TECHNICAL BULLETIN

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[Title] Precautions for replacing QnUD(E)(H)CPU with QnUDVCPU
[Date of Issue] February 2013
[Relevant Models] Q03UDVCPU, Q04UDVCPU, Q06UDVCPU, Q13UDVCPU, Q26UDVCPU

Thank you for your continued support of Mitsubishi programmable controllers, MELSEC-Q series.
This bulletin provides precautions for replacing the QnUD(E)(H)CPU with QnUDVCPU.
Note that the reference manuals or the references described in this bulletin are information as of February 2013.

GENERIC TERMS

Generic term	Description
High-speed Universal model QCPU	A generic term for the Q03UDVCPU, Q04UDVCPU, Q06UDVCPU, Q13UDVCPU, and Q26UDVCPU
QnUD(H)CPU	A generic term for the Q03UDCPU, Q04UDHCPU, Q06UDHCPU, Q10UDHCPU, Q13UDHCPU, Q20UDHCPU, and Q26UDHCPU
QnUDE(H)CPU	A generic term for the Q03UDECPU, Q04UDEHCPU, Q06UDEHCPU, Q10UDEHCPU, Q13UDEHCPU, Q20UDEHCPU, Q26UDEHCPU, Q50UDEHCPU, and Q100UDEHCPU
QnUD(E)(H)CPU	A generic term for the Q03UDCPU, Q03UDECPU, Q04UDHCPU, Q04UDEHCPU, Q06UDHCPU, Q06UDEHCPU, Q10UDHCPU, Q10UDEHCPU, Q13UDHCPU, Q13UDEHCPU, Q20UDHCPU, Q20UDEHCPU, Q26UDHCPU, Q26UDEHCPU, Q50UDEHCPU, and Q100UDEHCPU
QnUDVCPU	A generic term for the Q03UDVCPU, Q04UDVCPU, Q06UDVCPU, Q13UDVCPU, and Q26UDVCPU

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1. PRECAUTIONS FOR REPLACEMENT

(1) System configuration

Item	Precaution	Replacement method	Reference
RS-232 port	There is no RS-232 port.*1	Use a USB or Ethernet port. To communicate with an RS-232 interface, use the QJ71C24N(-R2) in the system.	-
Applicable products and software	• A programming tool that was available for the QnUD(E)(H)CPU can no longer be used or needs to be upgraded. (The use of GX Developer is not supported in the system after replacement.) • Some GOTs and intelligent function modules that were available for the QnUD(E)(H)CPU can no longer be used or need to be upgraded.	• Upgrade the version of GX Works2 to the one compatible with the QnUDVCPU. • Replace the GOT and intelligent function modules to those compatible with the QnUDVCPU.	Chapter 2
Multiple CPU system	Scan time is shortened in the High-speed Universal model QCPU because operations are performed at higher speed. When used in a multiple CPU system, the High-speed Universal model QCPU accesses to the control modules frequently. As a result, the processing time in other CPU modules may increase.	Check the processing timings of other CPU modules and adjust the access frequency of the High-speed Universal model QCPU using timers or the constant scan function.	QCPU User's Manual (Multiple CPU System)
Current consumption	The current consumption increases.	Select a power supply module according to the total current consumption in the system.	QCPU User's Manual (Hardware Design Maintenance and Inspection)

*1: This applies when the QnUD(H)CPU is replaced with the High-speed Universal model QCPU.

(2) Program

Item	Precaution	Replacement method	Reference
Number of steps	The number of basic steps differs in some instructions. The number of steps increases by one when: • Index modification is performed. • A leading or trailing edge instruction is used. • Bit devices are used as word data by specifying digits using K1, K2, K3, K5, K6, or K7, or by specifying a device number of other than multiples of 16.	If index modifications mentioned on the left are frequently used in the program, the program size may exceed the storage capacity of the replaced CPU module. After the program controller type is changed, check the program size using the confirm memory size function. If the program size exceeds the storage capacity, take the following actions or change the CPU module to that with larger program memory. • Move parameters and device comments to the standard ROM. • Reduce the reserved area for online change. • Use the file register, extended data register, and extended link register within 64K words because the number of steps decreases by one when used in that way.	MELSEC-Q/L Programming Manual (Common Instruction)

(3) Parameter size

Item	Precaution	Replacement method	Reference
Parameter size	The parameter size increases because the built-in Ethernet port setting parameters are added.*1	• Delete unnecessary files and free some space. • Move the parameter file to another memory area.	-

*1: This applies when the QnUD(H)CPU is replaced with the High-speed Universal model QCPU.

