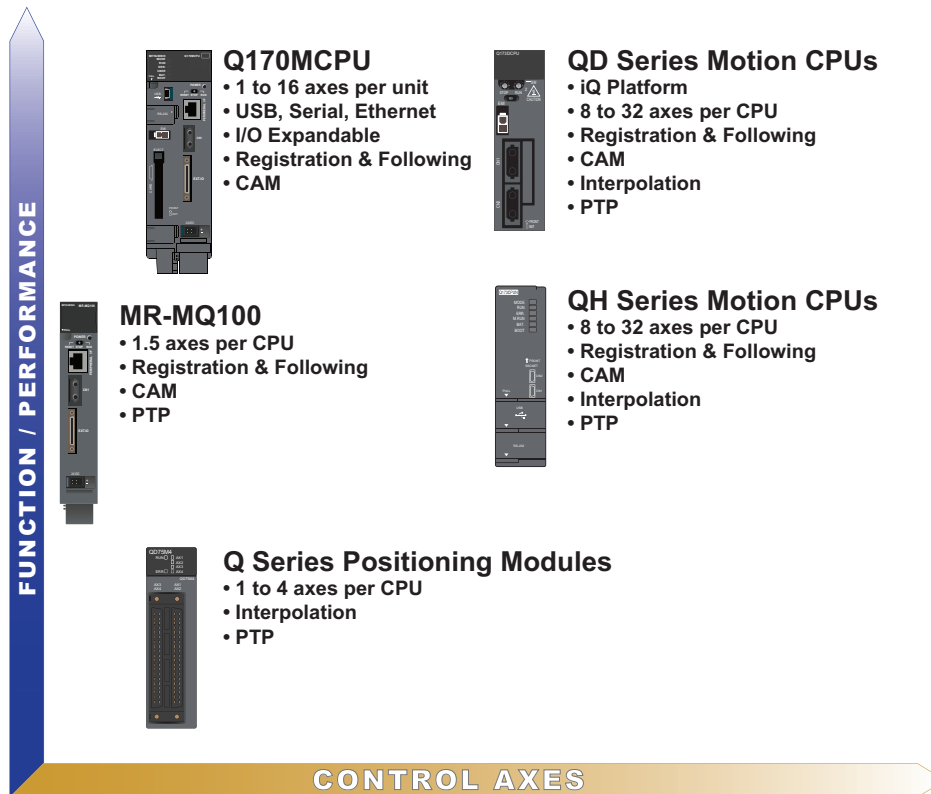


Motion Controller



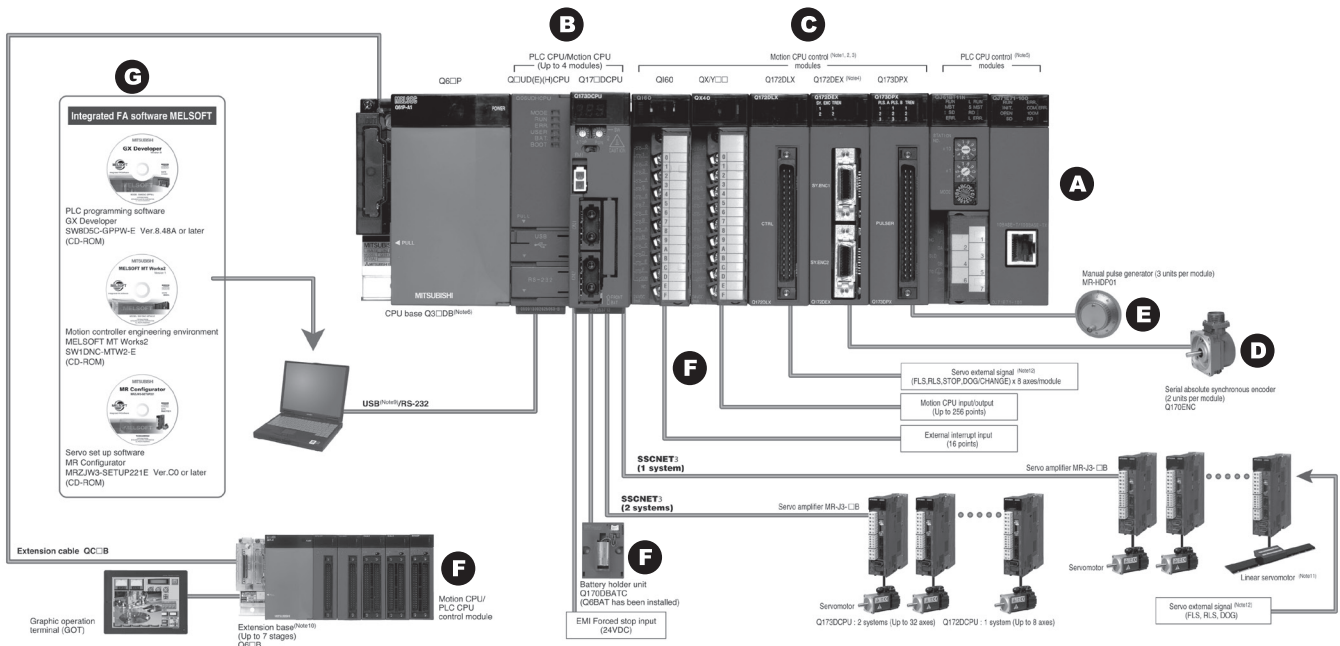
QD Series for iQ Platform	212
QH Series.....	218
QD75MH Positioning Modules	225
MR-MQ100 Single Axis Module	228
Q170MCPU - Stand-Alone Motion Controller	231

