MITSUBISHI

2000 No.135E

NEW PRODUCT RELEASE

GENERAL-PURPOSE
PROGRAMMABLE LOGIC CONTROLLERS

Notification of the MELSEC-Q Series PLC CPU Upgrade (Q02CPU,Q02HCPU,Q06HCPU,Q12HCPU,Q25HCPU)

New!

The following functions have been added to the QCPU to make it even easier to use. The additional functions are shown as follows.

■Multiple PLC system compatibility

- Sequence control and motion control are incorporated in one PLC system.
- High-speed control by distributing load over multiple CPUs.
- Total volume of program memory and devices expanded by the addition of CPU modules.
- Operations of other CPU modules continue while one of the CPU modules goes down.

■Standard RAM capacity increased by four times

The capacity of the standard RAM in the Q12HCPU and Q25HCPU has been increased to 128k words to enable the use of more file registers and local devices.

■Overwriting on the standard ROM made possible with the memory card (Automatic write to standard ROM)

When ROM operations are being performed with the standard ROM, it is possible to write over the parameters and programs in the standard ROM directly from a memory card at the field without PC (GX Developer).

■Debug on Line (Forced ON/OFF of external inputs/outputs)

System debug with forcibly switch the I/O (X, Y) to ON/OFF by GX Developer is possible on Line.

■Possible to restrict access from external sources (Remote password setting)

It is possible to prevent QCPU from illegal remote access through serial communications or Ethernets.

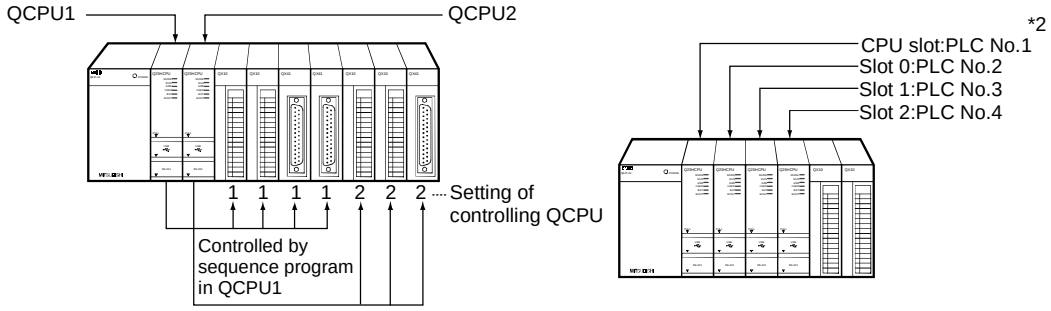
■Compatible with MELSECNET/H remote I/O networks

1. Multiple PLC system compatibility

(1) Outline of multiple PLC system

Multiple PLC system is the system which enable a maximum of four QCPUs (PLC CPUs) or motion CPUs (*1) mounted onto the main base unit to control the I/O modules and intelligent function modules.

In the multi PLC system, the CPU slots are assigned to PLC No. 1, No. 2, No. 3 and No. 4 in order from left to right to specify the loaded QCPUs and motion CPUs.



*1: Motion CPUs are CPU modules that are connected to Mitsubishi servo amplifiers with SSCNET (which reduces wiring and afford highly reliable connections) in order to perform motion control.

This enables synchronous operations with the servo motors and the simple structuring of absolute position systems.

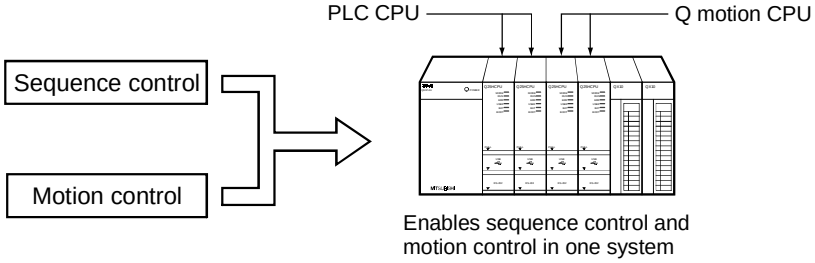
The motion CPUs will be released soon.

*2: The CPU slot (slot on the right of the power supply module) accepts only the QCPU.

