

**Q Series | Mitsubishi | Q00 | Q01 | Q02 | Q06 | Q12 |
Q25 | Q17 | Q6 BAT | Q7 BAT | Q7 BAT | Q8 BAT**

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Mitsubishi

MELSEC - Q Series Platform



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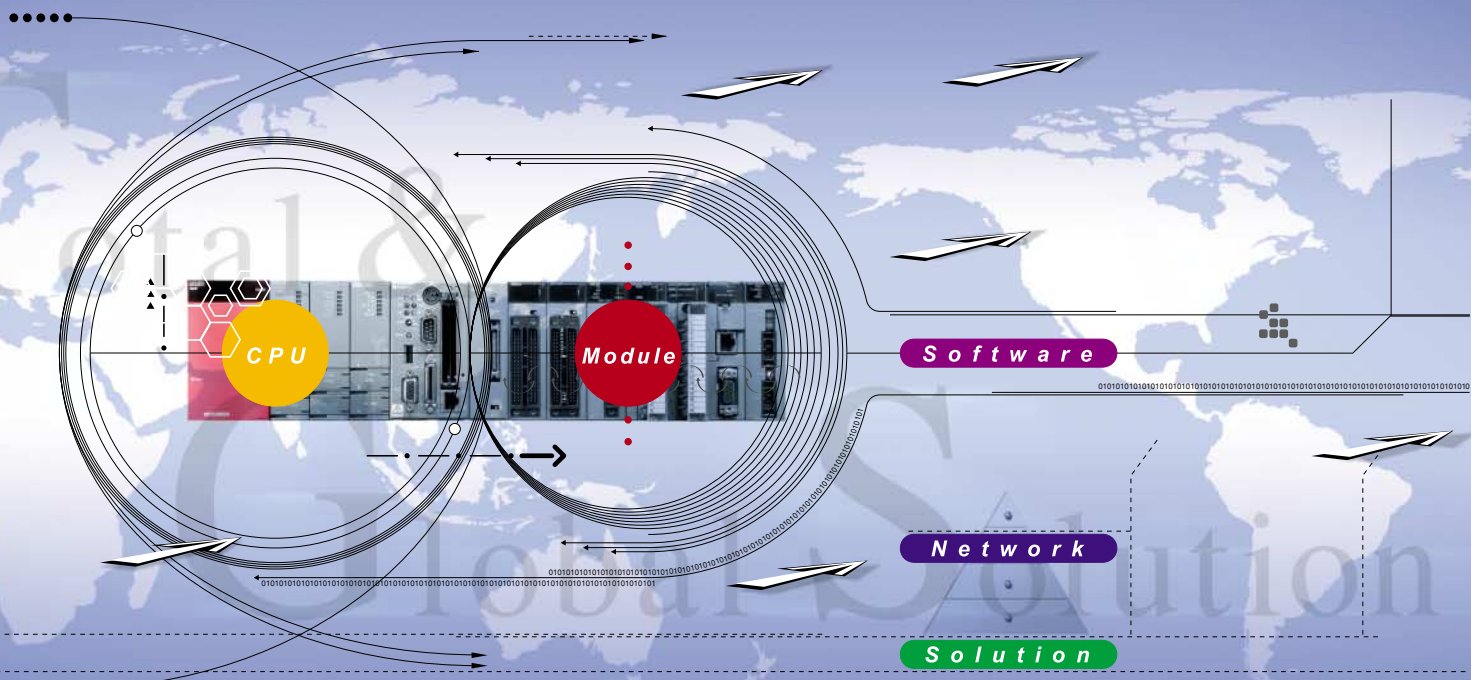


MITSUBISHI ELECTRIC

Mitsubishi Programmable Controllers

Changes for the Better

MELSEC Series



Mitsubishi Electric Corporation Nagoya Works is a factory certified for ISO14001 (standards for environmental management systems) and ISO9001 (standards for quality assurance management systems).

**Empowering
Industries**



CC-Link



Q Series lineup

CPU Modules

Programmable Controller CPU

Basic Model QCPU

CPU type	Program capacity	Number of I/O points
Q00JCPU	8k steps	256 points
Q00CPU	8k steps	1024 points
Q01CPU	14k steps	1024 points

High Performance Model QCPU

CPU type	Program capacity	Number of I/O points
Q02CPU	28k steps	4096 points
Q02HCPU	28k steps	4096 points
Q06HCPU	60k steps	4096 points
Q12HCPU	124k steps	4096 points
Q25HCPU	252k steps	4096 points

Process CPU

CPU type	Program capacity	Number of I/O points
Q12PHCPU	124k steps	4096 points
Q25PHCPU	252k steps	4096 points

Redundant CPU

CPU type	Program capacity	Number of I/O points
Q12PRHCPU	124k steps	4096 points
Q25PRHCPU	252k steps	4096 points

Motion CPU

CPU type	Number of control axes
Q172HCPU (-T)	8 axes
Q173HCPU (-T)	32 axes
Q172CPUN (-T)	8 axes
Q173CPUN (-T)	32 axes

Power Supply Modules

Q61SP [Slim type]
100 to 240V AC input
5V DC, 2A output

Q61P
100 to 240V AC input
5V DC, 6A output

Q62P
100 to 240V AC input
5V DC, 3A output
24V DC, 0.6A output

Q63P
24V DC input
5V DC, 6A output

Q64PN
100 to 240V AC input
5V DC, 8.5A output

Q63RP
24V DC input
5V DC, 8.5A output

Q64RP
100 to 120/200 to 240V AC input
5V DC, 8.5A output

Memory Cards

SRAM cards
Q2MEM-1MBS
Q2MEM-2MBS

Flash cards
Q2MEM-2MBF
Q2MEM-4MBF

ATA cards
Q2MEM-8MBA
Q2MEM-16MBA
Q2MEM-32MBA

PC card adapter
Q2MEM-ADP

Network/Information Processing Modules

MES Interface Module
QJ71MES96

Ethernet Modules
QJ71E71-100
QJ71E71-B5
QJ71E71-B2

MELSECNET/H Modules
QJ71LP21-25 QJ72LP25-25
QJ71LP21S-25 QJ72LP25G(E)
QJ71LP21G(E) QJ72BR15
QJ71BR11
MELSECNET/H PC I/F Boards
Q80BD-J71LP21-25
Q80BD-J71LP21S-25
Q80BD-J71LP21G(E)
Q80BD-J71BR11

CC-Link Module
QJ61BT11N
CC-Link PC I/F Board
Q80BD-J61BT11N

CC-Link/LT Module
QJ61CL12

Serial Communication Modules
QJ71C24N
QJ71C24N-R2
QJ71C24N-R4

FL-net (OPCN-2) Interface Modules
QJ71FL71-T-F01
QJ71FL71-B5-F01
QJ71FL71-B2-F01

AS-i Master Module
QJ71AS92

Intelligent Communication Modules
QD51
QD51-R24

Intelligent Function Modules

Analog Modules
A/D Converter Modules
Q64AD-GH Q68AD-G
Q62AD-DGH Q66AD-DG
Q64AD
Q68ADV
Q68ADI
D/A Converter Modules
Q62DA-FG Q68DAVN
Q62DAN Q68DAIN
Q64DAN Q66DA-G

Loop Control Module
Q62HLC

Positioning Modules
QD75P1 QD75MH1
QD75P2 QD75MH2
QD75P4 QD75MH4
QD75D1 QD75M1
QD75D2 QD75M2
QD75D4 QD75M4
QD70P4 QD72P3C3
QD70P8
QD70D4
QD70D8

Temperature Control Modules
Q64TCCT
Q64TCCTBW
Q64TCRT
Q64TCRTBW

Channel Isolated Pulse Input Module
QD60P8-G

Temperature Input Modules
Q64TDV-GH
Q64TD
Q68TD-G-H01
Q64RD-G
Q64RD

High Speed Counter Modules
QD62
QD62D
QD62E
QD63P6
QD64D2

Accessories

Batteries
Q6BAT
Q7BAT (-SE1)
Q8BAT (-SE1)
Q2MEM-BAT (for SRAM memory card)

Connectors for I/O Modules
40-pin connector type
A6CON1 (soldering type)
A6CON2 (crimp-contact type)
A6CON3 (IDC type)
A6CON4 (soldering and inclined insertion combination type)
37-pin D-sub connector type
A6CON1E (soldering type)
A6CON2E (crimp-contact type)
A6CON3E (IDC type)

DIN Rail Adapter
Q6DIN1
Q6DIN2
Q6DIN3

Spring Clamp Terminal Block
Q6TE-18S

IDC Terminal Block Adapter, Dedicated Tool
Q6TA32
Q6TA32-TOL

Connection Cable
QC30R2

Connector Disconnection Prevention Holder
Q6HLD-R2

Input Modules

Points	100 to 120V AC	100 to 240V AC	24V DC (positive common)	48V AC/DC (positive/negative common)	5/12V DC (positive/negative common)	24V DC (negative common)
8 points		QX28	QX48Y57 ^{*1}			
16 points	QX10		QX40 QX40-S1 QX41 QX41-S1 QH42P ^{*1} QX41Y41P ^{*1}	QX50	QX70	QX80
32 points					QX71	QX81
64 points			QX42 QX42-S1		QX72	QX82 QX82-S1

*1: Input specifications for I/O composite module

Output Modules

Points	Relay 24V DC, 240V AC	Triac 100 to 240V AC	Transistor 12 to 24V DC (sink)	Transistor 5 to 24V DC (sink/source)	Transistor 5 to 12V DC (sink)	Transistor 12 to 24V DC (source)
7 points			QX48Y57 ^{*2}			
8 points	QY18A			QY68A		
16 points	QY10	QY22	QY40P QY50		QY70	QY80
32 points			QY41P QH42P ^{*2} QX41Y41P ^{*2} QY42P		QY71	QY81P
64 points						

*2: Output specifications for I/O composite module

Base Units, Extension Cables

Slim Type Main Base Unit
Main base unit
(Power supply module required; cannot be extended)

Main Base Unit
Main base unit
(Power supply module required; can be extended)

Extension base unit
(Power supply module required; can be extended)

Extension base unit
(Power supply module not required; can be extended)

Redundant type extension base unit
(Power supply module required; can be extended; for redundant CPU system)

Extension Cables
QC05B (0.45m)
QC06B (0.6m)
QC12B (1.2m)
QC30B (3.0m)
QC50B (5.0m)
QC100B (10.0m)

Tracking Cable
QC10TR (1m)
QC30TR (3m)

Interrupt Module
QI60

Blank Cover
QG60

* Only the slim type power supply module (Q61SP) can be used.
* This does not support the process CPU or redundant CPU.

* Only Q68RB or Q5□B can be used as a redundant power extension base unit.

* The redundant CPU occupies two slots (CPU slot + I/O slot).

* The slim type power supply module (Q61SP) cannot be mounted.
* Q65WRB for the first extension base stage and Q68RB for the second to seventh extension base stage only.

MELSOFT

GX Developer
MELSEC programmable controller programming software

GX Simulator
MELSEC programmable controller simulation software

GX Explorer
Maintenance tool

GX Converter
Excel/text data converter

GX Configurator
Intelligent function module setting/monitoring tool

GX Remote Service-I
Remote access tool

PX Developer
Process control FBD software package

MT Developer
Q-motion integrated startup support software

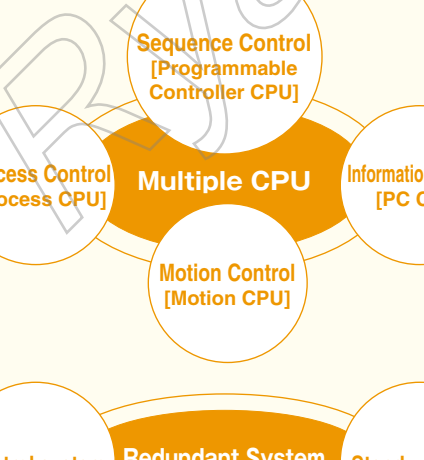
MR Configurator
Servo setup software

MX Component
ActiveX® library for communication

MX Sheet
Excel communication support tool

Wide range & Multiple applications

CPU



The diagram illustrates a **Multiple CPU** control system. At the center is a large orange circle labeled **Multiple CPU**. Surrounding this central circle are four smaller white circles, each connected to the center by a line. These circles represent different control functions:

- Sequence Control [Programmable Controller CPU]** (top)
- Information Control [PC CPU]** (right)
- Motion Control [Motion CPU]** (bottom)
- Process Control [Process CPU]** (left)

Below this main structure, there is a horizontal bar with three segments: **Control system**, **Redundant System**, and **Standby system**. The **Redundant System** segment is highlighted in orange, indicating its role in the system's redundancy.