Stock Product: Stock product is product MEAU makes every effort to have on hand for immediate shipment. There may be instances when we are out of stock due to unexpected large requirements. All stock product will be indicated in this book by an “S” in the Stocked Item columns/rows.

Non-Stock Product: Non-stock product is product supplied on an “as-needed” basis. Standard lead times of 12 - 16 weeks apply, product is non-returnable and non-cancelable. Product listed as non-stock may change to stock product subject to increases in sales and usage. All non-stock product will be indicated in this book by a dash “-” in the Stocked Item columns/rows.

QD Series Motion Controllers for the iQ Platform

The performance of the Q172D/Q173D Motion CPUs is twice as fast as the previous generation systems resulting in shorter system times. Shared memory capacity has been increased 3.5 times, Motion SFC processing time is reduced by three-quarters, in-position signal response time has been decreased by half and programs read and write times have been increased three times when compared with Q172H/Q173H motion CPU models.



Notes:

1. Only input module among Motion CPU control modules can be accessed from PLC CPU.
2. Motion modules (Q172DLX/Q172EX/Q173DPX) cannot be installed in CPU slot 0 to 2 of the main base unit.
3. Motion modules (Q172DLX/Q172EX-S2/Q173DPX) for Q172H-CPU/Q173H-CPU cannot be used.
4. Installation position of Q172EX is only the main base unit. It cannot be used on the extension base unit.
5. Other CPU modules cannot be accessed from Motion CPU.
6. It is impossible to mount the main base unit by DIN rail when using the Motion CPU module.
7. Be sure to use the cable for forced stop input (sold separately). The forced stop cannot be released without using it.
8. Be sure to use the external battery.
9. USB cannot be used in Windows NT 4.0.
10. Motion CPU cannot control the module installed to the QA1S6-B.
11. The servo amplifiers for Linear servomotors are required.
12. Connecting target can be selected for each axis from general-purpose input of servo amplifier or Q172DLX.

A. CPU Base Unit / Power Supply Module / CPU Modules	213
B. Motion Controller CPU Modules	213
C. External Signal Interface Module	214
D. Synchronous Encoder and Interface Module	214
E. Manual Pulse Generator and Interface Module	215
F. Misc Parts/Cables/Connectors/Manuals	216
G. Operating/Programming Software	217

A iQ Series Base Units

iQ Series Base Information

Model Number	Q38DB	Q312DB	Q63B	Q65B	Q68B	Q612B
Type	Base Unit		Extension Base Unit			
Specifications and Extension Connection Cables	See iQ section of this PSG for detailed information and specifications					

Power Supply Modules

Model Number	Q61P-A1	Q61P-A2	Q61P	Q62P	Q63P	Q64P
Specifications	See iQ section of this PSG for detailed information and specifications					

Sequence CPU Modules

Model Number	Q03UDCPU	Q04UDHCPU	Q06UDHCPU	Q13UDHCPU	Q26UDHCPU	Q03UDECPU	Q04UDEHCPU	Q06UDEHCPU	Q13UDEHCPU	Q26UDEHCPU
Specifications	See iQ section of this PSG for detailed information and specifications									

Cables for CPU to Extension Base Unit or Extension Base Unit to Extension Base Unit

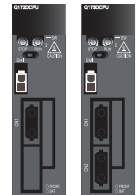
Model Number	QC05B	QC06B	QC12B	QC30B	QC50B	QC100B
Specifications	See iQ section of this PSG for detailed information and specifications					

