : P, I set being requested	While a program is running, upon completion of transfer of another program (for example, a subprogram when the main program is running), a P and I set request is turned on. This relay automatically turns off upon completion of P and I setting.	
M9061	SM1061	×	Sub program 3 P, I set request	OFF : Other than when P, I set being requested ON : P, I set being requested		
M9070	SM1070	×	A8UPU/A8PUJ required search time[*3]	OFF : Read time not shortened ON : Read time shortened	When this is turned on, the search time in the A8UPU/A8PUJ can be shortened. (In this case, the scan time is extended by 10%.)	
M9084	SM1084	×	Error check	OFF : Error check executed ON : No error check	This relay sets whether or not to check the following errors at the time of the END instruction processing (for setting of the END instruction processing time). • Check for fuse blown • Check of battery • Collation check of I/O module	
M9091	SM1091	×	Operation error details flag	OFF : No error ON : Error	• This relay turns on when the detail factor of the operation error is stored into SD1091. • This relay remains on even after the condition returns to normal.	

ACPU Special Relay	Special Relay after Conversion	Special Relay for Modification	Name	Meaning	Details	Corre-sponding CPU
M9100	SM1100	SM320	Presence/ absence of SFC program	OFF : SFC programs not used ON : SFC programs used	This relay is on when an SFC program has been registered, and is off when no program is registered.	Qn(H) QnPH
M9101	SM1101	SM321	Start/stop SFC program	OFF : SFC programs stop ON : SFC programs start	• The same value as in SM1100 is set as the initial value. (This relay turns on when an SFC program is registered.) • This relay is turned off to stop SFC program execution. • This relay is turned on to resume the SFC program execution.	
M9102	SM1102	SM322	SFC program start status	OFF : Initial start ON : Resume start	In the SFC setting of the PLC parameter dialog box, Initial start is set for the SFC program start mode. • At initial start: OFF • At continue start: ON	
M9103	SM1103	SM323	Presence/ absence of continuous transition	OFF : Continuous transition not effective ON : Continuous transition effective	Set whether to enable or disable continuous transition for the blocks where "continuous transition bit" of the SFC information device is not set.	
M9104	SM1104	SM324	Continuous transition suspension flag	OFF : When transition is completed ON : When no transition	• This relay is off during operation in the continuous transition mode or during continuous transition, and is on while continuous transition is not performed. • This relay is always on while the CPU module is operating not in the continuous transition mode.	
M9108	SM1108	SM90	Step transition monitoring timer start (equivalent of SD90)	OFF : Monitoring timer reset ON : Monitoring timer reset start	The relay turns on when measurement by the step transition monitoring timer is started. The step transition monitoring timer is reset when the relay turns off.	
M9109	SM1109	SM91	Step transition monitoring timer start (equivalent of SD91)			
M9110	SM1110	SM92	Step transition monitoring timer start (equivalent of SD92)			
M9111	SM1111	SM93	Step transition monitoring timer start (equivalent of SD93)			
M9112	SM1112	SM94	Step transition monitoring timer start (equivalent of SD94)			
M9113	SM1113	SM95	Step transition monitoring timer start (equivalent of SD95)			
M9114	SM1114	SM96	Step transition monitoring timer start (equivalent of SD96)			
M9196	SM1196	SM325	Operation output at block stop	OFF : Coil output OFF ON : Coil output ON	Selects the operation output when block stop is executed. • On: Retains the on or off status of the coil used in the operation output of the step, which was being executed at the time of block stop. • Off::Turns off all the coil outputs. (Operation output by the SET instruction is retained regardless of the on/off status of SM1196.)	

<table>
<tr><th>ACPU Special Relay</th><th>Special Relay after Conversion</th><th>Special Relay for Modification</th><th>Name</th><th>Meaning</th><th>Details</th><th>Corre-sponding CPU</th></tr>
<tr><td>M9197</td><td>SM1197</td><td>×</td><td rowspan="2">Switch between blown fuse and I/O module verification error display</td><td rowspan="2"><table><tr><th>SM1197</th><th>SM1198</th><th>I/O numbers to be displayed</th></tr><tr><td>OFF</td><td>OFF</td><td>X/Y0 to 7F0</td></tr><tr><td>ON</td><td>OFF</td><td>X/Y800 to FF0</td></tr><tr><td>OFF</td><td>ON</td><td>X/Y1000 to 17F0</td></tr><tr><td>ON</td><td>ON</td><td>X/Y1800 to 1FF0</td></tr></table></td><td rowspan="2">Switches I/O numbers between the fuse-blown module registers (SD1100 to SD1107) and I/O module verify error registers (SD1116 to SD1123) according to the on/off combination of SM1197 and SM1198.</td><td rowspan="2">Qn(H)
QnPH</td></tr>
<tr><td>M9198</td><td>SM1198</td><td>×</td></tr>
<tr><td>M9199</td><td>SM1199</td><td>×</td><td>Data recovery of online sampling trace/status latch</td><td>OFF : Data recovery disabled
ON : Data recovery enabled</td><td>• Recovers the setting data stored in the CPU module at restart when sampling trace/status latch is executed.
• Turn this on to re-execute the sampling trace or status latch. (Rewriting data using the programming tool is not required.)</td></tr>
</table>

*1 The relevant modules are as follows:
• The Universal model QCPU whose serial number (first five digits) is "10102" or later.
• Q00UJCPU, Q00UCPU, Q01UCPU

*2 1 minute clock indicates the name of the special relay (M9034) of the ACPU.

*3 The A8UPU/A8PUJ is not available for the QCPU/LCPU.

(10) Built-in Ethernet port QCPU and built-in Ethernet function

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corresponding CPU
SM1270	Time setting function (SNTP client) execution	OFF : No time setting function (SNTP client) execution ON : Time setting function (SNTP client) execution	This relay is turned on to perform the time setting function (SNTP client). (Turns on only when "Use" has been set for the time setting function in the time setting parameter.)	U	New	QnU*1 LCPU
SM1273	Remote password mismatch count clear	OFF : Normal ON : Clear	This relay is turned on to clear the accumulated number of mismatched remote password entries (SD979 to SD999).			
SM1292	IP address storage area write request	OFF : Ignored ON : Write request	The IP address setting stored in SD1292 to SD1297 are written to the IP address storage area (flash ROM) of the CPU module when the END instruction is executed in the scan where this relay is turned on.			QnU*2
SM1293	IP address storage area write completion	OFF : Not completed ON : Completed	• This relay turns on when writing to the IP address storage area (flash ROM) is completed. • This relay turns off when the END instruction is executed in the scan where SM1292 is turned off.	S (Status change)		
SM1294	IP address storage area write error	OFF : Normal ON : Error	• This relay turns on when writing to the IP address storage area (flash ROM) fails. • This relay turns off when the END instruction is executed in the scan where SM1292 is turned off.			
SM1295	IP address storage area clear request	OFF : Ignored ON : Clear request	The IP address storage area (flash ROM) is cleared when the END instruction is executed in the scan where this relay is turned on.	U		
SM1296	IP address storage area clear completion	OFF : Not completed ON : Completed	• This relay turns on when clearing the IP address storage area (flash ROM) is completed. • This relay turns off when the END instruction is executed in the scan where SM1295 is turned off.	S (Status change)		
SM1297	IP address storage area clear error	OFF : Normal ON : Error	• This relay turns on when clearing the IP address storage area (flash ROM) fails. • This relay turns off when the END instruction is executed in the scan where SM1295 is turned off.			

*1 This applies to the Built-in Ethernet port QCPU.
*2 This applies to the built-in Ethernet port QCPU whose first five digits of serial No. is "11082" or later.

(11) Process control instruction

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corresponding CPU
SM1500	Hold mode	OFF : No-hold ON : Hold	Specifies whether or not to hold the output value when a range over occurs for the S.IN instruction range check.	U	New	QnPH QnPRH
SM1501			Specifies whether or not the output value is held when a range over occurs for the S.OUT instruction range check.			

(12) Redundant system (host system CPU information*1)

The special relay (SM1510 to SM1599) is valid only for redundant systems. All bits are set to off for stand-alone systems.

<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by (When Set)</th><th>Corre-sponding ACPU M9□□□</th><th>Corre-sponding CPU</th></tr>
<tr><td>SM1510</td><td>Operation mode</td><td>OFF : Redundant system backup mode, stand-alone system
ON : Redundant system separate mode</td><td>This relay is on while the system is operating in the separate mode.</td><td>S (Every END processing)</td><td rowspan="4">New</td><td rowspan="4">QnPRH</td></tr>
<tr><td>SM1511</td><td>System A identification flag</td><td colspan="2" rowspan="2">• Distinguishes between system A and system B.
• The flag status does not change even if the tracking cable is disconnected.
<table><tr><th></th><th>System A</th><th>System B</th><th>If TRK. CABLE ERR. (error code: 6210) occurred (Unknown)</th></tr><tr><td>SM1511</td><td>ON</td><td>OFF</td><td>OFF</td></tr><tr><td>SM1512</td><td>OFF</td><td>ON</td><td>OFF</td></tr></table></td><td rowspan="3">S (Initial)</td></tr>
<tr><td>SM1512</td><td>System B identification flag</td></tr>
<tr><td>SM1513</td><td>Debug mode status flag</td><td>OFF : Not in debug mode
ON : Debug mode</td><td>This relay is on while the system is operating in the debug mode.</td></tr>
</table>

<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th colspan="4">Explanation</th><th>Set by (When Set)</th><th>Corre-sponding ACPU M9□□□</th><th>Corre-sponding CPU</th></tr>
<tr><td>SM1515</td><td>Control system judgment flag</td><td rowspan="2">• Indicates operation system status.
• The flag status does not change even if the tracking cable is disconnected.
<table><tr><td></td><td>Control system</td><td>Standby system</td><td>If TRK. CABLE ERR. (error code: 6210) occurred (Unknown)</td></tr><tr><td>SM1515</td><td>ON</td><td>OFF</td><td>OFF</td></tr><tr><td>SM1516</td><td>OFF</td><td>ON</td><td>OFF</td></tr></table></td><td colspan="4" rowspan="2"></td><td rowspan="2">S (Status change)</td><td rowspan="34">New</td><td rowspan="34">QnPRH</td></tr>
<tr><td>SM1516</td><td>Standby system judgment flag</td></tr>
<tr><td>SM1517</td><td>CPU module startup status</td><td>OFF : Power supply on startup
ON : Operation system switch start up</td><td colspan="4">Turns on when the CPU module is started up by the system switching (switching from the standby system to the control system). Remains OFF when the standby system is switched to the control system by a power-ON startup.</td><td>S (Status change)</td></tr>
<tr><td>SM1518</td><td>Standby system to control system switching status flag</td><td>ON / OFF, 1 scan</td><td colspan="4">• This relay turns on during one scan after the standby system was switched to the control system.
• This relay can be used only in a scan execution type program.</td><td rowspan="2">S (Every END processing)</td></tr>
<tr><td>SM1519</td><td>Previous Control System Identification Flag</td><td>ON / OFF, 1 scan</td><td colspan="4">When the previous control system is System B, this relay turns on during one scan in System A, following the RUN state after both Systems A and B were simultaneously turned on or were reset.</td></tr>
<tr><td>SM1520</td><td rowspan="32">Data tracking transfer trigger specification</td><td rowspan="32">OFF : No trigger
ON : Trigger</td><td>SM1520</td><td>Block 1</td><td rowspan="32">• When data is transferred based on the tracking setting of the Redundant parameter dialog box, the target block is specified as trigger.
• When "Do auto forward Tracking block No.1" is selected for the tracking setting, SM1520 is turned on by the system at power-on or when the system is switched from STOP to RUN.In other cases, SM1520 to SM1583 are turned on by the user.</td><td rowspan="32">S (initial)/U</td></tr>
<tr><td>SM1521</td><td>SM1521</td><td>Block 2</td></tr>
<tr><td>SM1522</td><td>SM1522</td><td>Block 3</td></tr>
<tr><td>SM1523</td><td>SM1523</td><td>Block 4</td></tr>
<tr><td>SM1524</td><td>SM1524</td><td>Block 5</td></tr>
<tr><td>SM1525</td><td>SM1525</td><td>Block 6</td></tr>
<tr><td>SM1526</td><td>SM1526</td><td>Block 7</td></tr>
<tr><td>SM1527</td><td>SM1527</td><td>Block 8</td></tr>
<tr><td>SM1528</td><td>SM1528</td><td>Block 9</td></tr>
<tr><td>SM1529</td><td>SM1529</td><td>Block 10</td></tr>
<tr><td>SM1530</td><td>SM1530</td><td>Block 11</td></tr>
<tr><td>SM1531</td><td>SM1531</td><td>Block 12</td></tr>
<tr><td>SM1532</td><td>SM1532</td><td>Block 13</td></tr>
<tr><td>SM1533</td><td>SM1533</td><td>Block 14</td></tr>
<tr><td>SM1534</td><td>SM1534</td><td>Block 15</td></tr>
<tr><td>SM1535</td><td>SM1535</td><td>Block 16</td></tr>
<tr><td>SM1536</td><td>SM1536</td><td>Block 17</td></tr>
<tr><td>SM1537</td><td>SM1537</td><td>Block 18</td></tr>
<tr><td>SM1538</td><td>SM1538</td><td>Block 19</td></tr>
<tr><td>SM1539</td><td>SM1539</td><td>Block 20</td></tr>
<tr><td>SM1540</td><td>SM1540</td><td>Block 21</td></tr>
<tr><td>SM1541</td><td>SM1541</td><td>Block 22</td></tr>
<tr><td>SM1542</td><td>SM1542</td><td>Block 23</td></tr>
<tr><td>SM1543</td><td>SM1543</td><td>Block 24</td></tr>
<tr><td>SM1544</td><td>SM1544</td><td>Block 25</td></tr>
<tr><td>SM1545</td><td>SM1545</td><td>Block 26</td></tr>
<tr><td>SM1546</td><td>SM1546</td><td>Block 27</td></tr>
<tr><td>SM1547</td><td>SM1547</td><td>Block 28</td></tr>
<tr><td>SM1548</td><td>SM1548</td><td>Block 29</td></tr>
<tr><td>SM1549</td><td>SM1549</td><td>Block 30</td></tr>
<tr><td>SM1550</td><td>SM1550</td><td>Block 31</td></tr>
<tr><td>SM1551</td><td>SM1551</td><td>Block 32</td></tr>
</table>

Number	Name	Meaning	Explanation			Set by (When Set)	Corresponding ACPU M9□□□	Corresponding CPU
SM1552	Data tracking transfer trigger specification	OFF : No trigger ON : Trigger	SM1552	Block 33	• When data is transferred based on the tracking setting of the Redundant parameter dialog box, the target block is specified as trigger. • When "Do auto forward Tracking block No.1" is selected for the tracking setting, SM1520 is turned on by the system at power-on or when the system is switched from STOP to RUN.In other cases, SM1520 to SM1583 are turned on by the user.	S (initial)/U	New	QnPRH
SM1553			SM1553	Block 34				
SM1554			SM1554	Block 35				
SM1555			SM1555	Block 36				
SM1556			SM1556	Block 37				
SM1557			SM1557	Block 38				
SM1558			SM1558	Block 39				
SM1559			SM1559	Block 40				
SM1560			SM1560	Block 41				
SM1561			SM1561	Block 42				
SM1562			SM1562	Block 43				
SM1563			SM1563	Block 44				
SM1564			SM1564	Block 45				
SM1565			SM1565	Block 46				
SM1566			SM1566	Block 47				
SM1567			SM1567	Block 48				
SM1568			SM1568	Block 49				
SM1569			SM1569	Block 50				
SM1570			SM1570	Block 51				
SM1571			SM1571	Block 52				
SM1572			SM1572	Block 53				
SM1573			SM1573	Block 54				
SM1574			SM1574	Block 55				
SM1575			SM1575	Block 56				
SM1576			SM1576	Block 57				
SM1577			SM1577	Block 58				
SM1578			SM1578	Block 59				
SM1579			SM1579	Block 60				
SM1580			SM1580	Block 61				
SM1581			SM1581	Block 62				
SM1582			SM1582	Block 63				
SM1583			SM1583	Block 64				
SM1590	System switching enable/disable flag from network module	OFF : System switching request issuing module absent ON : System switching request issuing module present	Turns on when a system switching request is issued from the network module. The module No. that issued system switching can be checked by SD1590. Turns off when all bits of SD1590 are off.			S (Every END processing)		
SM1591	Standby system error detection disable flag at system switching	ON : Error is not detected by new standby system at system switching OFF : Error is detected by new standby system at system switching	This flag is used when switching the system in any of the following sources to determine whether to detect "STANDBY" (error code 6210) in the new standby system: [Reason(s) for system switching] • System switching with a programming tool • System switching using dedicated instruction • System switching by the intelligent function module			U		
SM1592	Enable/disable user system switching	OFF : Disable user system switching ON : Enable user system switching	This relay stores whether to enable manual switching using a programming tool or the system switching instruction (SP.CONTSW).					

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corre-sponding CPU
SM1593	Setting to access extension base unit of standby system CPU	OFF : Error ON : Ignored	This relay sets the behavior of the system after the stanby CPU in the separate mode accessed the buffer memory of an intelligent function module mounted on an extension base unit. • OFF: "OPERATION ERROR" (error code: 4112) is returned. • ON: No processing	U	New	QnPRH
SM1595	Memory copy to other system start flag	OFF : Start memory copy ON : No memory copy initiated	When SM1595 is turned on from off, memory copying from the control system to the standby system starts. Note that memory copy does not start even after SM1595 was turned on from off if the I/O No. of the copy destination (standby system CPU module: $3D1_H$) is not stored in SD1595.			
SM1596	Memory copy to other system status flag	OFF : Memory copy not executed ON : Memory copy executed	• This relay is on during memory copy from the control system to the standby system. • This relay turns off when memory copy is complete.	S (Starting to copy/finish)		
SM1597	Memory copy to other system completion flag	OFF : Memory copy not completed ON : Memory copy completed	• This relay turns upon completion of memory copy from the control system to the standby system.	S (finish)/U		
SM1598	Copy contents of standard ROM during memory copy	OFF : Copy standard ROM data ON : Standard ROM data is not copied	• If set to on by user, the standard ROM data is not copied to the other system while memory copy is executing.	U		

*1 The information of the host CPU module is stored.

(13) Redundant system (other system CPU information*1)

The special relay (SM1600 to SM1649) is valid when the redundant system is in backup mode and is invalid in separate mode. All bits are set to off for stand-alone systems.

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding Host SM□□*2	Corresponding CPU
SM1600	Other system error flag	OFF : No error ON : Error	• This relay turns on if an error is detected by error check for redundant system. (This relay turns on when any of the SD1600 bits turns on.) • This relay turns off when an error is cleared.	S (Every END processing)	-	QnPRH
SM1610	Other system diagnostics error	OFF : No error ON : Error	• This relay turns on if a diagnostic error occurs in the CPU module in the other system. (Also turns off when an annunciator turns on and when an error is detected by the CHK instruction.) • The SM0 status for the CPU module in the other system is reflected.		SM0	
SM1611	Other systems self diagnostics error.	OFF : No self diagnostics error occurred ON : Self diagnostics error occurred	• This relay turns on if a self-diagnostics error occurred in the CPU module in the other system. (Excluding error detections by an annunciator and the CHK instruction.) • The SM1 status for the CPU module in the other system is reflected.		SM1	
SM1615	Other system common error information	OFF : No common error information present ON : Common error information present	• This relay turns on when there is error common information data for an error occurred in the CPU module in the other system. • The SM5 status for the CPU module in the other system is reflected.		SM5	
SM1626	Error individual information for other systems	OFF : No individual error information present ON : Individual error information present	• This relay turns on when there is error individual information for an error occurred in the CPU module in the other system. • The SM16 status for the CPU module in the other system is reflected.		SM16	
SM1649	Standby system cancel error flag	OFF to ON: Cancels error of standby system	This relay is turned on from off to clear a continuation error occurred in the standby system. Use SD1649 to specify the error code of the error to be canceled.	U	-	

*1 Stores other system CPU diagnostic information and system information.

*2 This shows the special relay (SM□□) for the host system CPU.

(14) Redundant system (tracking information)

The special relay (SM1700 to SM1799) is valid when the redundant system is in backup mode or in separate mode. All bits are set to off for stand-alone systems.

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corre-sponding CPU
SM1700	Transfer trigger completion flag	OFF : Transfer not completed ON : Transfer completed	This relay remains on for one scan upon completion of a transfer for any of the blocks 1 to 64.	S (Status change)	New	QnPRH
SM1709	Manual system switching disable/ enable setting during online program change redundant tracking	ON : Manual system switching enabled (Disable canceled) OFF : Manual system switching disabled	• This relay is turned from off to on to enable the user to switch a system during online program change for redundancy. After the manual system switching disable status is canceled, the system automatically turns off SM1709. • A system can be switched even a online program change for redundancy is being performed and regardless of the status of this relay, if the reason for the switching is any of the following: • Power-off • Reset • Hardware failure • CPU stop error • The system switching disable status can also be canceled by this relay during the following states. • Multiple-block online program change redundant tracking execution status • File batch online program change redundant tracking execution status	S (Request)/U		
SM1710	Transfer tracking data during online program change enable flag	OFF : No device tracking ON : Transfer device memory	• This relay specifies whether to execute a tracking transfer for the following control data during online program change for redundancy. • Device memory (Including SMs and SDs that automatically execute a tracking transfer) • PIDINIT information, S.PIDINIT information, SFC information • SM1710 can be also used to specify whether to enable a tracking transfer whhle multiple-block online program change redundant tracking and while file batch online program change redundant tracking. • SM1710 is transferred from the cjntrol system to the standby system by tracking transfer.	U		

Number	Name	Meaning	Explanation			Set by (When Set)	Corresponding ACPU M9□□□	Corresponding CPU
SM1712	Transfer trigger completion flag	OFF : Transfer uncompleted ON : Transfer completed	SM1712	Block 1	This relay turns on only during one scan upon completion of a transfer for the relevant block.	S (Status change)	New	QnPRH
SM1713			SM1713	Block 2				
SM1714			SM1714	Block 3				
SM1715			SM1715	Block 4				
SM1716			SM1716	Block 5				
SM1717			SM1717	Block 6				
SM1718			SM1718	Block 7				
SM1719			SM1719	Block 8				
SM1720			SM1720	Block 9				
SM1721			SM1721	Block 10				
SM1722			SM1722	Block 11				
SM1723			SM1723	Block 12				
SM1724			SM1724	Block 13				
SM1725			SM1725	Block 14				
SM1726			SM1726	Block 15				
SM1727			SM1727	Block 16				
SM1728			SM1728	Block 17				
SM1729			SM1729	Block 18				
SM1730			SM1730	Block 19				
SM1731			SM1731	Block 20				
SM1732			SM1732	Block 21				
SM1733			SM1733	Block 22				
SM1734			SM1734	Block 23				
SM1735			SM1735	Block 24				
SM1736			SM1736	Block 25				
SM1737			SM1737	Block 26				
SM1738			SM1738	Block 27				
SM1739			SM1739	Block 28				
SM1740			SM1740	Block 29				
SM1741			SM1741	Block 30				
SM1742			SM1742	Block 31				
SM1743			SM1743	Block 32				
SM1744			SM1744	Block 33				
SM1745			SM1745	Block 34				
SM1746			SM1746	Block 35				
SM1747			SM1747	Block 36				
SM1748			SM1748	Block 37				
SM1749			SM1749	Block 38				
SM1750			SM1750	Block 39				
SM1751			SM1751	Block 40				
SM1752			SM1752	Block 41				
SM1753			SM1753	Block 42				
SM1754			SM1754	Block 43				
SM1755			SM1755	Block 44				
SM1756			SM1756	Block 45				
SM1757			SM1757	Block 46				
SM1758			SM1758	Block 47				
SM1759			SM1759	Block 48				
SM1760			SM1760	Block 49				

Number	Name	Meaning	Explanation			Set by (When Set)	Corre-sponding ACPU M9□□□	Corre-sponding CPU
SM1761	Transfer trigger completion flag	OFF : Transfer uncompleted ON : Transfer completed	SM1761	Block 50	This relay turns on only for one scan upon completion of a transfer for the relevant block.	S (Status change)	New	QnPRH
SM1762			SM1762	Block 51				
SM1763			SM1763	Block 52				
SM1764			SM1764	Block 53				
SM1765			SM1765	Block 54				
SM1766			SM1766	Block 55				
SM1767			SM1767	Block 56				
SM1768			SM1768	Block 57				
SM1769			SM1769	Block 58				
SM1770			SM1770	Block 59				
SM1771			SM1771	Block 60				
SM1772			SM1772	Block 61				
SM1773			SM1773	Block 62				
SM1774			SM1774	Block 63				
SM1775			SM1775	Block 64				

(15) Redundant power supply module information

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corresponding CPU
SM1780	Power supply off detection flag	OFF : No redundant power supply module with input power OFF detected ON : Redundant power supply module with input power OFF detected	• Turns ON when one or more redundant power supply modules with input power OFF are detected. • Turns on if any of SD1780 bits is on. • Turns off if all bits of SD1780 are off. • This relay turns off when the main base unit is not the redundant main base unit (Q38RB). • When the multiple CPU system is configured, the flags are stored only to the CPU No.1.	S (Every END processing)	New	Qn(H)*3 QnPH*3 QnPRH QnU*4
SM1781	Power supply failure detection flag	OFF : No faulty redundant power supply module detected ON : Faulty redundant power supply module detected	• Turns ON when one or more faulty redundant power supply modules are detected. • Turns on if any of SD1781 bits is on. • Turns off if all bits of SD1781 are off. • This relay turns off when the main base unit is not the redundant main base unit (Q38RB). • When the multiple CPU system is configured, the flags are stored only to the CPU No.1.			
SM1782	Momentary power failure detection flag for power supply 1 *1	OFF : No momentary power failure detected ON : Momentary power failure detected	• Turns ON when a momentary power failure of the input power supply to the power supply 1 or 2 is detected one or more times. After turning on, this relay remains on even if the power supply recovers from the momentary power failure. • Turns off the flags (SM1782 and SM1783) of the power supply 1 and 2 when the CPU module starts. • When the input power to one of the redundant power supply modules turns OFF the corresponding flag turns OFF. • This relay turns off when the main base unit is not the redundant main base unit (Q38RB). • When the multiple CPU system is configured, the flags are stored only to the CPU No.1.			
SM1783	Momentary power failure detection flag for power supply 2 *2					

*1 The "power supply 1" indicates the redundant power supply module mounted on the POWER 1 slot of the redundant base unit (Q38RB/Q68RB/Q65WRB).

*2 The "power supply 2" indicates the redundant power supply module mounted on the POWER 2 slot of the redundant base unit (Q38RB/Q68RB/Q65WRB).

*3 The module whose first 5 digits of serial No. is "04012" or later.
However, for the multiple CPU system configuration, this applies to all CPU modules whose first 5 digits of serial No. are "07032" or later.

*4 The module whose first 5 digits of serial No. is "10042" or later.

(16) Built-in I/O function

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corresponding CPU
SM1840	Axis 1 busy	OFF : Not busy ON : Busy	• This relay turns on when positioning control, OPR control, JOG operation, or absolute position restoration is started. This relay turns off when each control is completed. In positioning control, this relay turns off when the axis 1 decelerates and stops, and then "dwell time" elapsed. (This relay remains on while positioning control is being performed.) • This relay turns off when each control is ended due to such as an error or stop operation.	S (Every END processing)	New	LCPU
SM1841	Axis 1 positioning completion	OFF : Not completed ON : Completed	• This relay turns on when OPR control, position control, or absolute position restoration is completed. • This relay turns off when OPR control, positioning control, absolute position restoration, or JOG operation is started. • This relay remains off when JOG operation is completed. • This relay remains off when position control is stopped.	S (Instruction execution/ Status change)		
SM1842	Axis 1 OPR request	OFF : Machine OPR control completed ON : Machine OPR control started	• This relay turns on when the CPU module is powered on, is reset, or is set from STOP to RUN; or the drive unit ready signal turns off; or machine OPR control is started. • This relay turns off when machine OPR control is completed.	S (Every END processing)		
SM1843	Axis 1 OPR completion	OFF : Not completed ON : Completed	• This relay turns on when machine OPR control is completed. • This relay turns off when OPR control, positioning control, absolute position restoration, or JOG operation is started; or the CPU module is set from STOP to RUN; or the drive unit ready signal turns off.	S (Instruction execution/ Status change)		
SM1844	Axis 1 speed 0	OFF : Operating at speed other than 0 ON : Operating at speed 0	• This relay turns on when JOG operation or speed control in speed/position switching control set at a speed of "0" is started. • This relay turns on when speed is changed with a new speed value of "0", and turns off when speed is changed with a new speed value other than "0". • This relay turns off when SM1840 turns off.	S (Every END processing)		
SM1845	Axis 1 error	OFF : No error ON : Error	• This relay turns on if an error occurs. • The present error can be checked by SD1845. • This relay is turned off by turning on SM1850.			
SM1846	Axis 1 warning	OFF : No warning ON : Warning	• This relay turns on if a warning occurs. • The present warning can be checked by SD1846. • This relay is turned off by turning on SM1850.			
SM1847	Axis 1 start in busy status	OFF : No start attempted in busy status ON : Start attempted in busy status	• This relay turns on when positioning control, OPR control, JOG operation, or absolute position restoration is attempted while the axis 1 is in the busy status. The executed start instruction will be ignored. • This relay is reset by the user.	S (Instruction execution) /U		

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU M9□□□	Corresponding CPU
SM1848	Axis 1 start instruction	OFF : Not executed ON : Being executed	• This relay turns on when positioning control by the start instruction (IPPSTRT1(P), IPDSTRT1(P), IPSIMUL(P), IPABRST1), JOG operation by the JOG start instruction (IPJOG1), or OPR control by the OPR start instruction (IPOPR1(P)) is started. • This relay turns off when positioning control, OPR control, or JOG operation is completed.	S (Instruction execution/ Status change)	New	LCPU
SM1850	Axis 1 error reset	OFF → ON: Resets the Axis 1 error. OFF : Clears the reset status.	• Turning on this relay will turn off SM1845 and SM1846 and will clear the SD1845 and SD1846 values to "0". • Even if this relay is turned on, SM1845 will not turn off and the SD1845 value will not be cleared to "0" until SM1840 turns off.	U		
SM1851	Axis 1 OPR request off	OFF → ON: Axis 1 OPR request OFF : Cleared	Turning on this relay will forcibly turn off SM1842.			
SM1852	Axis 1 speed/ position switching	OFF : Disabled ON : Enabled	This relay stores whether to enable switching from speed control to position control in speed/position switching control.			
SM1860	Axis 2 busy	OFF : Not busy ON : Busy	• This relay turns on when positioning control, OPR control, JOG operation, or absolute position restoration is started. This relay turns off when each control is completed. In positioning control, this relay turns off when the axis 2 decelerates and stops, and then "dwell time" elapsed. (This relay remains on while positioning control is being performed.) • This relay turns off when each control is ended due to such as an error or stop operation.	S (Every END processing)		
SM1861	Axis 2 positioning completion	OFF : Not completed ON : Completed	• This relay turns on when OPR control, position control, or absolute position restoration is completed. • This relay turns off when OPR control, positioning control, absolute position restoration, or JOG operation is started. • This relay remains off when JOG operation is completed. • This relay remains off when position control is stopped.	S (Instruction execution/ Status change)		
SM1862	Axis 2 OPR request	OFF : Machine OPR control completed ON : Machine OPR control started	• This relay turns on when the CPU module is powered on, is reset, or is set from STOP to RUN; or the drive unit ready signal turns off; or machine OPR control is started. • This relay turns off when machine OPR control is completed.	S (Every END processing)		

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corresponding CPU
SM1863	Axis 2 OPR completion	OFF : Not completed ON : Completed	• This relay turns on when machine OPR control is completed. • This relay turns off when OPR control, positioning control, absolute position restoration, or JOG operation is started; or the CPU module is set from STOP to RUN; or the drive unit ready signal turns off.	S (Instruction execution/ Status change)	New	LCPU
SM1864	Axis 2 speed 0	OFF : Operating at speed other than 0 ON : Operating at speed 0	• This relay turns on when JOG operation or speed control in speed/position switching control set at a speed of "0" is started. • This relay turns on when speed is changed with a new speed value of "0", and turns off when speed is changed with a new speed value other than "0". • This relay turns off when SM1860 turns off.	S (Every END processing)		
SM1865	Axis 2 error	OFF : No error ON : Error	• This relay turns on if an error occurs. • The present error can be checked by SD1865. • This relay is turned off by turning on SM1870.			
SM1866	Axis 2 warning	OFF : No warning ON : Warning	• This relay turns on if a warning occurs. • The present warning can be checked by SD1866. • This relay is turned off by turning on SM1870.			
SM1867	Axis 2 start in busy status	OFF : No start attempted in busy status ON : Start attempted in busy status	• This relay turns on when positioning control, OPR control, JOG operation, or absolute position restoration is attempted while the axis 2 is in the busy status. The executed start instruction will be ignored. • This relay is reset by the user.	S (Instruction execution) /U		
SM1868	Axis 2 start instruction	OFF : Not executed ON : Being executed	• This relay turns on when positioning control by the start instruction (IPPSTRT2(P), IPDSTRT2(P), IPSIMUL(P), IPABRST2), JOG operation by the JOG start instruction (IPJOG2), or OPR control by the OPR start instruction (IPOPR2(P)) is started. • This relay turns off when positioning control, OPR control, or JOG operation is completed.	S (Instruction execution/ Status change)		
SM1870	Axis 2 error reset	OFF → ON: Resets the Axis 2 error. OFF : Clears the reset status.	• Turning on this relay will turn off SM1865 and SM1866 and will clear the SD1865 and SD1866 values to "0". • Even if this relay is turned on, SM1865 will not turn off and the SD1865 value will not be cleared to "0" until SM1860 turns off.	U		
SM1871	Axis 2 OPR request off	OFF→ON: Axis 2 OPR request OFF : Cleared	Turning on this relay will forcibly turn off SM1862.			
SM1872	Axis 2 speed/ position switching	OFF : Disabled ON : Enabled	This relay stores whether to enable switching from speed control to position control in speed/position switching control.			

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU M9□□□	Corresponding CPU
SM1880	CH1 counter value greater (No.1)	OFF : Coincidence point (No.1) or smaller ON : Greater than coincidence point (No.1)	• This relay turns on when "current value of CH1 > coincidence output No.1 point setting value" is met. • This relay turns off when "current value of CH1 ≤ coincidence output No.1 point setting value" is met.	S (Every END processing)	New	LCPU
SM1881	CH1 counter value coincidence (No.1)	OFF : Not detected ON : Detected	• This relay turns on when "current value of CH1 = coincidence output No.1 point setting value" is met. • This relay is turned off by turning on CH1 coincidence signal No.1 reset command.	S (Status change/ Every END processing)		
SM1882	CH1 counter value smaller (No.1)	OFF : Coincidence point (No.1) or greater ON : Smaller than coincidence point (No.1)	• This relay turns on when "current value of CH1 < coincidence output No.1 point setting value" is met. • This relay turns off when "current value of CH1 ≥ coincidence output No.1 point setting value" is met.	S (Every END processing)		
SM1883	CH1 counter value greater (No.2)	OFF : Coincidence point (No.2) or smaller ON : Greater than coincidence point (No.2)	• This relay turns on when "current value of CH1 > coincidence output No.2 point setting value" is met. • This relay turns off when "current value of CH1 ≤ coincidence output No.2 point setting value" is met.			
SM1884	CH1 counter value coincidence (No.2)	OFF : Not detected ON : Detected	• This relay turns on when "current value of CH1 = coincidence output No.2 point setting value" is met. • This relay is turned off by turning on CH1 coincidence signal No.2 reset command.	S (Status change/ Every END processing)		
SM1885	CH1 counter value smaller (No.2)	OFF : Coincidence point (No.2) or greater ON : Smaller than coincidence point (No.2)	• This relay turns on when "current value of CH1 < coincidence output No.2 point setting value" is met. • This relay turns off when "current value of CH1 ≥ coincidence output No.2 point setting value" is met.	S (Every END processing)		
SM1886	CH1 external preset (phase Z) request detection	OFF : Not detected ON : Detected	• This relay turns on when a preset request by phase Z (preset) terminal of CH1 is detected. • This relay is turned off by turning on CH1 external preset (phase Z) request detection clear command.			
SM1887	CH1 error	OFF : No error ON : Error	• This relay turns on if the CH1 error occurs. • This relay turns off when an error cause is removed and CH1 error reset command is turned on.			
SM1888	CH1 warning	OFF : No warning ON : Warning	• This relay turns on if a warning occurs in CH1. • This relay turns off when a warning cause is removed and CH1 error reset command is turned on.			

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU M9□□□	Corresponding CPU
SM1890	CH1 coincidence signal No.1 reset command	Resets CH1 counter value coincidence No.1.	• This relay is turned on to reset CH1 counter value coincidence No.1. • The command is valid while this relay is on. • The on time must be held for at least 2ms.	U	New	LCPU
SM1891	CH1 coincidence signal No.2 reset command	Resets CH1 counter value coincidence No.2.	• This relay is turned on to reset CH1 counter value coincidence No.2. • The command is valid while this relay is on. • The on time must be held for at least 2ms.			
SM1892	CH1 coincidence output enable command	Controls outputs from CH1 coincidence output No.1 and No.2 terminals.	• This relay is turned on to perform coincidence output from CH1 coincidence output No.1 and CH1 coincidence output No.2 terminals. • The command is valid while this relay is on.			
SM1893	CH1 preset command	Presets the counter value.	• This relay is turned on to preset the counter value. • The command is valid at the rise of this relay (off → on). • The on and off time must be held for at least 2ms.			
SM1894	CH1 count down command	Counts down pulses.	• This relay is turned on to count down pulses. • The command is valid while the Pulse input mode is either 1-phase multiple of n or 1-phase multiple of n (A phase only). • The command is valid while this relay is on.			
SM1895	CH1 count enable command	Starts counting.	• This relay is turned on to start counting. • The command is valid while this relay is on.			
SM1896	CH1 counter function selection start command	Starts the selected counter function.	• This relay is turned on to start the selected counter function. • When the count disabling function is selected, the command is valid while this relay is on. • When the latch counter function or the sampling counter function is selected, the command is valid at the rise of this relay (off → on). The on time must be held for at least 2ms. • When the count disabling/preset function or the latch counter/preset function is selected, the command is invalid.			
SM1897	CH1 external preset (phase Z) request detection reset command	Resets CH1 external preset (phase Z) request detection.	• This relay is turned on to reset CH1 external preset (phase Z) request detection. • The command is valid at the rise of this relay (off → on). • The on and off time must be held for at least 2ms.			
SM1898	CH1 pulse measurement start command	Starts pulse measurement.	• This relay is turned on to measure pulses. • The command is valid while this relay is on.			
SM1899	CH1 error reset command	Resets the CH1 error.	• This relay is turned on to reset the CH1 error. • The command is valid at the rise of this relay (off → on). • The on and off time must be held for at least 2ms.			