Refer to page 45 for details on the partner product.

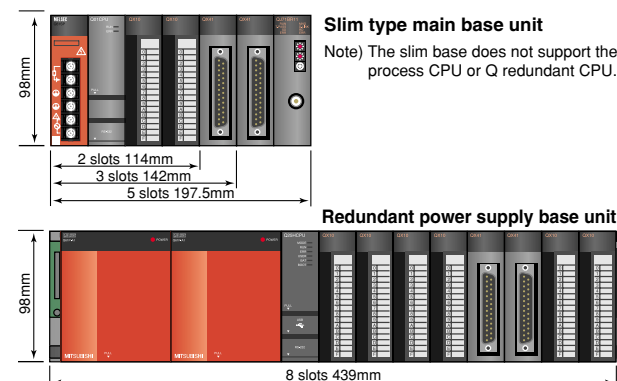
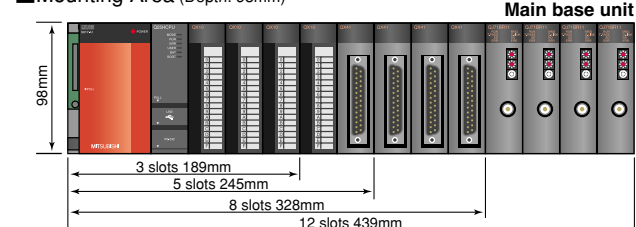


High performance and flexibility on a small footprint

Mounting Area

In the Q Series, 2, 3, 5, 8 and 12 I/O slot main base units are available. The mounting area can be further reduced by using the slim type base unit.

Mounting Area (Depth: 98mm)



Mounting Freedom

Choose from 2, 3, 5, 8 and 12 I/O slot bases to design the best system for the required application. Connect extension bases directly by using cables alone. Therefore, no need for network modules, adapters, or configuration software to distribute base units over an extended distance. Extension bases that do not require a power supply module are available to further reduce space and costs.

Types of slim type main base units (power supply module required)

Number of I/O Slots	Main Base	Mounting Dimensions (mm)
2	Q32SB	114 x 98
3	Q33SB	142 x 98
5	Q35SB	197.5 x 98

Note) The slim type main base unit cannot be connected with an extension base. This does not support the process CPU or redundant CPU.

Base unit types (power supply module required)

Number of I/O Slots	Main Base	Extension Base	Mounting Dimensions (mm)
3	Q33B	Q63B	189 x 98
5	Q35B	Q65B	245 x 98
8	Q38B	Q68B	328 x 98
12	Q312B	Q612B	439 x 98

Power supply redundant base unit

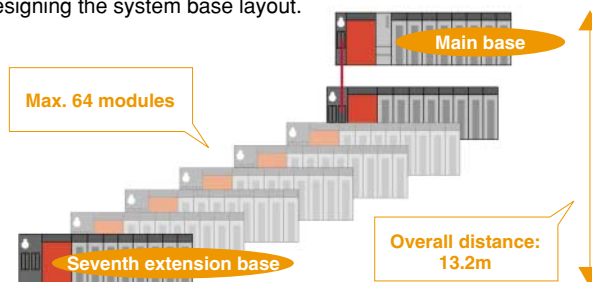
Number of I/O Slots	Redundant Main Base	Redundant Extension Base	Mounting Dimensions (mm)
8	Q38RB	Q68RB	439 x 98

Base unit types (Requires no power supply module)

Number of I/O Slots	Extension Base	Mounting Dimensions (mm)
2	Q52B	106 x 98
5	Q55B	189 x 98

Up to 7 Extension Bases Connectable

Up to seven extension bases (eight when counting the main base) can be connected to accept up to 64 modules. Also, the overall distance of extension cables is max. 13.2m, enabling high freedom for designing the system base layout.



CPU	Number of Extension Base Units	Number of Loaded Modules	Overall Extension Cable Length (m)
Basic Model	Q00JCPU	2 (max.)	16 (max.) (Note 3)
	Q00CPU	4 (max.)	24 (max.) (Note 3)
	Q01CPU		
High Performance Model	Q02CPU		
	Q02HCPU		
	Q06HCPU		
	Q12HCPU	7 (max.)	64 (max.) (Note 3)
	Q25HCPU		
Process CPU	Q12PHCPU		
	Q25PHCPU		
Redundant CPU	Q12PRHCPU	0 (Note 1)	11 (max.) (Note 2)
	Q25PRHCPU		

Note 1) Non-redundant modules are all mounted on the remote station side. (Up to 64 modules can be mounted on one remote station.)

Note 2) Up to seven power supply redundant modules can be mounted.

Note 3) If a 12-slot base is used, the maximum number of I/O, intelligent function and network modules mounted is 16/24/64 respectively.

Number of Control I/O Points

The Q Series can control a maximum of 8192 points (input device points) in a remote I/O network such as CC-Link, or a maximum of 4096 points (I/O points) for direct I/O only.

Note 1) Number of I/O points on main and extension bases directly controllable by a CPU module.

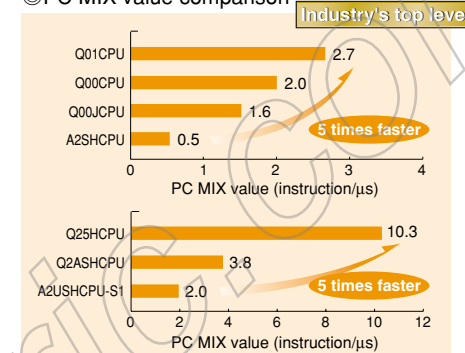
Note 2) Total number of I/O points on main and extension bases directly controllable by a CPU module and I/O points that can be controlled as remote I/O by a remote I/O network.

CPU	Number of I/O Points (Note 1)	Number of I/O Device Points (Including remote I/O points) (Note 2)
Basic Model	Q00JCPU	256
	Q00CPU	1024
	Q01CPU	
	Q02CPU	
High Performance Model	Q02HCPU	
	Q06HCPU	
	Q12HCPU	
	Q25HCPU	
Process CPU	Q12PHCPU	
	Q25PHCPU	
Redundant CPU	Q12PRHCPU	
	Q25PRHCPU	

Increased Operation Processing Speeds

Q Series offers some of the highest processing performance on the market today; basic operation processing speed is 34ns and PC MIX value is 10.3. By Mitsubishi's own "PC-MIX" performance metric, it is about 5 times faster than the A2USHCPU-S1 and about 2.7 times faster than the Q2ASHCPU. The CPU has dramatically increased floating-point operation speeds for PID and other arithmetic functions. The PC-MIX aims to replicate real-world application performance by executing a mixed instruction set.

PC MIX value comparison



CPU operation processing speeds

Instruction	Basic Model				High Performance Model	Process CPU	Redundant CPU
	Q00JCPU	Q00CPU	Q01CPU	Q02CPU	Q02HCPU Q06HCPU Q12HCPU Q25HCPU	Q12PHCPU Q25PHCPU	Q12PRHCPU Q25PRHCPU
LD (LD X0)	200ns	160ns	100ns	79ns		34ns	
OUT (OUT Y0)	200ns	160ns	100ns	158ns		68ns	
Timer (OUT T0 K5)	1100ns	880ns	550ns	632ns		272ns	
Transfer (MOV D0 D1)	700ns	560ns	350ns	237ns		102ns	
Addition (+D0 D1)	1000ns	800ns	500ns	395ns		170ns	
Floating-point addition (E+)	65.5μs	60.5μs	49.5μs	1815ns		782ns	
PC MIX value (Instruction/μs)	1.6	2.0	2.7	4.4		10.3	

* The PC MIX value is the average number of instructions such as the basic and data processing instructions executed in 1 μs. A larger value indicates a higher processing speed.

Program Capacities and Large Standard RAM Capacities

To construct small to large scale systems, the Q Series has a wide variation of CPU modules having 8k to 252k step program capacities and up to 256KB, large-capacity standard RAMs, to meet the application requirements from basic sequence control up to complex multi-discipline applications.

A standard ROM (flash ROM) is built-in to enable ROM operation without a memory card. The efficient use of memory space allows the Q Series CPU to contain substantially more the program than the A Series CPU. (Example: the basic model CPUs contain twice the program of A Series.)

CPU	Program Capacity (Steps)	Device Memory (Words)	Standard RAM (Bytes) (Note)	Standard ROM (Bytes)	Memory Card (Number of slots)
Basic Model	Q00JCPU	8k		No	58k
	Q00CPU	14k		128k	94k
	Q01CPU			64k	112k
High Performance Model	Q02CPU	28k		128k	240k
	Q02HCPU			256k	496k
	Q06HCPU	60k		256k	1008k
	Q12HCPU	124k		256k	496k
	Q25HCPU	252k		256k	1008k
Process CPU	Q12PHCPU	124k		256k	496k
	Q25PHCPU	252k		256k	1008k
Redundant CPU	Q12PRHCPU	124k		256k	496k
	Q25PRHCPU	252k		256k	1008k

Note) Memory that stores the data used in sequence programs such as file registers and local devices (with the exception of Basic Model CPU). As a built-in type RAM, the sequence program having a lot of file registers and local devices stored in standard RAM can run rapidly.

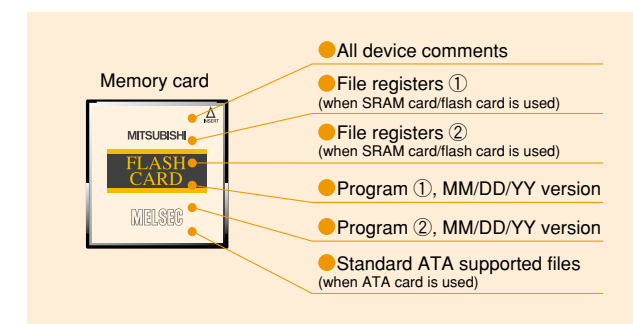
Extended Memory

The high performance model QCPU, process CPU and redundant CPU are equipped with a small PC card I/F into which the following extension memory can be mounted: SRAM card: 1M/2MB, Flash card: 2M/4MB, ATA card: 8M/16M/32MB. This large capacity extension memory facilitates management of large files. The extension memory allows massive system documentation to reside in the controllers. Storage for file register data, device comments and program histories is also possible.

Memory capacity

Type	Model	Capacity	Number of Storable Files
SRAM card	Q2MEM-1MBS	1011.5KB (Note)	256
	Q2MEM-2MBS	2034KB (Note)	
FLASH card	Q2MEM-2MBF	2035KB	288
	Q2MEM-4MBF	4079KB	
ATA card	Q2MEM-8MBA	7940KB (Note)	512
	Q2MEM-16MBA	15932KB (Note)	
	Q2MEM-32MBA	31854KB (Note)	

Note) The SRAM card and ATA card memory capacity is the value after formatting.



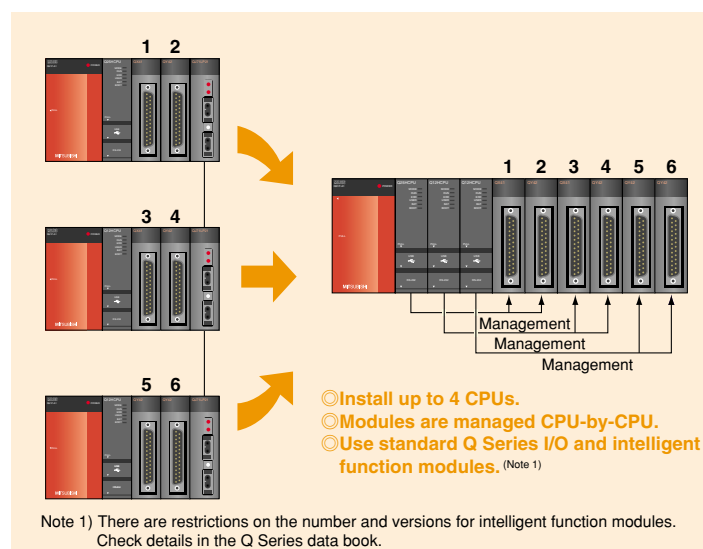


Multi CPUs break through the limitation of programmable controller.

Multiple CPU System Configuration

The Q Series can combine multiple CPUs together on the same system to build the required application configuration. Control of I/O modules can be segmented between different CPUs. CPUs communicate with each other via shared memory, and can increase system performance by distributing tasks between different CPUs. A variety of methods exist for controlling the methods by which CPUs communicate, but in each case the development effort is simplified by available software tools.

* The redundant CPU does not support the multiple CPU.