(2) Features

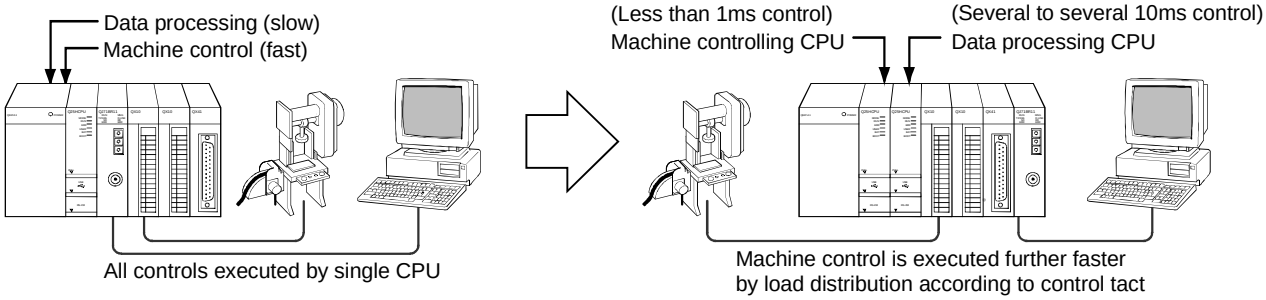
(a) Possible to incorporate sequence control and motion control in one PLC system

It is possible to select the most suitable CPU module from the PLC CPUs (five types) and motion CPUs (two types) in accordance with the size and use of the system when structuring systems.



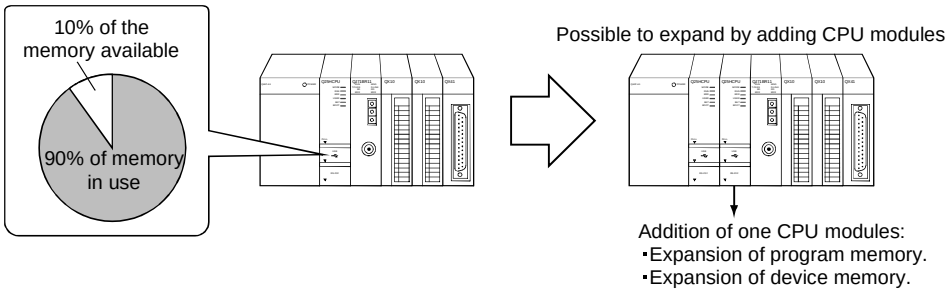
(b) High-speed control by dispersing the load brought about by control tact

By separating and isolating CPU modules for each control item, such as machine control and data processing, it is possible to enable high-speed control without affecting data processing or other processes.



(c) CPU modules additions make it possible to expand the program memory and the number of devices

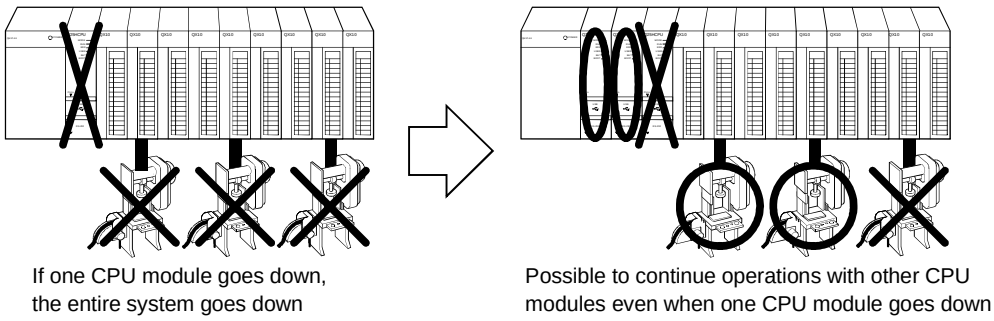
As it is not necessary to change I/O numbers when adding CPU modules, it is possible to expand program memory and the number of devices without having to amend existing programs.



(d) Possible to continue operations with other CPU modules even when one CPU module goes down

As the operations (continue/stop) for other CPU modules can be set with parameters when one CPU module goes down, it is possible to keep the damage to the entire system at a minimum when an error occurs with one CPU module.