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU M9□□□	Corresponding CPU
SM1900	CH2 counter value greater (No.1)	OFF : Coincidence point (No.1) or smaller ON : Greater than coincidence point (No.1)	• This relay turns on when "current value of CH2 > coincidence output No.1 point setting value" is met. • This relay turns off when "current value of CH2 ≤ coincidence output No.1 point setting value" is met.	S (Every END processing)	New	LCPU
SM1901	CH2 counter value coincidence (No.1)	OFF : Not detected ON : Detected	• This relay turns on when "current value of CH2 = coincidence output No.1 point setting value" is met. • This relay is turned off by turning on CH2 coincidence signal No.1 reset command.	S (Status change/ Every END processing)		
SM1902	CH2 counter value smaller (No.1)	OFF : Coincidence point (No.1) or greater ON : Smaller than coincidence point (No.1)	• This relay turns on when "current value of CH2 < coincidence output No.1 point setting value" is met. • This relay turns off when "current value of CH2 ≥ coincidence output No.1 point setting value" is met.	S (Every END processing)		
SM1903	CH2 counter value greater (No.2)	OFF : Coincidence point (No.2) or smaller ON : Greater than coincidence point (No.2)	• This relay turns on when "current value of CH2 > coincidence output No.2 point setting value" is met. • This relay turns off when "current value of CH2 ≤ coincidence output No.2 point setting value" is met.			
SM1904	CH2 counter value coincidence (No.2)	OFF : Not detected ON : Detected	• This relay turns on when "current value of CH2 = coincidence output No.2 point setting value" is met. • This relay is turned off by turning on CH2 coincidence signal No.2 reset command.	S (Status change/ Every END processing)		
SM1905	CH2 counter value smaller (No.2)	OFF : Coincidence point (No.2) or greater ON : Smaller than coincidence point (No.2)	• This relay turns on when "current value of CH2 < coincidence output No.2 point setting value" is met. • This relay turns off when "current value of CH2 ≥ coincidence output No.2 point setting value" is met.	S (Every END processing)		
SM1906	CH2 external preset (phase Z) request detection	OFF : Not detected ON : Detected	• This relay turns on when a preset request by phase Z (preset) terminal of CH2 is detected. • This relay is turned off by turning on CH2 external preset (phase Z) request detection clear command.			
SM1907	CH2 Error	OFF : No error ON : Error	• This relay turns on if the CH2 error occurs. • This relay turns off when an error cause is removed and CH2 error reset command is turned on.			
SM1908	CH2 warning	OFF : No warning ON : Warning	• This relay turns on if a warning occurs in CH2. • This relay turns off when a warning cause is removed and CH2 error reset command is turned on.			

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU M9□□□	Corresponding CPU
SM1910	CH2 coincidence signal No.1 reset command	Resets CH2 counter value coincidence No.1.	• This relay is turned on to reset CH2 counter value coincidence No.1. • The command is valid while this relay is on. • The on time must be held for at least 2ms.	U	New	LCPU
SM1911	CH2 coincidence signal No.2 reset command	Resets CH2 counter value coincidence No.2.	• This relay is turned on to reset CH2 counter value coincidence No.2. • The command is valid while this relay is on. • The on time must be held for at least 2ms.			
SM1912	CH2 coincidence output enable command	Controls outputs from CH2 coincidence output No.1 and No.2 terminals.	• This relay is turned on to perform coincidence output from CH2 coincidence output No.1 and CH2 coincidence output No.2 terminals. • The command is valid while this relay is on.			
SM1913	CH2 preset command	Presets the counter value.	• This relay is turned on to preset the counter value. • The command is valid at the rise of this relay (off → on). • The on and off time must be held for at least 2ms.			
SM1914	CH2 count down command	Counts down pulses.	• This relay is turned on to count down pulses. • The command is valid while the Pulse input mode is either 1-phase multiple of n or 1-phase multiple of n (A phase only). • The command is valid while this relay is on.			
SM1915	CH2 count enable command	Starts counting.	• This relay is turned on to start counting. • The command is valid while this relay is on.			
SM1916	CH2 counter function selection start command	Starts the selected counter function.	• This relay is turned on to start the selected counter function. • When the count disabling function is selected, the command is valid while this relay is on. • When the latch counter function or the sampling counter function is selected, the command is valid at the rise of this relay (off → on). The on time must be held for at least 2ms. • When the count disabling/preset function or the latch counter/preset function is selected, the command is invalid.			
SM1917	CH2 external preset (phase Z) request detection reset command	Resets CH2 external preset (phase Z) request detection.	• This relay is turned on to reset CH2 external preset (phase Z) request detection. • The command is valid at the rise of this relay (off → on). • The on and off time must be held for at least 2ms.			
SM1918	CH2 pulse measurement start command	Starts pulse measurement.	• This relay is turned on to measure pulses. • The command is valid while this relay is on.			
SM1919	CH2 error reset command	Resets the CH2 error.	• This relay is turned on to reset the CH2 error. • The command is valid at the rise of this relay (off → on). • The on and off time must be held for at least 2ms.			

(17) Data logging

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corresponding CPU
SM1940	Data logging setting No.1 Data logging preparation	OFF : Not ready ON : Ready	This relay turns on when the system is ready for data logging. This relay remains on even after data logging is suspended. However, this relay turns off when data logging is stopped.	S (Initial)	New	LCPU
SM1941	Data logging setting No.1 Data logging start	OFF : Pause ON : Start	This relay is turned on to start data logging while the CPU module is set to RUN and is turned off to suspend data logging. (The related specialy relays will all turn off.) Even if this relay is turned on while the CPU module is set to STOP, data logging will not be started.	S (Status change)/U		
SM1942	Data logging setting No.1 Data logging collection	OFF : Not being collected ON : Being collected	This relay is on while data logging is being collected.	S (Status change)		
SM1943	Data logging setting No.1 Data logging end	OFF : Not ended ON : Ended	This relay turns on when data logging is ended. [Continuous is set for Logging type] The corresponding bit turns on when data logging is ended after data have been written by the number of storable files (Stop is set for Operation occurring when number of saved files is exceeded). [Trigger is set for Logging type] The corresponding bit turns on when the trigger condition is met, data are collected by the number of set times, and then the data are written to the SD memory card. This relay also turns on if an error occurs during data logging (except data logging error occurred by the execution of online change).			
SM1944	Data logging setting No.1 Data logging trigger	OFF→ON: Triggered	• This relay turns on when the specified trigger condition is met. • This relay is turned on to meet the trigger condition.	S (Status change)/U		
SM1945	Data logging setting No.1 After data logging trigger	OFF : Not triggered ON : Triggered	This relay turns on after trigger logging is triggered. This relay remains on even after data logging is completed. This relay turns off when trigger logging is suspended or stopped.	S (Status change)		
SM1946	Data logging setting No.1 Data logging error	OFF : No error ON : Error	This relay turns on if a data logging error occurs. This relay is turned off by the registration of the setting or a stop command from LCPU Logging Configuration Tool.	S (Error)		
SM1947	Data logging setting No.1 Data storage in SD memory card	OFF : Not stored ON : Being stored	This relay is on while buffer memory data are being stored to a SD memory card by data logging.	S (Status change)		
SM1948	Data logging setting No.1 Data logging file transfer execution status flag	OFF : Not executed ON : Being executed	This relay turns on when the data logging file transfer function is started.			LCPU[*1]

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU M9□□□	Corresponding CPU
SM1950 to SM1958	Data logging setting No.2	Same as in data logging setting No.1	Same as in data logging setting No.1 (SM1940 to SM1948)	Same as in data logging setting No.1	New	LCPU*1
SM1960 to SM1968	Data logging setting No.3					
SM1970 to SM1978	Data logging setting No.4					
SM1980 to SM1988	Data logging setting No.5					
SM1990 to SM1998	Data logging setting No.6					
SM2000 to SM2008	Data logging setting No.7					
SM2010 to SM2018	Data logging setting No.8					
SM2020 to SM2028	Data logging setting No.9					
SM2030 to SM2038	Data logging setting No.10					

*1 Data logging file transfer execution status flag is supported by a module whose serial number (first five digits) is "12112" or later.

Appendix 3 Special Register List

The special register (SD) is an internal register whose application is fixed in the programmable controller. For this reason, the special register cannot be used in the same way as other internal registers are used in sequence programs. However, data can be written to the special register to control the CPU module as needed. Data is stored in binary format if not specified.

The following table shows how to read the special register list.

Item	Description
Number	Special register number
Name	Special register name
Meaning	Contents of special register
Explanation	Detailed description of special register
Set by (When Set)	Set side and set timing of special register <Set by> • S: Set by system • U: Set by user (using a program, programming tool, GOT, or test operation from other external devices) • S/U: Set by both system and user <When Set> The following shows the set timing when the special register is set by system. • Every END processing: Set during every END processing • Initial: Set during initial processing (after power-on or status change from STOP to RUN) • Status change: Set when the operating status is changed • Error: Set if an error occurs • Instruction execution: Set when an instruction is executed • Request: Set when requested by a user (using the special relay) • When condition occurs: Set when the condition is triggered • When system is switched: Set when the system is switched (between the control system and the standby system) • When RUN/STOP/RESET switch changed: Set when the RUN/STOP/RESET switch is changed • Card removal: Set when a memory card is inserted or removed • At write: Set when data is written to the CPU module
Corresponding CPU	CPU module supporting the special register • QCPU: All the Q series CPU modules • Q00J/Q00/Q01: Basic model QCPU • Qn(H): High Performance model QCPU • QnPH: Process CPU • QnPRH: Redundant CPU • QnU: Universal model QCPU • Q00UJ/Q00U/Q01U: Q00UJCPU, Q00UCPU, and Q01UCPU • LCPU: All the L series CPU modules • CPU module model: Only the specified model (Example: Q02UCPU, L26CPU-BT)
Corresponding ACPU D9□□□	• Special register (D9□□□) supported by the ACPU ("D9□□□ format change" indicates the one whose application has been changed. Incompatible with the Q00J/Q00/Q01 and QnPRH.) • "New" indicates the one added for the QCPU or LCPU.

For details on the following items, refer to the following.

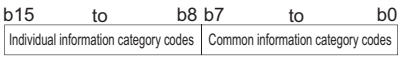
- For network related items: 📖 Manuals for each network module
- For SFC programs: 📖 MELSEC-Q/L/QnA Programming Manual (SFC)

Point

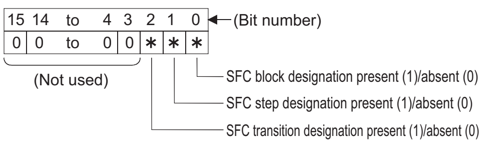
Do not change the values of special register set by system using a program or by test operation.
Doing so may result in system down or communication failure.

(1) Diagnostic information

<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by
(When Set)</th><th>Corre-
sponding
ACPU
D9□□□</th><th>Corre-
sponding
CPU</th></tr>
<tr><td>SD0</td><td>Diagnostic errors</td><td>Diagnosis error code</td><td>• This register stores the error code of an error detected by diagnostics.
• Contents identical to latest error history information.</td><td rowspan="4">S
(Error)</td><td>D9008 format change</td><td rowspan="4">QCPU
LCPU</td></tr>
<tr><td>SD1</td><td rowspan="3">Clock time for diagnosis error occurrence</td><td rowspan="3">Clock time for diagnosis error occurrence</td><td>This register stores the year (last two digits) and the month when the SD0 data is updated in 4-digit BCD.
b15 to b8 b7 to b0
Year (0 to 99) | Month (1 to 12)
(Example) October, 1995
9510H</td><td rowspan="3">New</td></tr>
<tr><td>SD2</td><td>This register stores the day and the hour when the SD0 data is updated in 4-digit BCD.
b15 to b8 b7 to b0
Day (1 to 31) | Hour (0 to 23)
(Example) 10 a.m. on 25th
2510H</td></tr>
<tr><td>SD3</td><td>This register stores the minute and the second when the SD0 data is updated in 4-digit BCD.
b15 to b8 b7 to b0
Minutes (0 to 59) | Seconds (0 to 59)
(Example) 35 min. 48 sec.
3548H</td></tr>
</table>

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD4	Error information categories	Error information category code	• Error information is stored in Error common information (SD5 to SD15) and Error individual information (SD16 to SD26). • This register stores a category code indicating an error information type.  • The common information category codes store the following codes: • 0: No error • 1: Module No. (QCPU: Slot No./CPU No./base No., LCPU: Slot No./Block No.)*1 • 2: File name/drive name • 3: Time (value set) • 4: Program error location • 5: Reason(s) for system switching (for Redundant CPU) • 6: Reason(s) for tracking size excess error (for Redundant CPU) • 7: Base No./power supply No. (Except for the Universal model QCPU and LCPU having the serial No. (first five digits) of "10041" or earlier) • 8: Tracking transmission data classification (for Redundant CPU) *1 For a multiple CPU system, the module No. or CPU No. is stored according to an error. (To determine whether a storage value is a module No. or CPU No., refer to each error code.) CPU No. 1: 1, CPU No. 2: 2, CPU No. 3: 3, CPU No. 4: 4 • The individual information category codes store the following codes: • 0: No error • 1: (Empty) • 2: File name/drive name • 3: Time (value actually measured) • 4: Program error location • 5: Parameter number • 6: Annunciator (F) No. • 7: CHK instruction failure No. (Except for the Basic model QCPU, Universal model QCPU, and LCPU.) • 8: Reason(s) for system switching failure (for Redundant CPU) • 9: Failure information (for LCPU) • 12: File diagnostic information (for Universal model QCPU and LCPU) • 13: Parameter No./CPU No. (for Universal model QCPU)	S (Error)	New	QCPU LCPU

<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by (When Set)</th><th>Corre-sponding ACPU D9□□□</th><th>Corre-sponding CPU</th></tr>
<tr>
<td>SD5
SD6
SD7
SD8
SD9
SD10
SD11
SD12
SD13
SD14
SD15</td>
<td>Error common information</td>
<td>Error common information</td>
<td>
• This register stores common information corresponding to the error code stored in SD0.
• The following ten types of information are stored here:
• The error common information type can be determined by "common information category code" stored in SD4. (Values stored in "common information category code" correspond to the following 1) to 8).)
1) Module No.
<table>
<tr><th>Number</th><th>Meaning</th></tr>
<tr><td>SD5</td><td>Slot No./CPU No./Base No./Block No. *1, *2, *3, *4, *5</td></tr>
<tr><td>SD6</td><td>I/O No. *6, *11</td></tr>
<tr><td>SD7
SD8
SD9
SD10
SD11
SD12
SD13
SD14
SD15</td><td>(Empty)</td></tr>
</table>
*1 For a multiple CPU system, the module No. or CPU No. is stored according to an error. (To determine whether a storage value is a module No. or CPU No., refer to each error code.)
CPU No. 1: 1, CPU No. 2: 2, CPU No. 3: 3, CPU No. 4: 4
*2 If a fuse has been blown or an I/O module verification error occurs in a module on the MELSECNET/H remote I/O station, the network No. is stored in the upper 8 bits and the station No. is stored in the lower 8 bits. To determine a fuse-blown module or a module where an I/O module verification error occurs, check the I/O No.
*3 If an instruction is executed to the Basic model QCPU on the slot where the module cannot be mounted, "255" is stored in SD5.
*4 The definitions of the base No., slot No., and block No. are as follows:
[Base No.]
This number indicates a base unit on which the CPU module is mounted.
<table>
<tr><th>Base No.</th><th>Definition</th></tr>
<tr><td>0</td><td>Indicates the main base unit where a CPU module is mounted.</td></tr>
<tr><td>1 to 7</td><td>Indicates the extension base unit. The stage number setting made by the stage number setting connector on the extension base unit is the base No.
When stage number setting is extension 1: Base No. = 1
When stage number setting is extension 7: Base No. = 7</td></tr>
</table>
[Slot No.]
This number is used to identify the slot No. of a module where an error occurs. The "0" I/O slot (slot on the right of the CPU slot) on the main base unit is defined as "Slot No. = 0". The slot Nos. are assigned in sequence numbers in order of the main base unit and then the first extension base unit to 7th extension base unit. When the number of slots on base units has been set in the I/O assignment tab of the PLC Parameter dialog box, the slot Nos. are assigned by the number of set slots.
[Block No.]
<table>
<tr><th>Block No.</th><th>Definition</th></tr>
<tr><td>0</td><td>Indicates the number of main block where a CPU module is mounted.</td></tr>
<tr><td>1 to 3</td><td>Indicates the main block where a CPU module is mounted.
Extension block 1: Block No. = 1
Extension block 2: Block No. = 2
Extension block 3: Block No. = 3</td></tr>
</table>
(To the next page)
</td>
<td>S
(Error)</td>
<td>New</td>
<td>QCPU
LCPU</td>
</tr>
</table>

<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by (When Set)</th><th>Corre-sponding ACPU D9□□□</th><th>Corre-sponding CPU</th></tr>
<tr>
<td>SD5
SD6
SD7
SD8
SD9
SD10
SD11
SD12
SD13
SD14
SD15</td>
<td>Error common information</td>
<td>Error common information</td>
<td>
*5 If a module is not mounted on any slots as set, FF_H is stored.
*6 If $FFFF_H$ is stored in SD6 (I/O No.), this indicates that the I/O No. cannot be identified due to such as overlap of an I/O No. in the I/O assignment setting of the PLC Parameter dialog box. In this case, identify the error location using SD5. $FFFF_H$ is stored in SD6 also for a branch module.
*11 The number found by dividing the head I/O number by 16 is stored.
2) File name/drive name
<table>
<tr><th>Number</th><th>Meaning</th></tr>
<tr><td>SD5</td><td>Drive</td></tr>
<tr><td>SD6</td><td rowspan="4">File name
(ASCII code: 8 characters)</td></tr>
<tr><td>SD7</td></tr>
<tr><td>SD8</td></tr>
<tr><td>SD9</td></tr>
<tr><td>SD10</td><td>Extension *7 | 2EH(.)</td></tr>
<tr><td>SD11</td><td>(ASCII code: 3 characters)</td></tr>
<tr><td>SD12</td><td rowspan="4">(Empty)</td></tr>
<tr><td>SD13</td></tr>
<tr><td>SD14</td></tr>
<tr><td>SD15</td></tr>
</table>
(Example) File name = ABCDEFGH. IJK
<table>
<tr><th>b15 to b8</th><th>b7 to b0</th></tr>
<tr><td>42H(B)</td><td>41H(A)</td></tr>
<tr><td>44H(D)</td><td>43H(C)</td></tr>
<tr><td>46H(F)</td><td>45H(E)</td></tr>
<tr><td>48H(H)</td><td>47H(G)</td></tr>
<tr><td>49H(I)</td><td>2EH(.)</td></tr>
<tr><td>4BH(K)</td><td>4AH(J)</td></tr>
</table>
3) Time (value set)
<table>
<tr><th>Number</th><th>Meaning</th></tr>
<tr><td>SD5</td><td>Time : 1μs units (0 to 999μs)</td></tr>
<tr><td>SD6</td><td>Time : 1ms units (0 to 65535ms)</td></tr>
<tr><td>SD7</td><td rowspan="9">(Empty)</td></tr>
<tr><td>SD8</td></tr>
<tr><td>SD9</td></tr>
<tr><td>SD10</td></tr>
<tr><td>SD11</td></tr>
<tr><td>SD12</td></tr>
<tr><td>SD13</td></tr>
<tr><td>SD14</td></tr>
<tr><td>SD15</td></tr>
</table>
4) Program error location
<table>
<tr><th>Number</th><th>Meaning</th></tr>
<tr><td>SD5</td><td rowspan="4">File name
(ASCII code: 8 characters)</td></tr>
<tr><td>SD6</td></tr>
<tr><td>SD7</td></tr>
<tr><td>SD8</td></tr>
<tr><td>SD9</td><td>Extension *7 | 2EH(.)</td></tr>
<tr><td>SD10</td><td>(ASCII code: 3 characters)</td></tr>
<tr><td>SD11</td><td>Pattern *8</td></tr>
<tr><td>SD12</td><td>Block No.</td></tr>
<tr><td>SD13</td><td>Step No./transition condition</td></tr>
<tr><td>SD14</td><td>Sequence step No. (L)</td></tr>
<tr><td>SD15</td><td>Sequence step No. (H)</td></tr>
</table>
*7 For extension names, refer to the table on Page 296.
*8 The description of the bit pattern is as follows:


(To the next page)
</td>
<td>S
(Error)</td>
<td>New</td>
<td>QCPU
LCPU</td>
</tr>
</table>

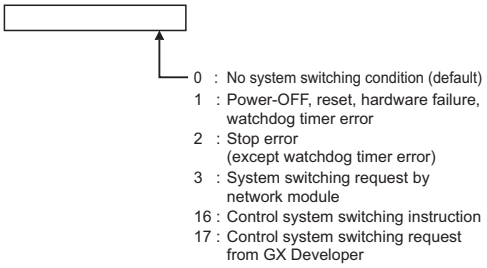
A

Appendix 3 Special Register List

*7 The extension names are shown below.

SD_n	SD_{n+1}		Extension Name	File Type
Higher 8 bits	Lower 8 bits	Higher 8 bits		
51H	50H	41H	QPA	Parameters
51H	50H	47H	QPG	Program
51H	43H	44H	QCD	Device comment
51H	44H	49H	QDI	Initial device value
51H	44H	52H	QDR	File register
51H	44H	4CH	QDL	Local device (For High Performance model QCPU, Process CPU, Redundant CPU, Universal model QCPU, and LCPU)
51H	54H	44H	QTD	Sampling trace data (For High Performance model QCPU, Process CPU, Redundant CPU, Universal model QCPU, and LCPU)
51H	46H	44H	QFD	Error history data (For High Performance model QCPU, Process CPU, and Redundant CPU)
51H	53H	54H	QST	SP.DEVST/S.DEVLD instruction file (for Universal model QCPU and LCPU)

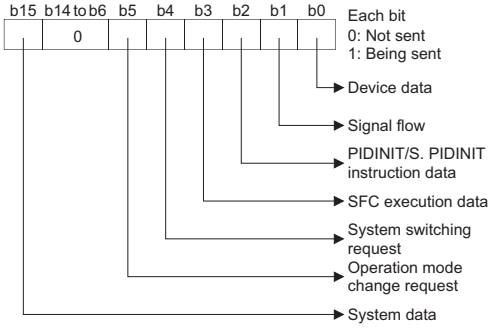
<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by
(When Set)</th><th>Corre-
sponding
ACPU
D9□□□</th><th>Corre-
sponding
CPU</th></tr>
<tr><td>SD5
SD6
SD7
SD8
SD9
SD10
SD11
SD12
SD13
SD14

SD15</td><td>Error common information</td><td>Error common information</td><td>5) Reason(s) for system switching
<table><tr><th>Number</th><th>Meaning</th></tr><tr><td>SD5</td><td>System switching cause *9</td></tr><tr><td>SD6</td><td>Control system switching instruction argument</td></tr><tr><td>SD7
SD8
SD9
SD10
SD11
SD12
SD13
SD14
SD15</td><td>(Empty)</td></tr></table>*9 The following shows the description.
 

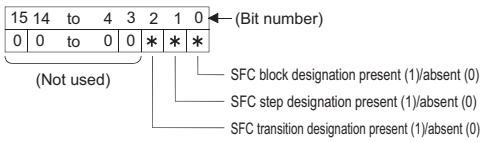
6) Reason(s) for tracking size excess error
The following shows block Nos. when data size that can be tracked (100K) is exceeded in the bit pattern of the corresponding special relay.
<table><tr><th></th><th>b15</th><th>b14</th><th>b13</th><th>b12</th><th>b11</th><th>b10</th><th>b9</th><th>b8</th><th>b7</th><th>b6</th><th>b5</th><th>b4</th><th>b3</th><th>b2</th><th>b1</th><th>b0</th></tr><tr><td>SD5</td><td>1 (SM1535) (Block16)</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1 (SM1528) (Block9)</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1 (SM1520) (Block1)</td></tr><tr><td>SD6</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>SD7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>SD8</td><td>1 (SM1583) (Block64)</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1 (SM1568) (Block49)</td></tr><tr><td>SD9</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>SD15</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr></table>(To the next page)</td><td>S
(Error)</td><td>New</td><td>QnPRH</td></tr>
</table>

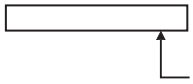
<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by
(When Set)</th><th>Corre-
sponding
ACPU
D9□□□</th><th>Corre-
sponding
CPU</th></tr>
<tr><td>SD5
SD6
SD7
SD8
SD9
SD10
SD11
SD12

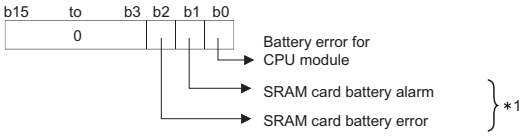
SD13</td><td rowspan="3">Error common information</td><td rowspan="3">Error common information</td><td>7) Base No./power supply No.
<table><tr><th>Number</th><th>Meaning</th></tr><tr><td>SD5</td><td>Base No.</td></tr><tr><td>SD6</td><td>Power supply No.</td></tr><tr><td>SD7
SD8
SD9
SD10
SD11
SD12
SD13
SD14
SD15</td><td>(Empty)</td></tr></table>1: Power supply 1 fault
2: Power supply 2 fault
"Power supply module 1": Redundant power supply module mounted on POWER 1 slot of redundant base unit (Q38RB, Q68RB, Q65WRB)
"Power supply module 2": Redundant power supply module mounted on POWER 2 slot of redundant base unit (Q38RB, Q68RB, Q65WRB)</td><td rowspan="3">S
(Error)</td><td rowspan="3">New</td><td>Qn(H)*1
QnPH*1
QnPRH
QnU*2</td></tr>
<tr><td>SD14

SD15</td><td>8) Tracking transmission data classification
This register stores a data type during tracking.
<table><tr><th>Number</th><th>Meaning</th></tr><tr><td>SD5</td><td>Data type *10</td></tr><tr><td>SD6
SD7
SD8
SD9
SD10
SD11
SD12
SD13
SD14
SD15</td><td>(Empty)</td></tr></table>*10 The description of the data type is as follows:
 
</td><td>QnPRH</td></tr>
</table>

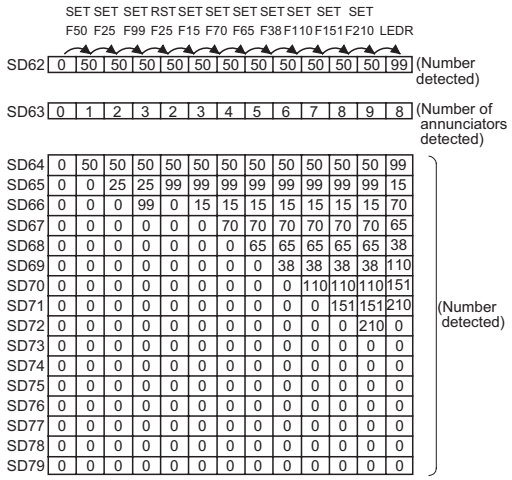
<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by
(When Set)</th><th>Corre-
sponding
ACPU
D9□□□</th><th>Corre-
sponding
CPU</th></tr>
<tr><td>SD16
SD17
SD18
SD19
SD20
SD21
SD22
SD23
SD24
SD25

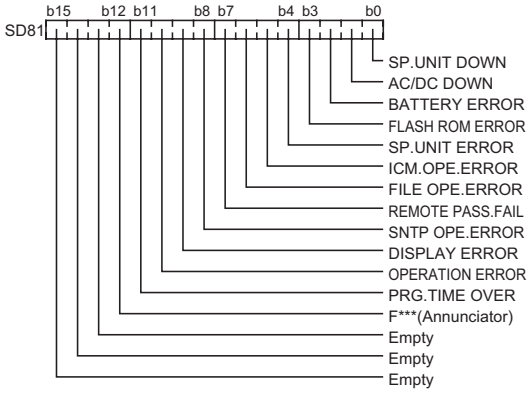
SD26</td><td>Error individual information</td><td>Error individual information</td><td>• This register stores individual information corresponding to the error code stored in SD0.
• There are the following eight different types of information are stored.
• The error individual information type can be determined by "individual information category code" stored in SD4. (Values stored in "individual information category code" correspond to the following 1) to 8), 12), and 13).)
1) (Empty)
2) File name/drive name
<table><tr><th>Number</th><th colspan="2">Meaning</th></tr><tr><td>SD16</td><td colspan="2">Drive</td></tr><tr><td>SD17</td><td colspan="2" rowspan="4">File name
(ASCII code: 8 characters)</td></tr><tr><td>SD18</td></tr><tr><td>SD19</td></tr><tr><td>SD20</td></tr><tr><td>SD21</td><td>Extension *6</td><td>2EH(.)</td></tr><tr><td>SD22</td><td colspan="2">(ASCII code: 3 characters)</td></tr><tr><td>SD23</td><td colspan="2" rowspan="4">(Empty)</td></tr><tr><td>SD24</td></tr><tr><td>SD25</td></tr><tr><td>SD26</td></tr></table>(Example) File name = ABCDEFGH. IJK
<table><tr><th>b15 to b8</th><th>b7 to b0</th></tr><tr><td>42H(B)</td><td>41H(A)</td></tr><tr><td>44H(D)</td><td>43H(C)</td></tr><tr><td>46H(F)</td><td>45H(E)</td></tr><tr><td>48H(H)</td><td>47H(G)</td></tr><tr><td>49H(I)</td><td>2EH(.)</td></tr><tr><td>4BH(K)</td><td>4AH(J)</td></tr></table>3) Time (value actually measured)
<table><tr><th>Number</th><th>Meaning</th></tr><tr><td>SD16</td><td>Time : 1μs units (0 to 999μs)</td></tr><tr><td>SD17</td><td>Time : 1ms units (0 to 65535ms)</td></tr><tr><td>SD18</td><td rowspan="9">(Empty)</td></tr><tr><td>SD19</td></tr><tr><td>SD20</td></tr><tr><td>SD21</td></tr><tr><td>SD22</td></tr><tr><td>SD23</td></tr><tr><td>SD24</td></tr><tr><td>SD25</td></tr><tr><td>SD26</td></tr></table>4) Program error location
<table><tr><th>Number</th><th>Meaning</th></tr><tr><td>SD16</td><td rowspan="4">File name
(ASCII code: 8 characters)</td></tr><tr><td>SD17</td></tr><tr><td>SD18</td></tr><tr><td>SD19</td></tr><tr><td>SD20</td><td>Extension *6 2EH(.)</td></tr><tr><td>SD21</td><td>(ASCII code: 3 characters)</td></tr><tr><td>SD22</td><td>Pattern *7</td></tr><tr><td>SD23</td><td>Block No.</td></tr><tr><td>SD24</td><td>Step No./transition No.</td></tr><tr><td>SD25</td><td>Sequence step No. (L)</td></tr><tr><td>SD26</td><td>Sequence step No. (H)</td></tr></table>*6 For extension names, refer to the table on Page 296.
*7 The description of the bit pattern is as follows:
 
(To the next page)</td><td>S
(Error)</td><td>New</td><td>QCPU
LCPU</td></tr>
</table>

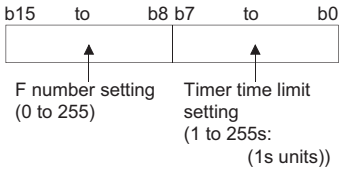
<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by
(When Set)</th><th>Corre-
sponding
ACPU
D9□□□</th><th>Corre-
sponding
CPU</th></tr>
<tr><td rowspan="2">SD26</td><td rowspan="2">Error individual information</td><td rowspan="2">Error individual information</td><td>5) Parameter No. 6) Annunciator number / 7) CHK instruction malfunction number
<table><tr><td>Number</td><td>Meaning</td></tr><tr><td>SD16</td><td>Parameter No. *8</td></tr><tr><td>SD17</td><td rowspan="10">(Empty)</td></tr><tr><td>SD18</td></tr><tr><td>SD19</td></tr><tr><td>SD20</td></tr><tr><td>SD21</td></tr><tr><td>SD22</td></tr><tr><td>SD23</td></tr><tr><td>SD24</td></tr><tr><td>SD25</td></tr><tr><td>SD26</td></tr></table><table><tr><td>Number</td><td>Meaning</td></tr><tr><td>SD16</td><td>No.</td></tr><tr><td>SD17</td><td rowspan="10">(Empty)</td></tr><tr><td>SD18</td></tr><tr><td>SD19</td></tr><tr><td>SD20</td></tr><tr><td>SD21</td></tr><tr><td>SD22</td></tr><tr><td>SD23</td></tr><tr><td>SD24</td></tr><tr><td>SD25</td></tr><tr><td>SD26</td></tr></table>*8 For details of the parameter No., refer to the following:
User's Manual (Function Explanation, Program Fundamentals) for the CPU module used</td><td rowspan="2">S
(Error)</td><td rowspan="2">New</td><td>QCPU
LCPU</td></tr>
<tr><td>8) Reason(s) for system switching failure
<table><tr><td>Number</td><td>Meaning</td></tr><tr><td>SD16</td><td>System switching prohibition condition *9</td></tr><tr><td>SD17</td><td rowspan="10">(Empty)</td></tr><tr><td>SD18</td></tr><tr><td>SD19</td></tr><tr><td>SD20</td></tr><tr><td>SD21</td></tr><tr><td>SD22</td></tr><tr><td>SD23</td></tr><tr><td>SD24</td></tr><tr><td>SD25</td></tr><tr><td>SD26</td></tr></table>*9 The following shows the description.
 
0 : Normal switching completion (default)
1 : Tracking cable fault (cable removal, cable fault, internal circuit fault, hardware fault)
2 : Hardware failure, power OFF, reset or watchdog timer error occurring in standby system
3 : Hardware failure, power OFF, reset or watchdog timer error occurring in control system
4 : Preparing for tracking
5 : Time limit exceeded
6 : Standby system is in stop error (except watchdog timer error)
7 : Operation differs between two systems (in backup mode only)
8 : During memory copy from control system to standby system
9 : Online program change
10 : Error detected by network module of standby system
11 : System switching being executed
12 : Online module change in progress
(To the next page)</td><td>QnPRH</td></tr>
</table>

<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by
(When Set)</th><th>Corre-
sponding
ACPU
D9□□□</th><th>Corre-
sponding
CPU</th></tr>
<tr><td rowspan="3">SD26</td><td rowspan="3">Error individual information</td><td rowspan="3">Error individual information</td><td>9) Failure information
<table><tr><th>Number</th><th>Meaning</th></tr><tr><td>SD16</td><td>Failure information 1</td></tr><tr><td>SD17</td><td>Failure information 2</td></tr><tr><td>SD18</td><td>Failure information 3</td></tr><tr><td>SD19</td><td>Failure information 4</td></tr><tr><td>SD20</td><td>Failure information 5</td></tr><tr><td>SD21</td><td>Failure information 6</td></tr><tr><td>SD22</td><td>Failure information 7</td></tr><tr><td>SD23</td><td>Failure information 8</td></tr><tr><td>SD24</td><td>Failure information 9</td></tr><tr><td>SD25</td><td>Failure information 10</td></tr><tr><td>SD26</td><td>Failure information 11</td></tr></table></td><td>S
(Error)</td><td rowspan="5">New</td><td>LCPU</td></tr>
<tr><td>12) File diagnostic information
<table><tr><td>SD16</td><td>Failure information1 (H)</td><td>drive No.(L)</td></tr><tr><td>SD17
SD18
SD19
SD20</td><td colspan="2">File name
(ASCII: 8 characters)</td></tr><tr><td>SD21</td><td>EXtension *6</td><td>2EH(.)</td></tr><tr><td>SD22</td><td colspan="2">(ASCII; 3 characters)</td></tr><tr><td>SD23
SD24</td><td colspan="2">Failure information 2
(CRC value that is read)</td></tr><tr><td>SD25
SD26</td><td colspan="2">Failure information 3
(CRC value that is calculated)</td></tr></table>*6 For extension names, refer to the table on Page 296.</td><td rowspan="3">U</td><td>QnU
LCPU</td></tr>
<tr><td>13) Parameter No./CPU No.
<table><tr><th>Number</th><th>Meaning</th></tr><tr><td>SD16</td><td>Parameter No.*16</td></tr><tr><td>SD17</td><td>CPU No. (1 to 4)</td></tr><tr><td>SD18
SD19
SD20
SD21
SD22
SD23
SD24
SD25
SD26</td><td>(Empty)</td></tr></table>*16 For details of the parameter No., refer to the following:
User's Manual (Function Explanation, Program Fundamentals) for the CPU module used</td><td>QnU</td></tr>
<tr><td>SD50</td><td>Error reset</td><td>Error number that performs error reset</td><td>Stores error number that performs error reset</td><td>QCPU
LCPU</td></tr>
<tr><td>SD51</td><td>Battery low latch</td><td>Bit pattern indicating where battery voltage drop occurred</td><td>• If a battery voltage drops, the corresponding bit stores "1" (turns on).
• This register remains on even after the battery voltage returns to normal.
 

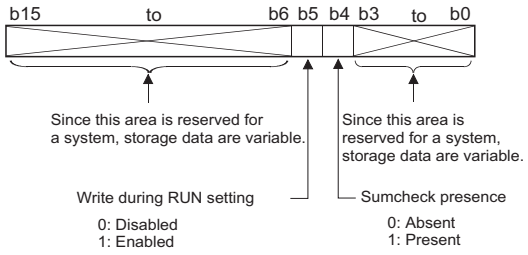
*1 These bits are not available for the Basic model QCPU and LCPU.
• If an alarm occurs, data can be held within the time specified for battery low.
• The error indicates full discharge of a battery.</td><td>S
(Error)</td><td>QCPU
LCPU</td></tr>
</table>

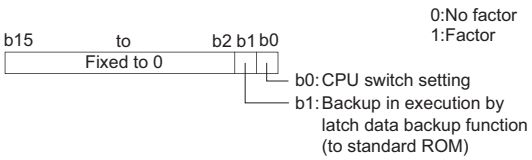
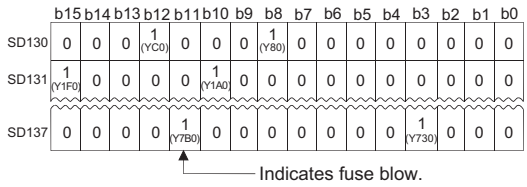
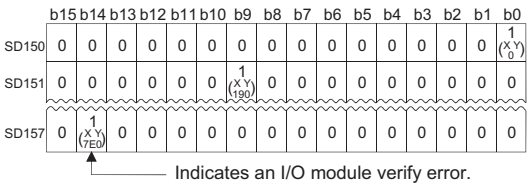
<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by (When Set)</th><th>Corre-sponding ACPU D9□□□</th><th>Corre-sponding CPU</th></tr>
<tr><td>SD52</td><td>Battery low</td><td>Bit pattern indicating where battery voltage drop occurred</td><td>• This register has the same bit pattern as that of SD51.
• After an alarm is detected (the alarm bit turns on), the alarm bit turns off if an error is detected (the error bit turns on). (Universal model QCPU only)
• This register stores "0" (turns off) when the battery voltage returns to normal.</td><td rowspan="4">S
(Error)</td><td>New</td><td rowspan="2">QCPU
LCPU</td></tr>
<tr><td>SD53</td><td>AC/DC DOWN detection</td><td>Number of times for AC/DC DOWN detection</td><td>• A value stored in this register is incremented by 1 whenever the input voltage falls to or below 85% (AC power)/65% (DC power) of the rating during operation of the CPU module.
• The counter repeats increment and decrement of the value; 0→32767→-32768→0</td><td>D9005</td></tr>
<tr><td>SD60</td><td>Number of module with blown fuse</td><td>Number of module with blown fuse</td><td>Value stored here is the lowest station I/O number of the module with the blown fuse.</td><td>D9000</td><td>QCPU</td></tr>
<tr><td>SD61</td><td>I/O module verify error number</td><td>I/O module verify error module number</td><td>The lowest I/O number of the module where the I/O module verification number took place.</td><td>D9002</td><td rowspan="13">QCPU
LCPU</td></tr>
<tr><td>SD62</td><td>Annunciator number</td><td>Annunciator number</td><td>This register stores the number of the annunciator (F number) detected first.</td><td rowspan="14">S
(Instruction execution)</td><td>D9009</td></tr>
<tr><td>SD63</td><td>Number of annunciators</td><td>Number of annunciators</td><td>This register stores the number of detected annunciators.</td><td>D9124</td></tr>
<tr><td>SD64</td><td rowspan="15">Table of detected annunciator numbers</td><td rowspan="15">Annunciator detection number</td><td rowspan="15">When an annunciator (F) is turned on by the OUT F or SET F instruction, the F numbers are stored from SD64 to SD79 in chronological order.
The number of an annunciator (F) turned off by the RST F instruction is deleted from SD64 to SD79, and F numbers stored later than the register where the deleted F number was stored are shifted upward.
When the LEDR instruction is executed, the contents of SD64 to SD79 are shifted upward by 1. After 16 annunciators have been detected, detection of the 17th will not be stored from SD64 through SD79.
 