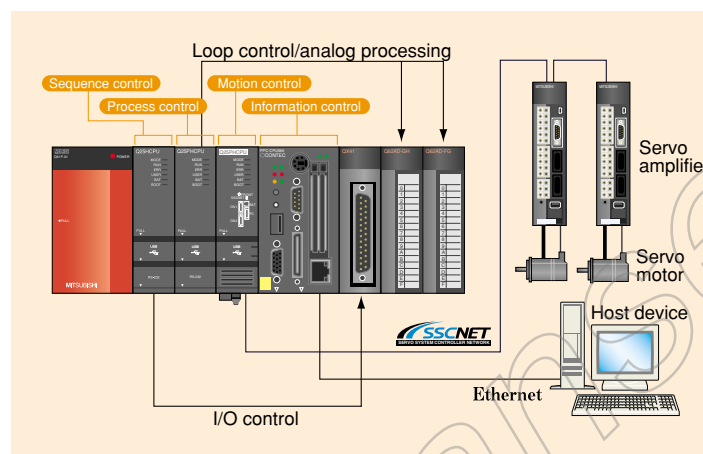
Integration of Process CPU, Motion CPU, and PC CPU

The Q Series multiple CPU system function allows programmable controller CPU, process, motion, and personal computer CPUs to be mounted together, enabling utilization of their respective strong points and design of an optimal system.

Note) Only the following combinations can be used with the Basic Model.

- Basic Model CPU + Motion CPU
- Basic Model CPU + PC CPU
- Basic Model CPU + Motion CPU + PC CPU

* SSCNET is a high-speed serial communication network that links motion CPUs and servo amplifiers with less wiring. SSCNET & SSCNETII are metal cable types, and SSCNETIII is a fiber optic cable type.



The broader line-up of CPU provide solution for diverse area of control.

Process Control

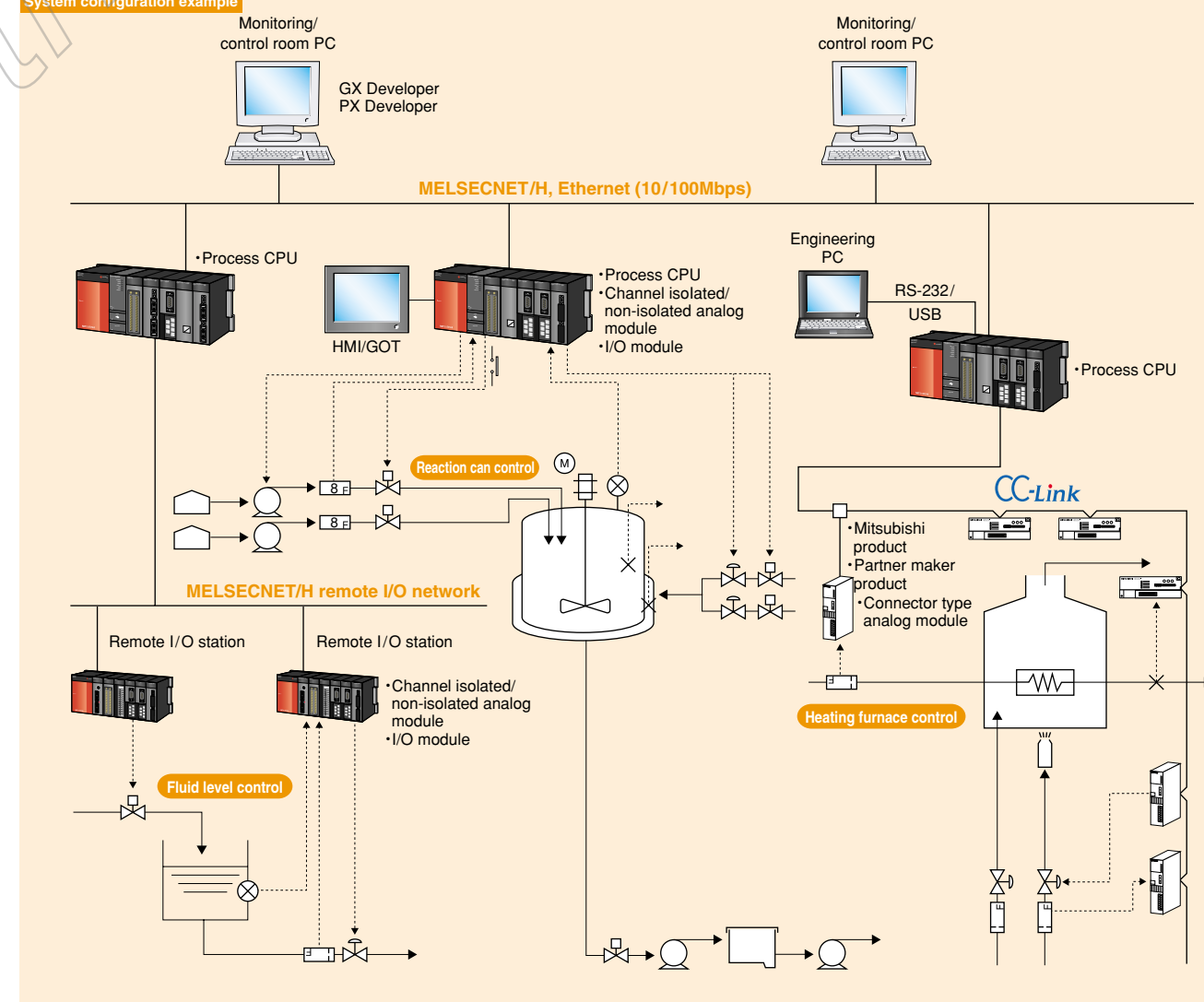
Process CPU

Q Series offers a feature that rivals those of costly DCS systems at a fraction of the cost. Q Series is adept at the automation of process systems with the simple addition of one or more process CPUs to the controller. The process CPUs are complemented by a range of channel isolated high resolution analog I/O modules with online change (hot-swap) capability, and the PX Developer function block programming software environment. (Refer to the "MELSEC PROCESS CONTROL/REDUNDANT SYSTEM" brochure for more information on the process CPU.)

- The "Process CPU" builds on the capability of the equivalent sequence CPU with the addition of an array of powerful process instructions.
- "Channel isolated high resolution analog module" further enhances process control using the programmable controller.
- A highly specialized process control system can be easily built using the engineering environment provided by the PX Developer process control software.
- Easy maintenance and high reliability are possible due to features which permit online module changes, etc.
- Combine the Process CPUs with the redundant network capabilities of the MELSECNET/H control level network. This offers high performance, robust, and deterministic communications between multiple Q Series systems, regardless of their assigned control tasks.



System configuration example





Redundant CPU system

Redundant CPU

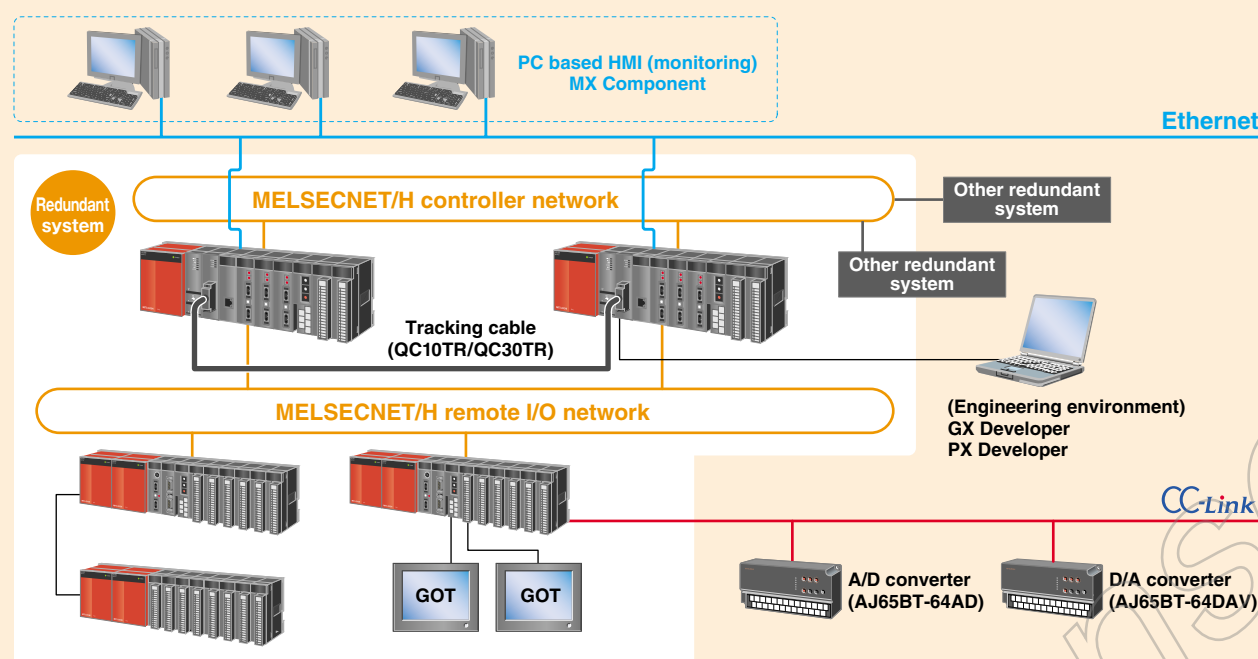
The redundant system prevents the sudden fault. An entire system including the power supply module, CPU and base unit is designed with redundancy. It provides the suitable system for diverse area of automation.

- Even if a failure occurs in the control system, the standby system takes over the control to continue the system operation.
- The Q Series products, such as I/O, intelligent and network modules, can be used without any changes (except for some modules*).
- The remote I/O reduces risks with decentralized control.
- GX Developer and PX Developer offer simple engineering environment for redundant system settings with the original operability.

*There are restrictions on the usable version when configuring a redundant system.

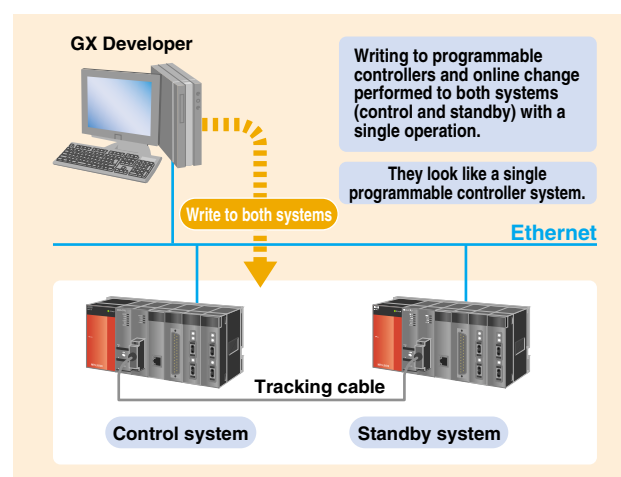


System configuration example



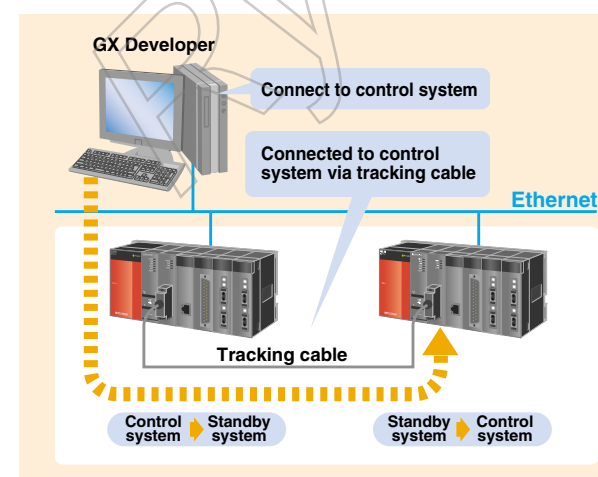
Easy program modification for both control and standby systems

- Write programs and parameter files to programmable controllers
- Online change while editing a program



Continue operations even at system switching

If system switching occurs due to a stop error inside the CPU, the access target is automatically switched to the other system via the network. This enables continuous operation so that the user need not pay attention to system switching.



Motion Control

Motion CPU

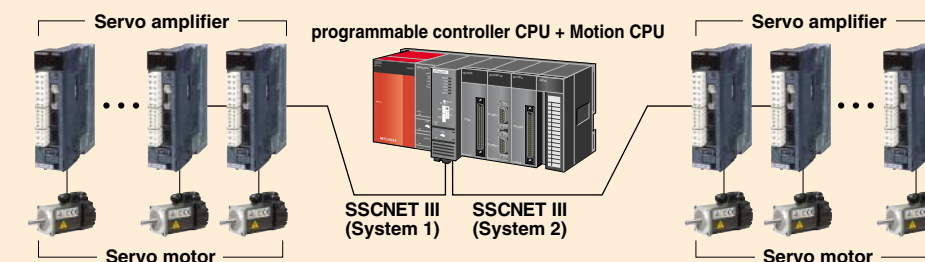
Mitsubishi Electric motion controller realizes high-speed control of up to 32 axes (96 axes when using the maximum three multiple CPUs) with one CPU having the same size as the Q Series programmable controller. This offers large cost savings, especially when complex wiring is eliminated due to the "daisy-chain" connection of Mitsubishi intelligent digital servos. (Refer to the "Motion Controller Catalog" for more information on the Motion CPU.)