However, operations for PLC No.2 to 4 will be suspended if PLC No.1, which controls the multiple PLC system, goes down.



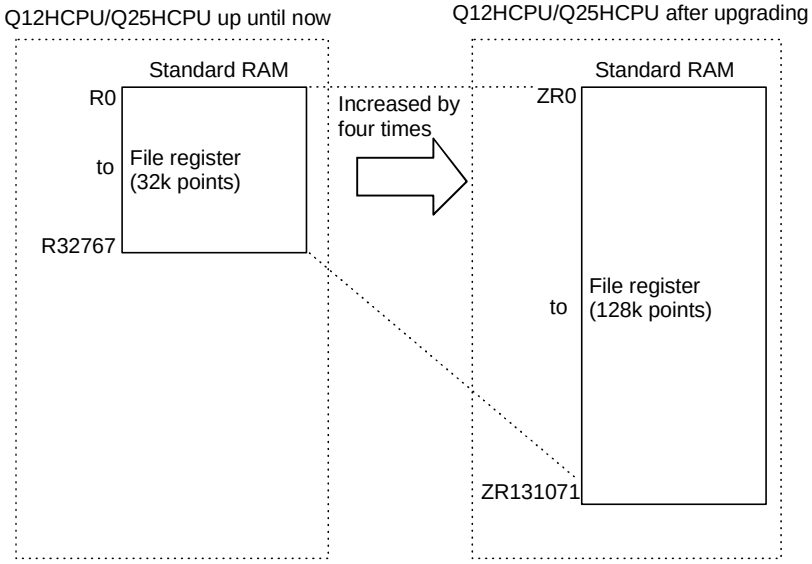
2. Standard RAM capacity increased by four times

The capacity of the standard RAM in the Q12HCPU and Q25HCPU has been increased from 32k words to 128k words.

This enables the standard RAM to use more file registers and local devices.

The following effects are now possible simply by amending the local device settings in the standard RAM for those users who up until now have had to set the file registers and local devices in memory cards owing to insufficient memory capacity in the standard RAM.

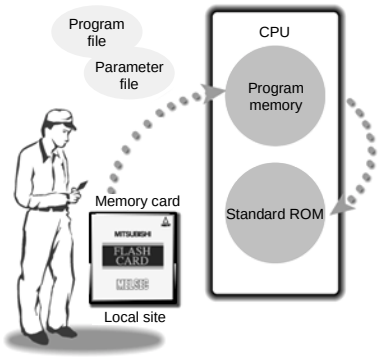
- Reduction of QCPU scan time *
- Cost reductions (memory cards no longer needed)



*: The remove/restore time for 4k point local devices with eight files has been reduced from 31.5ms to 6ms.

3. Overwriting on the standard ROM made possible with the memory card (Automatic write to standard ROM)

The automatic write to standard ROM function automatically writes the parameters and sequence programs already stored in the memory card across to the QCPU's standard ROM.



The simple amendment of programs away from the local site.

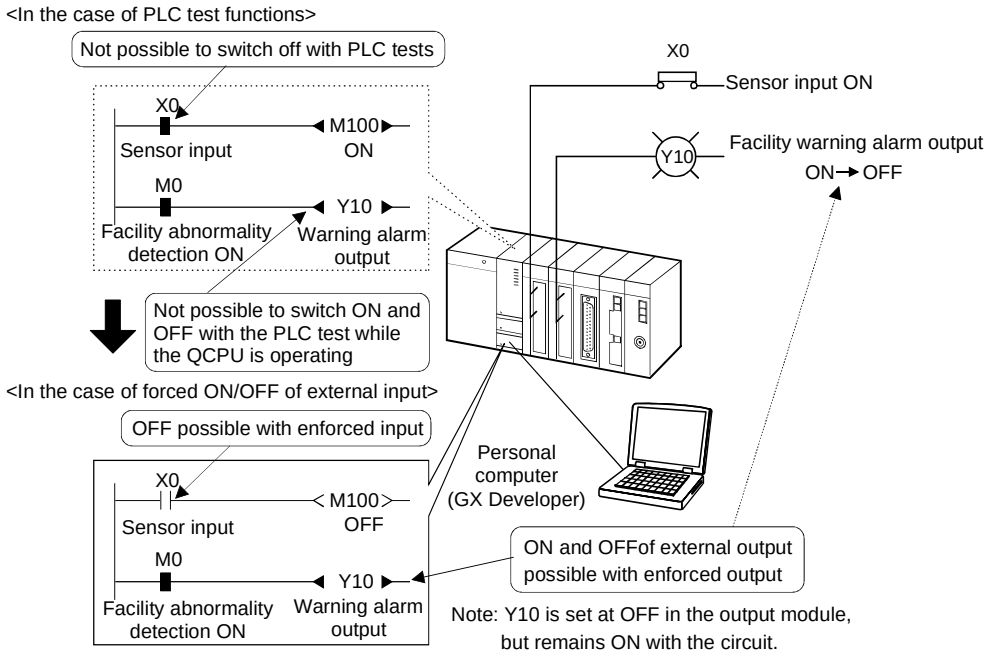
- Personal computers (GX Developer) are not required for installing programs.
  It is no longer necessary to take a personal computer when installing programs amended by the design office into the QCPU at a local sites.
- Only necessary to send a memory card to distant sites.
  The local operator only needs to insert the memory card into the QCPU.
  (Dipswitch setting are necessary.)