(4) Drive and file

Item	Precaution	Replacement method	Reference
Boot file setting	A memory card (SRAM card, ATA card, or Flash card) cannot be specified as a transfer source.	Specify an SD memory card as a transfer source.	Section 2.11 in the QnUCPU User's Manual (Function Explanation, Program Fundamentals)
Device comment	A device comment file cannot be stored in an SRAM card.	Store the file in the standard RAM.	-
	A device comment file cannot be stored in an ATA card nor Flash card.	Store the file in an SD memory card.	-
Initial device value	An initial device value file cannot be stored in an SRAM card.	Store the file in the standard RAM or standard ROM.	Section 3.25 in the QnUCPU User's Manual (Function Explanation, Program Fundamentals)
	An initial device value file cannot be stored in an ATA card nor Flash card.	Store the file in an SD memory card.	
Local device	A local device file cannot be stored in an SRAM card.	• Store the file in the standard RAM. • If the size of the local device file exceeds the standard RAM capacity, consider the use of an extended SRAM cassette.	Section 6.2 in the QnUCPU User's Manual (Function Explanation, Program Fundamentals)
File register	A file register file cannot be stored in an SRAM card.	• Store the file in the standard RAM. • If the size of the file register file exceeds the standard RAM capacity, consider the use of an extended SRAM cassette.	Section 4.7.1 in the QnUCPU User's Manual (Function Explanation, Program Fundamentals)
	A file register file cannot be stored in a Flash card. (Sequence programs only can read file register data in a Flash card.)	Use the initial device value file in an SD memory card or the FREAD/FWRITE instructions.	• Section 3.25 in the QnUCPU User's Manual Function Explanation, rogram Fundamentals) • MELSEC-Q/L rogramming Manual Common Instruction)
Sampling trace	A sampling trace file cannot be stored in an SRAM card.	• Store the file in the standard RAM. • If the size of the sampling trace file exceeds the standard RAM capacity, consider the use of an extended SRAM cassette.	Section 3.14 (2) in the QnUCPU User's Manual (Function Explanation, Program Fundamentals)
CPU module change function with memory card	A memory card cannot be specified as a backup destination or restoration source.	Specify an SD memory card as a backup destination or restoration source.	Section 3.31 in the QnUCPU User's Manual (Function Explanation, Program Fundamentals)

(5) Built-in Ethernet port communications*1

Item	Precaution	Replacement method	Reference
File transfer function (FTP server)	The security function has been enhanced from the password registration function to the file password 32 function. For this reason, the keyword-set subcommand, that sets/displays/clears the file access password, is no longer supported.	Use the FTP commands, passwd-rd and passwd-wr, that set/display/clear the read/write passwords of the file password 32 function.	QnUCPU User's Manual (Communication via Built-in Ethernet Port)

*1: This applies when the QnUDE(H)CPU is replaced with the High-speed Universal model QCPU.

(6) Functions

Item	Precaution	Replacement method	Reference
Security function	The security function, that limits accesses to the files in the CPU module, has been enhanced from the password registration function to the file password 32 function.	Use the file password 32 function instead of the password registration function.	Section 3.19 in the QnUCPU User's Manual (Function Explanation, Program Fundamentals)
Latch data backup to standard ROM	If an extended SRAM cassette is used and the memory capacity of the standard RAM (drive 3) is larger than that of the standard ROM, data cannot be backed up using this function.	Deselect the "Backup all files in the internal of standard RAM" checkbox in the PLC System tab of the PLC parameter dialog box.	Section 3.29 (4) in the QnUCPU User's Manual (Function Explanation, Program Fundamentals)
Battery life-prolonging function	The battery life-prolonging function is no longer supported. Without the use of the function, the battery life is as same as that of the QnUD(E)(H)CPU.	The switch setting parameters are ignored and the following operations are performed. • Data held by the battery are not cleared nor deleted. • The bits, b0 and b1, of SD119 (Battery life-prolonging factor) are fixed to 0.	• Section 3.26 in the QnUCPU User's Manual (Function Explanation, Program Fundamentals) • QCPU User's Manual (Hardware Design Maintenance and Inspection)

