TECHNICAL BULLETIN

[Issue No.] FA-A-0173 **[Page]** 1/1
[Title] Recovery support sheet at programmable controller error
[Date of Issue] August 2014
[Relevant Models] MELSEC-Q/L series

Thank you for your continued support of Mitsubishi programmable controllers, MELSEC-Q/L series.

We introduce "Recovery support sheet" (refer to the attachment) to be used when an error occurs in a machinery or equipment incorporating a programmable controller.

The "Recovery support sheet" will help users to determine the cause of the error by checking the programmable controller system step by step, and will also be helpful when making an inquiry to your local Mitsubishi representative.

For the reasons above, when an error occurs, please inspect the programmable controller in accordance with the check procedures on the sheet and write down the check and error details. If there may be a possibility of a hardware failure of the module, request an investigation of the module together with the sheet.

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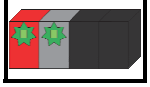
Recovery support sheet at a MELSEC programmable controller (Q/L series) error

Date (, Time AM/PM :) Company/operator name:

If an error occurs in a machinery or equipment incorporating a programmable controller

Check the LEDs of the power supply module and CPU module.



LED status of the power supply module (Select the checkbox. (☑))

	ON	OFF
POWER	☐	☐

Status of other LEDs

(Name:

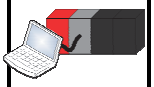
Status:)

LED status of the CPU module (Select the checkbox. (☑))

	ON	OFF	Flashing
MODE	☐	☐	☐
RUN	☐	☐	☐
ERR	☐	☐	☐
USER	☐	☐	☐
BAT	☐	☐	☐
BOOT	☐	☐	☐

Status of other LEDs [Name: , Status:]

Connect a personal computer to the CPU module.



Communication availability between the CPU module and personal computer (Select the checkbox. (☑))

	OK	NG			OK	NG			OK	NG
USB	☐	☐	/	RS232	☐	☐	/	Ethernet	☐	☐

Error information (Write details inside [ ].)

Error code [ ] Error description [ ]

Faulty module [Model: , Mounting slot:]

Saving data in the CPU module (Select the checkbox (☑) after saving the data.)

☐ Programs ☐ Parameters (PC parameters, network parameters) ☐ Device

☐ System configuration ☐ Error history

Procedure 1

Check the other modules.

Diagnostic result (Write details inside [ ]. Select the checkbox (☑) after saving the data.)

Faulty module [Model: , Mounting slot :]

Error description [Example] I/O module: Although the LED of Y00 turns on, the actual output remains off. D/A converter module: The output of CH8 is always 20mA. [ ]

Error code [ ] ☐ Buffer memory

Procedure 2

Check the network.

Diagnostic result (Write details inside [ ]. Select the checkbox (☑) after saving the data.)

Network type [ ]

Data link status (own station, other stations) [ ]

Error description [Example] Communications through CH1 is disabled. The personal computer does not recognize the network board. [ ]

Error code [ ]

☐ Error history ☐ SB/SW ☐ Buffer memory

Procedure 3

Reset the CPU module.

RESET

Recovered (temporary error)

An error occurs intermittently.

Error again

Error again

Condition and frequency (Write details inside [ ].)

Timing and condition (Example: While the system is energized, During program modification)

[ ]

Frequency and number of times (Example: Always, at every operation)

[ ]

Recovery measures (Select the checkbox of the action taken.(☑))

☐ Noise reduction

☐ External wiring review (retightening, reconnection)

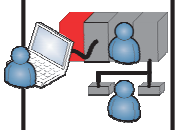
☐ Operation review of external devices

Conduct maintenance and inspection, and consider future actions, including continuous monitoring.

Procedure 4

Inquiry timing to your local Mitsubishi representative

Take recovery measures.



Check the corrective action corresponding to the error code (of the CPU module or other modules).

Recovery measures (Select the checkbox of the action taken. (☑))

☐ Review of the external power supply (including UPS) ☐ Rewrite of programs/parameters ☐ Module replacement

☐ Wiring review (retightening, reconnection) ☐ Program modification ☐ Parameter correction

☐ Removal/remounting of the module ☐ Operation review of external devices

Conduct maintenance and inspection, and consider future actions, including continuous monitoring.

Failure?

Check error condition and environment.

Items to be checked before requesting an investigation (Write details inside [ ].)