ATA cards are useful for memory cards.

- Saving from the program lost by battery out.
- Easy to load the data from a personal computer.

4. Possible to debug the QCPU during operations (Forced ON/OFF of external inputs/outputs)

The forced ON/OFF of external inputs/outputs is a function that enables the GX Developer to forcibly switch the input (X) and output (Y) ON and OFF while the QCPU is operating.



[Forced ON/OFF of external input]

The enforced OFF function can set the system at OFF without disconnecting the external lines when the sensor remains ON.

[Forced ON/OFF of external output]

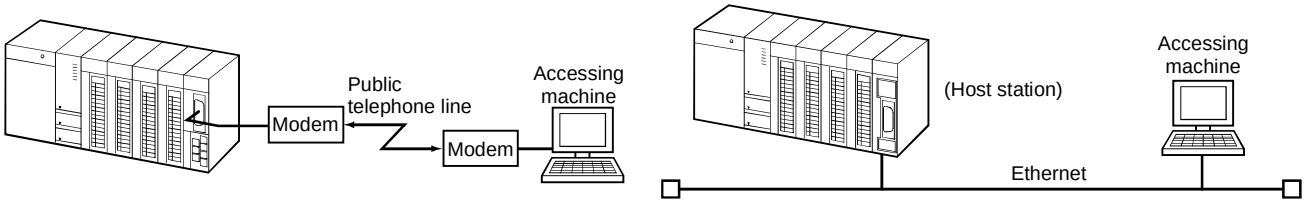
By forcibly setting the warning alarm output signal for other facilities to OFF when it remains on during facility start-up, it is possible to resolve the system error and continue with test operations.

5. Possible to restrict access from external sources (Remote password setting)

(1) The remote password prevents remote users from illegally accessing the QCPU from remote locations (the remote passwords restricts the writing of parameters, sequence programs and device data.)

The remote password set will be written into the QCPU as a parameter.

[During access via public telephone lines] [During access via Ethernets]

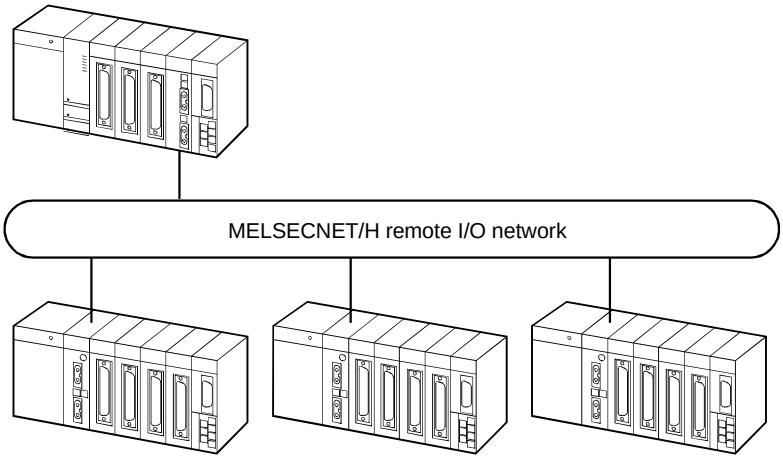


(2) Remote passwords are made possible through combinations of the following modules.