B Motion Controller CPU Modules

Model Number	Q173DCPU		Q172DCPU
Stocked Item	S		S
Number of Control Axes	Up to 32 axes		Up to 8 axes
Operation Cycle (Default)	SV13	0.44ms / 1 to 6 axes 0.88ms / 7 to 18 axes 1.77ms / 19 to 32 axes	0.44ms / 1 to 6 axes 0.88ms / 7 to 8 axes
	SV22	0.44ms / 1 to 4 axes 0.88ms / 5 to 12 axes 1.77ms / 13 to 28 axes 3.55ms / 29 to 32 axes	0.44ms / 1 to 4 axes 0.88ms / 5 to 8 axes
Interpolation Functions	Linear interpolation (Up to 4 axes), Circular interpolation (2 axes), Helical interpolation (3 axes)		
Control Modes	PTP(Point to Point) control, Speed control, Speed-position control, Fixed-pitch feed, Constant speed control, Position follow-up control, Speed control with fixed position stop, Speed switching control, High-speed oscillation control, Synchronous control (SV22)		
Acceleration/ Deceleration Control	Automatic trapezoidal acceleration/deceleration, S-curve acceleration/deceleration		
Compensation	Backlash compensation, Electronic gear, Phase compensation (SV22)		
Programming Language	Motion SFC, Dedicated instruction, Mechanical support language (SV22)		
Servo Program Capacity	16k steps		
Number of Positioning Points	3200 points (Positioning data can be designated indirectly)		
Peripheral I/F	Via PLC CPU (USB/RS-232)		
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 (Home position return retry function provided, home position shift function provided)		
JOG Operation Function	Provided		
Manual Pulse Generator Operation Function	Possible to connect 3 modules		
Synchronous Encoder	Possible to connect 12 modules (SV22)		Possible to connect 8 modules (SV22)
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		
Absolute Position System	Made compatible by setting battery to servo amplifier. (Possible to select the absolute data method or incremental method for each axis)		
Number of SSCNET III Systems (*1)	2 systems		1 system
Motion Related Interface Module	Q172DLX : 4 modules usable Q172DEX : 6 modules usable Q173DPX : 4 modules usable (*2)		Q172DLX : 1 module usable Q172DEX : 4 modules usable Q173DPX : 3 modules usable (*2)
Internal Current	1.14		1.25
Dimensions (W x D x H) mm (in)	27.4 x 98 x 119.3 (1.08 x 3.86 x 4.70)		
Weight (kg)	0.33		0.33

Notes:

1. The MR-J2S-B servo amplifiers for SSCNET cannot be used.
2. When using the incremental synchronous encoder (SV22), you can use above number of modules. When connecting the manual pulse generator, you can use only 1 module.



C External Signal Interface Module

Model Number	Q172DLX	
Stocked Item	S	
Number of Inputs	Servo external signals: 32 points (Upper stroke limit, Lower stroke limit, Stop input, Proximity DOG/Speed-position switching signal) (4 points x 8 axes)	
Input Method	Sink/Source type	
Isolation Method	Photocoupler	
Rated Input Voltage	12/24 VDC	
Rated Input Current	12 VDC 2mA/24 VDC 4mA	
Operating Voltage Range	10.2 to 26.4 VDC (12/24 VDC +10/-15%, ripple ratio 5% or less)	
ON Voltage/Current	10 VDC or more/2.0mA or more	
OFF Voltage/Current	1.8 VDC or less/0.18mA or less	
Input Resistance	Approx. 5.6KΩ	
Response time of the Upper/Lower Stroke Limit and STOP Signal	OFF to ON ON to OFF	1ms
Response Time of the Proximity DOG, Speed-Position Switching Signal	OFF to ON ON to OFF	0.4ms/0.6ms/1ms (CPU parameter setting, Default 0.4ms)
Common Terminal Arrangement	32 points/common (common terminal: B1, B2)	
Indicates to Display	ON indication (LED)	
External Connector Type	40 pin connector	
Applicable Wire Size	0.3mm ²	
Applicable Connector for the External Connection	A6CON1 (Attachment), A6CON2, A6CON3 (Optional)	
Applicable Connector/Terminal Block Converter Module	A6TBXY36, A6TBXY54, A6TBXY70 (Optional)	
Number of I/O Occupying Points	32 points (I/O allocation: Intelligent, 32 points)	
Internal Current Consumption (5VDC) [A]	0.06	
Weight (kg)	0.15	
Dimensions [mm (inch)] (W x H x D)	27.4 x 98 x 90 (1.08 x 3.86 x 3.54)	



Servo External Signal	Application	Number of Points
Upper Stroke Limit Input (FLS)	For detection of upper and lower stroke limits	32 points (4 points/8 axes)
Lower Stroke Limit Input (RLS)		
Stop Signal Input (STOP)		
Proximity DOG/Speed-Position Switching Input (DOG/CHANGE)	For detection of proximity DOG at proximity DOG or count type home position return or for switching from speed to position switching control.	