</td><td>D9125</td></tr>
<tr><td>SD65</td><td>D9126</td></tr>
<tr><td>SD66</td><td>D9127</td></tr>
<tr><td>SD67</td><td>D9128</td></tr>
<tr><td>SD68</td><td>D9129</td></tr>
<tr><td>SD69</td><td>D9130</td></tr>
<tr><td>SD70</td><td>D9131</td></tr>
<tr><td>SD71</td><td>D9132</td></tr>
<tr><td>SD72</td><td rowspan="9">New</td></tr>
<tr><td>SD73</td></tr>
<tr><td>SD74</td></tr>
<tr><td>SD75</td></tr>
<tr><td>SD76</td></tr>
<tr><td>SD77</td></tr>
<tr><td>SD78</td></tr>
<tr><td>SD79</td></tr>
<tr><td>SD80</td><td>CHK number</td><td>CHK number</td><td>Error codes detected by the CHK instruction are stored as BCD code.</td><td>Qn(H)
QnPH
QnPRH</td></tr>
</table>

<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th colspan="2">Explanation</th><th>Set by
(When Set)</th><th>Corre-
sponding
ACPU
D9□□□</th><th>Corre-
sponding
CPU</th></tr>
<tr><td>SD81</td><td rowspan="2">Continuation error cause</td><td rowspan="2">Continuation error cause</td><td colspan="2">This register stores a continuation error cause.
 

The SD82 bits are all empty.</td><td rowspan="2">S
(Error)</td><td rowspan="3">New</td><td rowspan="2">LCPU</td></tr>
<tr><td>SD82</td></tr>
<tr><td>SD84</td><td rowspan="2">Continuation error clear</td><td rowspan="2">Continuation error clear</td><td colspan="2" rowspan="2">This register stores a continuation error to be cleared in bit pattern.
This register has the same bit pattern as that of SD81 and SD82.</td><td rowspan="11">U</td><td rowspan="2">LCPU</td></tr>
<tr><td>SD85</td></tr>
<tr><td>SD90</td><td rowspan="10">Step transition monitoring timer setting value
(Enabled only when SFC program exists)</td><td rowspan="10">F number for timer set value and time over error</td><td>Corresponds to SM90</td><td rowspan="10">• This register stores a value set for step transition monitoring timer and the number of an annunciator (F) that turns on if the monitoring timer times out.
 

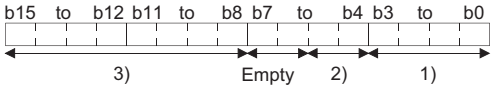
• Turning on any of SM90 to SM99 while a step is running will start the timer, and if the transition condition for the step next to the active step is not met within the timer limit, the set annunciator (F) turns on.</td><td>D9108</td><td rowspan="10">Qn(H)
QnPH
QnPRH</td></tr>
<tr><td>SD91</td><td>Corresponds to SM91</td><td>D9109</td></tr>
<tr><td>SD92</td><td>Corresponds to SM92</td><td>D9110</td></tr>
<tr><td>SD93</td><td>Corresponds to SM93</td><td>D9111</td></tr>
<tr><td>SD94</td><td>Corresponds to SM94</td><td>D9112</td></tr>
<tr><td>SD95</td><td>Corresponds to SM95</td><td>D9113</td></tr>
<tr><td>SD96</td><td>Corresponds to SM96</td><td>D9114</td></tr>
<tr><td>SD97</td><td>Corresponds to SM97</td><td rowspan="3">New</td></tr>
<tr><td>SD98</td><td>Corresponds to SM98</td></tr>
<tr><td>SD99</td><td>Corresponds to SM99</td></tr>
</table>

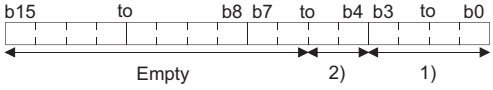
Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD100	Transmission speed storage area	Stores the transmission speed specified in the serial communication setting.	This register stores the transmission speed specified in the serial communication setting parameter. 96 : 9.6kbps,192 : 19.2kbps, 384 : 38.4kbps, 576 : 57.6kbps,1152 : 115.2kbps	S (Power-ON or reset)	New	Q00/Q01 QnU*4
SD101	Communication setting storage area	Stores the communication setting specified in the serial communication setting.	This register stores the value indicating the communication setting specified in the serial communication setting parameter.  			
SD102	Transmission wait time storage area	Stores the transmission wait time specifed in the serial communication setting.	This register stores the transmission wait time specified in the serial communication setting parameter. 0: No waiting time 10 to 150: Waiting time (unit: ms) Default: 0			
SD105	CH1 transmission speed setting (RS-232)	Stores a transmission speed (RS-232).	This register stores a transmission speed (When an external device is not connected, the default is 1152). Note when the serial communication setting is configured, this register stores the transmission speed specified in the parameter. 96 : 9600bps, 192 : 19.2kbps,384 : 38.4kbps, 576 : 57.6kbps, 1152 : 115.2kbps	S		Qn(H) QnPH QnPRH QnU*3 LCPU
SD110	Data sending result storage area	Stores the data sending result when the serial communication function is used.	Stores the error code at the time of sending data.	S (Error)		Q00/Q01 QnU*4
SD111	Data receiving result storage area	Stores the data receiving result when the serial communication function is used.	Stores the error code at the time of receiving data.			
SD118	Amount of battery consumption	Amount of battery consumption	This register stores a battery consumption rate. [Value range] • 1 or 2: Q00UJCPU, Q00UCPU, Q01UCPU, Q02UCPU, Q03UD(E)CPU, Q04UD(E)HCPU, L02CPU, L02CPU-P • 1 to 3: Q06UD(E)HCPU, L26CPU-BT, L26CPU-PBT • 1 to 4: Q10UD(E)HCPU, Q20UD(E)HCPU, Q13UD(E)HCPU, Q26UD(E)HCPU • 1 to 5: Q50UDEHCPU, Q100UDEHCPU	S (Status change)		QnU LCPU

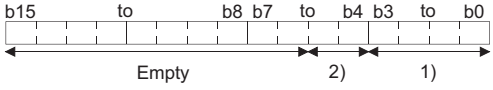
Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD119	Battery life-prolonging factor	Battery life-prolonging factor	This register stores a value indicating a cause that has the battery life-prolonging function enabled. While this register is other than "0", the battery life-prolonging function is enabled. 	S (Status change)		QnU LCPU
SD130 SD131 SD132 SD133 SD134 SD135 SD136 SD137	Fuse blown module	Bit pattern in units of 16 points, indicating the modules whose fuses have blown 0: No blown fuse 1: Blown fuse present	• This register stores the number of a fuse-blown output module (in units of 16 points) in the following bit pattern. (When module numbers have been set by the parameter, the parameter-set numbers are stored.)  For a module whose number of output points exceeds 16 points, only the bit corresponding to the output module number within the number of output points occupied by the module (in increments of 16 points) turns on. **Ex.** When a 64-point module is mounted on the slot 0, only b0 turns on when the fuse has blown. • Not cleared even if the blown fuse is replaced with a new one. The storage value is cleared by clearing the error.	S (Error)	New	Q00J/Q00/ Q01
SD150 SD151 SD152 SD153 SD154 SD155 SD156 SD157	I/O module verify error	Bit pattern, in units of 16 points, indicating the modules with verify errors. 0: No I/O verify errors 1: I/O verify error present	• If the status of the I/O module changes from that obtained at power-on, the module No. (unit: 16 points) is stored in the following bit pattern. (When I/O module numbers have been set by the parameter, the parameter-set numbers are stored.)  For a module whose number of I/O points exceeds 16 points, only the bit corresponding to the I/O module number within the number of I/O points occupied by the module (in increments of 16 points) turns on. **Ex.** When a 64-point module is mounted on the slot 0, only b0 turns on when an error is detected. • Not cleared even if the blown fuse is replaced with a new one. The storage value is cleared by clearing the error.			

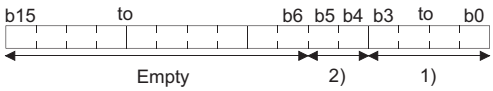
*1 The module whose first 5 digits of serial No. is "07032" or later.
*2 The module whose first 5 digits of serial No. is "10042" or later.
*3 This applies to Universal model QCPUs except for the Built-in Ethernet port QCPU.
*4 The following lists the relevant modules having RS-232 connector.
Universal model QCPU whose serial number (first five digits) is "13062" or later (Q02UCPU whose serial number (first five digits) is "10102" or later
Q00UJCPU, Q00UCPU, Q01UCPU

(2) System information

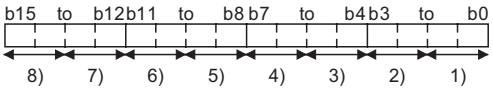
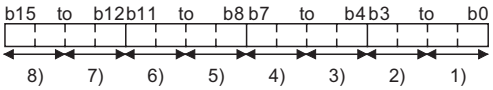
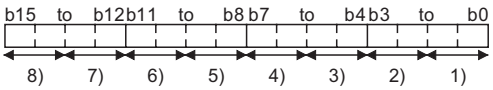
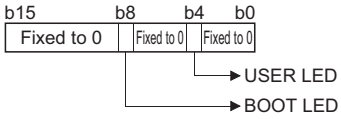
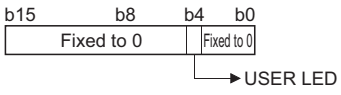
<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by
(When Set)</th><th>Corre-
sponding
ACPU
D9□□□</th><th>Corre-
sponding
CPU</th></tr>
<tr><td rowspan="4">SD200</td><td rowspan="4">Status of switch</td><td rowspan="4">Status of CPU switch</td><td>• This register stores the status of the CPU module switches in the following bit pattern.
 

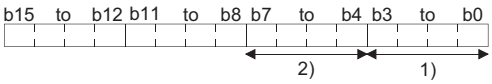
<table><tr><td>1): CPU switch status</td><td>0: RUN
1: STOP
2: L.CLR</td></tr><tr><td>2): Memory card switch</td><td>Always OFF</td></tr><tr><td>3): DIP switch</td><td>b8 through b12 correspond to SW1 through SW5 of system setting switch 1.
0: OFF, 1: ON.
b13 through b15 are empty.</td></tr></table></td><td rowspan="2">S
(Every END processing)</td><td rowspan="4">New</td><td>Qn(H)
QnPH
QnPRH</td></tr>
<tr><td>This register stores the status of the CPU module switches in the following bit pattern.
 

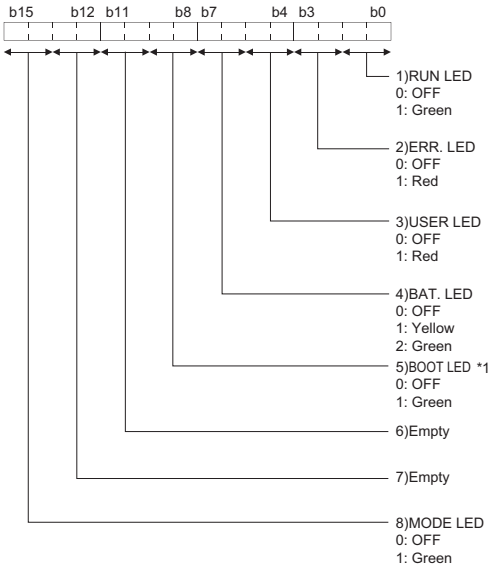
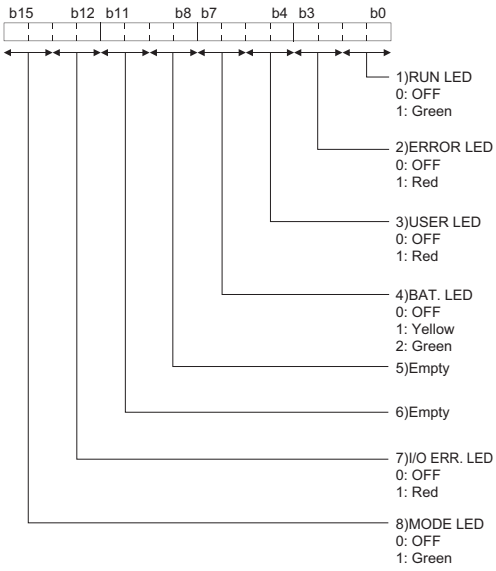
<table><tr><td>1):</td><td>CPU switch status</td><td>0: RUN
1: STOP</td></tr><tr><td>2):</td><td>Memory card switch</td><td>Always OFF</td></tr></table></td><td>Q00J/Q00/
Q01</td></tr>
<tr><td>This register stores the status of the CPU module switches in the following bit pattern.
 

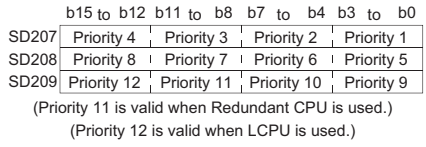
<table><tr><td>1):</td><td>CPU switch status</td><td>0: RUN
1: STOP</td></tr><tr><td>2):</td><td>Memory card switch</td><td>Always OFF</td></tr></table></td><td rowspan="2">S
(when RUN/ STOP/RESET switch changed)</td><td>QnU</td></tr>
<tr><td>This register stores the status of the CPU module switches in the following bit pattern.
 

<table><tr><td>1):</td><td>CPU switch status</td><td>0: RUN
1: STOP</td></tr><tr><td>2):</td><td>SD memory card switch</td><td>0: Not usable
1: Usable</td></tr></table></td><td>LCPU</td></tr>
</table>

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD201	LED status	Status of CPU-LED	• This register stores the LED status information on the CPU module in the following bit pattern. • 0 is off, 1 is on, and 2 is flicker.  1): RUN, 2): ERR., 3): USER*1, 4): BAT.*1, 5): BOOT*1, 6): Empty*1, 7): Empty*1, 8): MODE*1 (0: Off, 1: Green, 2: Orange) *1 For the Basic model QCPU, 3) to 8) are left empty.	S (Status change)	New	Q00J/Q00/ Q01 Qn(H) QnPH QnPRH
			• This register stores the LED status information on the CPU module in the following bit pattern. • 0 is off, 1 is on, and 2 is flicker.  1): RUN, 2): ERR., 3): USER, 4): BAT., 5): BOOT*1, 6): Empty, 7): Empty, 8): MODE *1 For the Q00UJCPU, Q00UCPU, and Q01UCPU, 5) is left empty.			QnU
			• This register stores the LED status information on the CPU module in the following bit pattern. • 0 is off, 1 is on, and 2 is flicker.  1): RUN, 2): ERR., 3): USER, 4): BAT., 5): Empty, 6): Empty, 7): I/O ERR., 8): MODE			LCPU
SD202	LED off command	Bit pattern of LED that is turned off	• By specifying the LEDs in this register and turning SM202 from off to on, the LEDs can be turned off. The USER and BOOT*1 LEDs can be specified. • The LED to be turned off can be specified in the following bit pattern. (Setting "1" turns off the LED and setting "0" does not turn off the LED.)  *1 For the Q00UJCPU, Q00UCPU, and Q01UCPU, the BOOT LED cannot be specified.	U		Qn(H) QnPH QnPRH QnU
			• By specifying the LEDs in this register and turning SM202 from off to on, the LEDs can be turned off. The USER LED can be specified. • The LED to be turned off can be specified in the following bit pattern.((Setting "1" turns off the LED and setting "0" does not turn off the LED.)  			LCPU

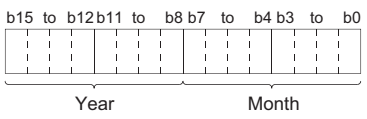
Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD203	Operating status of CPU	Operating status of CPU	This register stores the operating status of the CPU module in the following bit pattern.  1): Operating status of CPU — 0: RUN, 2: STOP, 3: PAUSE 2): STOP/PAUSE cause *1 — 0: Switch, 1: Remote contact, 2: Remote operation from programming tool/ serial communication, etc., 3: Internal program instruction, 4: Error *1 The item detected first is stored. (However, for the Universal model QCPU and LCPU, the latest cause after operation status change is stored.)	S (Every END processing)	D9015 format change	QCPU LCPU

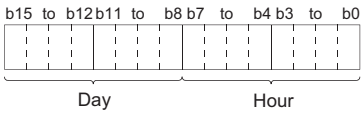
Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD204	LED display color	CPU-LED display color	The LED display color of the LED status shown in SD201 1) to 8).  *1 For the Q00UJCPU, Q00UCPU, and Q01UCPU, 5) is left empty.	S (Status change)	New	QnU
			The LED display color of the LED status shown in SD201 1) to 8).  			LCPU

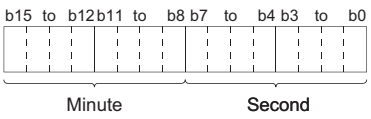
<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by (When Set)</th><th>Corre-sponding ACPU D9□□□</th><th>Corre-sponding CPU</th></tr>
<tr><td>SD207</td><td rowspan="3">LED display priority ranking</td><td>Priorities 1 to 4</td><td rowspan="3">• The priority of the LED indication in the case of an error is set by a cause number. (For the Basic model QCPU, only the annunciator (cause number 7) is available.)
• For the Universal model QCPU and LCPU, specify whether to enable or disable LED indication of the error that has priority when an error occurs.
• The setting areas for priorities are as follows:
 

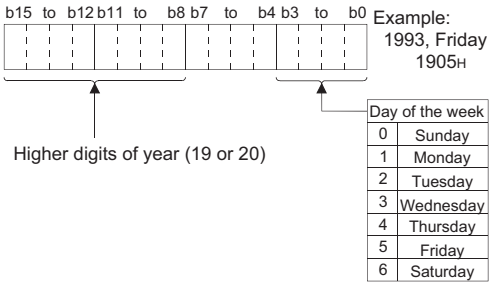
(Priority 11 is valid when Redundant CPU is used.)
(Priority 12 is valid when LCPU is used.)

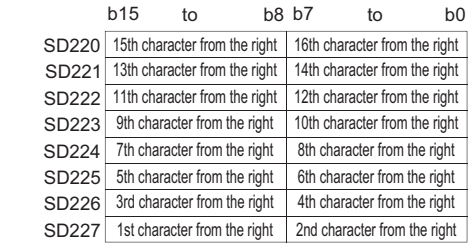
[Default value]
SD207 = 4321_H (0000_H for Basic model QCPU)
SD208 = 8765_H (0700_H for Basic model QCPU) (0765_H for Redundant CPU)
SD209 = $00A9_H$ (0000_H for Basic model QCPU) ($0B09_H$ for Redundant CPU, $CBA9_H$ for LCPU)
• No indication if "0" is stored.
• For the Basic model QCPU, the ERR. LED lights up upon turn-on of the annunciator, if "7" is stored in any of Priorities 1 to 11.
• For the Basic model QCPU, the ERR. LED does not light up upon turn-on of the annumciator, if "7" is not stored in any of Priorities 1 to 11.
However, even if "7" is stored, the error, which makes CPU module operation stop (including the error that is specified with a parameter), will be indicated with the LED without condition.</td><td rowspan="3">U</td><td>D9038</td><td rowspan="3">Q00J/ Q00/ Q01 *1
Qn(H)
QnPH
QnPRH
QnU
LCPU</td></tr>
<tr><td>SD208</td><td>Priorities 5 to 8</td><td>D9039 format change</td></tr>
<tr><td>SD209</td><td>Priorities 9 to 12</td><td>New</td></tr>
</table>

<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by (When Set)</th><th>Corre-sponding ACPU D9□□□</th><th>Corre-sponding CPU</th></tr>
<tr><td>SD210</td><td>Clock data</td><td>Clock data (year, month)</td><td>This register stores the year (last two digits) and month in BCD as shown below.
 

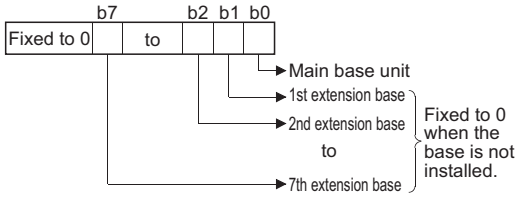
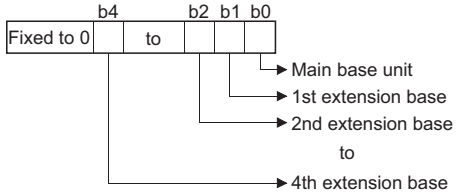
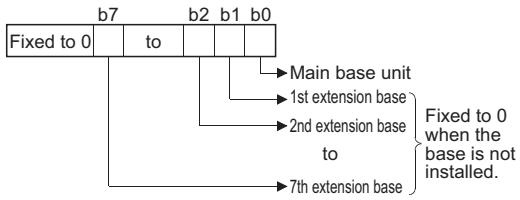
Example:
July, 1993
9307H</td><td rowspan="4">S(Request) /U</td><td>D9025</td><td rowspan="4">QCPU
LCPU</td></tr>
<tr><td>SD211</td><td>Clock data</td><td>Clock data (day, hour)</td><td>This register stores the day and hour in BCD as shown below.
 

Example:
31st, 10 a.m.
3110H</td><td>D9026</td></tr>
<tr><td>SD212</td><td>Clock data</td><td>Clock data (minute, second)</td><td>This register stores the minute and the second in BCD as shown below.
 

Example:
35 min, 48 s
3548H</td><td>D9027</td></tr>
<tr><td>SD213</td><td>Clock data</td><td>Clock data (higher digits of year, day of week)</td><td>This register stores the year (first two digits) and day of week in BCD as shown below.
 

Example:
1993, Friday
1905H</td><td>D9028</td></tr>
<tr><td>SD220
SD221
SD222
SD223
SD224
SD225
SD226
SD227</td><td>LED display data</td><td>LED display data</td><td>• LED display ASCII data (16 characters) stored here. For the Basic model QCPU, an error message (up to 16 ASCII characters) is stored. (Including a message for the case the annunciator is on)
 

• For the Basic model QCPU, Universal model QCPU or LCPU, HMI data at the time of CHK instruction execution are not stored.</td><td>S
(When changed)</td><td rowspan="2">New</td><td>QCPU
LCPU</td></tr>
<tr><td>SD235</td><td>Module to which online module change is being performed</td><td>The header I/O number of the module to which online module change is being performed /10_H</td><td>10_H is added to the value of the header I/O number of which the online module change is being performed.</td><td>S (During online module change)</td><td>QnPH
QnPRH</td></tr>
</table>

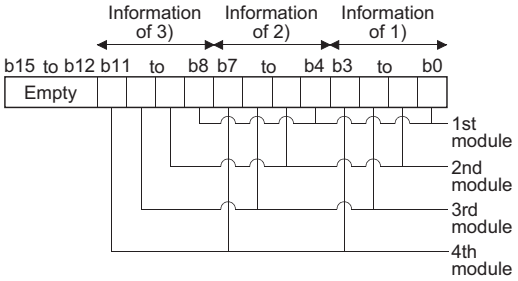
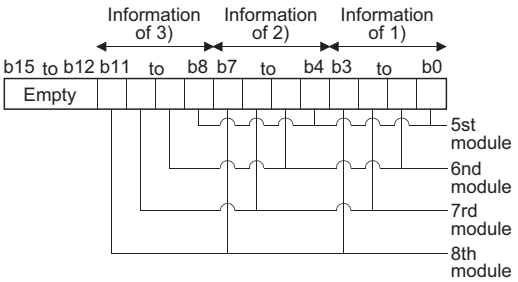
Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD240	Base mode	0: Automatic mode 1: Detail mode	Stores the base mode.	S (Initial)	New	QCPU
SD241	Extension stage number	0: Main base only 1 to 7: Extension stage number	Stores the maximum number of the extension bases being installed.			
	Number of extension blocks	0: Main only 1 to 3: Number of extension blocks	This register stores the maximum number of connected extension blocks.			LCPU[*9]
SD242	A/Q base differentiation	Base type differentiation 0: QA**B is installed (A mode) 1: Q**B is installed (Q mode)				Qn(H) QnPH QnPRH
	Installed Q base presence/ absence	Base type differentiation 0: Base not installed 1: Q**B is installed				Q00J/Q00/ Q01
	A/Q base differentiation	Base type differentiation 0: QA1S**B, QA**B, and QA6ADP+ A**B are installed / Base not installed 1: Q**B is installed	 • For the Q00UJCPU, the bits for the third to seventh extension bases are fixed to "0". • For the Q00UCPU, Q01UCPU, and Q02UCPU, the bits for the fifth to seventh extension bases are fixed to "0".			QnU

<table>
<tr><th>Number</th><th>Name</th><th colspan="2">Meaning</th><th>Explanation</th><th>Set by
(When Set)</th><th>Corre-
sponding
ACPU
D9□□□</th><th>Corre-
sponding
CPU</th></tr>
<tr><td>SD243

SD244</td><td>No. of base slots</td><td colspan="2" rowspan="3">No. of base slots</td><td>• The number of slots used is stored in the area corresponding to each base unit as shown below.
<table><tr><td></td><td>b15 to b12</td><td>b11 to b8</td><td>b7 to b4</td><td>b3 to b0</td></tr><tr><td>SD243</td><td>Extension 3</td><td>Extension 2</td><td>Extension 1</td><td>Main</td></tr><tr><td>SD244</td><td>Extension 7</td><td>Extension 6</td><td>Extension 5</td><td>Extension 4</td></tr></table>• For the Q00UJCPU, the bits for the third to seventh extension bases are fixed to "0".
• For the Q00UCPU, Q01UCPU, and Q02UCPU, the bits for the fifth to seventh extension bases are fixed to "0".</td><td rowspan="3">S
(Initial)</td><td rowspan="4">New</td><td>Qn(H)
QnPH
QnPRH
QnU</td></tr>
<tr><td>SD243

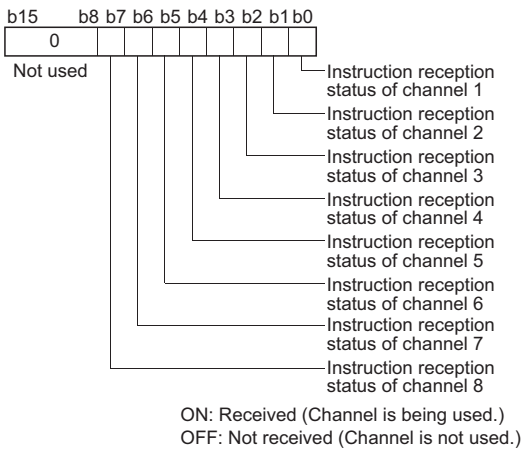
SD244</td><td>No. of base slots (Operation status)</td><td>The number of slots used is stored in the area corresponding to each base unit as shown below. (The number of slots set in the parameter setting.)
<table><tr><td></td><td>b15 to b12</td><td>b11 to b8</td><td>b7 to b4</td><td>b3 to b0</td></tr><tr><td>SD243</td><td>Extension 3</td><td>Extension 2</td><td>Extension 1</td><td>Main</td></tr><tr><td>SD244</td><td>Fixed to 0</td><td>Fixed to 0</td><td>Fixed to 0</td><td>Extension 4</td></tr></table></td><td>Q00J/Q00/
Q01</td></tr>
<tr><td>SD245

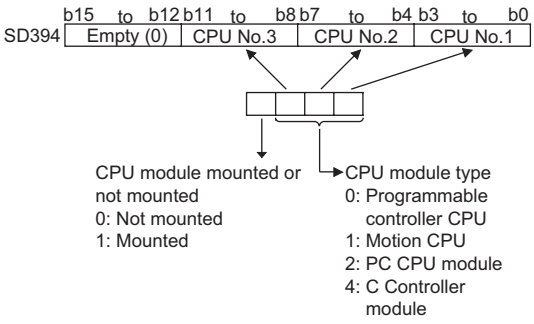
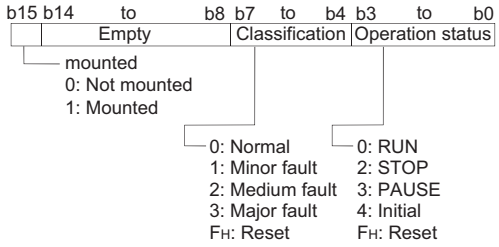
SD246</td><td>No. of base slots (Mounting status)</td><td>The number of slots where modules are actually mounted is stored in the area corresponding to each base unit as shown below.
<table><tr><td></td><td>b15 to b12</td><td>b11 to b8</td><td>b7 to b4</td><td>b3 to b0</td></tr><tr><td>SD245</td><td>Extension 3</td><td>Extension 2</td><td>Extension 1</td><td>Main</td></tr><tr><td>SD246</td><td>Fixed to 0</td><td>Fixed to 0</td><td>Fixed to 0</td><td>Extension 4</td></tr></table></td><td>Q00J/Q00
/Q01*1</td></tr>
<tr><td rowspan="2">SD250</td><td rowspan="2">Loaded maximum I/O</td><td colspan="2" rowspan="2">Loaded maximum I/O No</td><td>When SM250 is turned on from off, the first two digits of the number, which is the last I/O number of the mounted modules plus 1, are stored.</td><td>S
(Request END)</td><td>Qn(H)
QnPH
QnPRH</td></tr>
<tr><td>The first two digits of the number, which is the last I/O number of the mounted modules plus 1, are stored.</td><td rowspan="10">S
(Initial)</td><td>Q00J/Q00/
Q01
QnU
LCPU</td></tr>
<tr><td>SD254</td><td rowspan="10">MELSECNET/10.
MELSECNET/H
information</td><td colspan="2">Number of modules installed</td><td>Indicates the number of mounted MELSECNET/10 modules or MELSECNET/H modules.</td><td rowspan="6">QCPU</td></tr>
<tr><td>SD255</td><td rowspan="5">Information from 1st module</td><td>I/O No.</td><td>Indicates the I/O number of mounted MELSECNET/10 module or MELSECNET/H module.</td></tr>
<tr><td>SD256</td><td>Network No.</td><td>Indicates the network No. of mounted MELSECNET/10 module or MELSECNET/H module.</td></tr>
<tr><td>SD257</td><td>Group number</td><td>Indicates the group No. of mounted MELSECNET/10 module or MELSECNET/H module.</td></tr>
<tr><td>SD258</td><td>Station No.</td><td>Indicates the station No. of mounted MELSECNET/10 module or MELSECNET/H module.</td></tr>
<tr><td>SD259</td><td>Standby informa-tion</td><td>In the case of standby stations, the module number of the standby station is stored. (1 to 4)</td></tr>
<tr><td>SD260
to
SD264</td><td colspan="2">Information from 2nd module</td><td>Data configuration is the same as that of the 1st module (SD255 to SD259).</td><td>Qn(H)
QnPH
QnPRH
QnU*2</td></tr>
<tr><td>SD265
to
SD269</td><td colspan="2">Information from 3rd module</td><td>Data configuration is the same as that of the 1st module (SD255 to SD259).</td><td rowspan="2">Qn(H)
QnPH
QnPRH
QnU*3</td></tr>
<tr><td>SD270
to
SD274</td><td colspan="2">Information from 4th module</td><td>Data configuration is the same as that of the 1st module (SD255 to SD259).</td></tr>
</table>

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD280	CC-Link error	Error detection status	This register stores error detection status in the following bit pattern.  1): When Xn0 of a mounted CC-Link module turns on, the corresponding bit is set to 1 (on). 2): When either Xn1 or XnF of a mounted CC-Link module turns off, the corresponding bit is set to 1 (on). 3): When a mounted CC-Link module is not able to communicate with the CPU module, the corresponding bit is set to 1 (on). The above modules are numbered in order of the head I/O numbers. (However, the one where parameter setting has not been made is not counted.)	S (Error)		Qn(H) QnPH QnPRH
SD281			This register stores error detection status in the following bit pattern.  1): When Xn0 of a mounted CC-Link module turns on, the corresponding bit is set to 1 (on). 2): When either Xn1 or XnF of the mounted CC-Link module turns off, the corresponding bit is set to 1 (on). 3): When a mounted CC-Link module is not able to communicate with the CPU module, the corresponding bit is set to 1 (on). The above modules are numbered in order of the head I/O numbers. (However, the one where parameter setting has not been made is not counted.)		New	Qn(H)*4 QnPH*4 QnPRH*5
SD286	Device assignment	Points assigned to M (for extension)	• The number of points assigned to M is stored with 32 bits. • The number of 32K or less points can be assigned to M.	S (Initial)		QnU*6 LCPU
SD287						
SD288		Points assigned to B (for extension)	• The number of points assigned to B is stored with 32 bits. • The number of 32K or less points can be assigned to B.			
SD289						

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD290	Device assignment (Same as parameter contents)	Number of points assigned for X	Stores the number of points currently set for X devices.	S (Initial)	New	QCPU LCPU
SD291		Number of points assigned for Y	Stores the number of points currently set for Y devices.			
SD292		Number of points assigned for M	Stores the number of points currently set for M devices.			
SD293		Number of points assigned for L	Stores the number of points currently set for L devices.			
SD294		Number of points assigned for B	Stores the number of points currently set for B devices.			
SD295		Number of points assigned for F	Stores the number of points currently set for F devices.			
SD296		Number of points assigned for SB	Stores the number of points currently set for SB devices.			
SD297		Number of points assigned for V	Stores the number of points currently set for V devices.			
SD298		Number of points assigned for S	Stores the number of points currently set for S devices.			
SD299		Number of points assigned for T	Stores the number of points currently set for T devices.			
SD300		Number of points assigned for ST	Stores the number of points currently set for ST devices.			
SD301		Number of points assigned for C	Stores the number of points currently set for C devices.			
SD302		Number of points assigned for D	Stores the number of points currently set for D devices.			
SD303		Number of points assigned for W	Stores the number of points currently set for W devices.			
SD304		Number of points assigned for SW	Stores the number of points currently set for SW devices.			

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD305	Device assignment (Index register)	16 bit modification Number of points assigned for Z	Stores the number of points of index register (Z) used for the 16-bit modification area. (Depending on the index modification setting for ZR in the parameter setting.)	S (Initial)	New	QnU LCPU
SD306	Device assignment (Same as parameter contents)	Number of points assigned for ZR (for extension)	The number of points for ZR is stored (except the number of points of extended data register (D) and extended link register (W)). The number of points assigned to ZR is stored into this register only when 1K point or more is set for the extended data register (D) or extended link register (W).			QnU*7 LCPU
SD307						
SD308	Device assignment (assignment including the number of points set to the extended data register (D) and extended link register (W))	Number of points assigned for D (for inside + for extension)	The total points of the data register (D) in the internal device memory area and the extended data register (D) are stored as a 32-bit binary value.			
SD309						
SD310		Number of points assigned for W (for inside + for extension)	The total points of the link register (W) in the internal device memory area and the extended link register (W) are stored as a 32-bit binary value.			
SD311						
SD315	Time reserved for communication processing	Time reserved for communication processing	• This register specifies the amount of processing time for communication with a programming tool or another module. • The greater the value specified is, the shorter the response time for communication with another (such as a programming tool or serial communication module) is. However, scan time will increase by the specified time. • Setting range: 1 to 100ms A setting outside the above range is regarded as no setting.	U		Q00J/Q00/ Q01 Qn(H) QnPH QnPRH
SD329	Online change (inactive block) target block number	SFC block number	• While online change (inactive block) is executed (SM329 is on.), this register stores the target SFC block number. • In other than the above status, this register stores $FFFF_H$.	S (Status change)		QnU*8
SD340	Ethernet information	No. of modules installed	Indicates the number of mounted Ethernet module.	S (Initial)		QCPU
SD341		Information of 1st module: I/O No.	Indicates I/O No. of mounted Ethernet module			
SD342		Information of 1st module: Network No.	Indicates network No. of mounted Ethernet module			
SD343		Information of 1st module: Group No.	Indicates group No. of the mounted Ethernet module.			
SD344		Information of 1st module: Station No	Indicates station No. of mounted Ethernet module			
SD345 to SD346		Information of 1st module: Empty	Empty (The IP address of the 1st Ethernet module is stored in the buffer memory.)			Qn(H) QnPH QnPRH QnU*2
SD347		Information of 1st module: Empty	Empty (An error code of the 1st Ethernet module is read with the ERRRD instruction.)			
SD348 to SD354	Ethernet information	Information from 2nd module	Data configuration is the same as that of the 1st module (SD341 to SD347).			
SD355 to SD361		Information from 3rd module	Data configuration is the same as that of the 1st module (SD341 to SD347).			Qn(H) QnPH QnPRH QnU*3
SD362 to SD368		Information from 4th module	Data configuration is the same as that of the 1st module (SD341 to SD347).			

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD380	Ethernet instruction reception status	Instruction reception status of 1st module		S (Instruction execution)	New	QnPRH
SD381		Instruction reception status of 2nd module	Data configuration is the same as that of the 1st module (SD380).			
SD382		Instruction reception status of 3rd module	Data configuration is the same as that of the 1st module (SD380).			
SD383		Instruction reception status of 4th module	Data configuration is the same as that of the 1st module (SD380).			

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD393	Multiple CPU system information	Number of multiple CPUs	The number of CPU modules that comprise the multiple CPU system is stored. (1 to 3, Empty also included)	S (Initial)	New	Q00/Q01*1 QnU
SD394		CPU mounting information	This register stores information on the CPU module types of CPU No.1 to No.3 and whether or not the CPU modules are mounted. 			Q00/Q01*1
SD395		Multiple CPU number	In a multiple CPU system configuration, the CPU number of the host CPU is stored. CPU No. 1: 1, CPU No. 2: 2, CPU No. 3: 3, CPU No. 4: 4			Q00/Q01*1 Qn(H)*1 QnPH QnU
SD396		No. 1 CPU operation status	The operation information of each CPU No. is stored. (The information on the number of multiple CPUs indicated in SD393 is stored.) 	S (END processing error)		Q00/Q01*1 QnU
SD397		No. 2 CPU operation status				Q00/Q01*1 QnU*7
SD398		No. 3 CPU operation status				
SD399		No. 4 CPU operation statu				QnU*3

*1 Function version is B or later.
*2 The Universal model QCPU except the Q00UJCPU, Q00UCPU, and Q01UCPU.
*3 The Universal model QCPU except the Q00UJCPU, Q00UCPU, Q01UCPU, and Q02UCPU.
*4 The module whose first 5 digits of serial No. is "08032" or later.
*5 The module whose first 5 digits of serial No. is "09012" or later.
*6 The module whose first 5 digits of serial No. is "10042" or later.
*7 The Universal model QCPU except the Q00UJCPU.
*8 This applies when the first five digits of the serial number is "12052" or later.
*9 This applies when the first five digits of the serial number is "13072" or later.