Operation period [ ] Timing of error occurrence [ ]

Frequency of error [ ] Environment check [ ]

Procedure 5

Prepare information and items required, and request an investigation of the module.

Information and items required for an investigation (Write details inside [ ]. Select the checkbox of the prepared item. (☑))

Faulty module [ ]

Error description [ ]

☐ Saved data (Data saved in the procedures above) ☐ Recovery support sheet (this sheet)

☐ Data or document indicating the connection status between the programmable controller and external devices (if available)

Procedure details

Procedure 1. Checking the CPU module

Item	Operation	GX Works2 operation	
Error code	Check	Menu [Diagnostics]→[PLC Diagnostics]→[Error Help]	
Program/parameter	Save	Menu [Project]→[Save as]	
Device		Menu [Online]→[Read from PLC]→[Device Data]→[Detail]→[Default]	Select the read-target device(s), read the device data, and save it to the project. * For the file register, specify the storage memory in parameter, and save it to the project.
System configuration		Menu [Diagnostics]→[System Monitor]→[Product Information List]→[Create CSV File]	
Error history		Menu [Diagnostics]→[System Monitor]→[Error History Detail]→[Create CSV File]	

Procedure 2. Checking the intelligent function module

Item	Operation	GX Works2 operation	
Error code	Check	Menu [View]→[Docking Window]→[Intelligent Function Module Monitor]	Double-click or right-click each item.
Buffer memory	Save	Menu [Online]→[Read from PLC]→[Device Data]→[Detail]→[Default]	Set the start I/O number of the buffer memory, read the device data, and save it to the project.

Procedure 3. Checking the network module

Item	Operation	GX Works2 operation	
Network status (such as error history, other station information)	Check	Menu [Diagnostics]→[MELSECNET Diagnostics]	: MELSECNET10(H)
		Menu [Diagnostics]→[CC IE Control Diagnostics]	: CC-Link IE Controller Network
		Menu [Diagnostics]→[CC IE Field Diagnostics]	: CC-Link IE Field Network
		Menu [Diagnostics]→[CC-Link Diagnostics]	: CC-Link or CC-Link/LT
		Menu [Diagnostics]→[Ethernet Diagnostics]	: Ethernet
Error history	Save	Menu [Diagnostics]→[CC IE Control Diagnostics]→[Logging]→[Save Error Log]	: CC-Link IE Controller Network
		Menu [Diagnostics]→[CC IE Field Diagnostics]→[Network Event History]→[Create CSV File]	: CC-Link IE Field Network
		Menu [Diagnostics]→[CC-Link Diagnostics]→[Status Logging]→[Save]	: CC-Link or CC-Link/LT
SB/SW		Menu [Online]→[Read from PLC]→[Device Data]→[Detail]→[Default]	Select SB or SW, read the device data, and save it to the project.
Buffer memory		Menu [Online]→[Read from PLC]→[Device Data]→[Detail]→[Default]	Set the start I/O number of the buffer memory, read the device data, and save it to the project.

For details (procedures 1 to 3), refer to the GX Works2 Version 1 Operating Manual (Common).

Procedure 4. Measures to reduce noise

Phenomenon example	Cause	Action
An error occurs in synchronization with a certain external device (such as an output device).	Noise from a motor device	Separate the grounding wires for the programmable controller and for the motor.
		Store the cables for the programmable controller and for the motor in different ducts separately.
	Noise and serge from external devices	Noise reduction measures (Conduct the measure near the device.) 1) Inductive load for alternating current: Parallel connection of a surge suppressor 2) Inductive load for direct current: Parallel connection of a diode
		Noise evasion measures 1) Ground the noise source. (Lead the noise to the ground.) 2) Unground the device. (Shut off the sneaking noise.) 3) Shield the I/O signal line. (Shut off the spatial noise.)
The programmable controller operates unstably, causing an error randomly.	Influence of high-frequency devices	
	Momentary power failure of the power supply, power supply wave pattern change (including power supply noise)	1) Review the power supply environment. 2) Connect an isolation transformer between the external power supply and power supply module.

Procedure 5. Items to be checked before requesting an investigation

Item	Description example
Operation period	2 years, 1month, 0 days
Timing of error occurrence	While the system is energized, At power-on (first time), During operation, During program modification, At random, During RUN
Frequency of error	Always, Only once, At every operation, Once a month, Once a week, Once a day
Environment check	Corrosive gases, Ambient temperature (concrete value), Vibration, Dust, Abnormality of any external device (such as superimposed noise)