Note: Signal No. 1 to 8 can be assigned to the specified axis. To make the assignment, use the system settings of the positioning software package.

D QD Series Serial Absolute Synchronous Encoder and Interface Module



Tracking Enable Signal Input

Model Number	Q172DEX	
Stocked Item	S	
Number of Inputs	Tracking enable signal: 2 points	
Input Method	Sink/Source type	
Isolation Method	Photocoupler	
Rated Input Voltage	12/24 VDC	
Rated Input Current	12 VDC 2mA/24 VDC 4mA	
Operating Voltage Range	10.2 to 26.4 VDC (12/24 VDC +10 / -15%, ripple ratio 5% or less)	
ON Voltage/Current	10 VDC or more/2.0mA or more	
OFF Voltage/Current	1.8 VDC or less/0.18mA or less	
Input Resistance	Approx. 5.6KΩ	
Response Time	OFF to ON ON to OFF	0.4ms/0.6ms/1ms (CPU parameter setting, Default 0.4ms)
Common Terminal Arrangement	1 point/common (Common terminal: TREN.COM)	
Display	ON indication (LED)	

Serial Absolute Synchronous Encoder Input

Model Number	Q172DEX	
Applicable Signal Types	Differential-output type : (SN75C1168 or equivalent)	
Transmission Method	Serial communications	
Synchronous Method	Counter-clock-wise (viewed from end of shaft)	
Communication Speed	2.5 Mbps	
Applicable Types	Q170ENC	
Position Detection Method	Absolute (ABS) method	
Resolution	262144 PLS/rev (18bit)	
Number of Modules	2/module	
External Connector Type	20 pin connector	
Applicable Connector for the External Connection	Q170ENCNS (Optional)	
Applicable Wire	MB14B0023 12 Pair	
Recommended Cables	Q170ENCBL_M: _ = cable length 2m (6.56 ft.), 5m (16.4 ft.), 10m (32.81 ft.), 20m (65.62 ft.), 30m (98.43 ft.), 50m (164.04 ft.) (Note)	
Cable Length	Up to 50m (164.04 ft.)	
Back up the Absolute Position	Depends on A6BAT/MR-BAT	
Battery Service Life Time (Value in Actual)	12000 [h], (Example of encoders x 2, ambient temperature 40°C (104°F)) 24000 [h], (Example of encoders x 1, ambient temperature 40°C (104°F))	
Memory of Data Exchange	None	
Number of I/O Occupying Points	32 points (I/O allocation: Intelligent, 32 points)	
Internal Current Consumption (5VDC) [A]	0.19	
Dimensions [mm (inch)]	98 x 27.4 x 90 (3.86 x 1.08 x 3.54) H x W x D	
Weight [kg]	0.15	

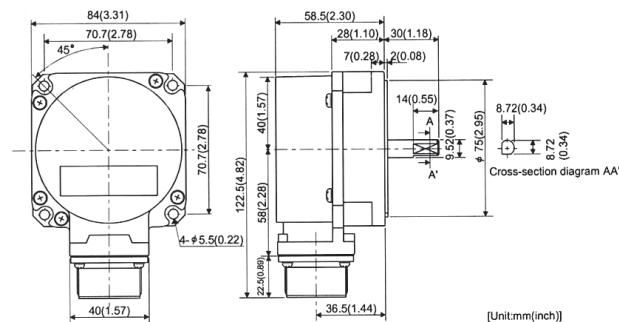
Note: Use these cables when the tracking enable signal is not used. Customer must make a cable when the tracking enable signal is used.