(3) System clock/counter

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD412	1 second counter	Number of counts in 1-second units	• This register is incremented by 1 for each second after the CPU module is set to RUN. • Count repeats from 0 to 32767 to -32768 to 0	S (Status change)	D9022	QCPU LCPU
SD414	2n second clock setting	2n second clock units	• Stores value n of 2n second clock (Default is 30) • Setting can be made between 1 and 32767	U	New	
SD415	2nms clock setting	2nms clock units	• Stores value n of 2nms clock (Default is 30) • Setting can be made between 1 and 32767			Qn(H) QnPH QnPRH QnU LCPU
SD420	Scan counter	Number of counts in each scan	• This register is incremented by 1 for each scan of a scan execution type program after the CPU module is set to RUN. (Not incremented for each scan of an initial execution type program.) • Count repeats from 0 to 32767 to -32768 to 0	S (Every END processing)		
			• This register is incremented by 1 for each scan after the CPU module is set to RUN. • Count repeats from 0 to 32767 to -32768 to 0			Q00J/Q00/Q01
SD430	Low speed scan counter	Number of counts in each scan	• This register is incremented by 1 for each scan of a low-speed execution type program after the CPU module is set to RUN. • Count repeats from 0 to 32767 to -32768 to 0 • Used only for low speed execution type programs			Qn(H) QnPH

(4) Scan information

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD500	Execution program No.	Program No. in execution	Program number of program currently being executed is stored as BIN value.	S (Status change)	New	Qn(H) QnPH QnPRH QnU LCPU
SD510	Low speed excution type program No.	Low speed execution type program No. in execution	• Program number of low speed excution type program No. currently being executed is stored as BIN value. • Enabled only when SM510 is ON.	S (Every END processing)		Qn(H) QnPH
SD520	Current scan time	Current scan time (ms value)	• This register stores the current scan time. (The time is measured in increments of 100μs (in icrements of 1μs for the Universal model QCPU and LCPU).) SD520: Stores a ms value (storage range: 0 to 65535). SD521: Stores a μs value (storage range: 0 to 900 (0 to 999 for the Universal model QCPU and LCPU)). Example: When the current scan time is 23.6ms, the following values are stored: • SD520 = 23 • SD521 = 600 • A value in this register is cleared to "0" when the CPU module is set to STOP.		D9018 format change	QCPU LCPU
SD521		Current scan time (μs value)			New	
SD522	Initial scan time	Initial scan time (ms value)	• This register stores the scan time of an initial execution type program. (The time is measured in increments of 100μs (in icrements of 1μs for the Universal model QCPU and LCPU).) SD522: Stores a ms value (storage range: 0 to 65535). SD523: Stores a μs value (storage range: 0 to 900 (0 to 999 for the Universal model QCPU and LCPU)). • A value in this register is cleared to "0" when the CPU module is switched from STOP to RUN.	S (First END processing)		Qn(H) QnPH QnPRH QnU LCPU
SD523		Initial scan time (μs value)				
SD524	Minimum scan time	Minimum scan time (ms value)	• This register stores the minimum scan time. (The time is measured in increments of 100μs.) SD524: Stores a ms value (storage range: 0 to 65535). SD525: Stores a μs value (storage range: 0 to 900) • A value in this register is cleared to "0" when the CPU module is switched from STOP to RUN.	S (Every END processing)		Q00J/Q00/ Q01
SD525		Minimum scan time (μs value)				
SD526	Maximum scan time	Maximum scan time (ms value)	• This register stores the maximum scan time. (The time is measured in increments of 100μs.) SD526: Stores a ms value (storage range: 0 to 65535). SD527: Stores a μs value (storage range: 0 to 900) • A value in this register is cleared to "0" when the CPU module is switched from STOP to RUN.			Q00J/Q00/ Q01
SD527		Maximum scan time (μs value)				
SD524	Minimum scan time	Minimum scan time (ms value)	• This register stores the minimum scan time except that of an initial execution type program. (The time is measured in increments of 100μs (in icrements of 1μs for the Universal model QCPU and LCPU).) SD524: Stores a ms value (storage range: 0 to 65535). SD525: Stores a μs value (storage range: 0 to 900 (0 to 999 for the Universal model QCPU and LCPU)). • A value in this register is cleared to "0" when the CPU module is switched from STOP to RUN.		D9017 format change	Qn(H) QnPH QnPRH QnU LCPU
SD525		Minimum scan time (μs value)			New	

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD526	Maximum scan time	Maximum scan time (ms value)	• This register stores the maximum scan time excluding the scan time of an initial execution type program. (The time is measured in increments of 100μs (in icrements of 1μs for the Universal model QCPU and LCPU).) SD526: Stores a ms value (storage range: 0 to 65535). SD527: Stores a μs value (storage range: 0 to 900 (0 to 999 for the Universal model QCPU and LCPU)). • A value in this register is cleared to "0" when the CPU module is switched from STOP to RUN.	S (Every END processing)	D9019 format change	Qn(H) QnPH QnPRH QnU LCPU
SD527		Maximum scan time (μs value)			New	
SD528	Current scan time for low speed execution type programs	Current scan time (ms value)	• This register stores the current scan time of a low-speed execution type program.(The time is measured in increments of 100μs.) SD528: Stores a ms value (storage range: 0 to 65535) SD529: Stores a μs value (storage range: 0 to 900) • A value in this register is cleared to "0" when the CPU module is set to STOP.			Qn(H) QnPH
SD529		Current scan time (μs value)				
SD532	Minimum scan time for low speed execution type programs	Minimum scan time (ms value)	• This register stores the minimum scan time of a low-speed execution type program.(The time is measured in increments of 100μs.) SD532: Stores a ms value (storage range: 0 to 65535) SD533: Stores a μs value (storage range: 0 to 900) • A value in this register is cleared to "0" when the CPU module is switched from STOP to RUN.			
SD533		Minimum scan time (μs value)				
SD534	Maximum scan time for low speed execution type programs	Maximum scan time (ms value)	• This register stores the maximum scan time excluding the time taken to the first scan of a low-speed execution type program. (The time is measured in increments of 100μs.) SD534: Stores a ms value (storage range: 0 to 65535) SD535: Stores a μs value (storage range: 0 to 900) • A value in this register is cleared to "0" when the CPU module is switched from STOP to RUN.			
SD535		Maximum scan time (μs value)				
SD540	END processing time	END processing time (ms value)	• Stores the time from the end of a scan program to the start of the next scan. (The time is measured in increments of 100μs.) SD540: Stores a ms value (storage range: 0 to 65535) SD541: Stores a μs value (storage range: 0 to 900) • A value in this register is cleared to "0" when the CPU module is switched from STOP to RUN.			Q00J/Q00/ Q01
SD541		END processing time (μs value)				
SD540	END processing time	END processing time (ms value)	• Stores the time from the end of a scan execution type program to the start of the next scan. (The time is measured in increments of 100μs (in icrements of 1μs for the Universal model QCPU and LCPU).) SD540: Stores a ms value (storage range: 0 to 65535) SD541: Stores a μs value (storage range: 0 to 900 (0 to 999 for the Universal model QCPU and LCPU)). • A value in this register is cleared to "0" when the CPU module is switched from STOP to RUN.			Qn(H) QnPH QnPRH QnU LCPU
SD541		END processing time (μs value)				
SD542	Constant scan wait time	Constant scan wait time (ms value)	• This register stores wait time for constant scan. (The time is measured in increments of 100μs (in icrements of 1μs for the Universal model QCPU and LCPU).) SD542: Stores a ms value (storage range: 0 to 65535) SD543: Stores a μs value (storage range: 0 to 900 (0 to 999 for the Universal model QCPU and LCPU)). • A value in this register is cleared to "0" when the CPU module is switched from STOP to RUN.			QCPU LCPU
SD543		Constant scan wait time (μs value)				

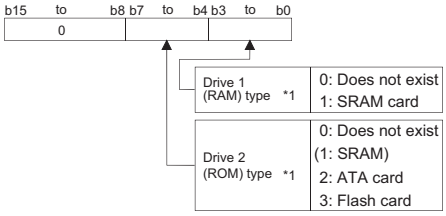
Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD544	Cumulative execution time for low speed execution type programs	Cumulative execution time for low speed execution type programs (ms value)	• Stores the cumulative execution time of a low-speed execution type program. (The time is measured in increments of 100μs.) SD544: Stores a ms value (storage range: 0 to 65535) SD545: Stores a μs value (storage range: 0 to 900) • Cleared to 0 after the end of one scan of a low-speed execution type program. • A value in this register is cleared to "0" when the CPU module is switched from STOP to RUN.	S (Every END processing)	New	Qn(H) QnPH
SD545		Cumulative execution time for low speed execution type programs (μs value)				
SD546	Execution time for low speed execution type programs	Execution time for low speed execution type programs (ms value)	• Stores the execution time of a low-speed execution type program in one scan. (The time is measured in increments of 100μs.) SD546: Stores a ms value (storage range: 0 to 65535) SD547: Stores a μs value (storage range: 0 to 900) • Stored every scan. • A value in this register is cleared to "0" when the CPU module is switched from STOP to RUN.			
SD547		Execution time for low speed execution type programs (μs value)				
SD548	Scan program execution time	Scan program execution time (ms value)	• Stores the execution time of a scan program in one scan. (The time is measured in increments of 100μs (in icrements of 1μs for the Universal model QCPU and LCPU).) SD548: Stores a ms value (storage range: 0 to 65535) SD549: Stores a μs value (storage range: 0 to 900 (0 to 999 for the Universal model QCPU and LCPU)). • Stored every scan. • A value in this register is cleared to "0" when the CPU module is switched from STOP to RUN.			Q00J/Q00/ Q01 QnU LCPU
SD549		Scan program execution time (μs value)				
SD548	Scan execution type program execution time	Scan execution type program execution time (ms value)	• Stores the execution time of a scan execution type program in one scan. (The time is measured in increments of 100μs.) SD548: Stores a ms value (storage range: 0 to 65535) SD549: Stores a μs value (storage range: 0 to 900) • Stored every scan. • A value in this register is cleared to "0" when the CPU module is switched from STOP to RUN.			Qn(H) QnPH QnPRH
SD549		Scan execution type program execution time (μs value)				
SD550	Service interval measurement module	Unit/module No.	Sets I/O number for module that measures service interval.	U		
SD551	Service interval time	Module service interval (ms value)	This register stores the service interval of a module specified by SD550 when SM551 is turned on. (The time is measured in increments of 100μs.) SD551: Stores a ms value (storage range: 0 to 65535) SD552: Stores a μs value (storage range: 0 to 900)	S (Request)		
SD552		Module service interval (μs value)				

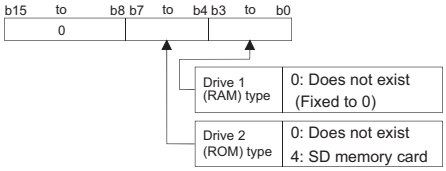
(5) Display unit information

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD581	Displayed language information	Language used on a display unit	This register stores a value corresponding to the language used on a display unit. Either of the following is stored: • 1: English • 2: Japanese	S (Status change)	New	LCPU*1

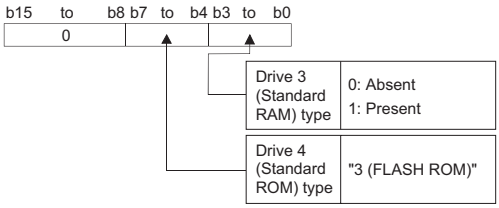
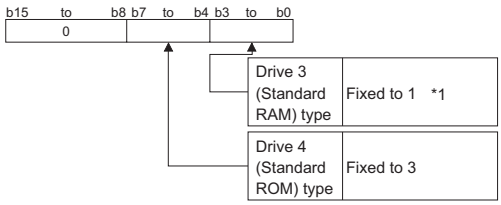
*1 This applies to a module whose serial number (first five digits) is "12112" or later.

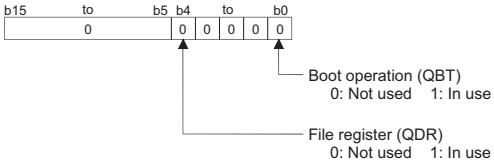
(6) Drive information

<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by (When Set)</th><th>Corre-sponding ACPU D9□□□</th><th>Corre-sponding CPU</th></tr>
<tr><td rowspan="2">SD600</td><td rowspan="2">Memory card typs</td><td rowspan="2">Memory card typs</td><td>This register stores a value indicating the type of used memory card in the following bit pattern.
 

*1 For the Q00UJCPU, Q00UCPU, and Q01UCPU, the drive 1 (RAM) type and drive 2 (ROM) type are fixed at "0".</td><td rowspan="3">S (Initial and card removal)</td><td rowspan="5">New</td><td>Qn(H)
QnPH
QnPRH
QnU</td></tr>
<tr><td>This register stores a value indicating the type of used memory card in the following bit pattern.
 
</td><td>LCPU</td></tr>
<tr><td>SD602</td><td>Drive 1 (Memory card RAM) capacity</td><td>Drive 1 capacity</td><td>This register stores the drive 1 storage capacity (unit: 1K byte). (Free space value after formatting is stored.)</td><td rowspan="3">Qn(H)
QnPH
QnPRH
QnU*2</td></tr>
<tr><td>SD603</td><td>Drive 2 (Memory card ROM) capacity</td><td>Drive 2 capacity</td><td>This register stores the drive 2 storage capacity (unit: 1K byte).*1
*1 For the Q2MEM-8MBA, a value stored to this register depends on the product control number of the ATA card. For details, refer to the following.
User's Manual (Hardware Design, Maintenance and Inspection) for the CPU module used</td></tr>
<tr><td>SD604</td><td>Memory card use conditions</td><td>Memory card use conditions</td><td>This register stores the usage status of a memory card in the following bit pattern. (Each bit is on while the memory card is being used.)
b0 : Boot operation (QBT)
b1 : Parameters (QPA)
b2 : Device comments (QCD)
b3 : Device initial value (QDI)
b4 : File register (QDR)
b5 : Sampling trace (QTD)
b6 : Not used
b7 : Not used
b8 : Not used
b9 : Error history (QFD)
b10 : Not used
b11 : Local device (QDL)
b12 : Not used
b13 : Not used
b14 : Not used
b15 : Not used</td><td>S (Status change)</td><td>Qn(H)
QnPH
QnPRH</td></tr>
</table>

<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by
(When Set)</th><th>Corre-
sponding
ACPU
D9□□□</th><th>Corre-
sponding
CPU</th></tr>
<tr><td rowspan="2">SD604</td><td rowspan="2">Memory card use conditions</td><td rowspan="2">Memory card use conditions</td><td>This register stores the usage status of a memory card in the following bit pattern. (Each bit is on while the memory card is being used.)
<table><tr><td>b0 : Boot operation (QBT) *1
b1 : Parameters (QPA)
b2 : Device comments (QCD)
b3 : Device initial value (QDI) *2
b4 : File register (QDR)
b5 : Sampling trace (QTD)
b6 : Not used
b7 : Backup data (QBP) *3</td><td>b8 : Not used
b9 : Not used
b10 : Not used
b11 : Local device (QDL)
b12 : Not used
b13 : Not used
b14 : Not used
b15 : Not used</td></tr></table>*1 This bit turns on at boot start and turns off at the completion.
*2 This bit turns on when the writing of initial device values is started and turns off at the completion.
*3 This bit can be used when the first five digits of the serial No. is "10102" or later.</td><td rowspan="2">S
(Status change)</td><td rowspan="4">New</td><td>QnU*2</td></tr>
<tr><td>This register stores the usage status of a memory card in the following bit pattern. (Each bit is on while the memory card is being used.)
<table><tr><td>b0 : Boot operation (QBT) *1
b1 : Parameters (QPA)
b2 : Device comments (QCD)
b3 : Device initial value (QDI) *2
b4 : Not used
b5 : Sampling trace (QTD)
b6 : Not used
b7 : Backup data (QBP)</td><td>b8 : Not used
b9 : Not used
b10 : Not used
b11 : Not used
b12 : Not used
b13 : Data logging setting (QLG) *3
b14 : Not used
b15 : Not used</td></tr></table>*1 This bit turns on at boot start and turns off at the completion.
*2 This bit turns on when the writing of initial device values is started and turns off at the completion.
*3 This bit turns on when data logging setting is registered and turns off at the completion or stop of data logging.</td><td>LCPU</td></tr>
<tr><td>SD606</td><td rowspan="2">Drive 2 (Memory card ROM) capacity</td><td>Drive 2 storage capacity (lower bits)</td><td rowspan="2">This register stores the drive 2 storage capacity (unit: 1M byte). (Free space value after formatting is stored.)</td><td rowspan="2">S
(Initial and card removal)</td><td rowspan="4"></td></tr>
<tr><td>SD607</td><td>Drive 2 storage capacity (upper bits)</td></tr>
<tr><td>SD616</td><td rowspan="2">Free space in drive 2 (Memory card ROM)</td><td>Free space in drive 2 (lower bits)</td><td rowspan="2">This register stores free space value in the drive 2 (unit: 1M byte).</td><td rowspan="2">S
(Status change)</td></tr>
<tr><td>SD617</td><td>Free space in drive 2 (upper bits)</td></tr>
</table>

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD620	Drive 3/4 types	Drive 3/4 types	This register stores the usage status of drives 3 and 4 in the following bit pattern.  	S (Initial)	New	Q00J/Q00/ Q01
			This register stores the usage status of drives 3 and 4 in the following bit pattern.  *1 For the Q00UJCPU, the drive 3 (Standard RAM) type is fixed at "0".			Qn(H) QnPH QnPRH QnU LCPU
SD622	Drive 3 (Standard RAM) capacity	Drive 3 capacity	This register stores the drive 3 storage capacity (unit: 1K byte).			Q00J/Q00/ Q01
			This register stores the drive 3 storage capacity (unit: 1K byte). (Free space value after formatting is stored.)			Qn(H) QnPH QnPRH QnU LCPU
SD623	Drive 4 (Standard ROM) capacity	Drive 4 capacity	This register stores the drive 4 storage capacity (unit: 1K byte).			Q00J/Q00/ Q01
			This register stores the drive 4 storage capacity (unit: 1K byte). (Free space value after formatting is stored.)			Qn(H) QnPH QnPRH QnU LCPU

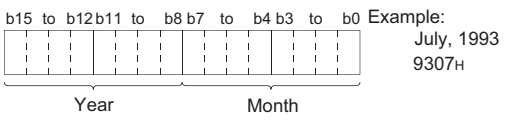
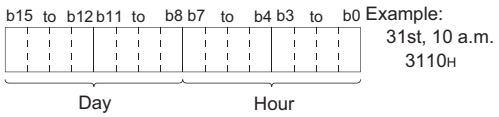
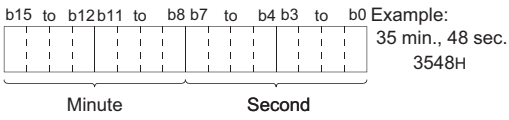
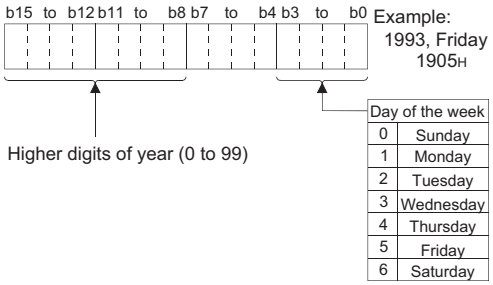
<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by
(When Set)</th><th>Corre-
sponding
ACPU
D9□□□</th><th>Corre-
sponding
CPU</th></tr>
<tr><td rowspan="4">SD624</td><td rowspan="4">Drive 3/4 use conditions</td><td rowspan="4">Drive 3/4 use conditions</td><td>This register stores the usage status of the drives 3 and 4 in the following bit pattern.
 
</td><td rowspan="4">S
(Status change)</td><td rowspan="4">New</td><td>Q00J/Q00/
Q01</td></tr>
<tr><td>This register stores the usage status of the drives 3 and 4 in the following bit pattern. (Each bit is on while the corresponding drive is being used.)
<table><tr><td>b0 : Boot operation (QBT)
b1 : Parameters (QPA)
b2 : Device comments (QCD)
b3 : Device initial value (QDI)
b4 : File register (QDR)
b5 : Sampling trace (QTD)
b6 : Not used
b7 : Not used</td><td>b8 : Not used
b9 : Error history (QFD)
b10 : SFC trace (QTS)
b11 : Local device (QDL)
b12 : Not used
b13 : Not used
b14 : Not used
b15 : Not used</td></tr></table></td><td>Qn(H)
QnPH
QnPRH</td></tr>
<tr><td>This register stores the usage status of the drives 3 and 4 in the following bit pattern. (Each bit is on while the corresponding drive is being used.)
<table><tr><td>b0 : Not used
b1 : Parameters (QPA)
b2 : Device comments (QCD)
b3 : Device initial value (QDI) *1
b4 : File register (QDR)
b5 : Sampling trace (QTD)
b6 : Not used
b7 : Not used</td><td>b8 : Module error log *2
b9 : Not used
b10 : Not used
b11 : Local device (QDL)
b12 : Not used
b13 : Not used
b14 : Not used
b15 : Not used</td></tr></table>*1 This bit turns on when the writing of initial device values is started and turns off at the completion.
*2 This bit can be used when the first five digits of the serial No. is "11043" or later.</td><td>QnU</td></tr>
<tr><td>This register stores the usage status of the drives 3 and 4 in the following bit pattern. (Each bit is on while the corresponding drive is being used.)
<table><tr><td>b0 : Not used
b1 : Parameters (QPA)
b2 : Device comments (QCD)
b3 : Device initial value (QDI) *1
b4 : File register (QDR)
b5 : Sampling trace (QTD)
b6 : Not used
b7 : Not used</td><td>b8 : Module error log
b9 : Not used
b10 : Not used
b11 : Local device (QDL)
b12 : Not used
b13 : Data logging setting (QLG) *2
b14 : Not used
b15 : Not used</td></tr></table>*1 This bit turns on when the writing of initial device values is started and turns off at the completion.
*2 This bit turns on when data logging setting is registered and turns off at the completion or stop of data logging.</td><td>LCPU</td></tr>
</table>

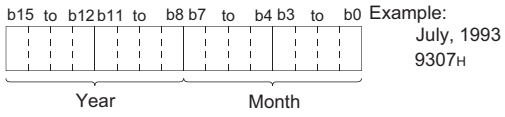
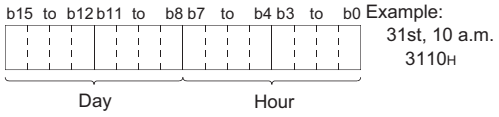
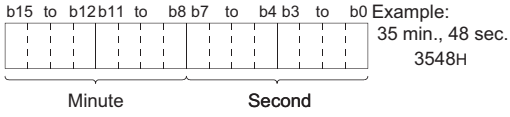
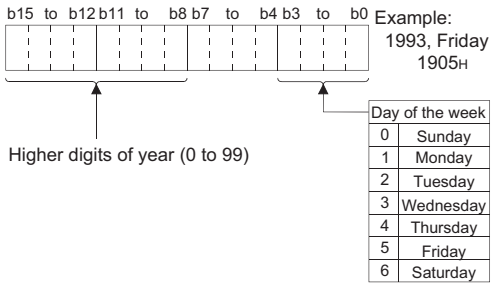
<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by (When Set)</th><th>Corre-sponding ACPU D9□□□</th><th>Corre-sponding CPU</th></tr>
<tr><td>SD640</td><td>File register drive</td><td>Drive number:</td><td>This register stores the number of a drive storing a file register.*1

*1 For the LCPU, this register is fixed at drive 3.</td><td>S (Status change)*4</td><td rowspan="5">New</td><td>Q00J/Q00/ Q01
Qn(H)
QnPH
QnPRH
QnU*3
LCPU</td></tr>
<tr><td>SD641
SD642</td><td rowspan="4">File register file name</td><td rowspan="4">File register file name</td><td>This register stores the file name of a file register (MAIN.QDR) in ASCII code.
<table><tr><th></th><th>b15 to b8</th><th>b7 to b0</th></tr><tr><td>SD641</td><td>2nd character (A)</td><td>1st character (M)</td></tr><tr><td>SD642</td><td>4th character (N)</td><td>3rd character (I)</td></tr><tr><td>SD643</td><td>6th character ( )</td><td>5th character ( )</td></tr><tr><td>SD644</td><td>8th character ( )</td><td>7th character ( )</td></tr><tr><td>SD645</td><td>1st character of the extension (Q)</td><td>2EH(.)</td></tr><tr><td>SD646</td><td>3rd character of the extension (R)</td><td>2nd character of the extension (D)</td></tr></table></td><td>S (Initial)</td><td>Q00J/Q00/ Q01</td></tr>
<tr><td>SD643
SD644</td><td>This register stores the file name of the file register selected by the parameter or the QDRSET instruction in ASCII code (with an extension).
<table><tr><th></th><th>b15 to b8</th><th>b7 to b0</th></tr><tr><td>SD641</td><td>2nd character</td><td>1st character</td></tr><tr><td>SD642</td><td>4th character</td><td>3rd character</td></tr><tr><td>SD643</td><td>6th character</td><td>5th character</td></tr><tr><td>SD644</td><td>8th character</td><td>7th character</td></tr><tr><td>SD645</td><td>1st character of extension</td><td>2EH(.)</td></tr><tr><td>SD646</td><td>3rd character of the extension</td><td>2nd character of the extension</td></tr></table></td><td rowspan="2">S (Status change)</td><td>Qn(H)
QnPH
QnPRH
QnU*3</td></tr>
<tr><td>SD645
SD646</td><td>This register stores the file name of the file register selected by the parameter in ASCII code (with an extension).
<table><tr><th></th><th>b15 to b8</th><th>b7 to b0</th></tr><tr><td>SD641</td><td>2nd character</td><td>1st character</td></tr><tr><td>SD642</td><td>4th character</td><td>3rd character</td></tr><tr><td>SD643</td><td>6th character</td><td>5th character</td></tr><tr><td>SD644</td><td>8th character</td><td>7th character</td></tr><tr><td>SD645</td><td>1st character of extension</td><td>2EH(.)</td></tr><tr><td>SD646</td><td>3rd character of the extension</td><td>2nd character of the extension</td></tr></table></td><td>LCPU</td></tr>
<tr><td>SD647</td><td>File register capacity</td><td>File register capacity</td><td>This register stores the data size of the selected file register (unit: 1K word).</td><td>S (Status change)</td><td rowspan="2">New</td><td>Qn(H)
QnPH
QnPRH
QnU*3
LCPU</td></tr>
<tr><td></td><td></td><td></td><td></td><td>S (Initial)</td><td>Q00J/Q00/ Q01</td></tr>
<tr><td>SD648</td><td>File register block number</td><td>File register block number</td><td>This register stores the block number of the selected file register.</td><td>S (Status change) *4</td><td>D9035</td><td>Q00J/Q00/ Q01
Qn(H)
QnPH
QnPRH
QnU*3
LCPU</td></tr>
</table>

<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by
(When Set)</th><th>Corre-
sponding
ACPU
D9□□□</th><th>Corre-
sponding
CPU</th></tr>
<tr><td>SD650</td><td>Comment drive</td><td>Comment drive number</td><td>This register stores the drive number of the comment selected by the parameter or the QCDSET instruction.</td><td rowspan="6">S
(Status change)</td><td rowspan="13">New</td><td rowspan="6">Qn(H)
QnPH
QnPRH
QnU
LCPU</td></tr>
<tr><td>SD651
SD652
SD653
SD654
SD655
SD656</td><td>Comment file name</td><td>Comment file name</td><td>This register stores the file name of the comment selected by the parameter or the QCDSET instruction in ASCII code (with an extension).
<table><tr><th></th><th>b15 to b8</th><th>b7 to b0</th></tr><tr><td>SD651</td><td>2nd character</td><td>1st character</td></tr><tr><td>SD652</td><td>4th character</td><td>3rd character</td></tr><tr><td>SD653</td><td>6th character</td><td>5th character</td></tr><tr><td>SD654</td><td>8th character</td><td>7th character</td></tr><tr><td>SD655</td><td>1st character of the extension</td><td>2E_H(.)</td></tr><tr><td>SD656</td><td>3rd character of the extension</td><td>2nd character of the extension</td></tr></table></td></tr>
<tr><td>SD660</td><td rowspan="6">Boot operation designation file</td><td>Boot designation file drive number</td><td>This register stores the number of a drive where the boot designation file (*.QBT) has been stored.</td><td rowspan="7">S
(Initial)</td><td rowspan="6">Qn(H)
QnPH
QnPRH
QnU*2
LCPU</td></tr>
<tr><td>SD661
SD662
SD663
SD664
SD665
SD666</td><td>File name of boot designation file</td><td>This register stores the name of a boot designation file (*.QBT) in ASCII code (with an extension).
<table><tr><th></th><th>b15 to b8</th><th>b7 to b0</th></tr><tr><td>SD661</td><td>2nd character</td><td>1st character</td></tr><tr><td>SD662</td><td>4th character</td><td>3rd character</td></tr><tr><td>SD663</td><td>6th character</td><td>5th character</td></tr><tr><td>SD664</td><td>8th character</td><td>7th character</td></tr><tr><td>SD665</td><td>1st character of the extension</td><td>2E_H(.)</td></tr><tr><td>SD666</td><td>3rd character of the extension</td><td>2nd character of the extension</td></tr></table></td></tr>
<tr><td>SD670</td><td>Parameter enable drive information</td><td>Parameter enable drive No.</td><td>This register stores the number of a drive where valid parameters have been stored.*1
• 0: Drive 0 (program memory)
• 1: Drive 1 (SRAM card)
• 2: Drive 2 (Flash card/ATA card)
• 4: Drive 4 (standard ROM)

*1 For the Q00UJCPU, Q00UCPU, and Q01UCPU, only drives 0 and 4 are parameter-valid drives.</td><td>QnU</td></tr>
<tr><td></td><td></td><td></td><td>This register stores the number of a drive where valid parameters have been stored.
• 0: Drive 0 (program memory)
• 2: Drive 2 (SD memory card)
• 4: Drive 4 (standard ROM)</td><td>LCPU</td></tr>
</table>

<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by
(When Set)</th><th>Corre-
sponding
ACPU
D9□□□</th><th>Corre-
sponding
CPU</th></tr>
<tr><td>SD671</td><td>Status of latch data backup function</td><td>Status display</td><td>This register stores the execution status of latch data backup in the following bit pattern.
<table><tr><th colspan="2">Status</th><th>Presence/ absence of backup data</th><th>Restore operation at turning power supply ON from OFF</th></tr><tr><td>0</td><td>No backup data</td><td>Absent</td><td>Restoring not executed</td></tr><tr><td>1</td><td>Restore ready completion</td><td rowspan="3">Present</td><td>Restoring executed when turning power supply ON from OFF the following time</td></tr><tr><td>2</td><td>Restore execution completion *1</td><td>Restoring not executed</td></tr><tr><td>3</td><td>Backup execution wait *2</td><td>Restoring not executed</td></tr><tr><td>4</td><td>Restore repeated execution ready completion</td><td>Restoring executed when turning power supply ON from OFF</td></tr></table>
*1 Indicates status immediately after restoration.
*2 Indicates status after the CPU module is powered off and then on while the CPU module is in the "2: Restore execution completion" status.</td><td>S
(Status change)</td><td rowspan="5">New</td><td rowspan="5">QnU
LCPU</td></tr>
<tr><td>SD672</td><td rowspan="4">Backup information</td><td>Backup time (Year and month)</td><td>This register stores the year (last two digits) and the month when data were backed up in 2-digit BCD.
 
</td><td rowspan="4">S
(At write)</td></tr>
<tr><td>SD673</td><td>Backup time (Day and hour)</td><td>This register stores the day and the hour when data were backed up in 2-digit BCD.
 
</td></tr>
<tr><td>SD674</td><td>Backup time (Minute and second)</td><td>This register stores the minute and the second when data were backed up in 2-digit BCD.
 
</td></tr>
<tr><td>SD675</td><td>Backup time (Year and day of week)</td><td>This register stores the year (first two digits) and the day of the week when data were backed up in BCD.
 
</td></tr>
</table>

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD676	Backup data restration information	Restore time (Year and month)	This register stores the year (last two digits) and the month when data were restored in 2-digit BCD. 	S (Initial)	New	QnU LCPU
SD677		Restore time (Day and time)	This register stores the day and the hour when data were restored in 2-digit BCD. 			
SD678		Restore time (Minute and second)	This register stores the minute and the second when data were restored in 2-digit BCD. 			
SD679		Restore time (Year and day of week)	This register stores the year (first two digits) and the day of the week when data were restored in BCD. 			

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD681	Program memory write (transfer) status	Write (transfer) status display (percentage)	This register stores the progress of writing (transfer) to the program memory (flash ROM) in percentage (0 to 100%). (When a write (transfer) command is given, "0" is stored in this register.)	S (At write)	New	QnU LCPU
SD682 SD683	Program memory write count index	Write count index up to present	This register stores the index value of write count of the program memory (flash ROM)*1 up to the present in 32-bit binary. When the index value exceeds 100 thousand times, "FLASH ROM ERROR" (error code: 1610) occurs. (The index value will be counted even after it exceeds 100 thousand.) *1 The write count does not equal to the index value. (Since the maximum write count of the flash ROM has been increased by the system, 1 is added about every two writing operations.)			
SD686	Standard ROM write (transfer) status	Write (transfer) status display (percentage)	This register stores the progress of writing (transfer) to the standard ROM (flash ROM) in percentage (0 to 100%). When a write (transfer) command is given, "0" is stored in this register.			
SD687 SD688	Standard ROM write count index	Write count index up to present	This register stores the index value of write count of the standard ROM (flash ROM)*1 up to the present in 32-bit binary. When the index value exceeds 100 thousand times, "FLASH ROM ERROR" (error code: 1610) occurs. (The index value will be counted even after it exceeds 100 thousand.) *1 The write count does not equal to the index value. (Since the maximum write count of the flash ROM has been increased by the system, 1 is added to the index value when the total write data size after the previous count-up reaches about 1M byte.)			

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD689	Backup error factor	Backup error factor	This register stores the cause of an error that occurred during backup. • 0_H: No error • 100_H: Memory card not inserted • 200_H: Backup data size exceeded • 300_H: Memory card write-protect setting • 400_H: Memory card write error • 500_H: Backup data read error (program memory) • 503_H: Backup data read error (standard RAM) • 504_H:Backup data read error (standard ROM) • 510_H: Backup data read error (system data) • 600_H: Backup preparation was performed while latch data was being backed up to the standard ROM. • 601_H: Backup preparation was performed during online change. • 602_H: Backup preparation was performed while a FTP client connected to the CPU module in FTP connection is present.	S (Error)	New	QnU*1 LCPU
SD690	Backup status	Backup status	Stores the current backup status. • 0: Before backup • 1: Being prepared • 2: Ready • 3: Being executed • 4: Completed • FF: Backup error	S (Status change)		
SD691	Backup execution status	Backup execution status display (percentage)	• This register stores the progress of backup to the memory card in percentage (0 to 100%). • "0" is stored at the start of backup.			
SD692	Restoration error factor	Factor of error occurred in restoration	Stores the cause of an error that occurred in restoration. • 800_H: The CPU module model name does not match. • 801_H: The backup data file does not match or the reading of backup data from the memory card is not completed. • 810_H: Writing backup data to the restoration drive is not completed.	S (Error)		

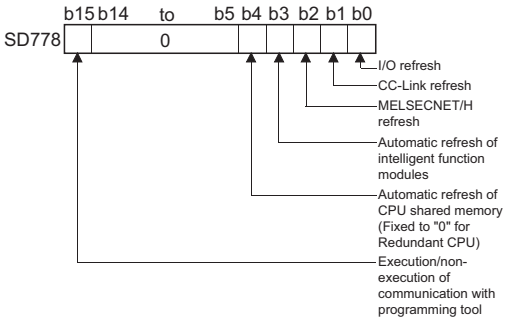
Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD693	Restoration status	Current restoration status	Stores the current restoration status. • 0: Before restoration • 1: Being executed • 2: Completed • FF: Restoration error (In automatic restoration, "0: Before restoration" is stored at the completion of restoration.)	S (Status change)	New	QnU*1 LCPU
SD694	Restoration execution status	Restoration execution status display (Percentage)	• This register stores the progress of restoration to the CPU module in percentage (0 to 100%). • "0" is stored at the start of restoration. In automatic restoration, "0: Before restoration" is stored at the completion of restoration.			
SD695	Specification of writing to standard ROM instruction count	Specification of writing to standard ROM instruction count	• This register stores the maximum number of executions of the writing to standard ROM instruction (SP.DEVST) per day. • When the number of executions of the writing to standard ROM instruction exceeds the number of times set by SD695, "OPERATION ERROR" (error code: 4113) occurs. • The setting range of this register is 1 to 32767. If "0" or a value outside the range has been set, "OPERATION ERROR" (error code: 4113) occurs at execution of the writing to standard ROM instruction.	U		QnU LCPU
SD696	Available memory in memory card	Available memory in memory card	This register stores a free space value in a memory card in 32-bit binary.	S (Backup in operation)		QnU*1
SD697						
SD696	Free memory card space at backup	Free memory card space at backup (lower bits)	This register stores a free space value in a SD memory card if the free space is insufficient for storing the backup data and resulting in a backup error. (unit: byte) This register is cleared to "0" when backup is completed.			LCPU
SD697		Free memory card space at backup (upper bits)				
SD698	Backup data capacity	Backup data size (lower bits)	This register stores backup data size in 32-bit binary.			QnU*1 LCPU
SD699		Backup data size (upper bits)				

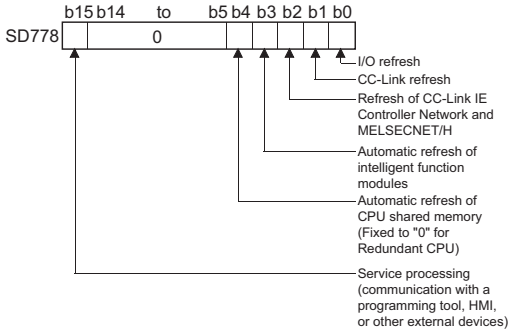
*1 The module whose first 5 digits of serial No. is "10102" or later. (Except the Q00UJCPU, Q00UCPU, and Q01UCPU)
*2 The Universal model QCPU except the Q00UJCPU, Q00UCPU, and Q01UCPU.
*3 The Universal model QCPU except the Q00UJCPU.
*4 On the Basic model QCPU, data is set at STOP to RUN or RSET instruction execution after parameter execution.