- Offers a minimum motion operation cycle time of 0.44ms (when using Q172HCPU/Q173HCPU), faster cam operation, and a shorter operation tact.
- Together with the shortened communication cycle time (0.44ms), the synchronization performance and speed/positioning control accuracy is substantially improved.
- Motion CPU can be used together with any type of Q Series CPU as required.
- Via Mitsubishi's high performance SSCNET motion network technology, Q Series offers significant engineering and operation benefits for motion control.

* SSCNET is a high-speed serial communication network that connects the motion CPU and servo amplifier. SSCNET is available with a metal cable (SSCNET/SSCNET II) or a fiber optic cable (SSCNET III).



System configuration example



Information Control

PC CPU

Q Series is unique in being able to mount a full-featured Windows™ PC in a robust industrial format directly on the Q Series base unit. This offers the potential to combine it with other Q Series CPU types, therefore fully integrating it into the Q I/O system to give complete access to all I/O modules and networking, allowing maximum design flexibility.

- Industrial specification level environmental and noise performance specifications.
- Choose HDD or silicon disk mass storage depending on the operating environment.
- Utilize third party PC applications available for Microsoft™ Windows™, offering a virtually unlimited application scope.
- Includes a wide variety of ports and connections to add third party hardware devices.

Note) The PC CPU is manufactured by CONTEC, Co., Ltd. Refer to the "Partner Products" on pages 45 and 46 for more information.





CPU module performance specifications

Programmable Controller CPU

Item		Basic Model			High Performance Model				
		Q00JCPU	Q00CPU	Q01CPU	Q02CPU	Q02HCPU	Q06HCPU	Q12HCPU	Q25HCPU
Control method		Sequence program control method							
I/O control mode		Refresh							
Programming language (sequence control language)		* Relay symbol language (ladder)			* Relay symbol language (ladder)				
		* Logic symbolic language (list)			* Logic symbolic language (list)				
		* MELSAP3 (SFC), MELSAP-L			* MELSAP3 (SFC), MELSAP-L				
		* Structured text (ST)			* Structured text (ST)				
Processing speed (Sequence instruction) (Note 1)	LD instruction	200ns	160ns	100ns	79ns	34ns			
	MOV instruction	700s	560ns	350ns	237ns	102ns			
	PC MIX value (instruction/μs) (Note 2)	1.6	2.0	2.7	4.4	10.3			
	Floating-point addition	65.5μs	60.5μs	49.5μs	1815ns	782ns			
Total number of instructions (Note 3)		318	327		381				
Operation (floating point calculation) instruction		Yes			Yes				
Character string processing instruction		Yes (Note 6)			Yes				
PID instruction		Yes			Yes				
Special function instruction (Trigonometric function, square root, exponential operation, etc.)		Yes			Yes				
Constant scan (Function for keeping regular scan time)		1 to 2000ms (set in 1ms units)			0.5 to 2000ms (set in 0.5ms units)				
Program capacity		8k steps		14k steps	28k steps		60k steps	124k steps	252k steps
Number of I/O device points [X/Y]		2048 points			8192 points				
Number of I/O points [X/Y]		256 points	1024 points		4096 points				
Internal relay [M]	(Note 4)	8192 points			8192 points				
Latch relay [L]		2048 points			8192 points				
Link relay [B]		2048 points			8192 points				
Timer [T]		512 points			2048 points				
Retentive timer [ST]		0 points			0 points				
Counter [C]		512 points			1024 points				
Data register [D]		11136 points			12288 points				
Link register [W]		2048 points			8192 points				
Annunciator [F]		1024 points			2048 points				
Edge relay [V]		1024 points			2048 points				
File register [R, ZR]		No	65536 points		32768 points (Note 5)	65536 points (Note 5)		131072 points (Note 5)	
Special link relay [SB]		1024 points			2048 points				
Special link register [SW]		1024 points			2048 points				
Step relay [S]		2048 points			8192 points				
Index register [Z]		10 points			16 points				
Pointer [P]		300 points			4096 points				
Interrupt pointer [I]		128 points			256 points				
Special relay [SM]		1024 points			2048 points				
Special register [SD]		1024 points			2048 points				
Function input [FX]		16 points			16 points				
Function output [FY]		16 points			16 points				
Function register [FD]		5 points			5 points				
Local device		No			Yes				
Device initial values		Yes			Yes				

Note 1) The processing time will not be delayed if the devices are indexed.
Note 2) The PC MIX value is the average number of instructions, such as basic instructions or data processing instructions, which can be executed in 1μs. The processing speed will rise as the value increases.
Note 3) The intelligent function module dedicated instructions are not included.
Note 4) Indicates the number of points in the default state. This can be changed with the parameters.
Note 5) Indicates the number of points when using the built-in memory (standard RAM).
This can be expanded with the SRAM card or Flash card. (Writing from the program is not possible when using the Flash card.)
Up to 1041408 points can be used when using the SRAM card.
Note 6) The character strings can be used only with the character string data transfer instruction (\$MOV).

Process CPU

Item		Process CPU	
		Q12PHCPU	Q25PHCPU
Control method		Sequence program control method	
I/O control mode		Refresh	
Programming language	Sequence control language	* Relay symbol language (ladder) * Logic symbolic language (list) * MELSAP3 (SFC), MELSAP-L * Structured text (ST)	
	Language for process control	Process control FBD (Note 2)	
Processing speed (Sequence instruction) (Note 1)	LD instruction	34ns	
	MOV instruction	102ns	
	PC MIX value (instruction/μs) (Note 3)	10.3	
	Floating-point addition	782ns	
Total number of instructions (Note 4)		415	
Operation (floating point calculation) instruction		Yes	
Character string processing instruction		Yes	
Processing instruction		Yes	
Special function instruction (Trigonometric function, square root, exponential operation, etc.)		Yes	
Constant scan (Function for keeping regular scan time)		0.5 to 2000ms (set in 0.5ms units)	
Program capacity		124k steps	252k steps
Loop control specifications	Instructions for process control	52 types	
	Number of control loops	No limit (Note 4)	
	Control cycle	10ms or more/control loop Setting available per loop	
	Main functions	2-degree of freedom PID control, cascade control, auto-tuning function, feed forward control	
Number of I/O device points [X/Y]		8192 points	
Number of I/O points [X/Y]		4096 points	
Internal relay [M]	(Note 6)	8192 points	
Latch relay [L]		8192 points	
Link relay [B]		8192 points	
Time [T]		2048 points	
Retentive timer [ST]		0 points	
Counter [C]		1024 points	
Data register [D]		12288 points	
Link register [W]		8192 points	
Annunciator [F]		2048 points	
Edge relay [V]		2048 points	
File register [R, ZR]			131072 points (Note 7)
Special link relay [SB]			2048 points
Special link register [SW]			2048 points
Step relay [S]			8192 points
Index register [Z]			16 points
Pointer [P]			4096 points
Interrupt pointer [I]			256 points
Special relay [SM]			2048 points
Special register [SD]			2048 points
Function input [FX]			16 points
Function output [FY]			16 points
Function register [FD]			5 points
Local device			Yes
Device default values			Yes

Note 1) The processing time will not be delayed if the devices are indexed.
Note 2) PX Developer is required for programming by FBD.
Note 3) The PC MIX value is the average number of instructions, such as basic instructions or data processing instructions, which can be executed in 1μs. The processing speed will rise as the value increases.
Note 4) The intelligent function module dedicated instructions are not included.
Note 5) The number of control loops is restricted by the combination of the device memory capacity (128 words/loop used) and the control cycle.
Note 6) Indicates the number of points in the default state. This can be changed with the parameters.
Note 7) Indicates the number of points when using the built-in memory (standard RAM).
This can be expanded with the SRAM card or Flash card. (Writing from the program is not possible when using the Flash card.)
Up to 1041408 points can be used when using the SRAM card.



Redundant CPU

Item		Redundant CPU	
		Q12PRHCPU	Q25PRHCPU
Control system		Sequence program control method	
I/O control		Refresh mode	
Programming language	Sequence control language	• Relay symbol language (ladder) • Logic symbolic language (list) • MELSAP3 (SFC) • Structured text (ST)	
	Process control language	• Process control FBD ^(Note 1)	
Instruction types		Sequence, basic, application and process control instructions (Process control instruction types: Control/Operation instructions, I/O control instructions, compensation operation instructions, arithmetic operation instructions, comparison operation instructions, auto-tuning instructions)	
Loop control specifications	Control cycle	10ms or more/control loop (Setting available per loop)	
	Number of control loops	No limit ^(Note 2)	
RAS	Main functions	2 degree of freedom PID control, cascade control, auto-tuning function, feed forward control	
	Online module replacement	The I/O, analog, temperature input, temperature control, and pulse input modules can be replaced (on a remote I/O station).	
	Output in case of error stop	Clear or output retention can be designated for each module.	
Functions compatible with redundant system		• Redundant configuration of the entire system, ----- Hot standby system for the control and standby systems online module change, including the CPU, the power supply, and the base unit selection of backup and separate modes available	
		• Large-capacity data tracking ----- Large-capacity device data transfer (100k words) from the control system to the standby system	
		• Network system compatible with redundant system ----- Switchover in case of MELSECNET/H or Ethernet module malfunction or network wire disconnection	
		• Engineering environment (GX Developer) ----- The control or standby system can be designated by direct CPU connection or communication with programming tools ----- connection via a network	
		Online program change function ----- Programmable controller write, online program change, online multi-block change	
		Memory copy function ----- Copying memory data from the control system to the standby system ^(Note 4)	
		Redundant system setting ----- The tracking device and network pairing can be set with parameters.	
Communication port		USB, RS-232	
Modules that can be mounted on the main base unit		Q Series network module (Ethernet, MELSECNET/H, CC-Link only), input/output module can be mounted.	
Programming software		GX Developer	
		PX Developer	
Program capacity	Number of steps	124k steps	252k steps
	Number of programs	124	252 ^(Note 3)
Device memory capacity ^(Note 5)		Device memory: 29k words / File register (internal): 128k words (It can be expanded up to 1017k words by adding a memory card [2MB].)	
Number of I/O device points ^(Note 6)		8192 points	
Number of I/O points ^(Note 7)		4096 points	
Number of CPUs mounted		1 (Multiple CPU configuration is not available)	
Number of mountable modules		11 on the main base unit (7 when the power supply is redundant type)	
Number of extension base		0 (All non-redundant modules are mounted on the remote I/O station [the maximum number of modules that can be mounted on a remote station is 64].)	
Number of remote I/O points		8192 points (up to 2048 points per station)	

Note 1) PX Developer is required for programming by FBD.
Note 2) The number of control loops is restricted by the combination of the device memory capacity (128k words/loop used) and the control cycle.
Note 3) The maximum number of files that can be executed is 124. It is impossible to execute 125 or more files. Two SFC/MELSAP-Ls are available, one of which is a program execution control SFC.
Note 4) The standard RAM, standard ROM and program memory can be copied from the control system to the standby system. The memory card cannot be copied.
Note 5) Each number of device points in the data memory can be changed within 29k words, depending on the parameters.
Note 6) Total number of the I/O points on the main base unit, which are directly controlled from the CPU module, and the I/O points controlled as remote I/O by the remote I/O network.
Note 7) The number of I/O points on the main base unit, which are directly controlled from the CPU module.