QD Series Synchronous Encoder (optional)

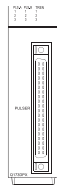
Model Number	Q170ENC
Stocked Item	S
Resolution	262144 PLS/rev
Transmission Method	Serial Communications (Connected to Q172EX-S2/S3)
Direction on Increase	Counter clockwise (viewed from end of shaft)
Protective Construction (*1)	IP65 (dust proof, waterproof) except for the shaft-through portion
Permitted Speed at ON	3600 r/min
Permitted Speed at OFF (*2)	500 r/min
Permitted Axis Load	Radial load: Max 19.6N; Thrust load: Max 9.8N
Runout at Input Shaft Tip	0.02 mm (0.00079 in) or less; 15 mm (0.59 in) from tip
Recommended Coupling	Bellows coupling
Permissible Angular Acceleration	40,000 rad/s ²
Internal Current Consumption	0.2 (A)
Connecting Cable	Q170ENCBL_M: _ = cable length 2m (6.56 ft.), 5m (16.4 ft.), 10m (32.8 ft.), 20m (65.6 ft.), 30m (98.4 ft.), 50m (164.04 ft.)
Communication Method	Differential driver/receiver conforming to RS-422A
Transmission Distance	Up to 50m (164.04 ft)
Operating Temperature	-5°C to 55°C (23 to 131°F)
Weight kg (lbs)	0.6 (1.3)

Notes:

1. If an "o-ring" is required, please purchase separately.
2. If it exceeds a permitted speed at power OFF, a position displacement is generated.



QD Series Manual Pulse Generator and Interface Module



Tracking Enable Signal Input

Model Number	Q173DPX
Stocked Item	S
Number of Inputs	Tracking enable signal: 3 points
Input Method	Sink/Source type
Isolation Method	Photocoupler
Rated Input Voltage	12/24 VDC
Rated Input Current	12 VDC 2mA/24 VDC 4mA
Operating Voltage Range	10.2 to 26.4 VDC (12/24 VDC +10/-15%, ripple ratio 5% or less)
ON Voltage/Current	10 VDC or more / 2.0 mA or more
OFF Voltage/Current	1.8 VDC or less / 0.18 mA or less
Input Resistance	Approx. 5.6KΩ
Common Terminal Arrangement	1 point/common (Common terminal: TREN.COM)
Display	ON indication (LED)

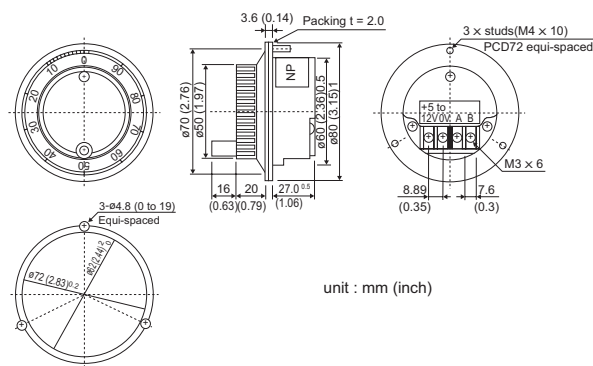
Serial Absolute Synchronous Encoder I/F

Model Number	Q173DPX
Stocked Item	S
Number of Modules (Max.)	3 per module
Voltage-output/ Open Collector	High Voltage: 3.0 to 5.25 VDC Low Voltage: 0 to 1.0 VDC
Differential-Output Type (26LS31 or Equivalent)	High Voltage: 2.0 to 5.25 VDC Low Voltage: 0 to 0.8 VDC
Input Frequency	Max. 200kpps (After magnification by 4)
Applicable Types	Voltage-output type/Open-collector type (5 VDC), Recommended product: MR-HDP01; Differential-output type: (26LS31 or equivalent)
External Connector Type	40 pin connector
Applicable Wire Size	0.3mm ²
Applicable Connector for the External Connection	A6CON1 (Attachment) A6CON2, A6CON3 (Optional)
Applicable Connector/ Terminal Block Converter Module	A6TBXY36, A6TBXY54, A6TBXY70 (Optional)
Cable Length	30m (98.43 ft.) (Open collector output type: 10m (32.81 ft.))
Number of I/O Occupying Points	32 points (I/O allocation: Intelligent, 32 points)
Internal Current Consumption	0.38
Dimensions mm (inch)	98 x 27.4 x 90 (3.86 x 1.08 x 3.54) H x W x D
Weight (kg)	0.15

Manual Pulse Generator (Optional)