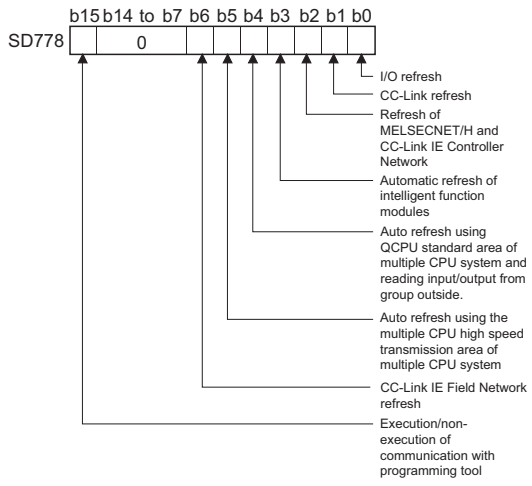
(7) Instruction-related register

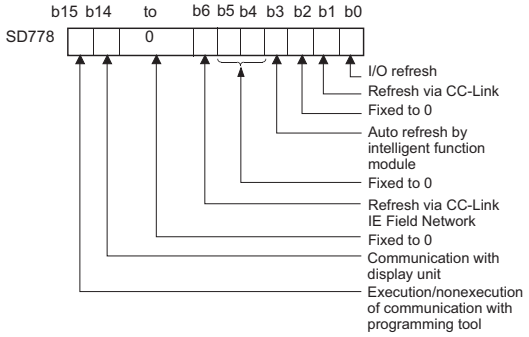
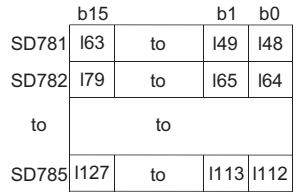
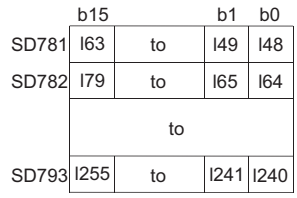
<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by (When Set)</th><th>Corre-sponding ACPU D9□□□</th><th>Corre-sponding CPU</th></tr>
<tr><td>SD705
SD706</td><td>Mask pattern</td><td>Mask pattern</td><td>Turning SM705 during a block operation enables all data in the block to be processed to masked values according to the mask patterns stored in SD705 (in SD705 and SD706 for double word data).</td><td>U</td><td rowspan="5">New</td><td>Q00J/Q00/ Q01
Qn(H)
QnPH
QnPRH</td></tr>
<tr><td>SD715
SD716
SD717</td><td>IMASK instruction mask pattern</td><td>Mask pattern</td><td>The mask patterns masked by the IMASK instruction are stored as follows.
<table><tr><th></th><th>b15</th><th></th><th>b1</th><th>b0</th></tr><tr><td>SD715</td><td>I15</td><td>to</td><td>I1</td><td>I0</td></tr><tr><td>SD716</td><td>I31</td><td>to</td><td>I17</td><td>I16</td></tr><tr><td>SD717</td><td>I47</td><td>to</td><td>I33</td><td>I32</td></tr></table></td><td>S (During execution)</td><td rowspan="3">QCPU
LCPU</td></tr>
<tr><td>SD718
SD719</td><td>Accumulator</td><td>Accumulator</td><td>For use as replacement for accumulators used in A series programs.</td><td>S/U</td></tr>
<tr><td>SD720</td><td>Program No. designation for PLOADP instruction</td><td>Program No. designation for PLOADP instruction</td><td>This register stores the program number of the program to read it with the PLOADP instruction.(Specified range: 1 to 124)</td><td>U</td><td>Qn(H)
QnPH</td></tr>
</table>

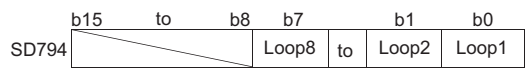
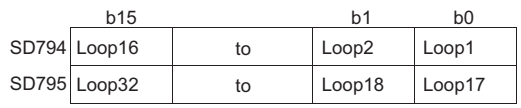
<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by (When Set)</th><th>Corre-sponding ACPU D9□□□</th><th>Corre-sponding CPU</th></tr>
<tr><td>SD738
SD739
SD740
SD741
SD742
SD743
SD744
SD745
SD746
SD747
SD748
SD749
SD750
SD751
SD752
SD753
SD754
SD755
SD756
SD757
SD758
SD759
SD760
SD761
SD762
SD763
SD764
SD765
SD766
SD767
SD768
SD769</td><td>Message storage</td><td>Message storage</td><td>This register stores the message specified by the MSG instruction.
<table><tr><th></th><th>b15 to b8</th><th>b7 to b0</th></tr><tr><td>SD738</td><td>2nd character</td><td>1st character</td></tr><tr><td>SD739</td><td>4th character</td><td>3rd character</td></tr><tr><td>SD740</td><td>6th character</td><td>5th character</td></tr><tr><td>SD741</td><td>8th character</td><td>7th character</td></tr><tr><td>SD742</td><td>10th character</td><td>9th character</td></tr><tr><td>SD743</td><td>12th character</td><td>11th character</td></tr><tr><td>SD744</td><td>14th character</td><td>13th character</td></tr><tr><td>SD745</td><td>16th character</td><td>15th character</td></tr><tr><td>SD746</td><td>18th character</td><td>17th character</td></tr><tr><td>SD747</td><td>20th character</td><td>19th character</td></tr><tr><td>SD748</td><td>22nd character</td><td>21st character</td></tr><tr><td>SD749</td><td>24th character</td><td>23rd character</td></tr><tr><td>SD750</td><td>26th character</td><td>25th character</td></tr><tr><td>SD751</td><td>28th character</td><td>27th character</td></tr><tr><td>SD752</td><td>30th character</td><td>29th character</td></tr><tr><td>SD753</td><td>32nd character</td><td>31st character</td></tr><tr><td>SD754</td><td>34th character</td><td>33rd character</td></tr><tr><td>SD755</td><td>36th character</td><td>35th character</td></tr><tr><td>SD756</td><td>38th character</td><td>37th character</td></tr><tr><td>SD757</td><td>40th character</td><td>39th character</td></tr><tr><td>SD758</td><td>42nd character</td><td>41st character</td></tr><tr><td>SD759</td><td>44th character</td><td>43rd character</td></tr><tr><td>SD760</td><td>46th character</td><td>45th character</td></tr><tr><td>SD761</td><td>48th character</td><td>47th character</td></tr><tr><td>SD762</td><td>50th character</td><td>49th character</td></tr><tr><td>SD763</td><td>52nd character</td><td>51st character</td></tr><tr><td>SD764</td><td>54th character</td><td>53rd character</td></tr><tr><td>SD765</td><td>56th character</td><td>55th character</td></tr><tr><td>SD766</td><td>58th character</td><td>57th character</td></tr><tr><td>SD767</td><td>60th character</td><td>59th character</td></tr><tr><td>SD768</td><td>62nd character</td><td>61st character</td></tr><tr><td>SD769</td><td>64th character</td><td>63rd character</td></tr></table></td><td>S (During execution)</td><td rowspan="3">New</td><td>Qn(H)</td></tr>
<tr><td>SD774</td><td rowspan="2">PID limit setting (for complete derivative)</td><td rowspan="2">0: With limit
1: Without limit</td><td>This register stores the limit of each PID loop as shown below.
<table><tr><th></th><th>b15 to b8</th><th>b7</th><th>to</th><th>b1</th><th>b0</th></tr><tr><td>SD774</td><td></td><td>Loop8</td><td>to</td><td>Loop2</td><td>Loop1</td></tr></table></td><td rowspan="2">U</td><td>Q00J/Q00/Q01*1</td></tr>
<tr><td>SD774 and SD775</td><td>This register stores the limit of each PID loop as shown below.
<table><tr><th></th><th>b15</th><th></th><th>b1</th><th>b0</th></tr><tr><td>SD774</td><td>Loop16</td><td>to</td><td>Loop2</td><td>Loop1</td></tr><tr><td>SD775</td><td>Loop32</td><td>to</td><td>Loop18</td><td>Loop17</td></tr></table></td><td>Qn(H)
QnPRH
QnU
LCPU</td></tr>
</table>

<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by (When Set)</th><th>Corre-sponding ACPU D9□□□</th><th>Corre-sponding CPU</th></tr>
<tr><td rowspan="3">SD778</td><td rowspan="3">Refresh processing selection when the COM/ CCOM instruction is executed</td><td rowspan="3">b0 to b14
0: Refresh not performed
1: Refresh performed
b15
0: Service processing performed
1: Service processing not performed</td><td>• Selects whether or not the data is refreshed when the COM instruction is executed.
• Designation of SD778 is made valid when SM775 turns ON.
 

• Refresh between multiple CPUs by the COM instruction is performed under the following conditions.
Data reception from another CPU: When b4 of SD778 is "1"
Data transmission from host CPU: When b15 of SD778 is "0"</td><td rowspan="3">U</td><td rowspan="3">New</td><td>Q00J/Q00 /Q01*1
Qn(H)*2</td></tr>
<tr><td>• Select whether or not each processing is performed when the COM instruction is executed.
• Designation of SD778 is made valid when SM775 turns ON.
 

• Refresh between multiple CPUs by the COM instruction is performed under the following conditions.
Data reception from another CPU: When b4 of SD778 is "1"
Data transmission from host CPU: When b15 of SD778 is "0"
• When b2 of SD778 is 1, both the CC-Link IE Controller Network and MELSECNET/H perform a refresh. Therefore, when refresh point is large, processing time for the COM instruction is extended.</td><td>Qn(H)*4
QnPH*3
QnPRH</td></tr>
<tr><td>• Selects whether or not the data is refreshed when the COM, CCOM instruction is executed.
• Designation of SD778 is made valid when SM775 turns ON.
 
</td><td>QnU</td></tr>
</table>

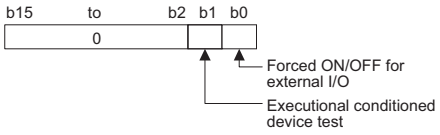
<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by (When Set)</th><th>Corre-sponding ACPU D9□□□</th><th>Corre-sponding CPU</th></tr>
<tr><td>SD778</td><td>Refresh processing selection when the COM/ CCOM instruction is executed</td><td>b0 , b1, b3, b6, b14: (Default: 0)
0: Do not refresh
1: Refresh
b15:
0: Communication with peripheral device is executed
1: Communication with peripheral device is nonexecuted</td><td>• Selects whether or not the data is refreshed when the COM, CCOM instruction is executed.
• Designation of SD778 is made valid when SM775 turns ON.
 
</td><td>U</td><td rowspan="5">New</td><td>LCPU</td></tr>
<tr><td>SD781 to SD785</td><td rowspan="2">Mask pattern of IMASK instruction</td><td rowspan="2">Mask pattern</td><td>The mask patterns masked by the IMASK instruction are stored as follows.
 
</td><td rowspan="2">S (During execution)</td><td>Q00J/Q00/ Q01</td></tr>
<tr><td>SD781 to SD793</td><td>The mask patterns masked by the IMASK instruction are stored as follows. *1
 

*1 The Q00UJCPU, Q00UCPU, and Q01UCPU cannot use SD786 to SD793.</td><td>Qn(H) QnPH QnPRH QnU LCPU</td></tr>
<tr><td>SD794</td><td rowspan="2">PID limit setting (for incomplete derivative)</td><td rowspan="2">0: With limit
1: Without limit</td><td>This register stores the limit of each PID loop as shown below.
 
</td><td rowspan="2">U</td><td>Q00J/Q00 /Q01*1</td></tr>
<tr><td>SD794 to SD795</td><td>This register stores the limit of each PID loop as shown below.
 
</td><td>Qn(H)*4 QnPRH QnU LCPU</td></tr>
</table>

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD796	Maximum number of blocks used for the multiple CPU high-speed transmission dedicated instruction setting (for CPU No.1)	Maximum number of blocks range for dedicated instructions Range: 1 to 7 (Default: 2 Or when setting other than 1 to 7, the register operates as 7).*6	Specifies the maximum number of blocks used for the multiple CPU high-speed transmission dedicated instruction (target CPU=CPU No.1). When the multiple CPU high-speed transmission dedicated instruction is executed to the CPU No.1, and the number of empty blocks of the dedicated instruction transmission area is less than the setting value of this register, SM796 is turned ON, which is used as the interlock signal for consecutive execution of the multiple CPU high-speed transmission dedicated instruction.	U (At 1 scan after RUN)	New	QnU*5
SD797	Maximum number of blocks used for the multiple CPU high-speed transmission dedicated instruction setting (for CPU No.2)		Specifies the maximum number of blocks used for the multiple CPU high-speed transmission dedicated instruction (target CPU=CPU No.2). When the multiple CPU high-speed transmission dedicated instruction is executed to the CPU No.2, and the number of empty blocks of the dedicated instruction transmission area is less than the setting value of this register, SM797 is turned ON, which is used as the interlock signal for consecutive execution of the multiple CPU high-speed transmission dedicated instruction.			
SD798	Maximum number of blocks used for the multiple CPU high-speed transmission dedicated instruction setting (for CPU No.3)		Specifies the maximum number of blocks used for the multiple CPU high-speed transmission dedicated instruction (target CPU=CPU No.3). When the multiple CPU high-speed transmission dedicated instruction is executed to the CPU No.3, and the number of empty blocks of the dedicated instruction transmission area is less than the setting value of this register, SM798 is turned ON, which is used as the interlock signal for consecutive execution of the multiple CPU high-speed transmission dedicated instruction.			
SD799	Maximum number of blocks used for the multiple CPU high-speed transmission dedicated instruction setting (for CPU No.4)		Specifies the maximum number of blocks used for the multiple CPU high-speed transmission dedicated instruction (target CPU=CPU No.4). When the multiple CPU high-speed transmission dedicated instruction is executed to the CPU No.4, and the number of empty blocks of the dedicated instruction transmission area is less than the setting value of this register, SM799 is turned ON, which is used as the interlock signal for consecutive execution of the multiple CPU high-speed transmission dedicated instruction.			

*1 Function version is B or later.
*2 The module whose first 5 digits of serial No. is "04012" or later.
*3 The module whose first 5 digits of serial No. is "07032" or later.
*4 The module whose first 5 digits of serial No. is "09012" or later.
*5 The Universal model QCPU except the Q00UJCPU, Q00UCPU, Q01UCPU, and Q02UCPU.
*6 The range is from 1 to 9 for the Q03UDCPU, Q04UDCPU, and Q06UDHCP whose first 5 digits of serial number is "10012" or earlier.
(Default: 2 Or when setting other than 1 to 9, the register operates as 9).

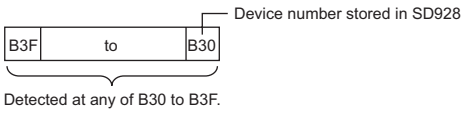
(8) Debugging

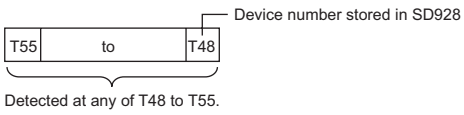
Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD840	Debug function usage	Debug function usage	This register indicates the status of the debug function usage as shown below. 0: Forced on/off for external I/O 1: Executional conditioned device test 2 to 15: Empty (fixed at 0.)  (0: Not used, 1: Used)	S (Status change)	New	QnU*1 LCPU

*1 The module whose first 5 digits of serial No. is "10042" or later.

(9) Device memory error information

<table>
<tr><th>Number</th><th>Name</th><th>Meaning</th><th>Explanation</th><th>Set by (When Set)</th><th>Corresponding ACPU D9□□□</th><th>Corresponding CPU</th></tr>
<tr><td>SD927</td><td rowspan="2">Device information during "RAM ERROR" (error code: 1161)</td><td>Device name</td><td>This register stores the device name that detected device memory data change.
<table>
<tr><th>Value</th><th>Device name</th><th>Value</th><th>Device name</th><th>Value</th><th>Device name</th></tr>
<tr><td>0</td><td>Not detected</td><td>8</td><td>L</td><td>16</td><td>C (contact, coil)</td></tr>
<tr><td>1</td><td rowspan="2">For system use</td><td>9</td><td>B</td><td>17</td><td>T (current value)</td></tr>
<tr><td>2</td><td>10</td><td>F</td><td>18</td><td>ST (current value)</td></tr>
<tr><td>3</td><td>SM</td><td>11</td><td>SB</td><td>19</td><td>C (current value)</td></tr>
<tr><td>4</td><td>SD</td><td>12</td><td>V</td><td>20</td><td>D</td></tr>
<tr><td>5</td><td>X</td><td>13</td><td>S</td><td>21</td><td>W</td></tr>
<tr><td>6</td><td>Y</td><td>14</td><td>T (contact, coil)</td><td>22</td><td>SW</td></tr>
<tr><td>7</td><td>M</td><td>15</td><td>ST (contact, coil)</td><td>-1</td><td>(cannot be determined.)</td></tr>
</table></td><td rowspan="2">S (Error)</td><td rowspan="2">New</td><td rowspan="2">QnU*1
LCPU*2</td></tr>
<tr><td>SD928</td><td>Device number</td><td>This register stores the device number that detected device memory data change (lower word)
1) Word devices (SD, T (current value), ST (current value), C (current value), D, W, SW)
The device number that detected an error is stored.
Ex. When SD927 stores 20, and SD928 stores 10 "RAM ERROR" (error code: 1161) is detected at D10.

2) Bit devices (SM, X, Y, M, L, B, F, SB, V, S)
The device number that detected an error is stored in units of 16 points.
Ex. When SD927 stores 9, and SD928 stores 48 "RAM ERROR" (error code: 1161) is detected at any of B30 to B3F.
 

3) T (contact, coil), ST (contact, coil), C (contact, coil)
The device number that detected an error is stored in units of 8 points.
Ex. When SD927 stores 14, and SD928 stores 48 "RAM ERROR" (error code: 1161) is detected at any of T48 to T55.
 

4) "0" (fixed value) is stored when the device number cannot be determined.</td></tr>
</table>

*1 The module whose first 5 digits of serial No. is "13022" or later.
*2 The module whose first 5 digits of serial No. is "13102" or later.

(10)Redundant CPU information (host system CPU information*1)

Number	Name	Name	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD952	History of memory copy from control system to standby system	Latest status of memory copy from control system to standby system	This register stores a value indicating the completion status of the latest memory data copy from the control system to the standby system. 1) The value same as the SD1596 value is stored at completion or abend of the memory data copy from the control system to the standby system. 2) Since data have been backed up in case of power failure, this register holds the value indicating the latest memory data copy status from the control system to the standby system. 3) This register is cleared to 0 by latch clear.	S (Status change)	New	QnPRH

*1 This applies to the Built-in Ethernet port QCPU.

(11)Remote password count

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD979	Direct MELSOFT connection	Count of unlock processing failures	This register stores the number of mismatched password entries. Range: 0 to $0FFFE_H$($0FFFF_H$ when the range is exceeded)	S (Status change)	New	QnU*1 LCPU
SD980 to SD995	Connection 1 to 16					
SD997	MELSOFT connection using UDP port					
SD998	MELSOFT connection using TCP port					
SD999	FTP communication port					

*1 This applies to the Built-in Ethernet port QCPU.

(12) Conversion from A series to Q or L series

The special register (D9000 to D9255) for ACPU corresponds to the special register (SD1000 to SD1255) for QCPU or LCPU after the A to Q/L conversion. (Note that the Basic model QCPU and Redundant CPU do not support the A to Q/L conversion.)

All data in this area of the special register are set by system (cannot be set by user using a program). To set data by user, correct the program using the special register for QCPU or LCPU. The special register (D9200 to D9255), however, includes the areas that can be set by user. For those areas, data can be set by user in the converted special register (SD1200 to SD1255) as well. For details on the special register for ACPU, refer to the following.

User's manual for the CPU module used

Type MELSECNET, MELSECNET/B Data Link System Reference Manual

Point

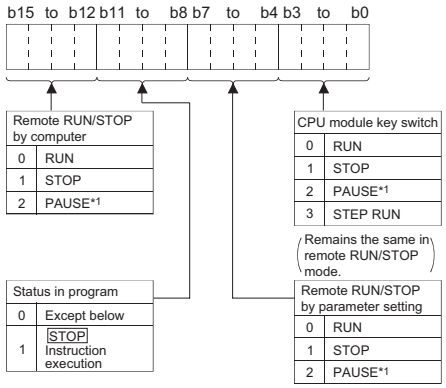
To use the converted special register in the High Performance model QCPU, Process CPU, Universal model QCPU, or LCPU, check "Use special relay/special register from SM/SD1000" under "A-PLC Compatibility Setting".

Project window ⇨ [Parameter] ⇨ [PLC Parameter] ⇨ [PLC System]
Note that the processing time will increase when the converted special register is used.

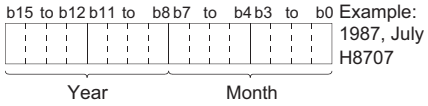
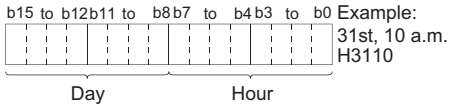
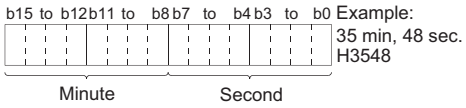
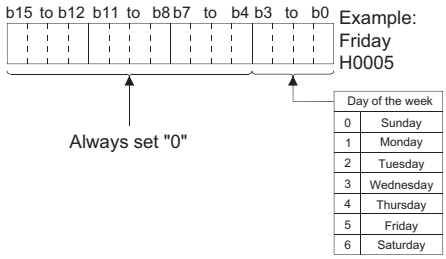
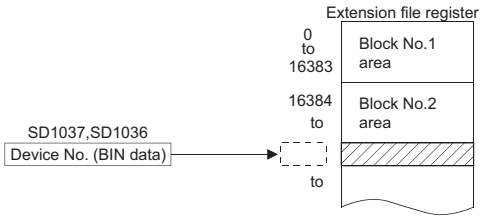
[How to read the Special Register for Modification column]

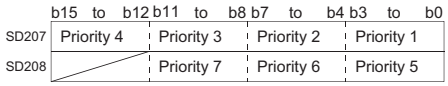
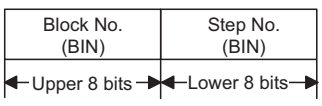
- If the special register number for QCPU or LCPU is provided, correct the program using it.
- ⊟ means that the converted special register can be used.
- ⊠ means that the special register cannot be used in QCPU or LCPU.

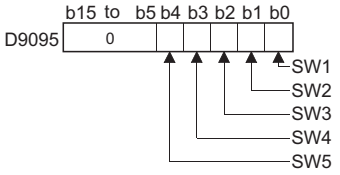
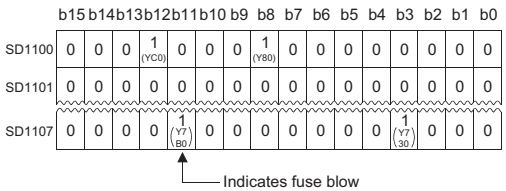
<table>
<tr><th>ACPU Special Register</th><th>Special Register after Conversion</th><th>Special Register for Modification</th><th>Name</th><th>Meaning</th><th>Details</th><th>Corre-sponding CPU</th></tr>
<tr><td>D9000</td><td>SD1000</td><td>-</td><td>Fuse blown</td><td>Number of module with blown fuse</td><td>• If a module with blown fuse is detected, the lowest first I/O number of the module is stored in hexadecimal. (Example: If a fuse blown is occurred in the output module with output number Y50 to Y6F, "50" is stored in hexadecimal.)
To monitor the number by a programming tool, monitor in hexadecimal.(This register is cleared when contents in SD1100 to SD1107 are all reset to "0".)
• Output modules on remote I/O stations are also checked for blown fuse.</td><td>Qn(H)
QnPH
QnU*1</td></tr>
<tr><td>D9001</td><td>SD1001</td><td>-</td><td>Fuse blown</td><td>Number of module with blown fuse</td><td>• If any fuse is blown, this register stores a number corresponding to each setting switch number or to slot number of the base unit.
<table><tr><th colspan="2">AJ02 I/O module</th><th colspan="2">Extension base unit</th></tr><tr><th>Setting switch</th><th>Stored data</th><th>Base unit slot No.</th><th>Stored data</th></tr><tr><td>0</td><td>0</td><td>0</td><td>4</td></tr><tr><td>1</td><td>1</td><td>1</td><td>5</td></tr><tr><td>2</td><td>2</td><td>2</td><td>6</td></tr><tr><td>3</td><td>3</td><td>3</td><td>7</td></tr><tr><td>4</td><td>4</td><td colspan="2" rowspan="4"></td></tr><tr><td>5</td><td>5</td></tr><tr><td>6</td><td>6</td></tr><tr><td>7</td><td>7</td></tr></table>• For the remote I/O station, the value of (module I/O No./ 10_H) + 1 is stored.</td><td>Qn(H)
QnPH</td></tr>
<tr><td>D9002</td><td>SD1002</td><td>-</td><td>I/O module verify error</td><td>I/O module verify error module number</td><td>• If the status of the I/O modules changes from that obtained at power-on, the lowest first I/O number of the module is stored in hexadecimal.(Example: If a module verification error is occurred on the output module with output numbers Y50 to Y6F, "50" is stored in hexadecimal.) To monitor the number by a programming tool, monitor in hexadecimal.(This register is cleared when contents in SD1116 to SD1123 are all reset to "0".)
• I/O module verification is conducted on I/O modules on remote I/O stations.</td><td>Qn(H)
QnPH
QnU*1
LCPU</td></tr>
<tr><td>D9005</td><td>SD1005</td><td>-</td><td>AC DOWN counter</td><td>Number of times for AC DOWN</td><td>• A value stored in this register is incremented by one whenever the input voltage falls to or below 85% (AC power) or 65% (DC power) of the rating during operation of the CPU module.
• The counter starts the routine: counts up from 0 to 32767, then counts down to -32768 and then again counts up to 0.</td><td>Qn(H)
QnPH
QnU*1
LCPU</td></tr>
<tr><td>D9008</td><td>SD1008</td><td>SD0</td><td>Self-diagnostic error</td><td>Self-diagnostic error number</td><td>This register stores the error code of an error detected by self-diagnostics.</td><td rowspan="2">Qn(H)
QnPH
QnU*1
LCPU</td></tr>
<tr><td>D9009</td><td>SD1009</td><td>SD62</td><td>Annunciator detection</td><td>F number at which external failure has occurred</td><td>• When any of F0 to F2047 (default device setting) is turned on by the OUT F or SET F instruction, the F number that has been detected earliest among the F numbers that have turned on is stored in BIN code.
• SD1009 can be cleared by RST F or LEDR instruction. If another F number has been detected, the clearing of SD1009 causes the next number to be stored in SD1009.</td></tr>
</table>

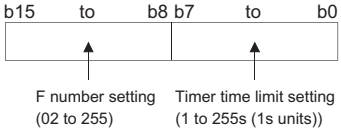
ACPU Special Register	Special Register after Conversion	Special Register for Modification	Name	Meaning	Details	Corre-sponding CPU
D9010	SD1010	×	Error step	Step number at which operation error has occurred.	If an operation error occurred during execution of an application instruction, the number of the step having the error is stored. The contents of SD1010 are updated upon every operation error.	Qn(H) QnPH
D9011	SD1011	×		Step number at which operation error has occurred.	If an operation error occurred during execution of an application instruction, the number of the step having the error is stored. Because the step number is stored in SD1011 when SM1011 turns from off to on, the data in SD1011 are not updated unless SM1011 is cleared by a user program	
D9014	SD1014	×	I/O control mode	I/O control mode number	The I/O control mode that has been set is returned in any of the following numbers. • 0: Both input and output in direct mode • 1: Input in refresh mode, output in direct mode • 3: Both input and output in refresh mode	
D9015	SD1015	SD203	Operating status of CPU	Operating status of CPU	Operation status of a CPU module is stored as shown below.  *1 For the High Performance model QCPU and Process CPU, if the CPU module is running and SM1040 is off, the CPU module remains in the RUN status even though it is set to the PAUSE status.	Qn(H) QnPH QnU*1 LCPU

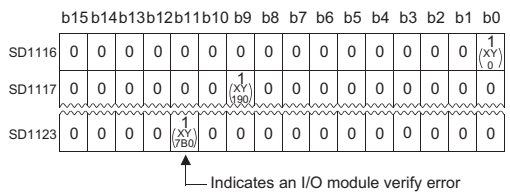
ACPU Special Register	Special Register after Conversion	Special Register for Modification	Name	Meaning	Details	Corre-sponding CPU
D9016	SD1016	×	Program number	0: Main program (ROM) 1: Main program (RAM) 2: Subprogram 1 (RAM) 3: Subprogram 2 (RAM) 4: Subprogram 3 (RAM) 5: Subprogram 1 (ROM) 6: Subprogram 2 (ROM) 7: Subprogram 3 (ROM) 8: Main program (E^2PROM) 9: Subprogram 1 (E^2PROM) A: Subprogram 2 (E^2PROM) B: Subprogram 3 (E^2PROM)	This register stores any of the values from 0 to B, indicating which program is currently running.	Qn(H) QnPH
D9017	SD1017	SD524	Scan time	Minimum scan time (10 ms units)	If a scan time value is smaller than the value in SD1017, the SD1017 value is updated in the END processing. Therefore the minimum value of scan time is stored in SD1017.	Qn(H) QnPH QnU*1 LCPU
D9018	SD1018	SD520		Scan time (10 ms units)	This register stores a scan time in every END processing.	
D9019	SD1019	SD526		Maximum scan time (10 ms units)	If a scan time value is greater than the value in SD1019, the SD1019 value is updated in END processing. Therefore the maximum value of scan time is stored in SD1019.	
D9020	SD1020	×	Constant scan	Constant scan time (User sets in 10 ms units)	This register stores an interval value in units of 10ms to run a program at regular intervals. • 0: No constant scan function • 1 to 200: Constant scan function available (executing at a interval of setting value × 10ms)	Qn(H) QnPH
D9021	SD1021	-	Scan time	Scan time (1 ms units)	This register stores scan time in every END processing.	Qn(H) QnPH QnU*1 LCPU
D9022	SD1022	SD412	Count in units of 1s.	Count in units of 1s.	• The value is incremented by one every second after RUN. • The counter starts the routine: counts up from 0 to 32767, then counts down to -32768 and then again counts up to 0.	

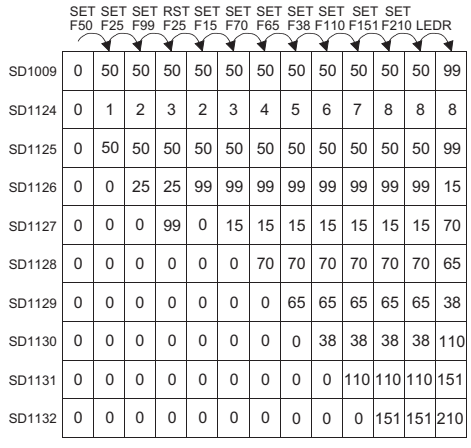
ACPU Special Register	Special Register after Conversion	Special Register for Modification	Name	Meaning	Details	Corre-sponding CPU
D9025	SD1025	-	Clock data	Clock data (year, month)	This register stores the last two digits of the year and the month in BCD as shown below. 	Qn(H) QnPH QnU*1 LCPU
D9026	SD1026	-	Clock data	Clock data (day, hour)	This register stores the day and the hour in BCD as shown below. 	
D9027	SD1027	-	Clock data	Clock data (minute, second)	This register stores the minute and the second in BCD as shown below. 	
D9028	SD1028	-	Clock data	Clock data (day of week)	This register stores the day of the week in BCD as shown below. 	
D9035	SD1035	SD648	Extension file register	Use block No.	Stores the block No. of the extension file register being used in BCD code.	
D9036	SD1036	×	Extension file registerfor designation of device number	Device number when individual devices from extension file register are directly accessed	Designate the device number for the extension file register for direct read and write in 2 words at SD1036 and SD1037 in BIN data. Use consecutive numbers beginning with R0 of block No. 1 to designate device numbers. 	Qn(H) QnPH
D9037	SD1037	×				

ACPU Special Register	Special Register after Conversion	Special Register for Modification	Name	Meaning	Details	Corre-sponding CPU
D9038	SD1038	SD207	LED display priority ranking	Priorities 1 to 4	• This register stores priority of errors to be indicated by the ERROR LED (on or flash) by using cause numbers. • Configuration of the priority setting areas is as shown below.  • For details, refer to the following. User's manual of the CPU module used Type ACPU/QCPU-A (A Mode) Programming Manual (Fundamentals)	Qn(H) QnPH
D9039	SD1039	SD208		Priorities 5 to 7		
D9044	SD1044	×	For sampling trace	Step or time during sampling trace	To operate the STRA or STRAR instruction of a sampling trace by turning on or off SM803 with a programming tool, use the value stored in SD1044 as the sampling trace condition. • When "Each scan" is selected: 0 • When a timing is specified: setting value (Unit: 10ms)	
D9049	SD1049	×	Work area for SFC	Block number of extension file register	• This register stores the block No. of the extended file register used as a work area for executing the SFC program. • This register stores "0" when SM320 is off and when empty area of 16K bytes or smaller is used (16K byte or less is too small to be used as block No.1 for an extended file register).	
D9050	SD1050	×	SFC program error number	Error code generated by SFC program	This register stores an error code of the error occurred in the SFC program. • 0 : No error • 80: SFC program parameter error • 81: SFC code error • 82: Number of steps of simultaneous execution exceeded • 83: Block start error • 84: SFC program operation error	
D9051	SD1051	×	Error block	Block number where error occurred	• This register stores the number of the block in the SFC program where an error occurred. For error 83, the number of the block where the program was started is stored.	
D9052	SD1052	×	Error step	Step number where error occurred	• This register stores the number of the step in the SFC program where error 83 occurred. • For error 80, 81, and 82, "0" is stored. • For error 83, the block starting step number is stored.	
D9053	SD1053	×	Error transition	Transition condition number where error occurred	This register stores the number of the transition condition in the SFC program where error code 84 occurred. For error codes 80, 81, 82, and 83, "0" is stored.	
D9054	SD1054	×	Error sequence step	Sequence step number where error occurred	This register stores the sequence step number of transfer condition and operation output in the SFC program where error 84 occurred.	
D9055	SD1055	SD812	Status latch execution step number	Status latch execution step number	• This register stores the number of the step where a status latch was executed. • When a status latch was executed in a main sequence program, the step No. is stored. • When a status latch was executed in a SFC program, the block number and step number are stored.  	

ACPU Special Register	Special Register after Conversion	Special Register for Modification	Name	Meaning	Details	Corre-sponding CPU
D9072	SD1072	×	PLC communication check	Data check of serial communication module	The serial communication module automatically reads and writes data in a single loopback test to perform communication check.	Qn(H) QnPH
D9085	SD1085	×	Register for setting time check value	1 s to 65535 s	Sets the time check time of the data link instructions (ZNRD, ZNWR) for the MELSECNET/10. • Setting range: 1s to 65535s (1 to 65535) • Unit: second • Default: 10s (If 0 has been set)	
D9090	SD1090	×	Microcomputer subroutine input data area start device number	Depends on microcomputer package.	For details, refer to the following. Manual for respective microcomputer package	
D9091	SD1091	×	Detailed error code	Self-diagnosis detailed error code	This register stores description of the error cause of an instruction error.	Qn(H) QnPH QnU*1 LCPU
D9094	SD1094	SD251	Head I/O number of I/O module to be replaced	Head I/O number of I/O module to be replaced	This register stores the first two digits of the start I/O number of an I/O module, which is to be removed and mounted online (with power on). Example) Input module with I/O No. X2F0 → H2F	Qn(H) QnPH
D9095	SD1095	SD200	DIP switch information	DIP switch information	This register stores a status of the DIP switch of the CPU module in the following format. • 0: OFF • 1: ON 	
D9100	SD1100	-	Fuse blown module	Bit pattern in units of 16 points, indicating the modules whose fuses have blown	• The number of an output module whose fuse has blown is stored in the following bit pattern (in units of 16 points).(If the module number has been set by parameter, the parameter-set number is stored.)  For a module whose number of output points exceeds 16 points, all bits corresponding to output module numbers within the number of output points occupied by the module (in increments of 16 points) turn on. Ex. When a 64-point module is mounted on the slot 0, b0 to b3 turn on when the fuse has blown. • Output modules on remote I/O stations are also checked for blown fuse. (This register must be cleared by a program because the bit status remains unchanged even after clearing the error.)	Qn(H) QnPH QnU*1
D9101	SD1101					
D9102	SD1102					
D9103	SD1103					
D9104	SD1104					
D9105	SD1105					
D9106	SD1106					
D9107	SD1107					

ACPU Special Register	Special Register after Conversion	Special Register for Modification	Name	Meaning	Details	Corre-sponding CPU
D9108	SD1108	-	Step transfer monitoring timer setting	Timer setting valve and the F number at time out	• This register stores a value set for step transition monitoring timer and the number of an annunciator (F number) that turns on if the monitoring timer times out.  • Turning on any of registers SM1108 to SM1114 activates a monitoring timer. If the transition condition for the step is not established before the time-out time, the annunciator (F) turns on.	Qn(H) QnPH
D9109	SD1109					
D9110	SD1110					
D9111	SD1111					
D9112	SD1112					
D9113	SD1113					
D9114	SD1114					

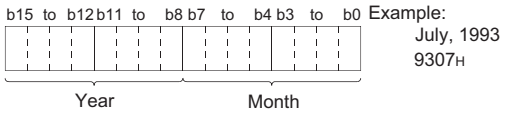
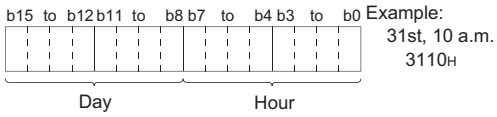
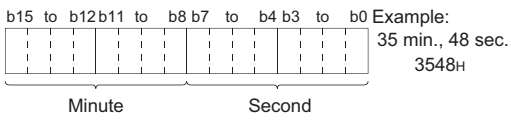
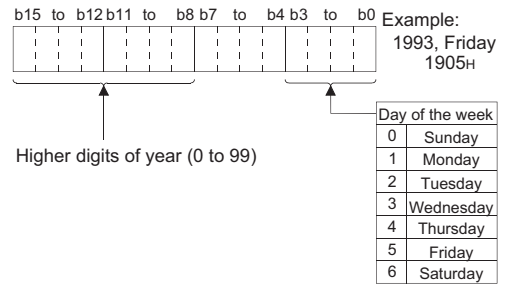
<table>
<tr><th>ACPU Special Register</th><th>Special Register after Conversion</th><th>Special Register for Modification</th><th>Name</th><th>Meaning</th><th>Details</th><th>Corre-sponding CPU</th></tr>
<tr><td>D9116</td><td>SD1116</td><td rowspan="8">-</td><td rowspan="8">I/O module verification error</td><td rowspan="8">Bit pattern, in units of 16 points, indicating the modules with verification errors</td><td rowspan="8">• If the status of the I/O module changes from that obtained at power-on, the module No. (unit: 16 points) is stored in the following bit pattern. (When I/O module numbers have been set by the parameter, the parameter-set numbers are stored.)
 

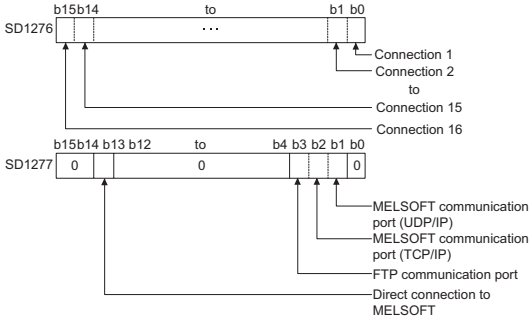
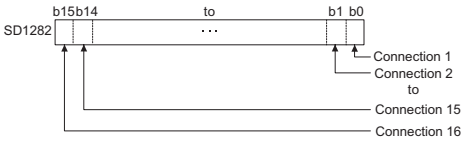
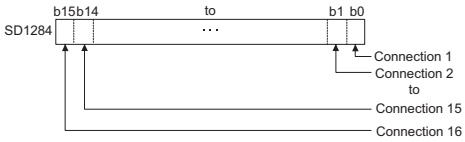
For a module whose number of I/O points exceeds 16 points, all bits corresponding to I/O module numbers within the number of I/O points occupied by the module (in increments of 16 points) turn on.
Ex. When a 64-point module is mounted on the slot 0, b0 to b3 turn on when an error is detected.
• I/O module verification is conducted on I/O modules on remote I/O stations.
(If normal status is restored, clear is not performed. Therefore, it is required to perform clear by user program.)</td><td rowspan="9">Qn(H)
QnPH
QnU*1
LCPU</td></tr>
<tr><td>D9117</td><td>SD1117</td></tr>
<tr><td>D9118</td><td>SD1118</td></tr>
<tr><td>D9119</td><td>SD1119</td></tr>
<tr><td>D9120</td><td>SD1120</td></tr>
<tr><td>D9121</td><td>SD1121</td></tr>
<tr><td>D9122</td><td>SD1122</td></tr>
<tr><td>D9123</td><td>SD1123</td></tr>
<tr><td>D9124</td><td>SD1124</td><td>SD63</td><td>Number of annuciator detections</td><td>Number of annuciator detections</td><td>When any of F0 to F2047 (default device setting) is turned on by the SET F instruction, a value in SD1124 is incremented by one (up to a maximum of 16). When the RST F or LEDR instruction is executed, it is decremented by one.</td></tr>
<tr><td>D9125</td><td>SD1125</td><td>SD64</td><td rowspan="8">Annunciator detection number</td><td rowspan="8">Annunciator detection number</td><td rowspan="8">When any of F0 to F2047 (default device setting) are turned on by the SET F instruction, the annunciator numbers (F numbers) that are turned on are stored in SD1125 to SD1132 in order.
The F numbers turned off by the RST F instruction is deleted from this register, and the F numbers stored after the deleted F numbers are shifted to the previous registers. When the LEDR instruction is executed, the contents of SD1125 to SD1132 are shifted upward by 1.
When there are eight annunciator detections, the next one is not stored in SD1125 to SD1132.
 
</td></tr>
<tr><td>D9126</td><td>SD1126</td><td>SD65</td></tr>
<tr><td>D9127</td><td>SD1127</td><td>SD66</td></tr>
<tr><td>D9128</td><td>SD1128</td><td>SD67</td></tr>
<tr><td>D9129</td><td>SD1129</td><td>SD68</td></tr>
<tr><td>D9130</td><td>SD1130</td><td>SD69</td></tr>
<tr><td>D9131</td><td>SD1131</td><td>SD70</td></tr>
<tr><td>D9132</td><td>SD1132</td><td>SD71</td></tr>
</table>

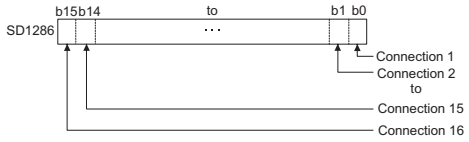
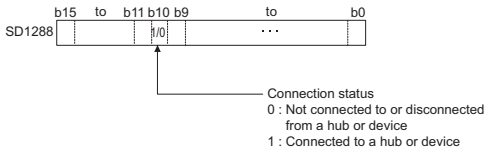
*1 The relevant modules are as follows:
• The Universal model QCPU whose serial number (first five digits) is "10102" or later.
• Q00UJCPU, Q00UCPU, Q01UCPU

(13) Built-in Ethernet port QCPU and built-in Ethernet function

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD1260	IP address in-use	IP address (lower digits)	This register stores an IP address of the built-in Ethernet port.	S (Initial)	New	QnU*3
SD1261		IP address (upper digits)				
SD1262		Subnet mask pattern (lower digits)	• This register stores a subnet mask pattern of the built-in Ethernet port. • When a subnet mask pattern is not set, "0" is stored.			
SD1263		Subnet mask pattern (upper digits)				
SD1264		Default router IP address (lower digits)	• This register stores a default router IP address of the built-in Ethernet port. • When a default router IP address is not stored, "0" is stored.			
SD1265		Default router IP address (upper digits)				
SD1266	MAC address	MAC address (5th and 6th bytes)	This register stores the MAC address of the built-in Ethernet ports.			QnU*5
SD1267		MAC address (3rd and 4th bytes)				
SD1268		MAC address (1st and 2nd bytes)				

Number	Name		Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD1270	Time setting function	Operation result	Storesoperationresult.	This register stores the operation result of the time setting function. • 0: Not executed • 1: Success $0FFFF_H$: Failure	S (Status change)	New	QnU*1 LCPU
SD1271		Execution time	Stores time acquired with time setting function.	This register stores the year (last two digits) and the month that the time setting function was executed in 2-digit BCD. 			
SD1272				This register stores the day and the hour that the time setting function was executed in a 2-digit BCD. 			
SD1273				This register stores the minute and the second that the time setting function was executed in a 2-digit BCD. 			
SD1274				This register stores the year (first two digits) and the day of the week that the time setting was executed in 2-digit BCD. 			
SD1275		Required response time	Stores time required for clock time aquisition.	This register stores the time required for a clock value to be set on the CPU after being sent to the SNTP server. • Range: A0 to $0FFFE_H$ (Unit: ms) $0FFFF_H$ when the above limit is exceeded.			