Motion CPU

Item		Q173HCPU (-T)	Q172HCPU (-T)	Q173CPUN (-T)	Q172CPUN (-T)
Number of control axes	SV13/SV22/SV43	32 axes	8 axes	32 axes (Max. of 16 axes × 2 per system)	8 axes
	SV54	—	—	16 axes (Max. of 4 axes per machine)	8 axes (Max. of 4 axes per machine)
Operation cycle (default) (Note 1)	SV13	0.44ms / 1 to 3 axes	0.44ms / 1 to 3 axes 0.88ms / 4 to 8 axes	0.88ms / 1 to 8 axes	0.88ms / 1 to 8 axes
		0.88ms / 4 to 10 axes		1.77ms / 9 to 16 axes	
		1.77ms / 11 to 20 axes		3.55ms / 17 to 32 axes	
	SV22/SV43	0.88ms / 1 to 5 axes	0.88ms / 1 to 5 axes	0.88ms / 1 to 4 axes	0.88ms / 1 to 4 axes
		1.77ms / 6 to 14 axes	1.77ms / 6 to 8 axes	1.77ms / 5 to 12 axes	1.77ms / 5 to 8 axes
3.55ms / 15 to 28 axes		3.55ms / 13 to 24 axes	3.55ms / 13 to 24 axes	3.55ms / 13 to 24 axes	
SV54	7.11ms / 29 to 32 axes	7.11ms / 25 to 32 axes	7.11ms / 25 to 32 axes	7.11ms / 25 to 32 axes	
	—	—	3.55ms / 1 to 8 axes	3.55ms / 1 to 8 axes	
Interpolation functions	SV13/SV22/SV43	Linear interpolation (Up to 4 axes), Circular interpolation (2 axes), Helical interpolation (3 axes)			
	SV54	3D linear interpolation (max. 4 axes), joint interpolation (max. 4 axes), 3D circular interpolation (max. 4 axes)			
Control method	SV13/SV22	PTP (Point To Point) control, Speed control, Speed/position switching control, Fixed-pitch feed, Constant-speed control, Position follow-up control, Prescribed position stop speed control (Q173HCPU(-T) / Q172HCPU(-T)), Speed switching control, High-speed oscillation control, Synchronous control (SV22)			
	SV43	PTP (Point To Point), Constant-speed positioning, High-speed oscillation control			
	SV54	PTP (Pose To Pose) control, CP (Configuraus Path) control			
Acceleration/deceleration control		Trapezoidal acceleration/deceleration, S-curve acceleration/deceleration, Post-interpolation acceleration/deceleration (SV54)			
Compensation function		Backlash compensation, Electronic gear, Phase compensation (SV22)		Backlash compensation, Electronic gear	
Programming tool	SV13/SV22	Motion SFC, Dedicated instruction, Mechanical support language (SV22)			
	SV43	EIA language (G-code)			
	SV54	Robot language (MELFA-BASIC IV (Lite))			
Servo program (dedicated instruction) capacity	SV13/SV22	14k steps			
	SV43	248KB			
	SV54	Capacity of 1 program file: Max. 64KB Total capacity of all program files: Max. 339KB			

Item		Q173HCPU (-T)	Q172HCPU (-T)	Q173CPUN (-T)	Q172CPUN (-T)
Number of programs (SV54)		Max. 255			
Number of positioning points	SV13/SV22	3200 points (positioning data can be set indirectly)			
	SV43	Approx. 10600 points (indirect setting possible)			
	SV54	Internal variables: 1022 points / program External variables: 40 points (Indirect setting possible; position type [pose], or joint type [Joint] format)			
Programming tool		IBM PC/AT			
Peripheral I/F		USB / SSCNET		USB / RS-232 / SSCNET	
Teaching function		Provided (when using Q17□HCPU-T / Q17□CPUN-T, SV13/SV54)			
Home position return function		Proximity dog type (2 types), Count type (3 types), Data set type (2 types), Dog cradle type, Stopper type (2 types), Limit switch combined type			
Jog operation function		Function present (with incremental feed function [SV54])			
Manual pulse generator operation function		Possible to connect 3 modules			
Synchronous encoder operation function		Possible to connect 12 modules (SV22 use)	Possible to connect 8 modules (SV22 use)	Possible to connect 12 modules (SV22 use)	Possible to connect 8 modules (SV22 use)
M-code function		M-code output function provided, M-code completion wait function provided			
Limit switch output function		Number of output points: 32 points Watch data: Motion control data/Word device			
ROM function		Yes		No	
Absolute position system		• Made compatible by setting battery to servo amplifier (Possible to select the absolute/incremental data method for each axis)			
Number of controlled machines (SV54)	Axis control machines	8 machines			
	Management machines	8 machines			
WAIT function (SV54)		With "Waiting for WAIT status" function, and "Device type/No. specific output during WAIT" function			
Number of Motion related modules	Q172LX: 4 modules		Q172LX: 1 module	Q172LX: 4 modules	Q172LX: 1 module
	Q172EX-S2: 6 modules (Note 2)		Q172EX-S2: 4 modules (Note 1)	Q172EX: 6 modules (Note 1)	Q172EX: 4 modules (Note 1)
	Q173PX: 4 modules (Note 3)		Q173PX: 3 modules (Note 2)	Q173PX: 4 modules (Note 2)	Q173PX: 3 modules (Note 2)
Program capacity	Code total (Motion SFC diagram + Operation control + Transition)		543KB	287KB	
	Test total (Operation control + Transition)		484KB	224KB	
Number of I/O (X/Y) points		8192 points			
Number of real I/O (PX/PY) points		256 points			
Number of devices	Internal relays (M)	Total (M+L): 8192 points			
	Latch relays (L)				
	Link relays (B)				
	Annunciators (F)	8192 points			
	Special relay (M)	2048 points			
	Data registers (D)	256 points			
	Link registers (W)	8192 points			
	Special register (D)	8192 points			
	Motion registers (#)	256 points			
	Coasting timers (FT)	8192 points			

Note 1) SV43 is not used at Q172EX and Q172EX-S2.
Note 2) The incremental synchronous encoder use (SV22). When connecting the manual pulse generator, you can use only one module.

GENERAL SPECIFICATIONS

General specifications indicate the environmental specifications in which this product can be installed and operated. Unless otherwise specified, the general specifications apply to all products of the Q Series. Install and operate the Q Series products in the environment indicated in the general specifications.

Item	Specifications				
Operating ambient temperature	0 to 55°C				
Storage ambient temperature	-25 to 75°C ^(Note 3)				
Operating ambient humidity	5 to 95%RH ^(Note 4) , non-condensing				
Storage ambient humidity	5 to 95%RH ^(Note 4) , non-condensing				
Vibration resistance	Conforms to JIS B 3502, IEC61131-2	Under intermittent vibration			Sweep count 10 times each in X, Y, Z directions (for 80 min.)
		Frequency	Acceleration	Amplitude	
		5 to 9 Hz	—	3.5mm (0.14 in.)	
		9 to 150 Hz	9.8m/s ²	—	
		Under continuous vibration			
		Frequency	Acceleration	Amplitude	
		5 to 9 Hz	—	1.75mm (0.069 in.)	
		9 to 150 Hz	4.9m/s ²	—	
Shock resistance	Conforms to JIS B 3502, IEC61131-2 (147m/s ² , 3 times in each of 3 directions X, Y, Z)				
Operating atmosphere ^(Note 5)	No corrosive gases				
Operating altitude	2000m (6565 ft.) or less				
Installation location	Inside control panel				
Overvoltage category ^(Note 1)	II or less				
Pollution degree ^(Note 2)	2 or less				
Equipment class	Class I				

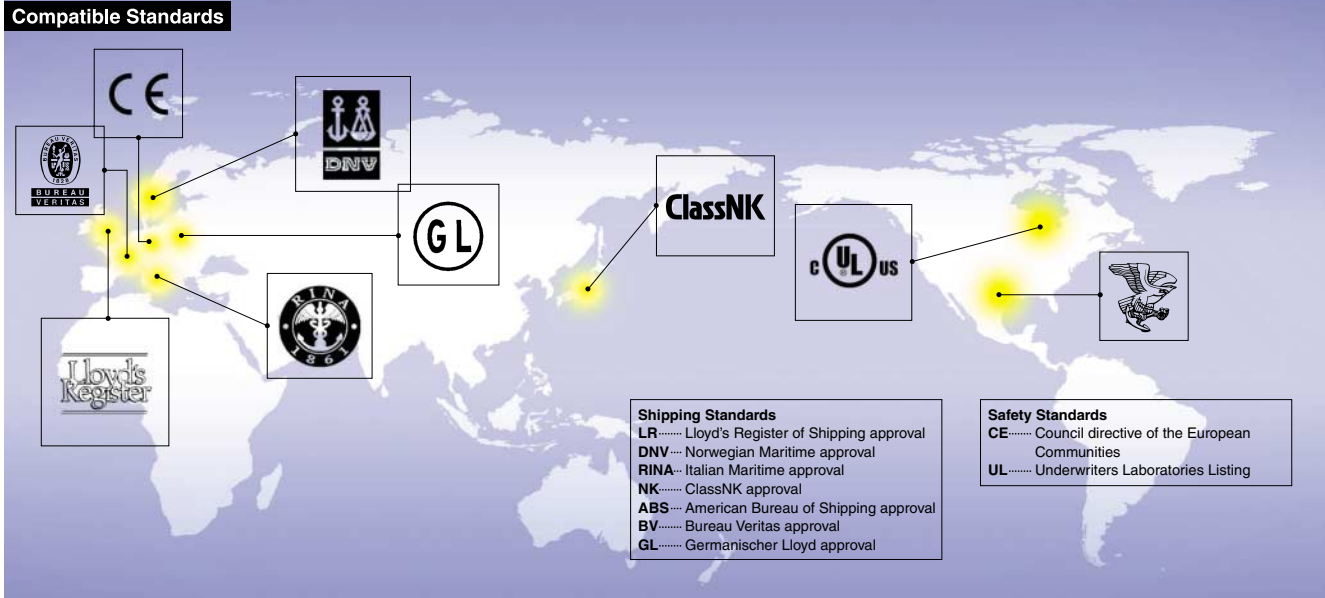
Note 1) This indicates the section of the power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within premises. Category II applies to equipment for which electrical power is supplied from fixed facilities. The surge voltage withstand level for up to the rated voltage of 300 V is 2500 V.
Note 2) This index indicates the degree to which conductive material is generated in the environment where the equipment is used. In pollution degree 2, only non-conductive pollution occurs. However, a temporary conductivity caused by condensation is to be expected.
Note 3) The storage ambient temperature is -20 to 75°C if the system includes the A/AnS Series modules.
Note 4) The operating ambient humidity and storage ambient humidity are 10 to 90%RH if the system includes the A/AnS Series modules.
Note 5) Do not use or store the programmable controller under pressure higher than the atmospheric pressure of altitude 0 m. Doing so can cause a malfunction. When using the programmable controller under pressure, please consult your local Mitsubishi sales office or representative.



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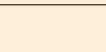
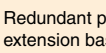
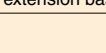
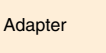
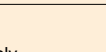
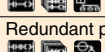
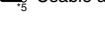
*Always refer to user's manuals for information on usable modules, restrictions, etc. before using.
*Contact your local Mitsubishi sales office or representative for the latest information on the MELSOFT versions and compatible OS.
[Icon] Usable with basic model [Icon] Usable with process CPU [Icon] Usable with MELSECNET/H remote I/O
[Icon] Usable with high performance model [Icon] Usable with redundant CPU