- Serial communication modules of function version B (QJ71C24 (-R2))
- Ethernet modules of function version B (QJ71E71 (-B2))

6. Compatible with MELSECNET/H remote I/O networks

(1) It is compatible with a remote I/O system with the use of Q series I/O.



(2) The MELSECNET/H module (QJ71LP21-25, QJ71BR11) of function version B is necessary to structure a MELSECNET/H remote I/O network.

[Compatible CPU]

Function	Relevant QCPU	Relevant GX Developer
Multiple PLC system compatibility	• QCPUs with function version B or higher (products shipped during and after November 2000)	Version 6 (SW6D5C-GPPW) or higher
Increased standard RAM capacity (Q12HCPU and Q25HCPU only)	• QCPUs with function version B or higher. • QCPUs with serial numbers of 02092 or higher (products shipped during and after September 2000)	
Automatic writing in the standard ROM		
Forced ON/OFF of external inputs/outputs		
Remote password setting		
MELSECNET/H remote I/O network compatible		

[Verifying the serial numbers and function versions]

The serial number and function version can be verified from the SERIAL column on the QCPU name plate. The serial numbers and function versions can also be verified for GX Developers.

SERIAL 02092 * * * * * * * * * -B

Serial number (first five digits)

Function version

[List of configurable functions]

The MELSEC-Q series modules listed below can be used without modification for multiple PLC systems.

- Input modules, output modules, I/O modules, power modules
- Basic base units, additional base units, addition cables

The intelligent function modules that are restricted for use with multiple PLC systems depending on the function version are listed below.

- Function version A modules can only be controlled with PLC No.1.
- The modules used with PLC No. 2 to 4 of a multiple PLC system should be those of function version B or later.

Product	Type	Description
MELSECNET/H module	QJ71BR11	10Mbps communication speed-compatible coaxial bus (control station, normal station, remote master station)
	QJ71LP21-25	10Mbps/25Mbps communication speed-compatible duplex optical bus (control station, normal station, remote master station)
Ethernet module	QJ71E71	Ethernet interface module (10BASE-T, 10BASE5)
	QJ71E71-B2	Ethernet interface module (10BASE2)
Serial communication module	QJ71C24	RS-232, RS-422/485, 1 channel each
	QJ71C24-R2	RS-232, 2 channels
CC-Link module	QJ61BT11	Master station, local station
FL-net module	QJ71FL71	FL-net (OPCN-2) interface module
Intelligent communication module	QD51	BASIC program, 2 channels of RS232C
	QD51-R24	BASIC program, 1 channel of RS232C, 1 channel of RS-422
Analog/digital conversion module	Q64AD	Analog input (voltage, current), 4 channels
	Q68ADV	Analog input (voltage), 8 channels
	Q68ADI	Analog input (current), 8 channels
Digital/analog conversion module	Q62DA	Analog output, 2 channels (voltage, current)
	Q64DA	Analog output, 4 channels (voltage, current)
Temperature control module	Q64TCTT	Temperature control module, thermocouple input, transistor output
	Q64TCTTBW	Temperature control module with disconnection detection function Thermocouple input, transistor output
	Q64TCRT	Temperature control module, platinum temperature-measuring resistor input, transistor output
	Q64TCRTBW	Temperature control module with disconnection detection function Platinum temperature-measuring resistor input, transistor output
Positioning module	QD75P1	Pulse train open collector output, 1 axis
	QD75P2	Pulse train open collector output, 2 axes
	QD75P4	Pulse train open collector output, 4 axes
	QD75D1	Pulse train differential output, 1 axis
	QD75D2	Pulse train differential output, 2 axes
	QD75D4	Pulse train differential output, 4 axes

Refer to the data book for details on the possibility of using AnS series I/O modules and special function modules.