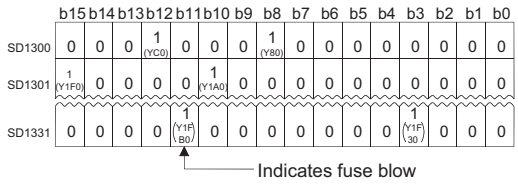
Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD1276 SD1277	Forced connection invalidation	Specifies forced connection invalidation.	This register is specified to forcibly invalidate a connection by a program. After being specified invalid, the connection stops communication and does not respond.(When a remote password is used and frequent unlock processing errors occur on a connection, this register is useful for temporarily disabling access.)  • 0: Valid (default) • 1: Invalid	U	New	QnU*1 LCPU
SD1282	Open completion signal	Stores open completion status	This register stores the open completion status of a socket communication connection. (when the open method is socket communication). Bits for connections other than that of socket communication are always "0".  • 0: Open processing is not completed. • 1: Open processing is completed.	S (Status change)		QnU*2 LCPU
SD1284	Open request signal	Stores open request status	This register stores the open request status of a socket communication connection. Bits for connections other than that of socket communication are always "0".  • 0: No open request • 1: In open request			

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD1286	Reception status signal	Stores reception status	This register stores the receive status of a socket communication connection. Bits for connections other than that of socket communication are always "0".  • TCP (standard receive mode) • 0: Data not received • 1: Data received • TCP (fixed-length receive mode) • 0: Data not received or received data size is not the size of receive buffer. • 1: Received data size reached to the receive buffer size. • UDP • 0: Data not received • 1: Data received	S (Status change)	New	QnU*2 LCPU
SD1288	Built-in Ethernet port connection status	Stores connection status of built-in Ethernet port	This register stores a connection status of the built-in Ethernet port.  			
SD1292	IP address setting	IP address (lower digits)	• Specify an IP address to be stored in the IP address storage area (flash ROM). Range: 00000001_H to $DFFFFFFE_H$ (0.0.0.1 to 223.255.255.254) • When writing to or clearing the IP address storage area (flash ROM) is completed, the values of the IP address stored in the IP address storage area (flash ROM) are stored.	S (Status change) /U		QnU*3
SD1293		IP address (upper digits)				
SD1294		Subnet mask pattern (lower digits)	• Specify a subnet mask pattern to be stored in the IP address storage area (flash ROM). Range: $C0000000_H$ to $FFFFFFFC_H$ (192.0.0.0 to 255.255.255.252), 00000000_H (blank) • When writing to or clearing the IP address storage area (flash ROM) is completed, the values of the subnet mask pattern stored in the IP address storage area (flash ROM) are stored.			
SD1295		Subnet mask pattern (upper digits)				
SD1296		Default router IP address (lower digits)	• Specify a default router IP address to be stored in the IP address storage area (flash ROM). Range: 00000001_H to $DFFFFFFE_H$ (0.0.0.1 to 223.255.255.254), 00000000_H (blank) • When writing to or clearing the IP address storage area (flash ROM) is completed, the values of the default router IP address stored in the IP address storage area (flash ROM) are stored.			
SD1297		Default router IP address (upper digits)				

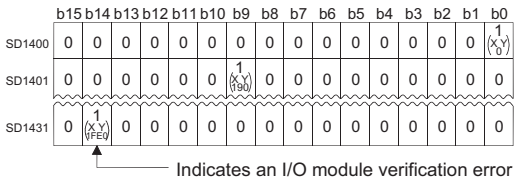
Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD1298	IP address storage area write error factor	Stores error factor when failing to write to IP address storage area	This register stores an error factor occurred when writing to the IP address storage area (flash ROM). (Links with SM1294.) • 0_H: No error • 100_H: The values of SD1292 to SD1297 are out of the setting range. • 200_H: Write error • 300_H: Writing is not available because other function is being executed. • 400_H: Writing is not available because the IP address storage area is being cleared	S (Status change)	New	QnU*3
SD1299	IP address storage area clear error factor	Stores error factor when failing to clear IP address storage area	This register stores an error factor occurred when clearing the IP address storage area (flash ROM). (Links with SM1297.) • 0_H: No error • 200_H: Clear error • 300_H: Clearing is not available because other function is being executed. • 400_H: Clearing is not available because the IP address storage area is being written.			
SD1395	Built-in Ethernet port counter	Number of times that data are not read due to receive buffer full	This register stores the number of times that packet data are not read due to receive buffer full. Range: 0 to 65535 (0000_H to $FFFF_H$)			QnU*4

*1 This applies to the Built-in Ethernet port QCPU.
*2 This applies to the built-in Ethernet port QCPU whose first five digits of serial No. is "11012" or later.
*3 This applies to the built-in Ethernet port QCPU whose first five digits of serial No. is "11082" or later.
*4 This applies to the built-in Ethernet port QCPU whose first five digits of serial No. is "12072" or later.
*5 This applies to the built-in Ethernet port QCPU whose first five digits of serial No. is "12112" or later.

(14) Fuse blown module

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD1300	Fuse blown module	Bit pattern in units of 16 points, indicating the modules whose fuses have blown 0: No blown fuse 1: Blown fuse present	• The number of an output module whose fuse has blown is stored in the following bit pattern (in units of 16 points). (If the module numbers are set by parameter, the parameter-set numbers are stored.) • The status of the blown fuse of an output module on a remote station is also detected.  For a module whose number of output points exceeds 16 points, all bits corresponding to output module numbers within the number of output points occupied by the module (in increments of 16 points) turn on. **Ex.** When a 64-point module is mounted on the slot 0, b0 to b3 turn on when the fuse has blown. • Not cleared even if the blown fuse is replaced with a new one. The numbers are cleared by clearing the error.	S (Error)	D9100	Qn(H) QnPH QnPRH QnU
SD1301					D9101	
SD1302					D9102	
SD1303					D9103	
SD1304					D9104	
SD1305					D9105	
SD1306					D9106	
SD1307					D9107	
SD1308						
SD1309 to SD1330						
SD1331					New	

(15) I/O module verification

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD1400	I/O module verify error	Bit pattern, in units of 16 points, indicating the modules with verification errors. 0: No I/O verification errors 1: I/O verification error present	• If the status of the I/O module changes from that obtained at power-on, the module No. is stored in the following bit pattern.(If the I/O numbers are set by parameter, the parameter-set numbers are stored.) • Also detects I/O module information.  For a module whose number of I/O points exceeds 16 points, all bits corresponding to I/O module numbers within the number of I/O points occupied by the module (in increments of 16 points) turn on. **Ex.** When a 64-point module is mounted on the slot 0, b0 to b3 turn on when an error is detected. • Not cleared even if the blown fuse is replaced with a new one. This flag is cleared by error resetting operation.	S (Error)	D9116	Qn(H) QnPH QnPRH QnU LCPU
SD1401					D9117	
SD1402					D9118	
SD1403					D9119	
SD1404					D9120	
SD1405					D9121	
SD1406					D9122	
SD1407					D9123	
SD1408						
SD1409 to SD1430						
SD1431					New	

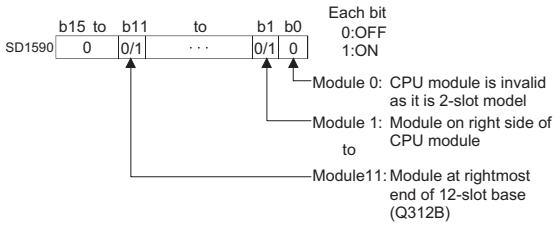
(16) Process control instruction

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD1500 SD1501	Basic period	Basic period time	Set the basic period (1 second units) use for the process control instruction using floating point data. Floating points data = SD1501 | SD1500	U	New	QnPH
SD1502	Process control instruction detail error code	Process control instruction detail error code	This register indicates the details of an error occurred by executing a process control instruction.	S (Error)		
SD1503	Process control instruction generated error location	Process control instruction generated error location	Shows the error process block that occurred in the process control instruction.			
SD1506 SD1507	Dummy device	Dummy device	Used to specify dummy devices by a process control instruction.	U		QnPH QnPRH
SD1508	Function availability selection for process control instruction	b0 Bumpless function availability setting for the S.PIDP instrunction 0: Enabled 1: Disabled (Default: 0)	This register stores whether to enable functions for process control instructions. SD1508: b15 b14 to b2 b1 b0 = 0 | 0 | 0 | 1/0 Bumpless function availability for the S.PIDP instruction			

(17) Redundant system (host system CPU information[*1])

The special register (SD1510 to SD1599) is valid only for redundant systems. All bits are set to "0" for stand-alone systems.

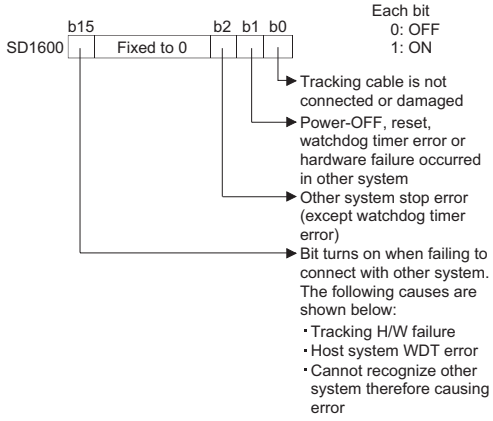
Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD1585	Redundant system LED status	4 LED states • BACKUP • CONTROL • SYSTEM A • SYSTEM B	The LED status of BACKUP, CONTROL, SYSTEM A, or SYSTEM B is stored in the following format: b15 to b10 b9 b8 b7 b6 b5 b4 b3 b2 to b0 = 0 | 0 SYSTEM B: 0: Off, 1: On, 2: Flicker SYSTEM A: 0: Off, 1: On, 2: Flicker BACKUP: 0: Off, 1: On (red), 2: Flicker(red), 3: On(green), 4: Flicker(green), 5: On (orange), 6: Flicker(orange) CONTROL: 0: Off, 1: On	S (Status change)	New	QnPRH

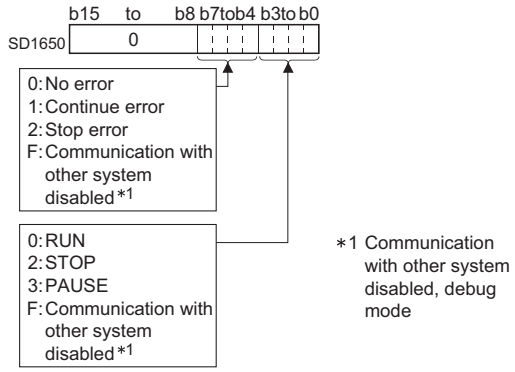
Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD1588	Reason(s) for system switching	Reason(s) for system switching that occurred in host station	Stores the reason(s) for system switching on the host system. The following values are stored corresponding to the methods for system switching: This register is initialized with zero (0) stored when the system is powered on from off or is reset. • 0: Initial value (control system has never been switched) • 1: Power off, Reset, H/W failure, WDT error • 2: CPU stop error (except WDT) • 3: System switching request from network module • 16: System switching dedicated instruction • 17: System switching request from a programming tool	S (when condition occurs)	○	QnPRH
SD1589	Reason(s) for system switching failure conditions	Reason(s) for system switching failure No	• If a system switching is failed, any of the following value is stored in this register. • 0: System switching complete (default) • 1: Tracking cable is not connected, tracking cable failure, or internal circuit failure • 2: H/W failure, power-off, reset, watchdog timer error on the standby system • 3: H/W failure, power-off, reset, WDT error on the control system • 4: Preparing tracking communication • 5: Communication timeout • 6: Stop error on the standby system (except for watchdog timer error) • 7: Operation differs between both systems (detected only in the back up mode) • 8: During memory copy from control system to standby system • 9: Performing program online change • 10: Detecting a failure of network module on the standby system • 11: System is being switched • Resets to "0" when host system is powered on. • Zero is stored in this register upon completion of system switching.	S (when system is switched)	○	
SD1590	Network module head address, which requested system switching	Network module head address, which requested system switching	• When system switching is requested from a network module in the host system, the bit corresponding to the module that received the request turns on.  • The system turns off the bit after the error is removed by a user. • For the number for modules where system switching is requested from a network module in other system, refer to SD1690.	S (Error/Status change)	New	
SD1595	Memory copy target I/O number	Memory copy target I/O number	• Before SM1595 is turned from off to on, the I/O No. of the memory copy destination (Standby system CPU module: $3D1_H$) is stored in this register.	U		
SD1596	Memory copy status	Memory copy status	• Stores the execution result of Memory copy function. • 0: Memory copy is complete • 4241_H: Standby system power supply off • 4242_H: Tracking cable is disconnected or is damaged • 4247_H: Memory copy is being executed • 4248_H: Unsupported memory copy destination I/O number	S (Status change)		

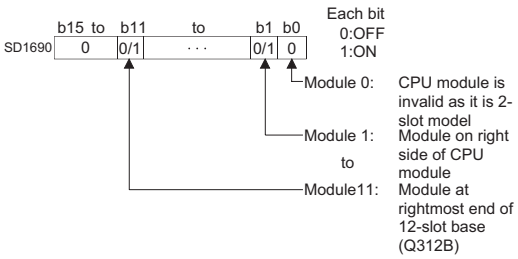
*1 The information of the host CPU module is stored.

(18) Redundant system (other system CPU information[*1])

The special register (SD1600 to SD1650) is valid when the redundant system is in backup mode and is invalid in separate mode. The special register (SD1651 to SD1690) is valid when the redundant system is in backup mode or in separate mode. All bits in SD1600 to SD1690 are set to "0" for stand-alone systems.

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU SD□□[*2]	Corresponding CPU
SD1600	System error information	System error information	• If an error is detected by the error check for redundant system, the corresponding bit shown below turns on. That bit turns OFF when the error is cleared after that.  • If any of b0, b1, b2 and b15 is on, the other bits are off. • In the debug mode, b0, b1, b2 and b15 are all off.	S (Every END processing)	-	QnPRH
SD1601	System switching results	System switching results	Reason(s) for system switching is stored. • When a system is switched, the reason for system switching is stored in SD1601 of both systems. • This register is initialized with zero (0) stored when the system is powered on from off or is reset. • The following shows the values stored in this register. • 0: Initial value (control system has never been switched) • 1: Power-off, reset, H/W failure, or watchdog timer error [*1] • 2: Stop error (except for watchdog timer error) • 3: A system switching request from network module • 16: Control system switching instruction • 17: System switching request from a programming tool *1 When the system is switched upon the power-off or reset of the control system, "1" is not stored in SD1601 of the new standby system.	S (when system is switched)		
SD1602	System switching dedicated instruction parameter	System switching dedicated instruction parameter	• This register stores the argument to the instruction when a system is switched by the SP.CONTSW instruction.(The argument for the SP.CONTSW instruction is stored in SD1602 of both systems upon system switching.) • SD1602 is only valid when "16" is stored in SD1601. • SD1602 is updated only when a system is switched by the control system switching instruction.			
SD1610	Other system diagnostic error	Diagnostic error code	• This register stores an error code for the error occurred on other system. • The value in SD0 of the CPU module on other system is reflected.	S (Every END processing)	SD0	
SD1611 SD1612 SD1613	Other system diagnostic error occurrence time	Diagnostic error occurrence time	• Stores the date and time when diagnostics error occurred corresponding to error code stored in SD1610. • Data format is the same as SD1 to SD3. • The values in SD1 to SD03 of the CPU module on other system are reflected.		SD1 to SD3	

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU SD□□*2	Corresponding CPU
SD1614	Other system error information category	Error information category code	• This register stores the category code of error information and individual information of the error that occurred on other system. • Data format is the same as SD4. • The value in SD4 of the CPU module on other system is reflected.	S (Every END processing)	SD4	QnPRH
SD1615 to SD1625	Other system error common information	Error common information	• Stores the common information corresponding to the error code stored in this system CPU. • Data composition is the same as SD5 to SD15. • The values in SD5 to SD15 of the CPU module on other system are reflected.		SD5 to SD15	
SD1626 to SD1636	Other system error individual information	Error individual information	• Stores the individual information corresponding to the error code stored in this system CPU. • Data composition is the same as SD16 to SD26. • The values in SD16 to SD26 of the CPU module on other system are reflected.		SD16 to SD26	
SD1649	Standby system error cancel command	Error code of the error to be cleared	• This register stores the error code of the error to clear by clearing a standby system error. • The standby system error is cleared by turning SM1649 from off to on after storing the error code of the error to clear. • The least significant digit (ones place) of the error code in this register is ignored.(The errors corresponding to error codes 4100 to 4109 are cleared by storing 4100 in this register.)		-	
SD1650	Other system operating information	Other system operating information	This register stores the operating status of the CPU module on the other system in the following bit pattern. When communications with other systems are disabled or the system is in the debug mode, "00FFH" is stored.  Note: Communications are disabled in the following states. • The other system is powered off or is being reset. • A hardware failure has occurred on the host or the other system. • A watchdog timer error has occurred on the host or the other system. • Tracking cable is not connected. Tracking cable is broken or failed.			

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU SD□□*2	Corre-sponding CPU
SD1690	Network module head address, which requested system switching on host (control) system	Network module head address, which requested system switching on host (control) system	• Stores head address of network module which a system switch request was initiated, using the following format.  • Turns off automatically by system, after network error is reset by user. • To find the number for the module where system switching is requested from a network module in the host system, refer to SD1590.	S (Every END processing)	-	QnPRH

*1 The diagnostic information and system information of other CPU modules are stored.

*2 Shows the special register (SD□□) for the host system CPU.

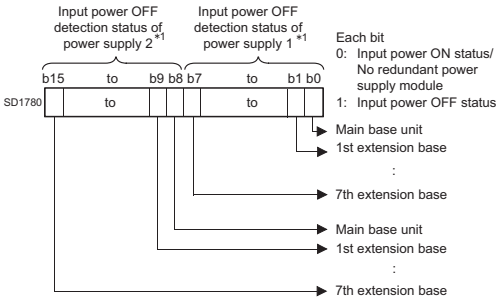
(19) Redundant system (tracking information)

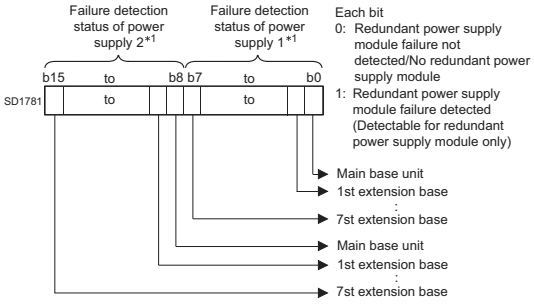
The special register (SD1700 to SD1779) is valid only for redundant systems. All bits are set to "0" for stand-alone systems.

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD1700	Tracking error detection count	Tracking error detection count	• A value in this register is incremented by one upon tracking error. • The counter starts the routine: counts up from 0 to 32767, then counts down to -32767 and then again counts up to 0.	S (Error)	New	QnPRH
SD1710	Waiting time for online program change (standby system)	Waiting time for online program change (standby system)	• This register stores the waiting time required for starting the online program change in the standby system after completion of that in the control system. The value is specified in units of seconds. • If online program change is not requested even after it is completed in the control system, the CPU modules in both of the system determine that it is a failure of an online program change for redundancy.In this case, both system CPU modules resume the consistency check for the systems that have been on hold during the online program change.Also, the control system is set to accept another request of online program change for redundancy. • When both systems are powered on, 90 seconds are set to SD1710 as the default value. • Set the value within the range 90 to 3600 seconds. When the setting is 0 to 89 seconds, it is regarded as 90 seconds for operation. If the setting is outside the allowed range, it is regarded other than 0 to 3600 seconds for operation. • The waiting time for a start of online program change to the standby system CPU module is checked according to the SD1710 setting during online change of multiple blocks and online change of batch of files for redundancy.	S (Initial) /U		

(20) Redundant power supply module information

The special register (SD1780 to SD1789) is valid only for redundant power supply systems. All bits are set to "0" for stand-alone power supply systems.

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD1780	Power supply off detection status	Power supply off detection status	• This register stores status of the redundant power supply module (Q63RP and Q64RP) with input power off, in the following bit pattern.  • When the main base unit is not the redundant power main base unit (Q38RB), "0" is stored. • When configuring multiple CPU, the status is stored to 1st CPU module.	S (Every END processing)	New	Qn(H)*2 QnPH*2 QnPRH QnU*3

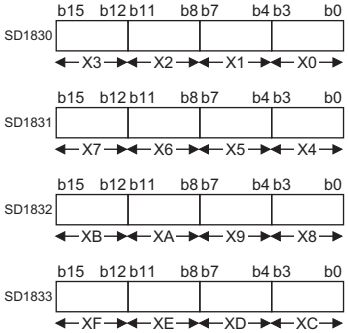
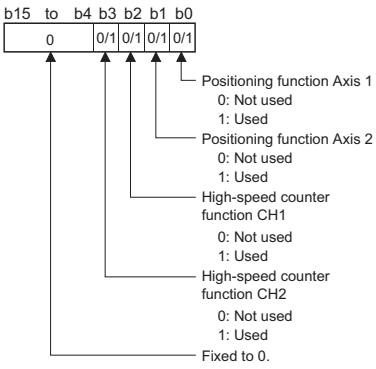
Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD1781	Power supply failure detection status	Power supply failure detection status	• This register stores failure detection status of the redundant power supply module (Q63RP and Q64RP) in the following bit pattern.(After a failure is detected on a redundant power supply module, the bit corresponding to the failed module turns to "0" upon turning off the module.)  • When the main base unit is not the redundant power main base unit (Q38RB), "0" is stored. • When configuring multiple CPU, the status is stored to 1st CPU module.	S (Every END processing)	New	Qn(H)*2 QnPH*2 QnPRH QnU*3
SD1782	Momentary power failure detection counter for power supply 1*1	Momentary power failure detection count for power supply 1	• Counts the number of times of momentary power failure of the power supply 1/2. • Monitors the status of the power supply 1/ 2 mounted on the redundant power main base unit (Q38RB) and counts the number of times of momentary power failure. Status of power supply 1/power supply 2 mounted on the redundant extension base unit is not monitored. • When the CPU module starts, the counter of the power supply 1/ 2 is cleared to 0. • If the input power to one of the redundant power supply modules is turned OFF, the corresponding counter is cleared to 0. • The counter is incremented by one upon momentary power failure on the power supply 1 or 2.(The counter repeats increment and decrement of the value; 0 → 32767 → - 32768 → 0 .(The value is displayed within the range of 0 to 65535 in the system monitor screen of programming tool.)) • Stores 0 when the main base unit is not the redundant power main base unit (Q38RB). • When configuring multiple CPU, the status is stored to 1st CPU module.			
SD1783	Momentary power failure detection counter for power supply 2*1	Momentary power failure detection count for power supply 2				

*1 The "power supply 1" indicates the redundant power supply module mounted on the POWER 1 slot of the redundant base unit (Q38RB/68RB/Q65WRB).
The "power supply 2" indicates the redundant power supply module mounted on the POWER 2 slot of the redundant base unit (Q38RB/68RB/Q65WRB).

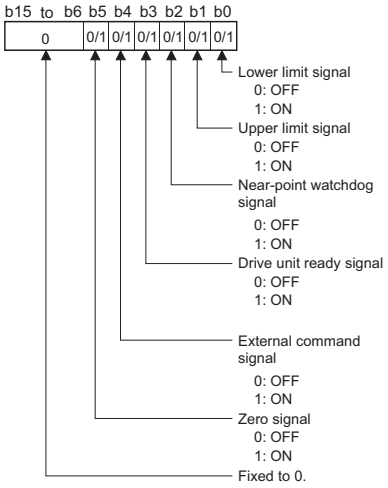
*2 The module whose first 5 digits of serial No. is "07032" or later. (However, for the multiple CPU system configuration, this applies to all CPU modules whose first 5 digits of serial No. are "07032" or later.)

*3 The module whose first 5 digits of serial No. is "10042" or later.

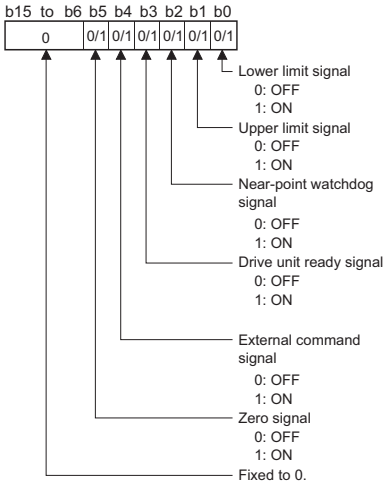
(21)Built-in I/O function

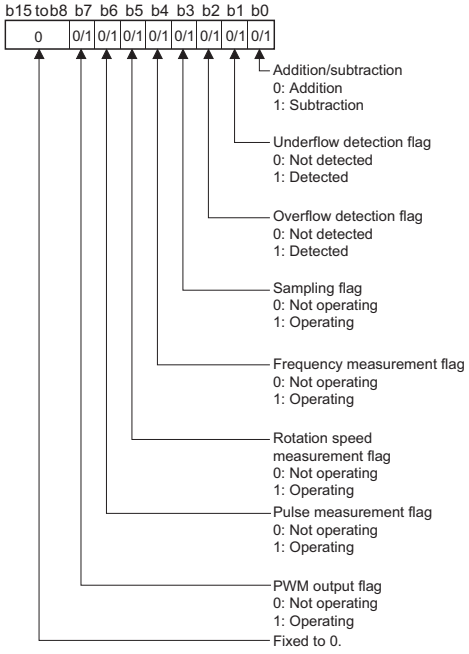
Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD1830 SD1831 SD1832 SD1833	Functions selected for input signals	Functions selected for input signals	This register stores values indicating functions assigned for input signals. Each signal has 4-bit data.  Values are stored according to functions as follows: • 0: General-purpose input function • 1: Interrupt input function • 2: Pulse catch function • 3: Positioning function • 4: High-speed counter function	S (Every END processing)	New	LCPU
SD1834 SD1835	Functions selected for output signals	Functions selected for output signals	This register stores values indicating functions assigned for output signals. Each signal has 4-bit data.  Values are stored according to functions as follows: • 0: General-purpose output function • 3: Positioning function • 4: High-speed counter function			
SD1836	Operating status of positioning and high-speed counter functions	Operating status of positioning and high-speed counter functions	This register stores the operating status of the positioning function and high-speed counter function.  			

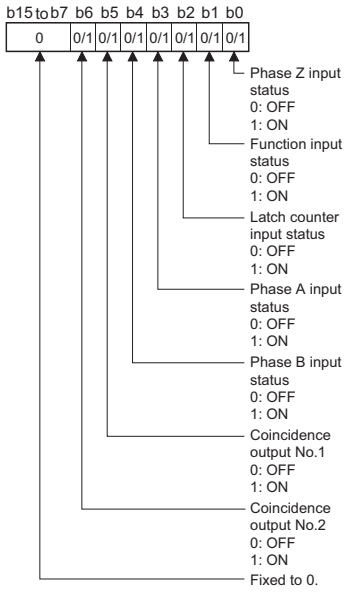
Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD1840 SD1841	Axis 1 current feed value	Current feed value	This register stores the current position value when the position where OPR control is completed is set as a base point. "0" is stored at power-on or reset of the CPU module. An OP address is stored at the completion of machine OPR control. This register is cleared to "0" when speed control in speed/position switching control is started. • When the current feed value is changed, the value after current value change is stored. • The current position read from a servo amplifier is stored at the completion of absolute position restoration.*1*2 *1 Range: -2147483648 to 2147483647 pulses *2 Since the internal update cycle of the storage value is 1ms, the information of the current feed value may be older than the actual command position by 1ms at maximum depending on the refresh timing at END processing.	S (Every END processing)	New	LCPU
SD1842 SD1843	Axis 1 current speed	Current speed	This register stores the current speed. (Fractions are not stored. If the current speed is slower than 1 pulse/s, "0" may be displayed.) *1*2 *1 Range: 0 to 200000 pulses *2 Since the internal update cycle of the storage value is 1ms, the information of the current speed value may be older than the actual command position by 1ms at maximum depending on the refresh timing at END processing.			
SD1844	Axis 1 axis operation status	Axis operation status	This register stores the axis operating status. • -1: Error occurring • 0: Standing by • 1: Stopped • 2: In JOG operation • 3: In OPR • 4: In position control • 5: In speed-position control (speed) (speed control in speed/position switching control) • 6: In speed-position control (position) (position control in speed/position switching control) • 7: Decelerating (axis stop ON) • 8: Decelerating (JOG start OFF) • 9: In high-speed OPR • 10: In speed control • 11: Analyzing			
SD1845	Axis 1 error code	Error code	• This register stores the error code of the present axis error. • If another error occurs while an axis error occurs, the latest error code is not stored. • This register is cleared to "0" by turning on SM1850.			
SD1846	Axis 1 warning code	Warning code	• This register stores the warning code of the present axis warning. • If another axis warning occurs, the latest warning code is written to this register. • This register is cleared to "0" by turning on SM1850.			

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD1847	Axis 1 external I/O signal	External I/O signals	• This register stores the on/off status of external I/O signals. • When an OPR method with the OPR retry function (Near-point dog method, Count 1, Count 2) is performed, a value indicating the status of the upper limit signal or the lower limit signal is stored to the external command signal.*1  *1 When an OPR method with the OPR retry function is performed even once, a value indicating the status of the upper limit signal or the lower limit signal will be stored until when speed/position switching control is started.	S (Every END processing)	New	LCPU
SD1848 SD1849	Axis 1 movement amount after near-point dog ON	Movement amount after near-point dog ON	• This register stores "0" when machine OPR control is started. • After machine OPR control is started, this register stores a travel distance from the point where the near-point watchdog signal turns on (The point is set to "0".) to the point where machine OPR control is completed.*1 • When an OPR method is set to Stopper 3, this register always stores "0". *1 Range: 0 to 2147483647 pulses			
SD1850	Axis 1 Data No. of positioning being executed	Data No. of positioning being executed	• This register stores the data No. of positioning being executed. (A storage value will be held until the next control starts.) • "0" is stored when JOG operation or machine OPR control is started. • "1" is stored when high-speed OPR control is started. • "1" is stored when positioning control is started by the IPDSTRT1 or IPDSTRT2 instruction. • If an error occurs at the start of positioning control, the previous value will be held.			

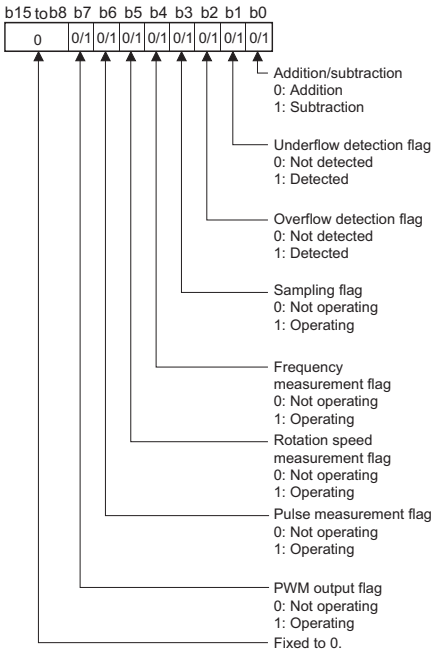
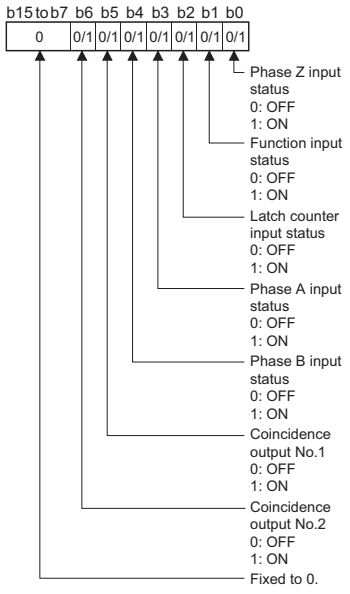
Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD1860 SD1861	Axis 2 current feed value	Current feed value	This register stores the current position value when the position where OPR control is completed is set as a base point. "0" is stored at power-on or reset of the CPU module. An OP address is stored at the completion of machine OPR control. This register is cleared to "0" when speed control in speed/position switching control is started. • When the current feed value is changed, the value after current value change is stored. • The current position read from a servo amplifier is stored at the completion of absolute position restoration.*1*2 *1 Range: -2147483648 to 2147483647 pulses *2 Since the internal update cycle of the storage value is 1ms, the information of the current feed value may be older than the actual command position by 1ms at maximum depending on the refresh timing at END processing.	S (Every END processing)	New	LCPU
SD1862 SD1863	Axis 2 current speed	Current speed	This register stores the current speed. (Fractions are not stored. If the current speed is slower than 1 pulse/s, "0" may be displayed.) *1*2 *1 Range: 0 to 200000 pulses *2 Since the internal update cycle of the storage value is 1ms, the information of the current speed value may be older than the actual command position by 1ms at maximum depending on the refresh timing at END processing.			
SD1864	Axis 2 axis operation status	Axis operation status	This register stores the axis operating status. • -1: Error occurring • 0: Standing by • 1: Stopped • 2: In JOG operation • 3: In OPR • 4: In position control • 5: In speed-position control (speed) (speed control in speed/position switching control) • 6: In speed-position control (position) (position control in speed/position switching control) • 7: Decelerating (axis stop ON) • 8: Decelerating (JOG start OFF) • 9: In high-speed OPR • 10: In speed control • 11: Analyzing			
SD1865	Axis 2 error code	Error code	• This register stores the error code of the present axis error. • If another error occurs while an axis error occurs, the latest error code is not stored. • This register is cleared to "0" by turning on SM1870.			
SD1866	Axis 2 warning code	Warning code	• This register stores the warning code of the present axis warning. • If another axis warning occurs, the latest warning code is written to this register. • This register is cleared to "0" by turning on SM1870.			

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD1867	Axis 2 external I/O signals	External I/O signals	• This register stores the on/off status of external I/O signals. • When an OPR method with the OPR retry function (Near-point dog method, Count 1, Count 2) is performed, a value indicating the status of the upper limit signal or the lower limit signal is stored to the external command signal.*1  *1 When an OPR method with the OPR retry function is performed even once, a value indicating the status of the upper limit signal or the lower limit signal will be stored until when speed/position switching control is started.	S (Every END processing)	New	LCPU

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD1868 SD1869	Axis 2 movement amount after near-point dog ON	Movement amount after near-point dog ON	• This register stores "0" when machine OPR control is started. • After machine OPR control is started, this register stores a travel distance from the point where the near-point watchdog signal turns on (The point is set to "0".) to the point where machine OPR control is completed.*1 • When an OPR method is set to Stopper 3, this register always stores "0". *1 Range: 0 to 2147483647 pulses	S (Every END processing)	New	LCPU
SD1870	Axis 2 Data No. of positioning being executed	Data No. of positioning being executed	• This register stores the data No. of positioning being executed. (A storage value will be held until the next control starts.) • "0" is stored when JOG operation or machine OPR control is started. • "1" is stored when high-speed OPR control is started. • "1" is stored when positioning control is started by the IPDSTRT1 or IPDSTRT2 instruction. • If an error occurs at the start of positioning control, the previous value will be held.			
SD1880 SD1881	CH1 current value	CH1 current value	• This register stores the current counter value of CH1 at END processing. • When the ICCNTRD1 instruction is executed, this register is updated by the current value at that moment. The current value is updated at END processing and by the ICCNTRD1 instruction only when Normal Mode is set for Operation Mode Setting (high-speed counter function parameter). The range of a value that can be read is from -2147483648 to 2147483647.	S (Every END processing/ Instruction execution)		
SD1882	CH1 status monitor	CH1 status monitor	This register stores each status of CH1.  	S (Every END processing)		

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD1883	CH1 external I/O status monitor	CH1 external I/O status monitor	• This register stores a value indicating the external I/O signal status of CH1. • Unused signal status is fixed at off. • When Normal Mode is set for Operation Mode Setting (high-speed counter function parameter), a value according to the setting configured for Function Input Logic Setting (high-speed counter function parameter) is stored in the function input status. Therefore, when a voltage is applied to the function input terminal while Negative logic is set for Function input logic setting, this register turns off. • When other than A Phase/B Phase is selected for Count Source Selection (high-speed counter function parameter), the phase A input status and phase B input status are fixed at off. 	S (Every END processing)	New	LCPU

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD1884	CH1 operation mode monitor	CH1 operation mode monitor	This register stores a value indicating the operation mode for high-speed counter of CH1 set by the parameter. • 0: Not used • 1: Normal mode • 2: Frequency measurement mode • 3: Rotation speed measurement mode • 4: Pulse measurement mode • 5: PWM output mode	S (Every END processing)	New	LCPU
SD1885	CH1 counter type monitor	CH1 counter type monitor	• This register stores a value indicating the counter type for high-speed counter of CH1 set by the parameter. • Counter selection is disabled (fixed at "0") when a value stored to CH1 operation mode monitor (SD1884) is other than "1" (normal mode). • 0: Linear counter • 1: Ring counter			
SD1886	CH1 selected counter function	CH1 selected counter function	• This register stores a value indicating the selected counter function for high-speed counter of CH1 set by the parameter. • Counter selection is disabled (fixed at "0") when a value stored to CH1 operation mode monitor (SD1884) is other than "1" (normal mode). • 0: Count disabling function • 1: Latch counter function • 2: Sampling counter function • 3: Count disabling/preset function • 4: Latch counter/preset function			
SD1887	CH1 error code	CH1 error code	This register stores the error code of an error occurred in CH1.			
SD1888	CH1 warning code	CH1 warning code	This register stores the warning code of a warning occurred in CH1.			
SD1900	CH2 current value	CH2 current value	• This register stores the current counter value of CH2 at END processing. • When the ICCNTRD2 instruction is executed, this register is updated by the current value at that moment. The current value is updated at END processing and by the ICCNTRD2 instruction only when Normal Mode is set for Operation Mode Setting (high-speed counter function parameter). The range of a value that can be read is from -2147483648 to 2147483647.	S (Every END processing/ Instruction execution)		
SD1901						

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD1902	CH2 status monitor	CH2 status monitor	This register stores each status of CH2. 	S (Every END processing)	New	LCPU
SD1903	CH2 external I/O status monitor	CH2 external I/O status monitor	• This register stores a value indicating the external I/O signal status of CH2. • Unused signal status is fixed at off. • When Normal Mode is set for Operation Mode Setting (high-speed counter function parameter), a value according to the setting configured for Function Input Logic Setting (high-speed counter function parameter) is stored in the function input status. Therefore, when a voltage is applied to the function input terminal while Negative logic is set for Function input logic setting, this register turns off. • When other than A Phase/B Phase is selected for Count Source Selection (high-speed counter function parameter), the phase A input status and phase B input status are fixed at off. 			

Number	Name	Meaning	Explanation	Set by (When Set)	Corre-sponding ACPU D9□□□	Corre-sponding CPU
SD1904	CH2 operation mode monitor	CH2 operation mode monitor	This register stores a value indicating the operation mode for high-speed counter of CH2 set by the parameter. • 0: Unused • 1: Normal mode • 2: Frequency measurement mode • 3: Rotation speed measurement mode • 4: Pulse measurement mode • 5: PWM output mode	S (Every END processing)	New	LCPU
SD1905	CH2 counter type monitor	CH2 counter type monitor	• This register stores a value indicating the counter type for high-speed counter of CH2 set by the parameter. • Counter selection is disabled (fixed at "0") when a value stored to CH2 operation mode monitor (SD1904) is other than "1" (normal mode). • 0: Linear counter • 1: Ring counter			
SD1906	CH2 selected counter function	CH2 selected counter function	• This register stores a value indicating the selected counter function for high-speed counter of CH2 set by the parameter. • Counter selection is disabled (fixed at "0") when a value stored to CH2 operation mode monitor (SD1904) is other than "1" (normal mode). • 0: Count disabling function • 1: Latch counter function • 2: Sampling counter function • 3: Count disabling/preset function • 4: Latch counter/preset function			
SD1907	CH2 error code	CH2 error code	This register stores the error code of an error occurred in CH2.			
SD1908	CH2 warning code	CH2 warning code	This register stores the warning code of a warning occurred in CH2.			