CPU, base, power supply

Product	Model	Outline
CPU	Basic model	Q00JCPU No. of I/O points: 256 points, no. of I/O device points: 2048 points, program capacity: 8 k steps, basic instruction processing speed (LD instruction): 0.20 μs, program memory capacity: 58 KB, 5 slots, 100 to 240 V AC input/5 V DC 3A output power supply
		Q00CPU No. of I/O points: 1024 points, no. of I/O device points: 2048 points, program capacity: 8 k steps, basic instruction processing speed (LD instruction): 0.16 μs, program memory capacity: 94 KB
		Q01CPU No. of I/O points: 1024 points, no. of I/O device points: 2048 points, program capacity: 14 k steps, basic instruction processing speed (LD instruction): 0.10 μs, program memory capacity: 94 KB
	High performance model	Q02CPU No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 28 k steps, basic instruction processing speed (LD instruction): 0.079 μs, program memory capacity: 112 KB
		Q02HCPU No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 28 k steps, basic instruction processing speed (LD instruction): 0.034 μs, program memory capacity: 112 KB
		Q06HCPU No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 60 k steps, basic instruction processing speed (LD instruction): 0.034 μs, program memory capacity: 240 KB
		Q12HCPU No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 124 k steps, basic instruction processing speed (LD instruction): 0.034 μs, program memory capacity: 496 KB
	Process CPU	Q25HCPU No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 252 k steps, basic instruction processing speed (LD instruction): 0.034 μs, program memory capacity: 1008 KB
		Q12PHCPU No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 124 k steps, basic instruction processing speed (LD instruction): 0.034 μs, program memory capacity: 496 KB
	Redundant CPU	Q25PHCPU No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 252 k steps, basic instruction processing speed (LD instruction): 0.034 μs, program memory capacity: 1008 KB
		Q12PRHCPU No. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 124 k steps, basic instruction processing speed (LD instruction): 0.034 μs, program memory capacity: 496 KB
	Motion CPU	Q172CPUN For 8-axis control
		Q172CPUN-T For 8-axis control, teaching module supported
		Q173CPUN For 32-axis control
		Q173CPUN-T For 32-axis control, teaching module supported
		Q172HCPU For 8-axis control, SSCNET III connectivity
		Q172HCPU-T For 8-axis control, SSCNET III connectivity, teaching module supported
		Q173HCPU For 32-axis control, SSCNET III connectivity
	Battery	Q173HCPU-T For 32-axis control, SSCNET III connectivity, teaching module supported
		Q6BAT [Icon] Replacement battery
		Q7BAT [Icon] Replacement large-capacity battery
		Q7BAT-SET [Icon] Large-capacity battery with battery holder for mounting CPU
		Q8BAT [Icon] Replacement large-capacity battery module
Memory card	Memory card	Q8BAT-SET [Icon] Large-capacity battery module with CPU connection cable
		Q2MEM-1MBS SRAM memory card, capacity: 1 MB
		Q2MEM-2MBS SRAM memory card, capacity: 2 MB
		Q2MEM-2MBF Linear Flash memory card, capacity: 2 MB
		Q2MEM-4MBF Linear Flash memory card, capacity: 4 MB
		Q2MEM-8MBA ATA card, capacity: 8 MB
		Q2MEM-16MBA ATA card, capacity: 16 MB
		Q2MEM-32MBA ATA card, capacity: 32 MB
	Memory card adapter	Q2MEM-ADP Adapter for Q2MEM memory card's standard PCMCIA slot
	SRAM card battery	Q2MEM-BAT Replacement battery for Q2MEM-1MBS and Q2MEM-2MBS
	Connection cable	QC30R2 RS-232 cable for connecting personal computer and CPU, 3 m (between mini-DIN6P and Dsub9P)
	Tracking cable	QC10TR 1 m cable for tracking
		QC30TR 3 m cable for tracking
Cable disconnection prevention holder	Q6HLD-R2 [Icon]	Holder for preventing RS-232 cable (programmable controller CPU connection) disconnection

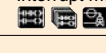


CPU, base, power supply

Product		Model	Outline
Base	Main base 	Q33B	3 slots, 1 power supply module required, for Q Series modules
		Q35B	5 slots, 1 power supply module required, for Q Series modules
		Q38B	8 slots, 1 power supply module required, for Q Series modules
		Q312B	12 slots, 1 power supply module required, for Q Series modules
	Slim type base 	Q32SB	2 slots, 1 slim type power supply module required, for Q Series modules
		Q33SB	3 slots, 1 slim type power supply module required, for Q Series modules
		Q35SB	5 slots, 1 slim type power supply module required, for Q Series modules
	Redundant power main base 	Q38RB	8 slots, 2 redundant power supply modules required, for Q Series modules
	Extension base 	Q63B	3 slots, 1 power supply module required, for Q Series modules
		Q65B	5 slots, 1 power supply module required, for Q Series modules
		Q68B	8 slots, 1 power supply module required, for Q Series modules
		Q612B	12 slots, 1 power supply module required, for Q Series modules
		Q52B	2 slots, power supply module not required, for Q Series modules
		Q55B	5 slots, power supply module not required, for Q Series modules
		QA1S65B ^(Note 1)	5 slots, 1 AnS Series power supply module required, for AnS Series modules
		QA1S68B ^(Note 1)	8 slots, 1 AnS Series power supply module required, for AnS Series modules
		QA65B ^(Note 1)	5 slots, 1 A Series power supply module required, for A Series modules
		QA68B ^(Note 1)	8 slots, 1 A Series power supply module required, for A Series modules
	Redundant power extension base 	Q68RB	8 slots, 2 redundant power supply modules required, for Q Series modules
	Redundant type extension base 	Q65WRB	5 slots, 2 redundant power supply modules required, for Q Series modules
	Extension cable 	QC05B	0.45 m cable for connecting extension base unit
		QC06B	0.6 m cable for connecting extension base unit
		QC12B	1.2 m cable for connecting extension base unit
		QC30B	3 m cable for connecting extension base unit
		QC50B	5 m cable for connecting extension base unit
		QC100B	10 m cable for connecting extension base unit
	Adapter 	Q6DIN1	DIN rail mounting adapter for Q38B, Q312B, Q68B, Q612B, Q38RB, Q68RB, Q65WRB, Q38DB, and Q312DB
		Q6DIN2	DIN rail mounting adapter for Q35B, Q65B, and Q00JCPU
		Q6DIN3	DIN rail mounting adapter for Q32SB, Q33SB, Q35SB, Q33B, Q52B, Q55B, and Q63B
		Q6DIN1A	DIN rail mounting adapter (with vibration-proofing bracket set) for Q3□B, Q5□B, Q6□B, Q38RB, Q68RB, and Q65WRB
	Blank cover 	QG60	Blank cover for I/O slot
Power supply 		Q61P	Input voltage: 100 to 240 V AC, output voltage: 5 V DC, output current: 6 A
		Q61P-A1	Input voltage: 100 to 120 V AC, output voltage: 5 V DC, output current: 6 A
		Q61P-A2	Input voltage: 200 to 240 V AC, output voltage: 5 V DC, output current: 6 A
		Q62P	Input voltage: 100 to 240 V AC, output voltage: 5/24 V DC, output current: 3/0.6 A
		Q63P	Input voltage: 24 V DC, output voltage: 5 V DC, output current: 6 A
		Q64PN ^{New}	Input voltage: 100 to 240 V AC, output voltage: 5 V DC, output current: 8.5 A
Slim type power supply 		Q61SP	Input voltage range: 100 to 240 V AC, output voltage: 5 V DC, output current: 2 A
Redundant power supply 		Q63RP	Input voltage: 24 V DC, output voltage: 5 V DC, output current: 8.5 A
		Q64RP	Input voltage: 100 to 120/200 to 240 V AC, output voltage: 5 V DC, output current: 8.5 A

 Usable at the second to seventh extension base stage.

I/O module

Product		Model	Outline
Input 	AC	QX10	16 points, 100 to 120 V AC, 8 mA (100 V AC, 60 Hz)/7 mA (100 V AC, 50 Hz), response time: 20 ms, 16 points/common, 18-point terminal block
		QX28	8 points, 100 to 240 V AC, 17 mA (200 V AC, 60 Hz)/14 mA (200 V AC, 50 Hz)/8 mA (100 V AC, 60 Hz)/ 7 mA (100 V AC, 50 Hz), response time: 20 ms, 8 points/common, 18-point terminal block
	DC (Positive common) ^(Note 2)	QX40	16 points, 24 V DC, 4 mA, response time: 1/5/10/20/70 ms, 16 points/common, positive common, 18-point terminal block
		QX40-S1	16 points, 24 V DC, 6 mA, response time: 0.1/0.2/0.4/0.6/1 ms, 16 points/common, positive common, 18-point terminal block
		QX41 ^(Note 3)	32 points, 24 V DC, 4 mA, response time: 1/5/10/20/70 ms, 32 points/common, positive common, 40-pin connector
		QX41-S1 ^(Note 3)	32 points, 24 V DC, 4 mA, response time: 0.1/0.2/0.4/0.6/1 ms, 32 points/common, positive common, 40-pin connector
		QX42 ^(Note 3)	64 points, 24 V DC, 4 mA, response time: 1/5/10/20/70 ms, 32 points/common, positive common, 40-pin connector
		QX42-S1 ^(Note 3)	64 points, 24 V DC, 4 mA, response time: 0.1/0.2/0.4/0.6/1 ms, 32 points/common, positive common, 40-pin connector
	AC/DC ^(Note 2)	QX50	16 points, 48 V AC/DC, 4 mA, response time: 20 ms, 16 points/common, positive/negative common, 18-point terminal block
	DC sensor ^(Note 2)	QX70	16 points, 5/12 V DC, 1.2 mA (5 V DC)/3.3 mA (12 V DC), response time: 1/5/10/20/70 ms, 16 points/common, positive/negative common, 18-point terminal block
		QX71 ^(Note 3)	32 points, 5/12 V DC, 1.2 mA (5 V DC)/3.3 mA (12 V DC), response time: 1/5/10/20/70 ms, 32 points/common, positive/negative common, 40-pin connector
		QX72 ^(Note 3)	64 points, 5/12 V DC, 1.2 mA (5 V DC)/3.3 mA (12 V DC), response time: 1/5/10/20/70 ms, 32 points/common, positive/negative common, 40-pin connector
	DC (Negative common) ^(Note 2)	QX80	16 points, 24 V DC, 4 mA, response time: 1/5/10/20/70 ms, 16 points/common, negative common, 18-point terminal block
		QX81 ^(Note 4)	32 points, 24 V DC, 4 mA, response time: 1/5/10/20/70 ms, 32 points/common, negative common, 37-pin D-sub connector
		QX82 ^(Note 3)	64 points, 24 V DC, 4 mA, response time: 1/5/10/20/70 ms, 32 points/common, negative common, 40-pin connector
		QX82-S1 ^(Note 3)	64 points, 24 V DC, 4 mA, response time: 0.1/0.2/0.4/0.6/1 ms, 32 points/common, negative common, 40-pin connector
	Relay	QY10	16 points, 24 V DC/240 V AC, 2 A/point, 8 A/common, response time: 12 ms, 16 points/common, 18-point terminal block
		QY18A	8 points, 24 V DC/240 V AC, 2 A/point, response time: 12 ms, 18-point terminal block, all points independent
	Triac	QY22	16 points; 100 to 240 V AC; 0.6 A/point; 4.8 A/common; minimum load voltage/current: 24 V AC/100 mA, 100 to 240 V AC/25 mA; response time: 1 ms + 0.5 cycle, 16 points/common, 18-point terminal block, with surge suppressor
	Transistor (Sink)	QY40P	16 points, 12 to 24 V DC, 0.1 A/point, 1.6 A/common, response time: 1 ms, 16 points/common, sink type, 18-point terminal block, with thermal and short-circuit protection and surge suppressor
		QY41P ^(Note 3)	32 points, 12 to 24 V DC, 0.1 A/point, 2 A/common, response time: 1 ms, 32 points/common, sink type, 40-pin connector, with thermal and short-circuit protection and surge suppressor
		QY42P ^(Note 3)	64 points, 12 to 24 V DC, 0.1 A/point, 2 A/common, response time: 1 ms, 32 points/common, sink type, 40-pin connector, with thermal and short-circuit protection and surge suppressor
Output 		QY50	16 points, 12 to 24 V DC, 0.5 A/point, 4 A/common, response time: 1 ms, 16 points/common, sink type, 18-point terminal block, with surge suppressor and fuse
	Transistor (Independent)	QY68A	8 points, 5 to 24 V DC, 2 A/point, 8 A/module, response time: 10 ms, sink/source type, 18-point terminalblock, with surge suppressor, all points independent
	TTL CMOS	QY70	16 points, 5 to 12 V DC, 16 mA/point, 256 mA/common, response time: 0.5 ms, 16 points/common, sink type, 18-point terminal block, with fuse
		QY71 ^(Note 3)	32 points, 5 to 12 V DC, 16 mA/point, 512 mA/common, response time: 0.5 ms, 32 points/common, sink type, 40-pin connector, with fuse
	Transistor (Source)	QY80	16 points, 12 to 24 V DC, 0.5 A/point, 4 A/common, response time: 1 ms, 16 points/common, source type, 18-point terminal block, with surge suppressor and fuse
		QY81P ^(Note 4)	32 points, 12 to 24 V DC, 0.1 A/point, 2 A/common, response time: 1 ms, 32 points/common, source type, 37-pin D-sub connector, with thermal and short-circuit protection and surge suppressor
	I/O 	QH42P ^(Note 3)	Input: 32 points, 24 V DC, 4 mA, response time: 1/5/10/20/70 ms, 32 points/common, positive common; output: 32 points, 12 to 24 V DC, 0.1 A/point, 2 A/common, response time: 1 ms, 32 points/common, sink type; 40-pin connector, with thermal and short-circuit protection and surge suppressor
		QX48Y57	Input: 8 points, 24 V DC, 4 mA, response time: 1/5/10/20/70 ms, 8 points/common, positive common; output: 7 points, 12 to 24 V DC, 0.5 A/point, 2 A/common, response time: 1 ms, 7 points/common, sink type; 18 points terminal block, with surge suppressor and fuse
		QX41Y41P ^(Note 3) ^{New}	Input: 32 points, 24 V DC, 4 mA, response time: 1/5/10/20/70 ms, 32 points/common, positive common; output: 32 points, 12 to 24 V DC, 0.1 A/point, 2 A/common, response time: 1 ms, 32 points/common, sink type; 40-pin connector, with thermal and short-circuit protection and surge suppressor
	Interrupt module 	QI60	16 points, 24 V DC, 4 mA, response time: 0.1/0.2/0.4/0.6/1 ms, 16 points/common, 18-point terminal block
Connector		A6CON1	40-pin connector, soldering type
		A6CON2	40-pin connector, crimp-contact type
		A6CON3	40-pin connector, IDC for flat cables
		A6CON4	40-pin connector, soldering type (cable connectable in bidirection)
		A6CON1E	37-pin D-sub connector, soldering type
		A6CON2E	37-pin D-sub connector, crimp-contact type
		A6CON3E	37-pin D-sub connector, IDC for flat cables