[Manuals]

Manual name	Manual shipment type	IB/SH No.	Type code
QCPU(Q mode) User's Manual (Functions Explanation/Proguram Fundamentals)	Sold separately	SH-0080038-B	13JL98
QCPU(QMode)/QnACPU Programming Manual (Common Instructions)	Sold separately	SH-0080039-C	13JF58

Country/Region	Sales office	Tel/Fax
U.S.A	Mitsubishi Electric Automation Inc. 500 Corporate Woods Parkway Vernon Hills, IL 60061	Tel : 1-847-478-2100 Fax : 1-847-478-0328
Brazil	MELCO-TEC Rep. Com.e Assessoria Tecnica Ltda. Av. Rio Branco, 123-15 ,and S/1507, Rio de Janeiro, RJ CEP 20040-005, Brazil	Tel : 55-21-221-8343 Fax : 55-21-221-9388
Germany	Mitsubishi Electric Europe B.V. German Branch Gothaer Strasse 8 D-40880 Ratingen, GERMANY	Tel : 49-2102-486-0 Fax : 49-2102-486-717
U.K	Mitsubishi Electric Europe B.V. UK Branch Travellers Lane, Hatfield, Herts., AL10 8XB,UK	Tel : 44-1707-276100 Fax : 44-1707-278695
Italy	Mitsubishi Electric Europe B.V. Italian Branch Centro Dir. Colleoni, Pal. Perseo - Ingr.2 Via Paracelso 12, 20041 Agrate B., Milano, Italy	Tel : 39-039-6053301 Fax : 39-039-6053312
Spain	Mitsubishi Electric Europe B.V. Spanish Branch Pol. Ind. "Can Magi"- C/.Joan Buscalla, 2-4-A.C.420 08190 Sant Cugat del Valles, Barcelona, Spain	Tel : 34-935-653135 Fax : 34-935-891579
South Africa	MSA Manufacturing (Pty) Ltd. P O Box 39733 Bramley 201 8 Johannesburg, South Africa	Tel : 27-11-444-8080 Fax : 27-11-444-8304
Hong Kong	Ryoden International Ltd. 10th Floor, Manulife Tower, 169 Electric Road, North Point, HongKong	Tel : 852-2887-8870 Fax : 852-2887-7984
China	Ryoden International Shanghai Ltd. 3F Block5 Building Automation Instrumentation Plaza 103 Cao Bao Rd. Shanghai 200233 China	Tel : 86-21-6475-3228 Fax : 86-21-6484-6996
Taiwan	Setsuyo Enterprise Co., Ltd. 6F., No.105 Wu-Kung 3rd.RD, Wu-Ku Hsiang, Taipei Hsine, Taiwan R.O.C.	Tel : 886-2-2299-2499 Fax : 886-2-2299-2509
Korea	HAN NEUNG TECHNO CO.,LTD. 1F Dong Seo Game Channel Bldg., 660-11,Deungchon-dong Kangsec-ku, Seoul, Korea	Tel : 82-2-3668-6567 Fax : 82-2-3664-8335
Singapore	Mitsubishi Electric Asia Pte, Ltd. 307 ALEXANDRA ROAD #05-01/02, MITSUBISHI ELECTRIC BUILDING SINGAPORE 159943	Tel : 65-473-2480 Fax : 65-476-7439
Thailand	F. A. Tech Co.,Ltd. 898/28,29,30 S.V.CITY BUILDING,OFFICE TOWER 2,FLOOR 17-18 RAMA 3 ROAD,BANGKPONGPANG,YANNAWA,BANGKOK 10120	Tel : 66-2-682-6522 Fax : 66-2-682-6020
Indonesia	P.T. Autoteknindo SUMBER MAKMUR JL. MUARA KARANG SELATAN BLOK A UTARA NO.1 KAV. NO.11 KAWASAN INDUSTRI/ PERGUDANGAN JAKARTA - UTARA 14440	Tel : 62-21-663-0833 Fax : 62-21-663-0832
India	Messung Systems Put,Ltd. Electronic Sadan NO:111 Unit No15, M.I.D.C BHOSARI,PUNE-411026	Tel : 91-20-7128927 Fax : 91-20-7128108
Australia	Mitsubishi Electric Australia Pty. Ltd. 348 Victoria Road, PostalBag, No 2, Rydalmere, N.S.W 2116, Australia	Tel : 61-2-9684-7777 Fax : 61-2-9684-7245

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