(22) Data logging

Number	Name	Meaning	Explanation	Set by (When Set)	Corresponding ACPU D9□□□	Corresponding CPU
SD1940 SD1941	Data logging setting No.1 Latest file No.	Latest file No.	This register stores the latest file number. This register is cleared to "0" by a stop command from LCPU Logging Configuration Tool.	S (Status change)	New	LCPU
SD1942 SD1943	Data logging setting No.1 Oldest file No.	Oldest file No.	This register stores the oldest file number. This register is cleared to "0" by a stop command from LCPU Logging Configuration Tool.			
SD1944	Data logging setting No.1 Free buffer space	Free buffer space	This register stores free buffer space (unit: 1K byte). If the value is small, processing overflow may occur. For trigger logging, this register stores the buffer size until when data are collected by the number of records after trigger. This register is cleared to "0" by a stop command from LCPU Logging Configuration Tool.			
SD1945	Data logging setting No.1 Processing timeout count	Number of times processing overflow occurred	This register stores the number of times that data logging processing overflow occurred. If an overflow occurs, some data may not be collected. When the storage value reaches to 65535, count is resumed from "0". If Stop is specified for Operation occurring when number of saved files is exceeded, processing overflow may occur from when data collection by the number of specified storage files is completed and until when data logging is stopped. This register is cleared to "0" by the registration of the setting or a stop command from LCPU Logging Configuration Tool.	S (Error)		
SD1946	Data logging setting No.1 Data logging error cause	Data logging error cause	This register stores the cause of an error that occurred during data logging. • 0: No error • Other than 0: For values stored at error occurrence, refer to the errors that occurs in data logging described in the following. (MELSEC-L CPU Module User's Manual (Data Logging Function)) This register is cleared to "0" by the registration of the setting or a stop command from LCPU Logging Configuration Tool.			
SD1947	Data logging setting No.1 Data logging file transfer function error code	Data logging file transfer function error code	This register stores the error code of the latest error detected during execution of the data logging file transfer function. • 0: No error • Other than 0: For values stored at error occurrence, refer to the errors that occurs in data logging described in the following. (MELSEC-L CPU Module User's Manual (Data Logging Function)) This register is cleared to "0" by the data logging start command from LCPU Logging Configuration Tool.			LCPU*1

Number	Name	Meaning	Explanation	Set by (When Set)	Corres-ponding ACPU D9□□□	Corresponding CPU
SD1950 to SD1957	Data logging setting No.2	Same as in data logging setting No.1	Same as in data logging setting No.1 (SD1940 to SD1947)	Same as in data logging setting No.1	New	LCPU*1
SD1960 to SD1967	Data logging setting No.3					
SD1970 to SD1977	Data logging setting No.4					
SD1980 to SD1987	Data logging setting No.5					
SD1990 to SD1997	Data logging setting No.6					
SD2000 to SD2007	Data logging setting No.7					
SD2010 to SD2017	Data logging setting No.8					
SD2020 to SD2027	Data logging setting No.9					
SD2030 to SD2037	Data logging setting No.10					

*1 Data logging file transfer function error code is supported by a module whose serial number (first five digits) is "12112" or later.

Appendix 4 Battery Life

Check the life of a battery depending on a CPU module used, battery consumption value, and operating time.
It is recommended to replace a battery on a regular basis although the battery still has its service life left or no alarm has yet occurred.
For battery replacement, refer to ☞ Page 86, Section 14.3.

(1) Precautions for battery life

Note the following precautions for battery life.

- Use a battery within the guaranteed value for battery life. When the battery is expected to be used exceeding the guaranteed value, perform boot operation or back up programs and data.
- When a battery is kept without connecting to a CPU module, its service life is five years.
- When SM52 (Battery low) turns on, immediately replace the battery.

(2) Battery consumption value

Battery consumption value is a value indicating the amount of CPU module battery consumption.
The larger the battery consumption value is, the more battery energy is consumed per hour.
The current battery consumption value can be checked in SD118 (Amount of battery consumption).

(a) Influence factor

A battery consumption value depends on the following factors.
The following shows the combination patterns of factors.

Influence factor			Combination pattern
Battery life-prolonging function*1	Module error collection function*1	Size of file register file in standard RAM (S_R)	
Set	—	—	A
Not set	Not set	No file or 0K < S_R ≤ 128K	B
		128K < S_R ≤ 384K	C
	Set	No file or 0K < S_R ≤ 128K	D
		128K < S_R ≤ 384K	E

*1 For each function, refer to the following.
MELSEC-L CPU Module User's Manual (Function Explanation, Program Fundamentals)

(b) Battery consumption value

The battery consumption value of a CPU module for each pattern is as follows.

CPU module model	Combination pattern				
	A	B	C	D	E
L02CPU, L02CPU-P	1	2	—	2	—
L26CPU-BT, L26CPU-PBT	1	2	3	2	3

Appendix 4.1 Battery life list

(1) Life of Q6BAT

CPU module model	Battery consumption value	Power-on time ratio*1	Battery life		
			Guaranteed value*2	Actual service value*3	After SM52 is turned on*4
L02CPU, L02CPU-P	1	0%	43,000hr (4.91 years)	43,800hr (5.00 years)	600hr (25 days)
		30%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		50%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		70%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		100%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
	2	0%	36,500hr (4.17 years)	43,800hr (5.00 years)	600hr (25 days)
		30%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		50%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		70%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		100%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
L26CPU-BT, L26CPU-PBT	1	0%	35,800hr (4.09 years)	43,800hr (5.00 years)	600hr (25 days)
		30%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		50%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		70%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		100%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
	2	0%	3,900hr (0.45 years)	28,100hr (3.21 years)	288hr (12 days)
		30%	5,600hr (0.64 years)	40,200hr (4.59 years)	288hr (12 days)
		50%	7,800hr (0.89 years)	43,800hr (5.00 years)	288hr (12 days)
		70%	13,000hr (1.48 years)	43,800hr (5.00 years)	288hr (12 days)
		100%	43,800hr (5.00 years)	43,800hr (5.00 years)	288hr (12 days)
	3	0%	2,000hr (0.23 years)	18,600hr (2.12 years)	192hr (8 days)
		30%	2,900hr (0.33 years)	26,600hr (3.04 years)	192hr (8 days)
		50%	4,100hr (0.47 years)	37,300hr (4.26 years)	192hr (8 days)
		70%	6,800hr (0.78 years)	43,800hr (5.00 years)	192hr (8 days)
		100%	43,800hr (5.00 years)	43,800hr (5.00 years)	192hr (8 days)

*1 The power-on time ratio is the ratio of programmable controller power-on time to one day (24 hours).
(When the total power-on time is 12 hours, the ratio is 50%. When the time is 6 hours, the ratio is 25%.)

*2 The guaranteed value is a battery life at 70°C, which is calculated based on the characteristics of manufacturer-supplied memories, when the battery is stored within the ambient temperature range of -25 to 75°C (or used within the ambient temperature range of 0 to 55°C).

*3 The actual service value is a battery life calculated based on the values measured at storage ambient temperature of 40°C. This value is intended for reference only because it varies depending on the characteristics of the components.

*4 SM52 turns on even when the battery connector is disconnected or the lead wire of the battery is disconnected. In this case, the battery stops working. The CPU module may lose data when the backup power time (three minutes) is elapsed after power-off.

(2) Life of Q7BAT

CPU module model	Battery consumption value	Power-on time ratio*1	Battery Life		
			Guaranteed value*2	Actual service value*3	After SM52 is turned on*4
L02CPU, L02CPU-P	1	0%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		30%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		50%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		70%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		100%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
	2	0%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		30%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		50%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		70%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		100%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
L26CPU-BT, L26CPU-PBT	1	0%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		30%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		50%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		70%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
		100%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
	2	0%	10,000hr (1.14 years)	43,800hr (5.00 years)	600hr (25 days)
		30%	14,300hr (1.63 years)	43,800hr (5.00 years)	600hr (25 days)
		50%	20,000hr (2.28 years)	43,800hr (5.00 years)	600hr (25 days)
		70%	33,400hr (3.81 years)	43,800hr (5.00 years)	600hr (25 days)
		100%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)
	3	0%	5,400hr (0.62 years)	43,800hr (5.00 years)	600hr (25 days)
		30%	7,700hr (0.88 years)	43,800hr (5.00 years)	600hr (25 days)
		50%	10,800hr (1.23 years)	43,800hr (5.00 years)	600hr (25 days)
		70%	18,100hr (2.07 years)	43,800hr (5.00 years)	600hr (25 days)
		100%	43,800hr (5.00 years)	43,800hr (5.00 years)	600hr (25 days)

*1 The power-on time ratio is the ratio of programmable controller power-on time to one day (24 hours).
(When the total power-on time is 12 hours, the ratio is 50%. When the time is 6 hours, the ratio is 25%.)

*2 The guaranteed value is a battery life at 70°C, which is calculated based on the characteristics of manufacturer-supplied memories, when the battery is stored within the ambient temperature range of -25 to 75°C (or used within the ambient temperature range of 0 to 55°C).

*3 The actual service value is a battery life calculated based on the values measured at storage ambient temperature of 40°C. This value is intended for reference only because it varies depending on the characteristics of the components.

*4 SM52 turns on even when the battery connector is disconnected or the lead wire of the battery is disconnected. In this case, the battery stops working. The CPU module may lose data when the backup power time (three minutes) is elapsed after power-off.

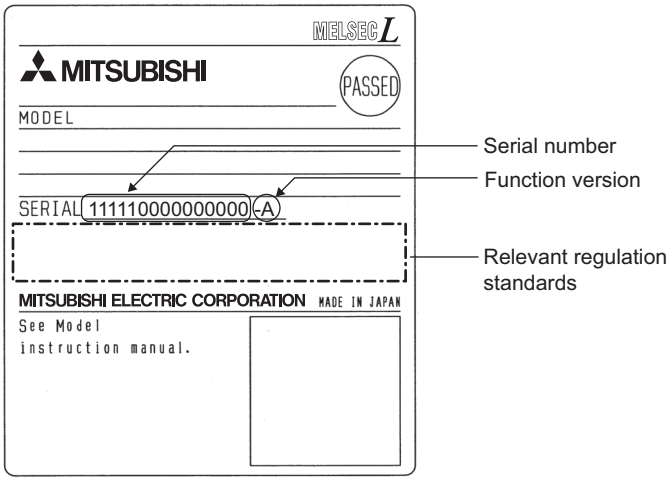
Appendix 5 Checking Serial Number and Function Version

The serial number and function version of the module can be checked any of on:

- the rating plate,
- the front of the module, or
- the System Monitor screen in a programming tool.

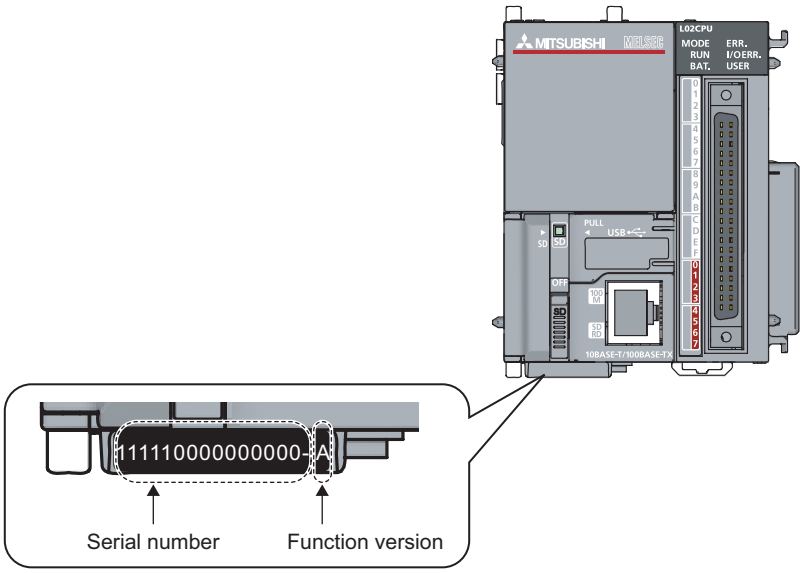
(1) Checking on the rating plate

The rating plate is located on the side of the module.



(2) Checking on the front of the module

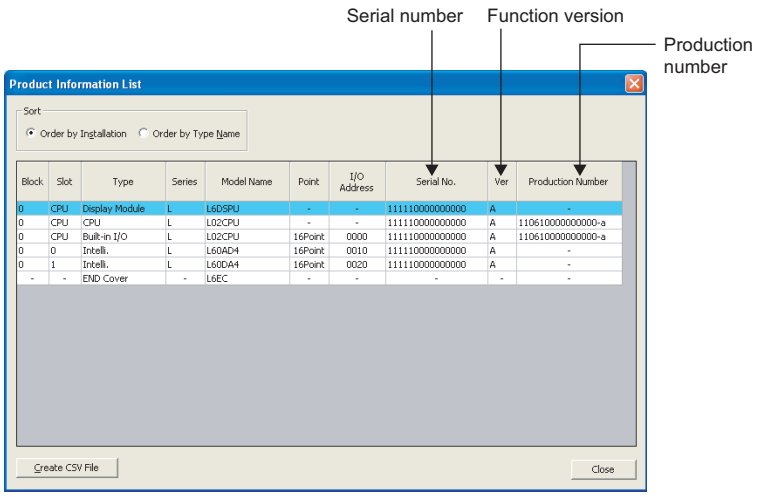
The serial number on the rating plate is printed on the front (at the bottom) of the module.



(3) Checking on the System Monitor screen

The serial number and function version can be checked on the "Product Information List" screen.

[Diagnostics] ⇨ [System Monitor...] ⇨ [Product Information List]



The serial number of the module is displayed in the "Serial No." column.
The function version of the module is displayed in the "Ver" column.
If the module supports the production number display, the serial number (production number) printed on the rating plate of the module is displayed in the "Production Number" column.

Point

The serial number displayed on the Product Information List screen of the programming tool may differ from that on the rating plate or on the front of the module.

- The serial number on the rating plate or on the front of the module indicates the management information of the product.
- The serial number displayed on the Product Information List screen indicates the functional information of the product. The functional information of the product will be updated when a function is added.

Appendix 6 Applicable Software Versions

The following table shows applicable software versions used for a system configuration.

Software	Software version*1	
	L02CPU, L26CPU-BT	L02CPU-P, L26CPU-PBT
GX Works2	Version 1.20W or later	Version 1.62Q or later
GX Developer	Version 8.88S or later	Not supported
GX Configurator-AD	Version 2.11M or later	
GX Configurator-DA	Version 2.11M or later	
GX Configurator-SC	Version 2.21X or later	
GX Configurator-QP	Version 2.34L or later	
GX Configurator-CT	Version 1.29AF or later	

*1 The applicable software versions differ depending on an intelligent function module to be used.

Appendix 7 EMC and Low Voltage Directives

Compliance with the EMC Directive, which is one of the EU directives, has been mandatory for the products sold within EU member states since 1996 as well as compliance with the Low Voltage Directive since 1997.
To prove the compliance, manufactures must issue an EC Declaration of Conformity and the products must bear a CE marking.

(1) Sales representative in EU member states

The authorized representative in EU member states will be:
Company name: Mitsubishi Electric Europe BV
Address: Gothaer Strasse 8,40880 Ratingen,Germany

Appendix 7.1 Measures to comply with the EMC Directive

The EMC Directive sets two requirements for compliance: emission (conducted and radiated electromagnetic energy emitted by a product) and immunity (the ability of a product to not be influenced by externally generated electromagnetic energy).
This section summarizes the precautions for machinery constructed with the MELSEC-L series modules to comply with the EMC Directive.
These precautions are based on the requirements of the EMC Directive and the harmonized standards. However, they do not guarantee that the entire machinery constructed according to the descriptions complies with the EMC Directive. The manufacture of the machinery must determine the testing method for compliance and declare conformity to the EMC Directive.

(1) EMC Directive related standards

(a) Emission requirements

Standard	Test item	Test description	Value specified in standard
EN61131-2: 2007	CISPR16-2-3 Radiated emission*2	The electromagnetic wave which the product emits to the external space is measured.	• 30 to 230MHz, QP: 40dBμV/m (measured at 10m distance)*1 • 230 to 1000MHz, QP: 47dBμV/m (measured at 10m distance)
	CISPR16-2-1, CISPR16-1-2 Conducted emission*2	The noise level which the product emits to the power line is measured.	• 0.15 to 0.5MHz, QP: 79dB, Mean: 66dB *1 • 0.5 to 30MHz, QP: 73dB, Mean: 60dB

*1 QP: Quasi-Peak value, Mean: Average value
*2 Programmable controller is an open type device (a device designed to be housed in other equipment) and must be installed inside a conductive control panel. The tests were conducted with the programmable controller installed in a control panel, applying the maximum applicable input voltage to the power supply module.

(b) Immunity requirements

Standard	Test item	Test description	Value specified in standard
EN61131-2: 2007	EN61000-4-2 Electrostatic discharge immunity*1	An electrostatic discharge is applied to the enclosure of the equipment.	• 8kV Air discharge • 4kV Contact discharge
	EN61000-4-3 Radiated, radio-frequency, electromagnetic field immunity*1	An electric field is radiated to the product.	80% AM modulation @1kHz • 80 to 1000MHz: 10Vm • 1.4 to 2.0GHz: 3Vm • 2.0 to 2.7GHz: 1Vm
	EN61000-4-4 Fast transient burst immunity*1	Burst noise is applied to power lines and signal lines.	• AC/DC power, I/O power, and AC I/O (unshielded) lines: 2kV • DC I/O, analog, and communication lines: 1kV
	EN61000-4-5 Surge immunity*1	Lightning surge is applied to power lines and signal lines.	• AC power, AC I/O power, and AC I/O (unshielded) lines: 2kV CM, 1kV DM • DC power and DC I/O power lines: 0.5kV CM, 0.5kV DM • DC I/O, AC I/O (shielded), analog*2, and communication lines: 1kV CM
	EN61000-4-6 Conducted RF immunity*1	High-frequency noise is applied to power lines and signal lines.	0.15 to 80MHz, 80% AM modulation @1kHz, 10Vrms
	EN61000-4-8 Power-frequency magnetic field immunity*1	The product is immersed in the magnetic field of an induction coil.	50/60Hz, 30A/m
	EN61000-4-11 Voltage dips and interruption immunity	Power voltage is momentarily interrupted.	• 0%, 0.5 period, starting at zero-crossing • 0%, 250/300 period (50/60Hz) • 40%, 10/12 period (50/60Hz) • 70%, 25/30 period (50/60Hz)

*1 Programmable controller is an open type device (a device designed to be housed in other equipment) and must be installed inside a conductive control panel.

*2 The accuracy of an analog-digital converter module may temporary vary within ±10%.

(2) Installation in a control panel

Programmable controller is an open type device and must be installed inside a control panel.*1
This ensures safety as well as effective shielding of programmable controller-emitted electromagnetic noise.

*1 Modules on the remote station in each network must be also installed inside the control panel. However, the waterproof type remote station can be installed outside the control panel.

(a) Control panel

- Use a conductive control panel.
- Mask off the area used for grounding when securing the top or bottom plate to the control panel using bolts.
- To ensure electrical contact between the inner plate and the control panel, mask off the bolt installation areas of an inner plate so that conductivity can be ensured in the largest possible area.
- Ground the control panel with a thick ground cable so that low impedance can be ensured even at high frequencies.
- Keep the diameter of the holes on the control panel to 10cm or less. If the diameter is larger than 10cm, electromagnetic wave may be emitted. In addition, because electromagnetic wave leaks through a clearance between the control panel and its door, reduce the clearance as much as possible. Use of EMI gaskets (sealing the clearance) can suppress undesired radiated emissions.

  The tests by Mitsubishi were conducted using a control panel having the damping characteristics of 37dB (maximum) and 30dB (average) (measured at 3m distance, 30 to 300MHz).

(b) Wiring power cables

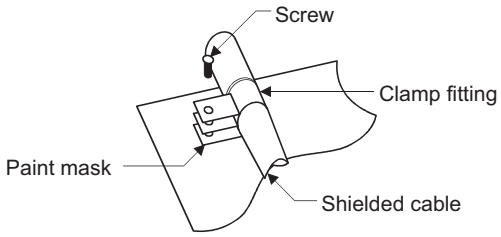
- Provide a ground point to the control panel near the power supply module. Ground the LG and FG terminals of the power supply module to the ground point with the thickest and shortest ground cable possible (30cm or shorter).

(3) Cables

Use a shielded cable for the cable connected to the I/O module and may be extended out of the control panel. If a shielded cable is not used or not grounded correctly, the noise immunity will not meet the required value.

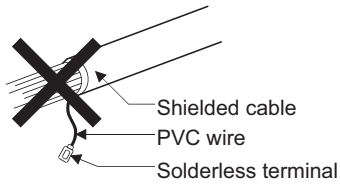
(a) Grounding a shielded cable

- Ground the shield of a shielded cable as close to the module as possible so that the grounded cable will not be affected by electromagnetic induction from ungrounded cables.
- Ground the exposed shield to large area on the control panel. A clamp fitting can be used as shown below. In this case, mask off the inner wall surface of the control panel, where comes in contact with the fitting.



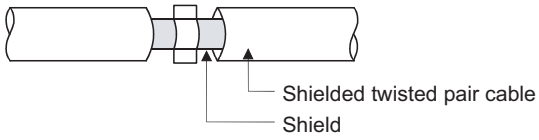
Point

Grounding with a vinyl-coated wire soldered onto the shield of the shielded cable as shown below is not recommended. Doing so will raise the high-frequency impedance, resulting in loss of the shielding effect.



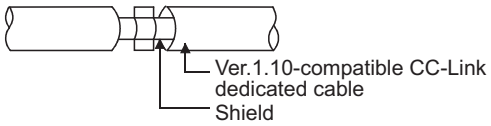
(b) Grounding a twisted pair cable

- Use a shielded twisted pair cable for connection to the 10BASE-T or 100BASE-TX connector. Strip a part of the jacket of the shielded twisted pair cable as shown below and ground the exposed shield to the ground as much as possible

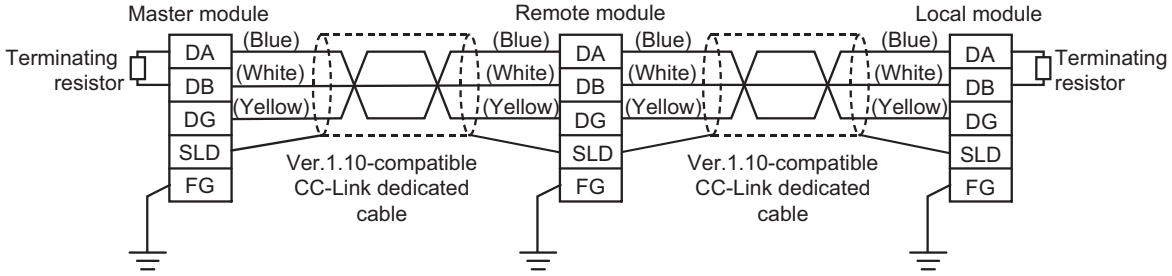


(c) Grounding a Ver.1.10-compatible CC-Link dedicated cable

Ground the shield of a cable connected to the CC-Link module or any of the CC-Link stations which is the farthest from the input power inside the control panel within 30cm from the module or station.
Ver.1.10-compatible CC-Link dedicated cable is a shielded cable. Strip a part of the jacket of the cable as shown below and ground the exposed shield to the ground as much as possible.

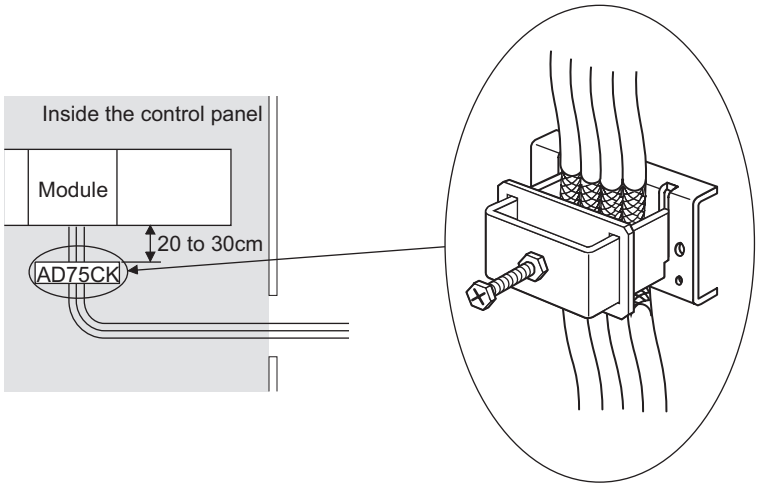


Use the specified Ver.1.10-compatible CC-Link dedicated cable.
Use the FG terminals of the CC-Link module and CC-Link stations as shown below to connect to the FG line inside the control panel.



(d) Grounding cables with a cable clamp

Use a shielded cable for external wiring and ground the shield of the shielded cable to the control panel with the AD75CK cable clamp (Mitsubishi).
(Ground the shield within 20 to 30cm from the module.)



For details on the AD75CK, refer to the following.

AD75CK-type Cable Clamping Instruction Manual

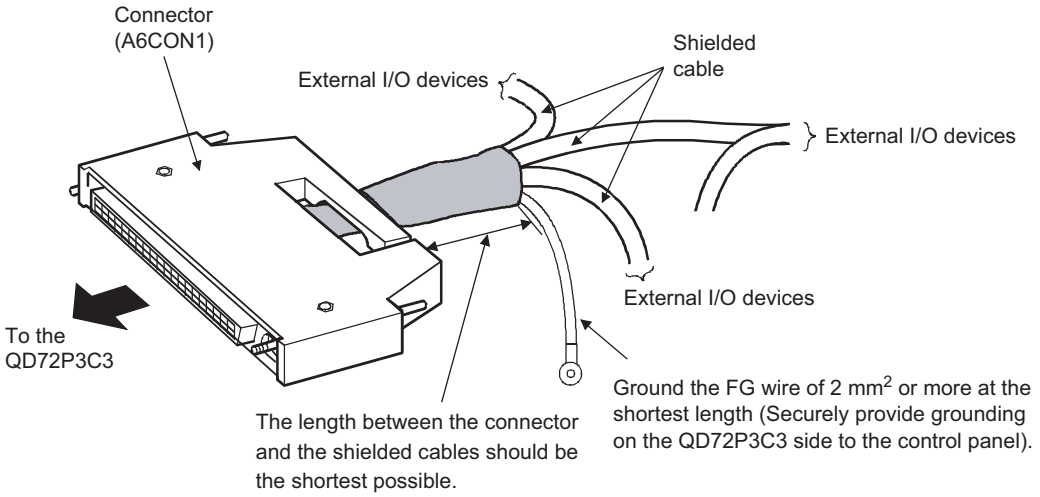
(e) Connectors for external devices

When using connectors for external devices with any of the following modules, take the noise reduction measures described below.

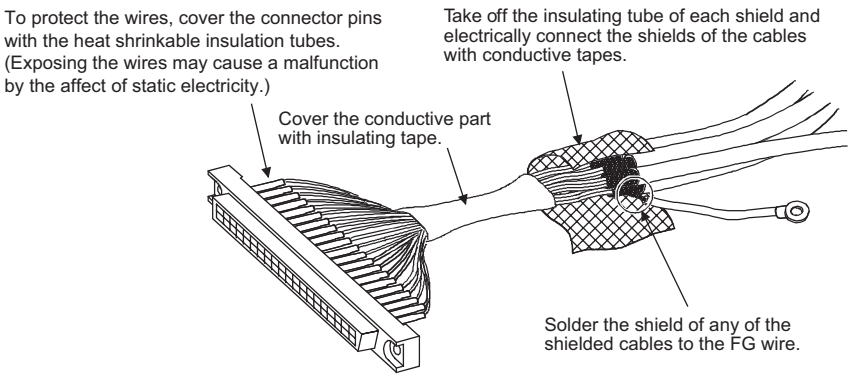
- CPU module
- High-speed counter module
- Positioning module

[Wiring example when using shielded cables]

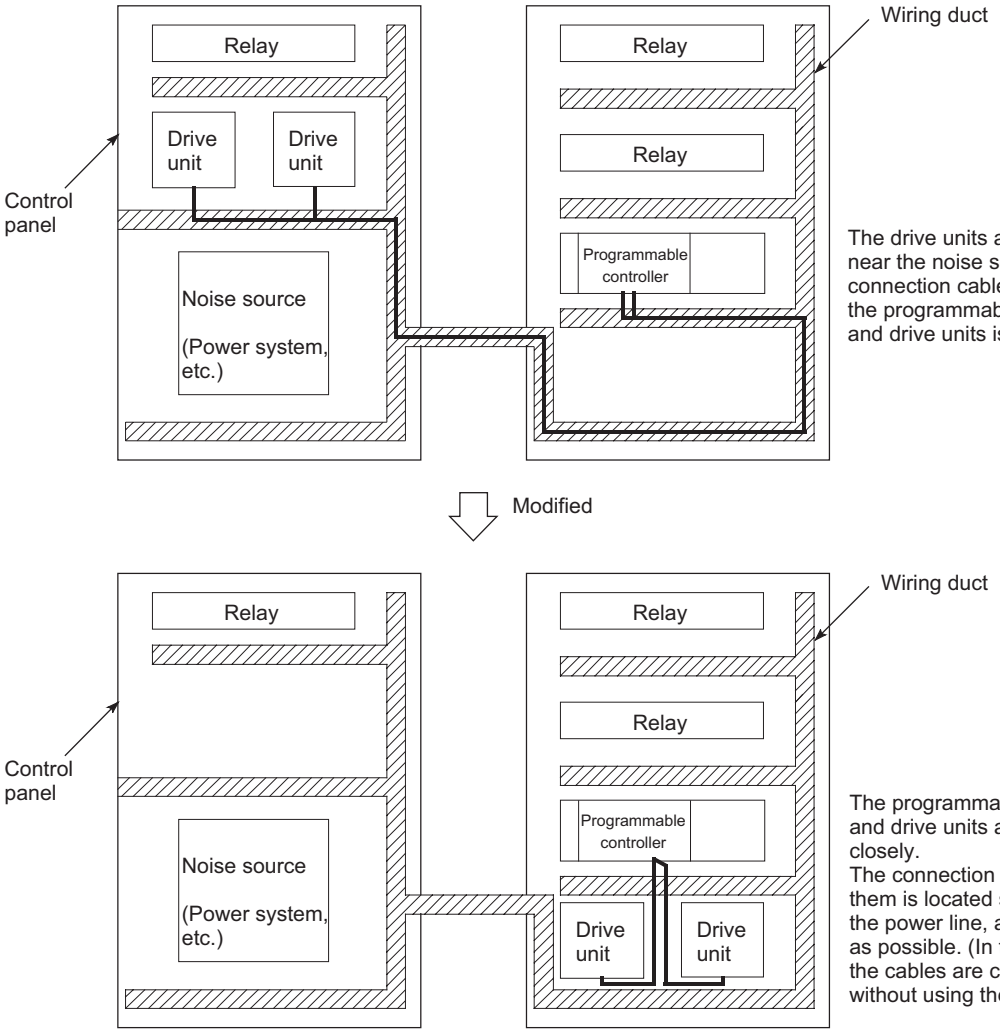
The following figure shows the example of wiring using A6CON1 for noise reduction.



[Example of processing for a shielded cable]



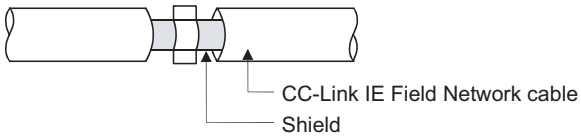
[Wiring example when using a duct (problematic example and modification example)]



(f) CC-Link IE Field Network module

The precautions for using CC-Link IE Field Network cables are described below.

- For CC-Link IE Field Network module, use CC-Link IE Field Network cables (SC-E5EW-S□M, manufactured by Mitsubishi Electric System & Service Co., Ltd.).
- A CC-Link IE Field Network cable is a shielded cable. Remove a part of the shield as shown below and ground the largest possible exposed section to the ground.



To ground the cables for external wiring, refer to Page 388, Appendix 7.1 (3) (d)

(g) I/O signal cables and other communication cables

As for the following, ground the shield of cables (in the same way as explained in ☞ Page 383, Appendix 7.1 (1)) when it is extended out of the control panel.

- I/O signal cable (including common cable)
- RS-232 cable

(h) Extension cables

Ground the shield of cables (in the same way as explained in ☞ Page 386, Appendix 7.1 (3) (a)) when it is extended out of the control panel.

(i) Power cables for external power supply terminal

Use a CE-marked AC-DC power supply as an external power supply for the following modules. Install the AC-DC power supply in the control panel where the module is installed. Keep the length of the power cable connected to the external power supply terminal to 30m or less.

- Analog-digital converter module
- Digital-analog converter module
- High-speed counter module
- Positioning module
- Temperature control module

(4) External power supply

Use a CE-marked external power supply and ground the FG terminal.
(External power supply used for the tests conducted by Mitsubishi: TDK-Lambda DLP-120-24-1, IDEC PS5R-SF24)

(5) Power supply module

Ground the LG and FG terminals after short-circuiting them.

(6) SD memory card

The L1MEM-2GBSD and L1MEM-4GBSD are compliant with IEC61131-2 when used in the MELSEC-L series CPU module.

(7) CPU module (Positioning function)

To use the positioning function, the length of the cable to be connected to external devices must be as shown below.

- Positioning pulse output: 2m or less
- General-purpose output: 30m or less

(8) I/O module

- Install an external DC power connected to I/O modules inside the same control panel.
- Use a shielded cable for the DC power when it is extended out of the control panel.
- Keep the DC power cable length to 30m or less.
- Take a surge protective measure, such as installing a surge suppressor, if the relay switches more than four times per minute.

(9) High-speed counter module

- Install an external DC power connected to high-speed counter modules inside the same control panel.
- Use a shielded cable for the DC power when it is extended out of the control panel.
- Keep the length of cables connected to external devices to 30m or less.

(10)Positioning module

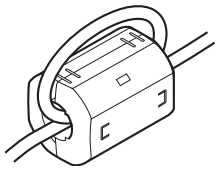
Install an external DC power connected to positioning modules inside the same control panel.

(11)Temperature control module

Install an external DC power connected to positioning modules inside the same control panel.

(12)CC-Link module

- To ground the Ver.1.10-compatible CC-Link dedicated cable, Page 387, Appendix 7.1 (3) (c).
- Each power line connecting to the external power supply terminal or module power supply terminal must be 30m or less.
- Install a noise filter to the external power supply. Use the noise filter having an attenuation characteristic, MA1206 (TDKLambda) or equivalent. Note that a noise filter is not required if the module is used in Zone A defined in EN61131-2.
- Keep the length of signal cables connected to the analog input terminals of the following modules to 30m or less.
- Wire cables connected to the external power supply and module power supply terminal in the control panel where the module is installed.
  - AJ65BT-64RD3
  - AJ65BT-64RD4
  - AJ65BT-68TD
- For the cable connected to the power supply terminal of the AJ65SBT-RPS, AJ65SBT-RPG or AJ65BT-68TD, attach a ferrite core with attenuation characteristic equivalent to that of the ZCAT3035-1330 from TDK Corporation. Twist the cable around the ferrite core by one as shown below.



(13)CC-Link/LT module

- Use the module under the installation environment of Zone A[*1]. For the specified Zones of the following products, refer to the manual provided with each product:
  - CL1Y4-R1B1
  - CL1Y4-R1B2
  - CL1XY4-DR1B2
  - CL1XY8-DR1B2
  - CL1PSU-2A
- To supply the CL2DA2-B and CL2AD4-B with power using the CL1PAD1, keep the length of the power cable connected from the CL1PAD1 to the external power supply to 30m or less.

*1 Zone defines categories according to industrial environment, specified in the EMC and Low Voltage Directives, EN61131-2.

Zone C: Factory mains (isolated from public mains by dedicated transformer)

Zone B: Dedicated power distribution, secondary surge protection (rated voltage: 300V or less)

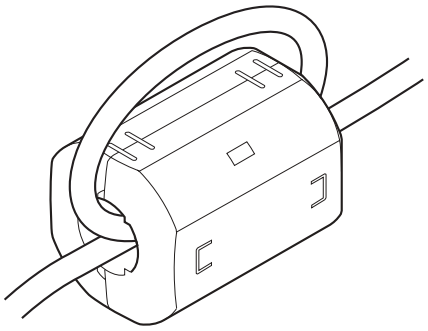
Zone A: Local power distribution, protected from dedicated power distribution by AC/DC converter and insulation transformer (rated voltage: 120V or less)

(14)Other measures

(a) Ferrite core

Ferrite core is effective for reducing radiated noise in the 30MHz to 100MHz frequency band.
It is recommended to install a ferrite core if a shield cable extended out of the control panel does not provide sufficient shielding effects.
Install a ferrite core to the cable in the position immediately before the cable is extended out of the control panel. If the installation position is not appropriate, the ferrite core will not produce any effect.
Install a ferrite core to each power cable as shown below.
(Ferrite core used for the tests conducted by Mitsubishi: NEC TOKIN ESD-SR-250)

Example

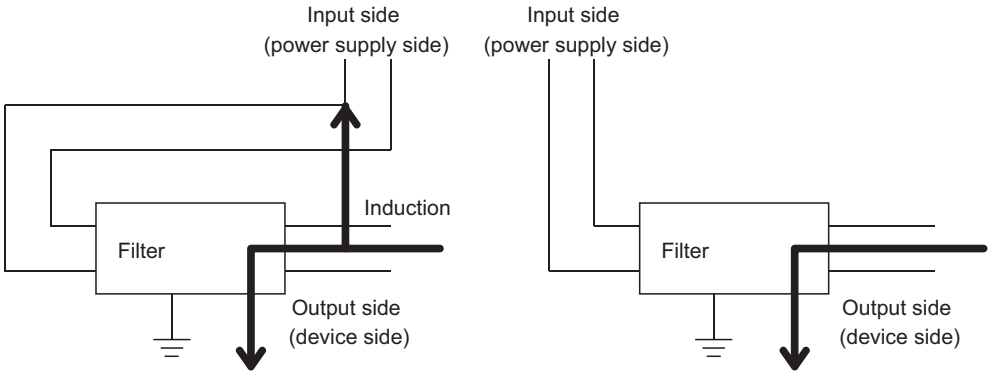


(b) Noise filter (power supply line filter)

Noise filter is effective for reducing conducted noise in the 10MHz or less frequency. (Use of a noise filter can suppress noise.)

The installation precautions are described below.

- Do not bundle the cables on the input side and output side of the noise filter. If bundled, the output side noise will be induced into the filtered cable on the input side.



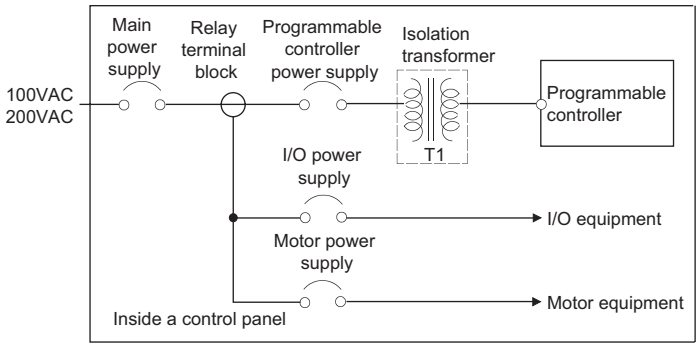
Noise will be induced when the input and output cables are bundled.

Separately install the input and output cables.

- Ground the ground terminal of the noise filter to the ground point of the control panel with the shortest ground wire possible (approximately 10cm).