I/O module

Product	Model	Outline
Spring clamp terminal block	Q6TE-18S	For 16-point I/O modules, 0.3 to 1.5 mm ² (22 to 16 AWG)
Terminal block adapter	Q6TA32	For 32-point I/O modules, 0.5 mm ² (20 AWG)
	Q6TA32-TOL	Q6TA32 dedicated tool
Connector/terminal block conversion module	A6TBXY36	For positive common input modules and sink output modules (standard type)
	A6TBXY54	For positive common input modules and sink output modules (2-wire type)
	A6TBX70	For positive common input modules (3-wire type)
	A6TBX36-E	For negative common input modules (standard type)
	A6TBX54-E	For negative common input modules (2-wire type)
	A6TBX70-E	For negative common input modules (3-wire type)
	A6TBY36-E	For source output modules (standard type)
	A6TBY54-E	For source output modules (2-wire type)
	Cable	AC05TB For A6TBXY36, A6TBXY54, and A6TBX70 (positive common/sink type); 0.5 m
		AC10TB For A6TBXY36, A6TBXY54, and A6TBX70 (positive common/sink type); 1 m
		AC20TB For A6TBXY36, A6TBXY54, and A6TBX70 (positive common/sink type); 2 m
		AC30TB For A6TBXY36, A6TBXY54, and A6TBX70 (positive common/sink type); 3 m
		AC50TB For A6TBXY36, A6TBXY54, and A6TBX70 (positive common/sink type); 5 m
		AC80TB For A6TBXY36, A6TBXY54, and A6TBX70 (positive common/sink type); 8 m *Common power supply 0.5 A or lower
		AC100TB For A6TBXY36, A6TBXY54, and A6TBX70 (positive common/sink type); 10 m *Common power supply 0.5 A or lower
		AC05TB-E For A6TBX36-E, A6TBY36-E, A6TBX54-E, A6TBY54-E, and A6TBX70-E (negative common/source type); 0.5 m
		AC10TB-E For A6TBX36-E, A6TBY36-E, A6TBX54-E, A6TBY54-E, and A6TBX70-E (negative common/source type); 1 m
		AC20TB-E For A6TBX36-E, A6TBY36-E, A6TBX54-E, A6TBY54-E, and A6TBX70-E (negative common/source type); 2 m
		AC30TB-E For A6TBX36-E, A6TBY36-E, A6TBX54-E, A6TBY54-E, and A6TBX70-E (negative common/source type); 3 m
		AC50TB-E For A6TBX36-E, A6TBY36-E, A6TBX54-E, A6TBY54-E, and A6TBX70-E (negative common/source type); 5 m
Relay terminal module	A6TE2-16SRN	For 40-pin connector 24 V DC transistor output modules (sink type)
	Cable	AC06TE For A6TE2-16SRN, 0.6 m
		AC10TE For A6TE2-16SRN, 1 m
		AC30TE For A6TE2-16SRN, 3 m
		AC50TE For A6TE2-16SRN, 5 m
		AC100TE For A6TE2-16SRN, 10 m

Analog I/O module

Product	Model	Outline
 Analog input	Voltage input	Q68ADV 8 channels; input: -10 to 10 V DC; output (resolution): 0 to 4000, -4000 to 4000, 0 to 12000, -12000 to 12000, 0 to 16000, -16000 to 16000; conversion speed: 80 μs/channel; 18-point terminal block
	Current input	Q62AD-DGH 2 channels; input: 4 to 20 mA DC; output (resolution): 0 to 32000, 0 to 64000; conversion speed: 10 ms/2 channels; 18-point terminal block; channel isolated; supplies power to 2-wire transmitter
		Q66AD-DG ^(Note 6) 6 channels; input: 4 to 20 mA DC (when 2-wire transmitter is connected), 0 to 20 mA DC; output (resolution): 0 to 4000, 0 to 12000; conversion speed: 10 ms/channel; 40-pin connector; channel isolated; supplies power to 2-wire transmitter
		Q68ADI 8 channels; input: 0 to 20 mA DC; output (resolution): 0 to 4000, -4000 to 4000, 0 to 12000, -12000 to 12000, 0 to 16000, -16000 to 16000; conversion speed: 80 μs/channel; 18-point terminal block
	Voltage/ current input	Q64AD 4 channels; input: -10 to 10 V DC, 0 to 20 mA DC; output (resolution): 0 to 4000, -4000 to 4000, 0 to 12000, -12000 to 12000, 0 to 16000, -16000 to 16000; conversion speed: 80 μs/channel; 18-point terminal block
		Q64AD-GH 4 channels; input: -10 to 10 V DC, 0 to 20 mA DC; output (resolution): 0 to 32000, -32000 to 32000, 0 to 64000, -64000 to 64000; conversion speed: 10 μs/4 channels; 18-point terminal block, channel isolated
 Analog output	Voltage/ current output	Q68AD-G ^(Note 6) 8 channels; input (resolution): 0 to 4000, -4000 to 4000, 0 to 12000, -12000 to 12000, 0 to 16000, -16000 to 16000; conversion speed: 10 ms/channel; 40-pin connector, channel isolated
		Q68DAVN 8 channels; input (resolution): 0 to 4000, -4000 to 4000, 0 to 12000, -12000 to 12000, -16000 to 16000; output: -10 to 10 V DC; conversion speed: 80 μs/channel; 18-point terminal block, transformer isolation between power supply and output
	Voltage/ current output	Q68DAIN 8 channels; input (resolution): 0 to 4000, -4000 to 4000, 0 to 12000, -12000 to 12000, -16000 to 16000; output: 0 to 20 mA DC; conversion speed: 80 μs/channel; 18-point terminal block, transformer isolation between power supply and output
		Q62DAN 2 channels; input (resolution): 0 to 4000, -4000 to 4000, 0 to 12000, -12000 to 12000, -16000 to 16000; output: -10 to 10 V DC, 0 to 20 mA DC; conversion speed: 80 μs/channel; 18-point terminal block, transformer isolation between power supply and output
		Q62DA-FG 2 channels; input (resolution): 0 to 12000, -12000 to 12000, -16000 to 16000; output: -12 to 12 V DC, 0 to 22 mA DC; conversion speed: 10 ms/2 channels; 18-point terminal block; channel isolated
		Q64DAN 4 channels; input (resolution): 0 to 4000, -4000 to 4000, 0 to 12000, -12000 to 12000, -16000 to 16000; output: -10 to 10 V DC, 0 to 20 mA DC; conversion speed: 80 μs/channel; 18-point terminal block; transformer isolation between power supply and output
 Temperature input	RTD	Q66DA-G ^(Note 6) 6 channels; input (resolution): 0 to 4000, -4000 to 4000, 0 to 12000, -12000 to 12000, -16000 to 16000; output: -12 to 12 V DC, 0 to 22 mA DC; conversion speed: 6 ms/channel; 40-pin connector; channel isolated
		Q64RD 4 channels, platinum RTD (Pt100 [JIS C1604-1997, IEC 751 1983], JPt100 [JIS C1604-1981]), conversion speed: 40 ms/channel, 18-point terminal block
	Thermocouple	Q64RD-G 4 channels, platinum RTD (Pt100 [JIS C1604-1997, IEC 751 1983], JPt100 [JIS C1604-1981], Ni100Ω [DIN43760 1987]), conversion speed: 40 ms/channel, 18-point terminal block, channel isolated
		Q64TD 4 channels, thermocouple (JIS C1602-1995), conversion speed: 40 ms/channel, 18-point terminal block
		Q64TDV-GH 4 channels, thermocouple (JIS C1602-1995), micro voltage (-100 to 100 mV), conversion speed: sampling cycle x 3, sampling cycle: 20 ms/channel, 18-point terminal block
		Q68TD-G-H01 ^(Note 6, 10) New 8 channels, thermocouple (JIS C1602-1995, IEC 60584-1 [1995], IEC 60584-2 [1982]), conversion speed: 320 ms/8 channels, 40-pin connector
 Temperature control	Platinum RTD	Q64TCRT 4 channels, platinum RTD (Pt100, JPt100), no heater disconnection detection, sampling cycle: 0.5 s/4 channels, 18-point terminal block
		Q64TCRTBW 4 channels, platinum RTD (Pt100, JPt100), with heater disconnection detection, sampling cycle: 0.5 s/4 channels, two 18-point terminal blocks
	Thermocouple	Q64TCTT 4 channels, thermocouple (K, J, T, B, S, E, R, N, U, L, PLII, W5Re/W26Re), no heater disconnection detection, sampling cycle: 0.5 s/4 channels, 18-point terminal block
		Q64TCTTBW 4 channels, thermocouple (K, J, T, B, S, E, R, N, U, L, PLII, W5Re/W26Re), with heater disconnection detection, sampling cycle: 0.5 s/4 channels, two 18-point terminal blocks
 Loop control		Q62HLC 2 channels, input: thermocouple/micro voltage/voltage/current, conversion speed (input): 25 ms/2 channels, sampling cycle: 25 ms/2 channels; output: 4 to 20 mA DC, conversion speed (output): 25 ms/2 channels; 18-point terminal block with 5 PID control modes

 Interrupt pointer and intelligent function module dedicated instructions cannot be used.

 Mountable on the extension base unit only.



Pulse I/O and positioning module

Product		Model	Outline
Channel isolated pulse input   		QD60P8-G	8 channels, 30 kpps/10 kpps/1 kpps/ 100 pps/ 50 pps/ 10 pps/ 1 pps/0.1 pps, count input signal: 5/12 to 24 V DC
High-speed counter   		QD62 (Note 3)	2 channels; 200/100/10 kpps; count input signal: 5/12/24 V DC; external input: 5/12/24 V DC; coincidence output: transistor (sink), 12/24 V DC, 0.5 A/point, 2 A/common; 40-pin connector
		QD62D (Note 3)	2 channels; 500/200/100/10 kpps; count input signal: EIA standards RS-422-A (differential line driver), external input: 5/12/24 V DC; coincidence output: transistor (sink), 12/24 V DC, 0.5 A/point, 2 A/common; 40-pin connector
		QD62E (Note 3)	2 channels; 200/100/10 kpps; count input signal: 5/12/24 V DC; external input: 5/12/24 V DC; coincidence output: transistor (source), 12/24 V DC, 0.1 A/point, 0.4 A/common; 40-pin connector
		QD63P6 (Note 5)	6 channels, 200/100/10 kpps, count input signal: 5 V DC, 40-pin connector
		QD64D2 (Note 5) New	2 channels; 4 Mpps; count input signal: EIA standards RS-422-A (differential line driver); external input: 24 V DC; coincidence output: transistor (sink), 12/24 V DC, 0.5 A/point, 2 A/common; 40-pin connector
Positioning	Open collector output (Note 5)	QD75P1   	1 axis; control unit: mm, inch, degree, pulse; no. of positioning data: 600/axis; max. output pulse: 200 kpps; 40-pin connector
		QD75P2   	2 axes; 2-axis linear interpolation, 2-axis circular interpolation; control unit: mm, inch, degree, pulse; no. of positioning data: 600/axis; max. output pulse: 200 kpps; 40-pin connector
		QD75P4   	4 axes; 2-/3-/4-axis linear interpolation, 2-axis circular interpolation; control unit: mm, inch, degree, pulse; no. of positioning data: 600/axis; max. output pulse: 200 kpps; 40-pin connector
		QD70P4   	4 axes, control unit: pulse, no. of positioning data: 10/axis, max. output pulse: 200 kpps, 40-pin connector
		QD70P8   	8 axes, control unit: pulse, no. of positioning data: 10/axis, max. output pulse: 200 kpps, 40-pin connector
	Differential output (Note 5)	QD75D1   	1 axis; control unit: mm, inch, degree, pulse; no. of positioning data: 600/axis; max. output pulse: 1 Mpps; 40-pin connector
		QD75D2   	2 axes; 2-axis linear interpolation, 2-axis circular interpolation; control unit: mm, inch, degree, pulse; no. of positioning data: 600/axis; max. output pulse: 1 Mpps; 40-pin connector
		QD75D4   	4 axes; 2-/3-/4-axis linear interpolation, 2-axis circular interpolation; control unit: mm, inch, degree, pulse; no. of positioning data: 600/axis; max. output pulse: 1 Mpps; 40-pin connector
		QD70D4   	4 axes, control unit: pulse, no. of positioning data: 10/axis, max. output pulse: 4 Mpps, 40-pin connector
		QD70D8   	8 axes, control unit: pulse, no. of positioning data: 10/axis, max. output pulse: 4 Mpps, 40-pin connector
	With SSCNET connectivity (Note 3)	QD75M1   	1 axis; control unit: mm, inch, degree, pulse; no. of positioning data: 600/axis; 40-pin connector
		QD75M2   	2 axes; 2-axis linear interpolation, 2-axis circular interpolation; control unit: mm, inch, degree, pulse; no. of positioning data: 600/axis; 40-pin connector
		QD75M4   	4 axes; 2-/3-/4-axis linear interpolation, 2-axis circular interpolation; control unit: mm, inch, degree, pulse; no. of positioning data: 600/axis; 40-pin connector
	With SSCNET III connectivity (Note 3)	QD75MH1   	1 axis; control unit: mm, inch, degree, pulse; no. of positioning data: 600/axis; 40-pin connector; with SSCNET III connectivity
		QD75MH2   	2 axes; 2-axis linear interpolation, 2-axis circular interpolation; control unit: mm, inch, degree, pulse; no. of positioning data: 600/axis; 40-pin connector; with SSCNET III connectivity
		QD75MH4   	4 axes; 2-/3-/4-axis linear interpolation, 2-axis circular interpolation; control unit: mm, inch, degree, pulse; no. of positioning data: 600/axis; 40-pin connector; with SSCNET III connectivity
	Open collector output with built-in counter function (Note 5)	QD72P3C3   	Positioning: 3 axes, control unit: pulse, no. of positioning data: 1/axis, max. output pulse: 100 kpps, counter: 3 channels, 100 kpps, count input signal: 5/24 V DC, 40-pin connector