2. APPLICABLE PRODUCTS AND SOFTWARE

(1) Products need to be replaced for the compatibility with the High-speed Universal model QCPU

The following tables show products need to be replaced for the compatibility with the High-speed Universal model QCPU. (As for devices not listed in the tables below, replacement is not required.)

(a) Communication modules

Product	Model	Module version*2
Web server module*1	QJ71WS96	"14122" or later
MES interface module	QJ71MES96	"14122" or later
High speed data logger module	QD81DL96	"14122" or later

*1: The High-speed Universal model QCPU does not operate normally when the Web server module on which GX RemoteService-I is installed is used.

*2: The High-speed Universal model QCPU does not operate normally when an incompatible module version is used.

(b) Personal computer boards

Product		Model	Dedicated software package version
CC-Link IE Field Network interface board		Q81BD-J71GF11-T2	1.03D or later
CC-Link IE Controller Network interface board		• Q81BD-J71GP21-SX • Q81BD-J71GP21S-SX • Q80BD-J71GP21-SX • Q80BD-J71GP21S-SX	1.15R or later
MELSECNET/H interface board	SI/QSI/H-PCF optical cable	• Q80BD-J71LP21-25 • Q80BD-J71LP21S-25	25B or later
		Q81BD-J71LP21-25	
	GI optical cable	Q80BD-J71LP21G	
	Coaxial cable	Q80BD-J71BR11	
CC-Link system master/local interface board		• Q80BD-J61BT11N • Q81BD-J61BT11	1.12N or later

*1: No restrictions on the board itself.

(c) GOT

Product	Model	GT Works3 OS version*1
GOT1000	• GT16□-□ • GT15□-□ • GT14□-□ • GT11□-□ • GT10□-□	1.64S or later

*1: No restrictions on GOT itself.

(d) Network modules and serial communication modules

Product	Model	Module version
MELSECNET/H module	• QJ71LP21-25 • QJ71LP21S-25 • QJ71LP21G • QJ71LP21GE • QJ71BR11	Some restrictions depending on use conditions*1
Serial communication module	• QJ71C24N • QJ71C24N-R2 • QJ71C24N-R4	Serial number (first five digits) "10042" or later

*1: The serial number (first five digits) of the MELSECNET/H module must be "10042" or later if all conditions 1) to 4) described below are satisfied.
1) A multiple CPU system including Built-in Ethernet port QCPU is configured.
2) A programming tool or GOT is connected to an Ethernet port of Built-in Ethernet port QCPU.
3) A programming tool or GOT accesses the CPU module on another station via the MELSECNET/H module controlled by another CPU.
4) The access target on another station is A/QnA series CPU module.

(2) CPU modules that can configure a multiple CPU system with the Universal model QCPU

CPU modules that can configure a multiple CPU system with the Universal model QCPU are shown below.

CPU module	Model	Applicable version	Restrictions
Motion CPU	• Q172DCPU • Q173DCPU • Q172DCPU-S1 • Q173DCPU-S1 • Q172DSCPU • Q173DSCPU	No restrictions	Use only the multiple CPU high-speed main base unit (Q3□DB) as a main base unit.
PC CPU module	PPC-CPU852(MS)	N/A	-
C Controller module	• Q06CCPU-V • Q06CCPU-V-B	N/A	-
	• Q12DCCPU-V • Q24DHCCPU-V	Serial number (first five digits) "14122" or later	-
High Performance model QCPU	• Q02CPU • Q02HCPU • Q06HCPU • Q12HCPU • Q25HCPU	Function version B or later	-
Process CPU	• Q02PHCPU • Q06PHCPU • Q12PHCPU • Q25PHCPU	No restrictions	-

REVISIONS

Version	Print Date	Revision
-	February 2013	First edition