(c) Insulation transformer

Isolation transformer is effective for reducing conducted noise (especially, lightning surge). Lightning surge may cause malfunction of the programmable controller. As measures against lightning surge, connect an isolation transformer as shown below. Use of an isolation transformer can reduce an impact from lightning.



Appendix 7.2 Measures to comply with the Low Voltage Directive

The Low Voltage Directive requires electrical equipment that is designed or adapted for use between 50 to 1000VAC or 75 to 1500VDC to satisfy the safety requirements.
This section summarizes the precautions for use of the MELSEC-L series modules to comply with the Low Voltage Directive.
These precautions are based on the requirements of the Low Voltage Directive and the harmonized standards. However, they do not guarantee that the entire machinery constructed according to the descriptions complies with the Low Voltage Directive. The manufacture of the machinery must determine the testing method for compliance and declare conformity to the Low Voltage Directive.

(1) Standard applied to MELSEC-L series modules

- EN61010-1 "Safety requirements for electrical equipment for measurement, control and laboratory use"

The MELSEC-L series modules which operate at 50VAC/75VDC or higher rated input voltage are developed in accordance with EN61010-1.
However, the modules which operate at less than 50VAC/75VDC rated input voltage are not targeted for the Low Voltage Directive compliance.

(2) Precautions when selecting MELSEC-L series products

(a) Power supply module

Power supply modules which operate at 100VAC or 200VAC rated input voltage internally have hazardous voltage (peak voltage higher than or equal to 42.4V). Therefore, insulation between the primary and secondary circuits is reinforced for CE-marked power supply modules.

(b) I/O modules

I/O modules which operate at 100VAC or 200VAC rated input voltage internally have hazardous voltage (peak voltage higher than or equal to 42.4V). Therefore, insulation between the primary and secondary circuits is reinforced for CE-marked I/O modules.
I/O modules which operate at 24VDC or less rated input voltage are not targeted for the Low Voltage Directive compliance.

(c) GOT

Use a CE-marked GOT.

(d) Products not subject to the Low Voltage Directive

The following modules are not targeted for the Low Voltage Directive compliance because the circuits in the modules operate at the voltage of 5VDC or less.

- CPU module (including built-in I/O part)
- SD memory card
- Display unit
- RS-232 adapter
- End cover

Intelligent function modules are also not targeted for the Low Voltage Directive compliance because the rated voltage of the modules is 24VDC or less.

(3) Power supply

Power supply modules are designed to meet the overvoltage category II.
Confirm that the power supply to a programmable controller meets the overvoltage category II.

(4) Control panel

(a) Protection against electric shock

The control panel must be handled as shown below to protect a person who does not have adequate knowledge of electrical installation form an electric shock.

- Lock the control panel so that only a person who is trained and has acquired enough knowledge of electrical installation can open the panel.
- Design the control panel so that the power supply is automatically shut off when the panel is opened.
- Use the control panel whose protection degree is IP20 or higher for the purpose of electric shock protection.

(b) Protection from dust and water

The control panel needs to be dustproof and waterproof.
Insufficient dustproof and waterproof lower the dielectric withstand of the control panel, possibly causing dielectric breakdown.
The insulation of Mitsubishi programmable controllers is designed to be used in a pollution degree 2 environment. Use them in an environment of pollution degree 2 or below. The pollution degree 2 environment can be achieved when the programmable controller is installed inside the control panel whose protection degree is IP54 or equivalent.

(5) Grounding

The following two types of ground terminals are available.
Use the ground terminals in grounded status.

Terminal type	Application
Protective ground 	Ensures the safety of the programmable controller and improves the noise resistance.
Functional ground 	Improves the noise resistance.

(6) External wiring

(a) 24VDC external power supply

For the 24VDC I/O modules or the intelligent function modules requiring an external power supply, connect an external power supply of which insulation between the 24VDC circuit section and the hazardous voltage circuit section is reinforced.

(b) External devices

For the external devices connected to the programmable controller, use the one of which insulation between the interface circuit section to the programmable controller and the hazardous voltage circuit section is reinforced (if the device internally has a hazardous voltage circuit section).

(c) Reinforced insulation

Reinforced insulation means an insulation having the following withstand voltage.

Rated voltage of hazardous voltage	Surge withstand voltage (1.2/50μs)
150VAC or less	2500V
300VAC or less	4000V

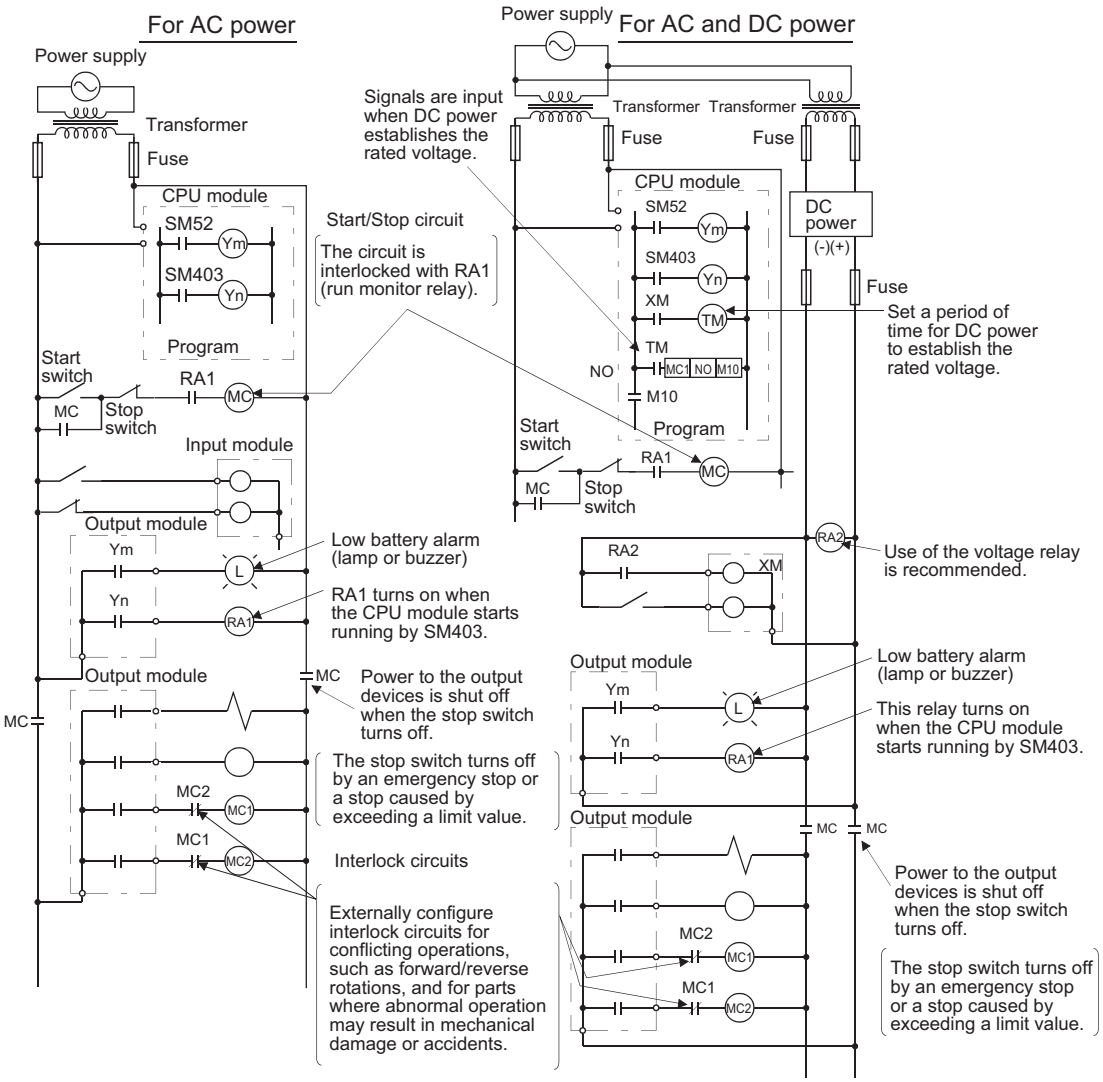
(Overvoltage category II, source: IEC 664)

Appendix 8 General Safety Requirements

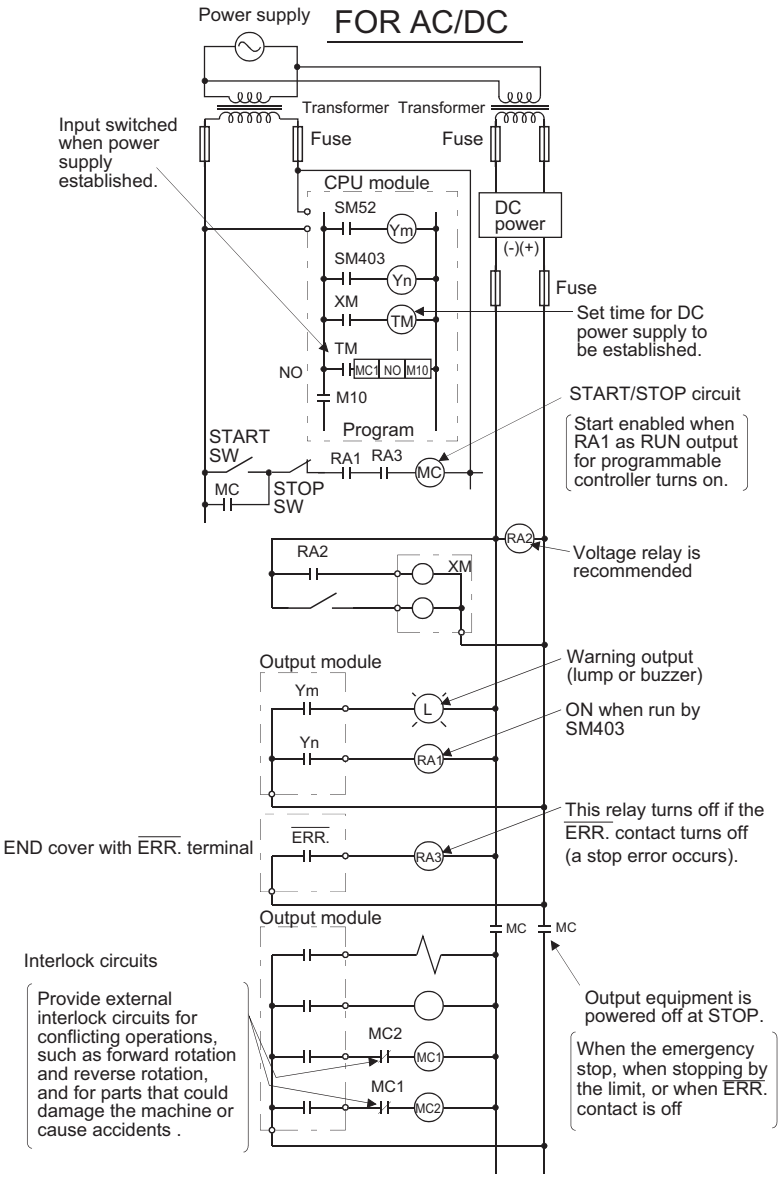
When a programmable controller is powered on or off, normal control outputs may not be performed temporarily. This is because there is a time lag for the power to be turned on between the programmable controller power supply and the external power supply (especially, DC) for the control target.
Normal control outputs also may not be performed when the external power supply or the programmable controller fails.
In terms of fail-safe and to prevent any of these abnormal operations from leading to the entire system failure, configure safety circuits (such as emergency stop circuits, protection circuits, or interlock circuits, where abnormal operation may result in mechanical damage or accidents) external to the programmable controller.
This section describes a system design circuit example, considering the points explained above.

(1) System design circuit example

(a) Without END cover with ERR terminal



(b) With END cover with $\overline{\text{ERR.}}$ terminal



The power-on procedure is as follows:

- For AC and DC power

  [1] Power on the programmable controller.

  [2] Set the CPU module to RUN.

  [3] RA2 turns on when DC power is on.

  [4] Timer (TM) turns on when DC power establishes the rated voltage.

  (The timer value is the period of time from when RA2 turns on to when DC power establishes the rated voltage. Set this value to 0.5 seconds.)

  [5] Turn on the start switch.

  [6] When the electromagnetic contactor (MC) turns on, the output devices will be activated by the program.

  (If a voltage relay is used at RA2, no timer (TM) is required in the program.)

The power-on procedure is as follows:

• For AC power

[1] Power on the programmable controller.

[2] Set the CPU module to RUN.

[3] Turn on the start switch.

[4] When the electromagnetic contactor (MC) turns on, the output devices will be activated by the program.

• For AC and DC power

[1] Power on the programmable controller.

[2] Set the CPU module to RUN.

[3] RA2 turns on when DC power is on.

[4] Timer (TM) turns on when DC power establishes the rated voltage.
(The timer value is the period of time from when RA2 turns on to when DC power establishes the rated voltage. Set this value to 0.5 seconds.)

[5] Turn on the start switch.

[6] When the electromagnetic contactor (MC) turns on, the output devices will be activated by the program.
(If a voltage relay is used at RA2, no timer (TM) is required in the program.

(2) Fail-safe measures for CPU module failure

A CPU module can detect hardware failures of the CPU module itself and of the SD memory card by the self-diagnostic function. However, failures which occur in a part, such as an I/O control part, may not be detected. In this case, depending on the failure, all input or output points may turn on or off, or normal operation and safety of the control-target device may not be ensured.
Even though Mitsubishi programmable controllers are manufactured under strict quality control, they may fail due to some reasons. Provide fail-safe circuits external to the programmable controller so that no machine is damaged and no accident occurs.

Appendix 9 Calculating Heating Value of Programmable Controller

The ambient temperature inside the control panel where a programmable controller is installed must be 55°C or less. It is necessary to know the average power consumption (heating value) of the equipment and devices installed inside the control panel when designing a heat release structure of the panel.
This section describes the calculation method of the average power consumption of a programmable controller system.
Calculate a rise in ambient temperature inside the control panel according to the power consumption.

Appendix 9.1 Calculating the average power consumption

The total of the power consumption calculated for each block is the power consumption of the entire programmable controller system.

$$W = W_{PW} + W_{5V} + W_{24V} + W_{OUT} + W_{IN} + W_S \text{ (W)}$$

Calculate a heating value and a rise in ambient temperature inside the control panel according to the calculated power consumption (W).
The calculation formula for a rise in ambient temperature inside the control panel is as follows.

$$T=\frac{W}{UA}[°C]$$

W: Power consumption of the entire programmable controller system
A: Surface area inside the control panel [m^2]
U (= 6): When the ambient temperature inside the control panel is uniformed using a fan
U (= 4): When the air inside the control panel is not circulated

Point

- If the temperature inside the control panel is expected to exceed the specified range, it is recommended to install a heat exchanger to the panel to lower the temperature.
- If a general-purpose fan is used, dust will be sucked into the control panel with the external air. This may affect the performance of the programmable controller.

The calculation formulas for the power consumption of each block are as follows.

(1) Power consumption of power supply module

The power conversion efficiency of the power supply module is approximately 70% and 30% of the output power is consumed as heat. As a result, 3/7 of the output power will be the power consumption.
The calculation formula is as follows.

$$W_{PW} = \frac{3}{7} \times \{ (I_{5V} \times 5) + (I_{24V} \times 24) \} \text{(W)}$$

I_{5V}: Current consumption of 5VDC circuit of each module
I_{24V}: Average current consumption of 24VDC power supply for internal consumption of the output module (power consumption for the output points simultaneously turned on)*1

*1 Not applicable for the power supply module which does not have the 24VDC power output. (Power (24VDC) is externally supplied.)

(2) Power consumption of 5VDC logic circuit sections in all modules (including the CPU module)

The power consumption of the 5VDC output circuit in the power supply module is the power consumption of each module.

$W_{5V} = I_{5V} \times 5$ (W)

(3) Total of 24VDC average power consumption of the output modules (power consumption for the output points simultaneously turned on)

The average power of the 24VDC external power supply is the total power consumption of each module.

$W_{24V} = I_{24V} \times 24 \times$ Simultaneous on rate (W)

(4) Voltage drop in the output section of the output module (power consumption for the output points simultaneously turned on)

$W_{OUT} = I_{OUT} \times V_{drop} \times$ Output points $\times$ Simultaneous on rate (W)

I_{OUT}: Output current (current in actual use) (A)

V_{drop}: Voltage drop of each output module (V)

(5) Average power consumption of input section in the input module (power consumption for the input points simultaneously turned on)

$W_{IN} = I_{IN} \times E \times$ Input points $\times$ Simultaneous on rate (W)

I_{IN}: Input current (effective value for AC) (A)

E: Input voltage (voltage in actual use) (V)

(6) Power consumption of the external power supply section to the load(s) connected to the intelligent function module

$W_S = I_{24V} \times 24$ (W)

Appendix 10 Precautions for Battery Transportation

When transporting lithium batteries, follow the transportation regulations.

(1) Regulated models

The batteries for the CPU module are classified as shown below.

Product name	Model	Supply status	Classification for transportation
Battery	Q7BAT	Lithium battery	Dangerous goods
	Q7BAT-SET	Lithium battery with holder	
	Q6BAT	Lithium battery	Non-dangerous goods

(2) Transport guidelines

Products are packed in compliance with the transportation regulations prior to shipment.
When repacking any of the unpacked products for transportation, make sure to observe the IATA Dangerous Goods Regulations, IMDG (International Maritime Dangerous Goods) Code, and other local transportation regulations.
For details, consult with the shipping carrier.

Appendix 11 Handling of Batteries and Devices with Built-In Batteries in EU Member States

This section describes the precautions for disposing of waste batteries in EU member states and exporting batteries and/or devices with built-in batteries to EU member states.

(1) Disposal precautions

In EU member states, there is a separate collection system for waste batteries. Dispose of batteries properly at the local community waste collection/recycling center.

The symbol shown below is printed on the batteries and packaging of batteries and devices with built-in batteries used for Mitsubishi programmable controllers.*1

*1 This symbol is for EU member states only. The symbol is specified in the new EU Battery Directive (2006/66/EC) Article 20 "Information for end-users" and Annex II.

The symbol indicates that batteries need to be disposed of separately from other wastes.

(2) Exportation precautions

The new EU Battery Directive (2006/66/EC) requires the following when marketing or exporting batteries and/or devices with built-in batteries to EU member states.

- To print the symbol on batteries, devices, or their packaging
- To explain the symbol in the manuals of the products

(a) Labelling

To market or export batteries and/or devices with built-in batteries, which have no symbol, to EU member states on September 26, 2008 or later, print the symbol shown in (1) on the batteries, devices, or their packaging.

(b) Explaining the symbol in the manuals

To export devices incorporating Mitsubishi programmable controller to EU member states on September 26, 2008 or later, provide the latest manuals that include the explanation of the symbol.
If no Mitsubishi manuals or any old manuals without the explanation of the symbol are provided, separately attach an explanatory note regarding the symbol to each manual of the devices.

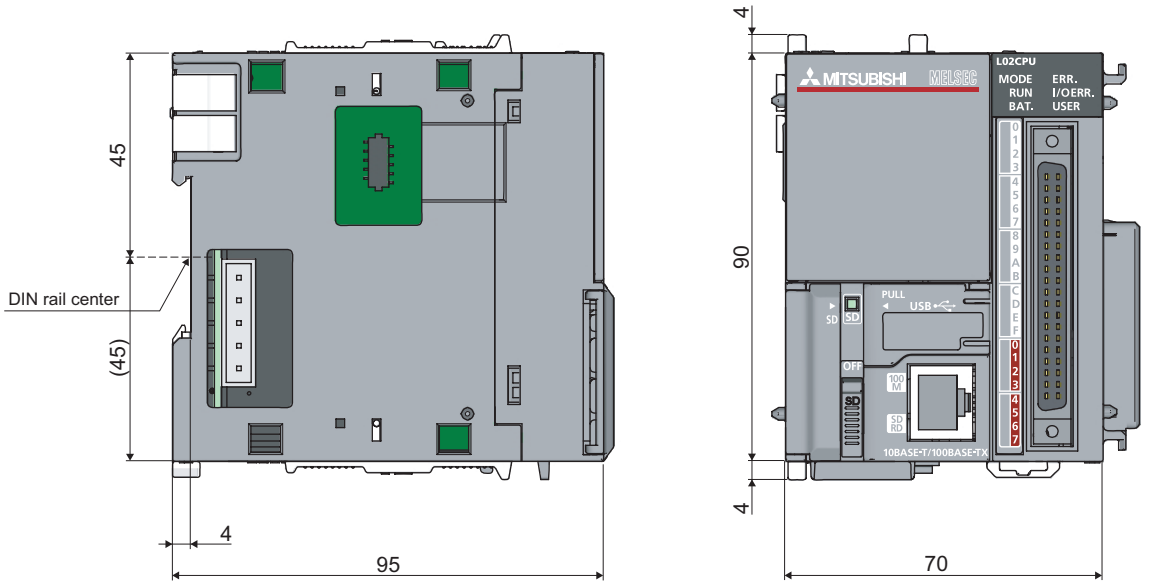
Point

The requirements apply to batteries and/or devices with built-in batteries manufactured before the enforcement date of the new EU Battery Directive(2006/66/EC).

Appendix 12 External Dimensions

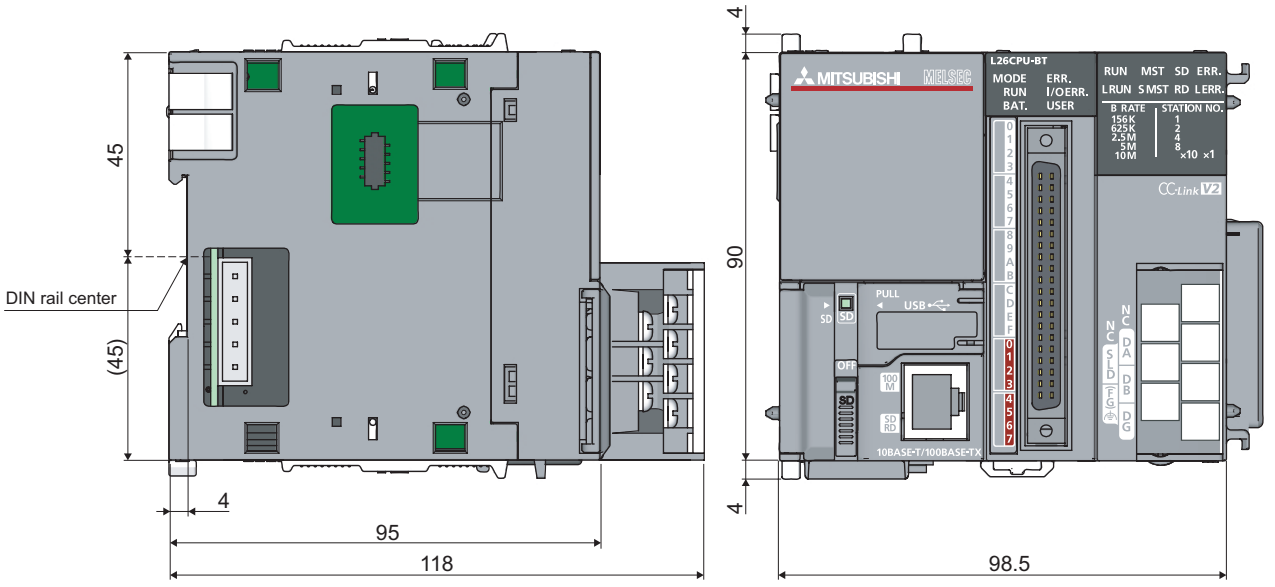
Appendix 12.1 CPU module

(1) L02CPU, L02CPU-P



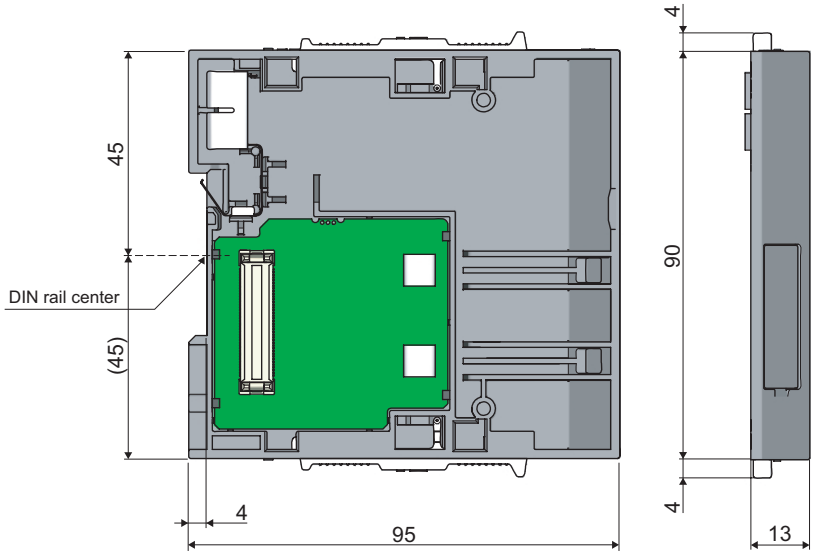
(Unit: mm)

(2) L26CPU-BT, L26CPU-PBT



(Unit: mm)

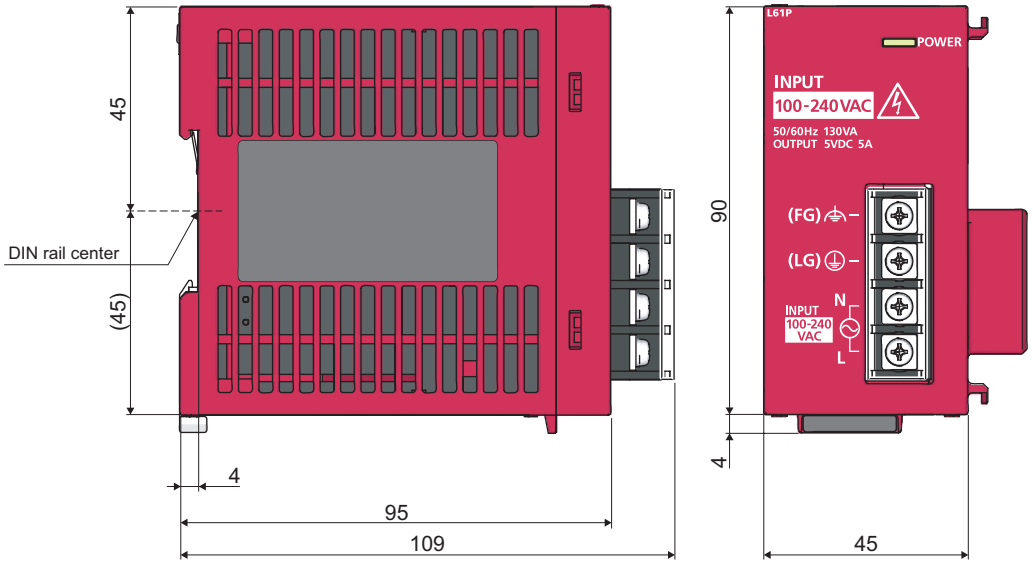
(3) END cover (L6EC)



(Unit: mm)

Appendix 12.2 Power supply module

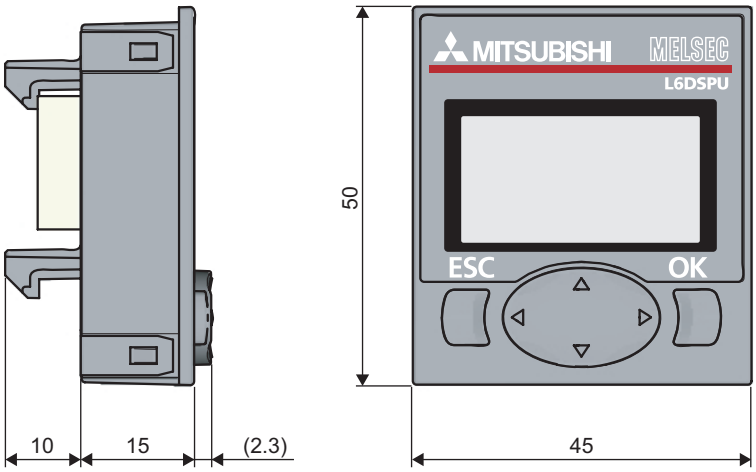
(1) L61P, L63P



(Unit: mm)

Appendix 12.3 Display unit

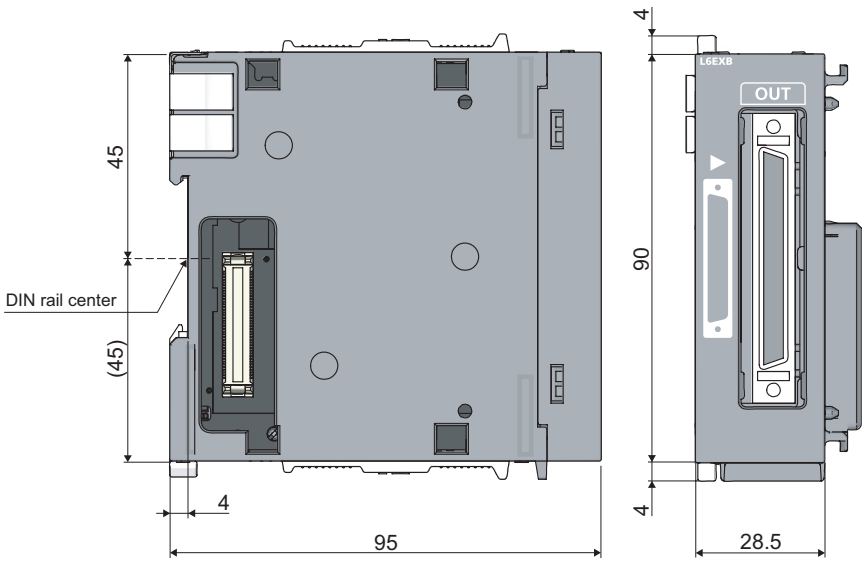
(1) L6DSPU



(Unit: mm)

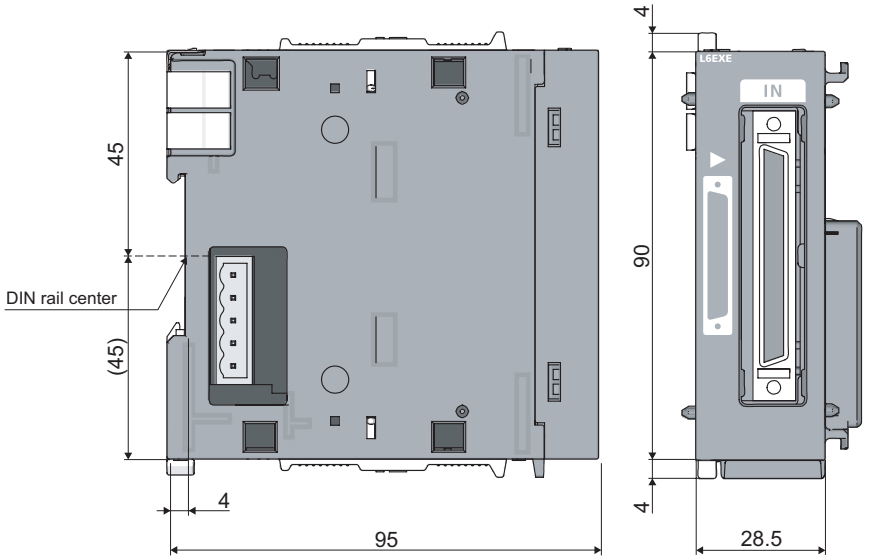
Appendix 12.4 Branch module and extension module

(1) Branch module (L6EXB)



(Unit: mm)

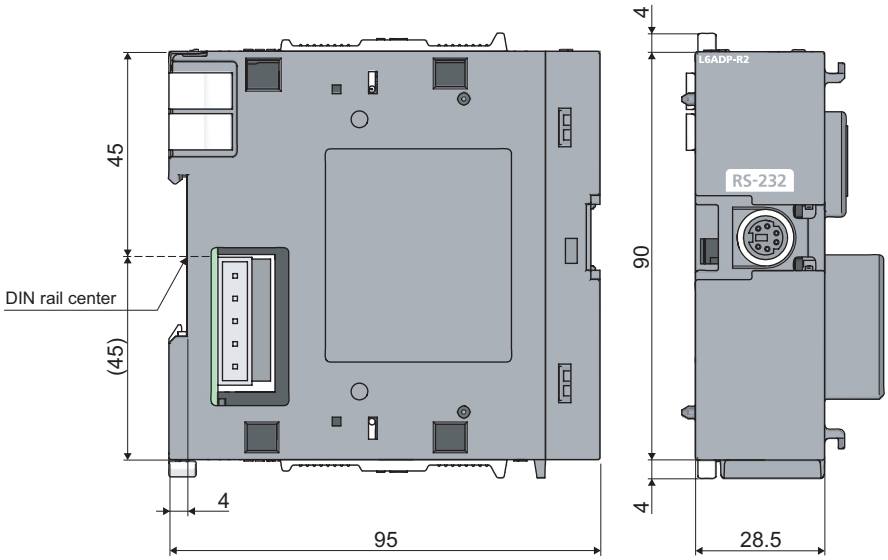
(2) Extension module (L6EXE)



(Unit: mm)

Appendix 12.5 Other optional items

(1) RS-232 adapter (L6ADP-R2)



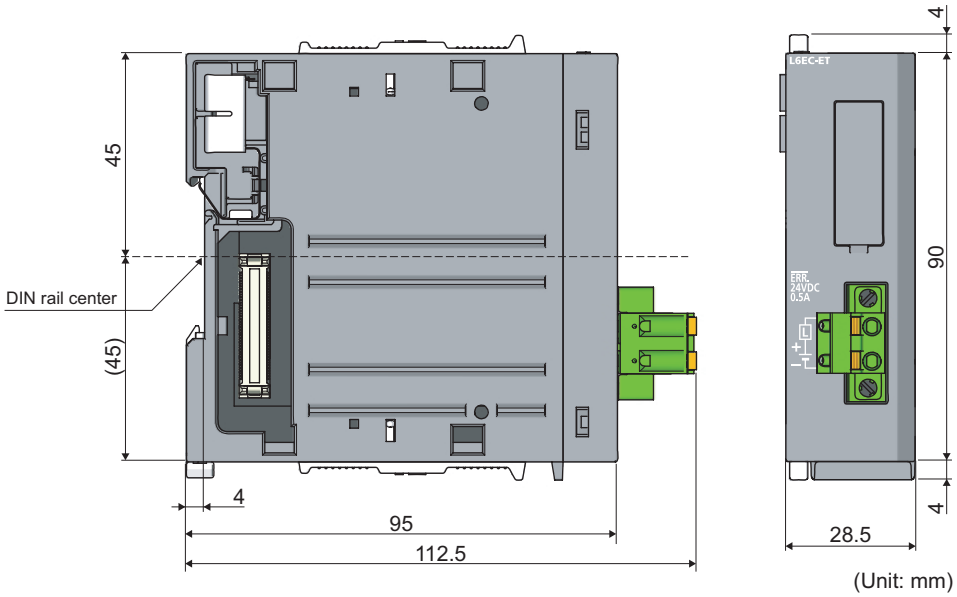
(Unit: mm)

(2) END cover (L6EC)

Refer to the following.

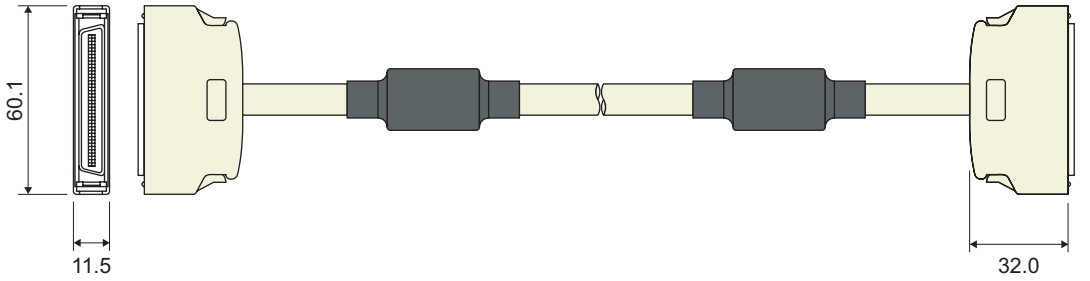
☞ Page 406, Appendix 12.1 (3)

(3) END cover with ERR terminal (L6EC-ET)



(Unit: mm)

(4) Extension cable (LC06E, LC10E, LC30E)



(Unit: mm)

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Memo

REVISIONS

*The manual number is given on the bottom left of the back cover.

Print date	*Manual number	Revision
January 2010	SH(NA)-080890ENG-A	First edition
April 2010	SH(NA)-080890ENG-B	Descriptions regarding the L6EC-ET are added.
November 2010	SH(NA)-080890ENG-C	Addition of descriptions of EN61131-2:2007
January 2011	SH(NA)-080890ENG-D	Addition of descriptions of the data logging file transfer function
April 2011	SH(NA)-080890ENG-E	Addition of descriptions of CC-Link IE Field
July 2011	SH(NA)-080890ENG-F	Descriptions regarding the L02CPU-P and L26CPU-PBT are added.
September 2011	SH(NA)-080890ENG-G	Descriptions regarding the L6EXB, L6EXE, LC06E, LC10E, and LC30E are added.
October 2011	SH(NA)-080890ENG-H	Descriptions regarding new functions are added.

Japanese manual version SH-080874-I

WARRANTY

Please confirm the following product warranty details before using this product.

1. Gratis Warranty Term and Gratis Warranty Range

If any faults or defects (hereinafter "Failure") found to be the responsibility of Mitsubishi occurs during use of the product within the gratis warranty term, the product shall be repaired at no cost via the sales representative or Mitsubishi Service Company.
However, if repairs are required onsite at domestic or overseas location, expenses to send an engineer will be solely at the customer's discretion. Mitsubishi shall not be held responsible for any re-commissioning, maintenance, or testing on-site that involves replacement of the failed module.
[Gratis Warranty Term]
The gratis warranty term of the product shall be for one year after the date of purchase or delivery to a designated place.
Note that after manufacture and shipment from Mitsubishi, the maximum distribution period shall be six (6) months, and the longest gratis warranty term after manufacturing shall be eighteen (18) months. The gratis warranty term of repair parts shall not exceed the gratis warranty term before repairs.
[Gratis Warranty Range]

(1) The range shall be limited to normal use within the usage state, usage methods and usage environment, etc., which follow the conditions and precautions, etc., given in the instruction manual, user's manual and caution labels on the product.
(2) Even within the gratis warranty term, repairs shall be charged for in the following cases.
    1. Failure occurring from inappropriate storage or handling, carelessness or negligence by the user. Failure caused by the user's hardware or software design.
    2. Failure caused by unapproved modifications, etc., to the product by the user.
    3. When the Mitsubishi product is assembled into a user's device, Failure that could have been avoided if functions or structures, judged as necessary in the legal safety measures the user's device is subject to or as necessary by industry standards, had been provided.
    4. Failure that could have been avoided if consumable parts (battery, backlight, fuse, etc.) designated in the instruction manual had been correctly serviced or replaced.
    5. Failure caused by external irresistible forces such as fires or abnormal voltages, and Failure caused by force majeure such as earthquakes, lightning, wind and water damage.
    6. Failure caused by reasons unpredictable by scientific technology standards at time of shipment from Mitsubishi.
    7. Any other failure found not to be the responsibility of Mitsubishi or that admitted not to be so by the user.

2. Onerous repair term after discontinuation of production

(1) Mitsubishi shall accept onerous product repairs for seven (7) years after production of the product is discontinued.
    Discontinuation of production shall be notified with Mitsubishi Technical Bulletins, etc.
(2) Product supply (including repair parts) is not available after production is discontinued.

3. Overseas service

Overseas, repairs shall be accepted by Mitsubishi's local overseas FA Center. Note that the repair conditions at each FA Center may differ.

4. Exclusion of loss in opportunity and secondary loss from warranty liability

Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation of damages caused by any cause found not to be the responsibility of Mitsubishi, loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products, special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products, replacement by the user, maintenance of on-site equipment, start-up test run and other tasks.

5. Changes in product specifications

The specifications given in the catalogs, manuals or technical documents are subject to change without prior notice.

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MELSEC-L CPU Module
User's Manual

Hardware Design, Maintenance and Inspection

MODEL	LCPU-U-HH-E
MODEL CODE	13JZ36
SH(NA)-080890ENG-H(1110)MEE	

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