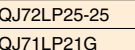
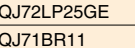
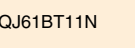
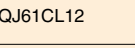
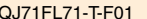
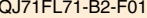
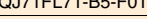
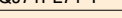
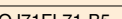
 Interrupt pointer and intelligent function module dedicated instructions cannot be used.

 Mountable on the extension base unit only.

Information module

Product		Model	Outline
MES interface   	Option	QJ71MES96	MES interface module *MX MESInterface and CompactFlash card are required.
		GT05-MEM-128MC	128 MB CompactFlash card
		GT05-MEM-256MC	256 MB CompactFlash card
Ethernet   		QJ71E71-100	10BASE-T/100BASE-TX
		QJ71E71-B2	10BASE2
		QJ71E71-B5	10BASE5
Serial communication   		QJ71C24N	RS-232: 1 channel, RS-422/485: 1 channel, total transmission speed of 2 channels: 230.4 kbps
		QJ71C24N-R2	RS-232: 2 channels, total transmission speed of 2 channels: 230.4 kbps
		QJ71C24N-R4	RS-422/485: 2 channels, total transmission speed of 2 channels: 230.4 kbps
Intelligent communication   		QD51   	BASIC program execution module, RS-232: 2 channels
		QD51-R24   	BASIC program execution module, RS-232: 1 channel, RS-422/485: 1 channel
		SW ☐ IVD-AD51HP (Note 7)	Software package for QD51, AD51H-S3, and A1SD51S

Control network module

MELSEC NET/H	SI/QSI fiber optic cable	 QJ71LP21-25	SI/QSI/H-PCF/ broadband H-PCF fiber optic cable, dual loop, controller network (control/normal station) or remote I/O network (remote mater station)
		 QJ71LP21S-25	SI/QSI/H-PCF/ broadband H-PCF fiber optic cable, dual loop, controller network (control/normal station) or remote I/O network (remote mater station), with external power supply function
		 QJ72LP25-25	SI/QSI/H-PCF/ broadband H-PCF fiber optic cable, dual loop, remote I/O network (remote I/O station)
	GI-50/125 fiber optic cable	 QJ71LP21G	GI-50/125 fiber optic cable, dual loop, controller network (control/normal station) or remote I/O network (remote master station)
		 QJ72LP25G	GI-50/125 fiber optic cable, dual loop, remote I/O network (remote I/O station)
	GI-62.5/125 fiber optic cable	 QJ71LP21GE	GI-62.5/125 fiber optic cable, dual loop, controller network (control/normal station) or remote I/O network (remote master station)
		 QJ72LP25GE	GI-62.5/125 fiber optic cable, dual loop, remote I/O network (remote I/O station)
	Coaxial cable	 QJ71BR11	3C-2V/5C-2V coaxial cable, single bus, controller network (control/normal station) or remote I/O network (remote master station)
 QJ72BR15		3C-2V/5C-2V coaxial cable, single bus, remote I/O network (remote I/O station)	
 CC-Link		 QJ61BT11N	Master/local station, CC-Link Ver. 2 compatible
 CC-Link/LT		 QJ61CL12	Master station
 FL-net (OPCN-2)	Ver. 2	 QJ71FL71-T-F01	10BASE-T
		 QJ71FL71-B2-F01	10BASE-2
		 QJ71FL71-B5-F01	10BASE-5
	Ver. 1	 QJ71FL71-T	10BASE-T
		 QJ71FL71-B2	10BASE-2
		 QJ71FL71-B5	10BASE-5
 AS-i		 QJ71AS92	Master station, AS-Interface Specification Version 2.11 compatible

 Interrupt pointer and intelligent function module dedicated instructions cannot be used.

 Interrupt pointer, intelligent function module dedicated instructions, and E-mail function cannot be used.

 Mountable on the extension base unit only.

 Mountable on the main base unit only.



A mode CPU, base

Product		Model	Outline
CPU		Q02CPU-A	For A mode, no. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 28 k steps, basic instruction processing speed (LD instruction): 0.079 μs, program memory capacity: 144 KB
		Q02HCPU-A	For A mode, no. of I/O points: 4096 points, no. of I/O device points: 8192 points, program capacity: 28 k steps, basic instruction processing speed (LD instruction): 0.034 μs, program memory capacity: 144 KB
		Q06HCPU-A	For A mode; no. of I/O points: 4096 points; no. of I/O device points: 8192 points; program capacity: 30 k steps (main), 30 k steps (sub); basic instruction processing speed (LD instruction): 0.034 μs, program memory capacity: 144 KB
Base	Main base	QA1S33B	3 slots, 1 AnS Series power supply module required, for AnS Series modules
		QA1S35B	5 slots, 1 AnS Series power supply module required, for AnS Series modules
		QA1S38B	8 slots, 1 AnS Series power supply module required, for AnS Series modules
	Extension base	QA1S65B	5 slots, 1 AnS Series power supply module required, for AnS Series modules
		QA1S68B	8 slots, 1 AnS Series power supply module required, for AnS Series modules

MELSOFT GX Series

GX Developer	SW□D5C-GPPW-E	MELSEC programmable controller programming software
	SW□D5C-GPPW-EV	MELSEC programmable controller programming software (upgrade)
GX Simulator	SW□D5C-LLT-E	MELSEC programmable controller simulation software
	SW□D5C-LLT-EV	MELSEC programmable controller simulation software (upgrade)
GX Explorer	SW□D5C-EXP-E	Maintenance tool
GX Converter	SW□D5C-CNVW-E	Excel/text data converter
GX Configurator-AD ^(Note 8)	SW□D5C-QADU-E	MELSEC-Q dedicated analog to digital conversion module setting/monitoring tool
GX Configurator-DA ^(Note 8)	SW□D5C-QDAU-E	MELSEC-Q dedicated digital to analog conversion module setting/monitoring tool
GX Configurator-SC ^(Note 8)	SW□D5C-QSCU-E	MELSEC-Q dedicated serial communication module setting/monitoring tool
GX Configurator-CT ^(Note 8)	SW□D5C-QCTU-E	MELSEC-Q dedicated high-speed counter module setting/monitoring tool
GX Configurator-TC ^(Note 8)	SW□D5C-QTCU-E	MELSEC-Q dedicated temperature control module setting/monitoring tool
GX Configurator-TI ^(Note 8)	SW□D5C-QTIU-E	MELSEC-Q dedicated temperature input module setting/monitoring tool
GX Configurator-FL ^(Note 8)	SW□D5C-QFLU-E	MELSEC-Q dedicated FL-net module setting/monitoring tool
GX Configurator-PT ^(Note 8)	SW□D5C-QPTU-E	MELSEC-Q dedicated positioning module QD70 setting/monitoring tool
GX Configurator-AS ^(Note 8)	SW□D5C-QASU-E	MELSEC-Q dedicated AS-i master module setting/monitoring tool
GX Configurator-QP ^(Note 8)	SW□D5C-QD75P-E	MELSEC-Q dedicated positioning module QD75P/D/M setting/monitoring tool
GX Configurator-CC	SW□D5C-J61P-E	CC-Link module setting/monitoring tool
GX RemoteService-I	SW□D5C-RAS-E	Remote access tool
GX Works	SW□D5C-QSET-E	A set of seven products: GX Developer, GX Simulator, GX Explorer, GX Configurator-AD, DA, SC, CT
	SW□D5C-GPPLT-E	A set of three products: GX Developer, GX Simulator, GX Explorer

MELSOFT PX Series

PX Developer ^(Note 8)	SW□D5C-FBDQ-E	Process control FBD software package
PX Works	SW□D5C-FBDGPP-E	A set of six products: PX Developer, GX Developer, GX Configurator-AD, DA, CT, TI

MELSOFT MX Series

MX Component	SW□D5C-ACT-E	ActiveX library for communication
MX Sheet	SW□D5C-SHEET-E	Excel communication support tool
MX MESInterface	SW1DNC-MESIF-E	MES interface module QJ71MES96 dedicated information linkage tool
MX Works	SW□D5C-SHEETSET-E	A set of two products: MX Component, MX Sheet

MELSOFT MT Series

MT Developer	SW□RNC-GSVPROE	Integrated start-up support software for Q Series motion controllers
	SW□RNC-GSVSETE	Integrated start-up support software for Q Series motion controllers, A30CD-PCF (SSC I/F card), Q170CDCBL03M cable

MELSOFT MR Series

MR Configurator ^(Note 9)	MRZJW3-SETUP221	Servo setup software for PC
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PC interface board

Product		Model	Outline
MELSEC NET/H (10)	SI/QSI fiber optic cable	Q80BD-J71LP21-25	PCI bus, Japanese/English OS compatible, SI/QSI/H-PCF/broadband H-PCF fiber optic cable, dual loop, controller network (control/normal station)
		Q80BD-J71LP21S-25	PCI bus, Japanese/English OS compatible, SI/QSI/H-PCF/broadband H-PCF fiber optic cable, dual loop, controller network (control/normal station), with external power supply function
	GI-50/125 fiber optic cable	Q80BD-J71LP21G	PCI bus, Japanese/English OS compatible, GI-50/125 fiber optic cable, dual loop, controller network (control/normal station)
	GI-62.5/125 fiber optic cable	Q80BD-J71LP21GE	PCI bus, Japanese/English OS compatible, GI-62.5/125 fiber optic cable, dual loop, controller network (control/normal station)
	Coaxial cable	Q80BD-J71BR11	PCI bus, Japanese/English OS compatible, 3C-2V/5C-2V coaxial cable, single bus, controller network (control/normal station)
CC-Link		Q80BD-J61BT11N	PCI bus, Japanese/English OS compatible, master/local interface board, CC-Link Ver. 2 compatible

- Note 1) Compatible with the high performance model only.
Note 2) "Positive common" means using the module by connecting the common terminal to positive DC power; "negative common" means using the module by connecting the common terminal to negative DC power.
Note 3) The connector is not enclosed. Prepare A6CON1, A6CON2, A6CON3, or A6CON4 separately.
Note 4) The connector is not enclosed. Prepare A6CON1E, A6CON2E, or A6CON3E separately.
Note 5) The connector is not enclosed. Prepare A6CON1, A6CON2, or A6CON4 separately.
Note 6) The connector is not enclosed. Prepare A6CON4 separately.
Note 7) Runs in Windows command prompt.
Note 8) Not compatible with the A mode.
Note 9) MRZJW3-SETUP211 does not support MR-J3-500A or later and MR-J3-B. Use MRZJW3-SETUP221 or later.
Note 10) Depending on the combination of the power supply module and base unit, the mounting position (slot) of Q68TD-G-H01 is restricted. Refer to the manual for more details.