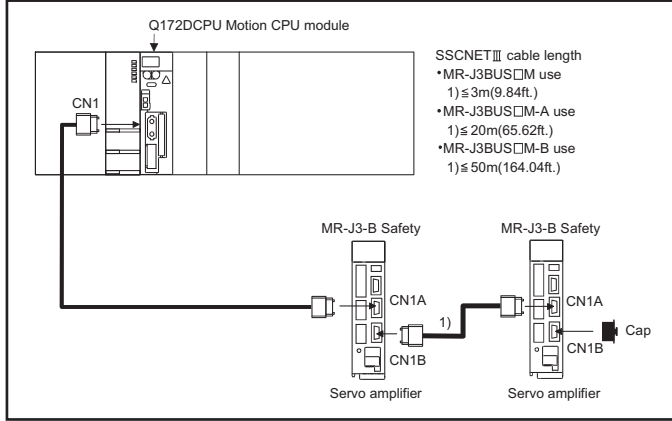
Model Number	MR-HDP01
Stocked Item	S
Pulse Resolution	25 PLS/rev (100 PLS/rev at magnification of 4)
Output Method	Voltage - output (power supply voltage - 1V or more), Output current = Up to 20 mA
Power Supply Voltage	4.5 to 13.2 VDC (*1)
Consumption Current	60
Life	1,000,000 revolutions at 200 r/min
Permitted Axis Load	Radial load : Max. 19.6N; Thrust load : Max. 9.8N
Pulse Signal Status	2 signals: A phase, B: phase, 90° phase difference
Friction Torque	0.06N/m (at 20°C (68°F))
Operating Temperature	-10°C to +60°C (14°F to 140°F)
Weight kg (lbs)	0.4 (0.88)

Note: 1. If using an external power supply, it needs to be 5 VDC.

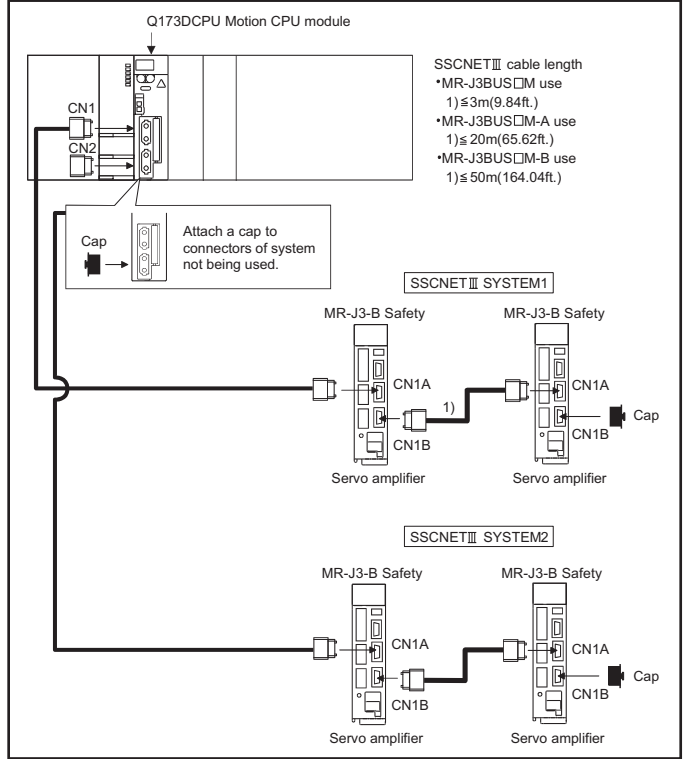


QD Misc. Parts • Cables • Connectors • Manuals

Connection between Q172DCPU and MR-J3-B Safety Series Servo Amplifiers



Connection between Q173DCPU and MR-J3-B Safety Series Servo Amplifiers



Miscellaneous Parts

Model Number	Description	Stocked Item
HMI	Please select the HMI from the GOT1000 series in this Product Selection Guide	N/A
Q170DBATC	Battery holder for Q6BAT (Battery Not Included)	S
Q6BAT	Battery for memory data backup of SRAM built-in Motion CPU	S
A6BAT	Battery for data backup of the Q170ENC	S
Q170DBATCBL05M	Cable between Q170DBATC holder and Motion CPU (0.5M)	S
MR-J3USBCBL3M	USB cable from PC to PLC CPU (3M)	S
SC09	RS232 cable from PC to PLC CPU	S

Manuals

Model Number	Description	Stocked Item
IB(NA)0300133	Q173DCPU/Q172DCPU User's Manual	Meau.com
IB(NA)0300134	Q173DCPU/Q172DCPU Programming Manual (Common)	Meau.com
IB(NA)0300135	Q173DCPU/Q172DCPU Programming Manual (Motion SFC)	Meau.com
IB(NA)0300136	Q173DCPU/Q172DCPU Programming Manual (Real Mode)	Meau.com
IB(NA)0300137	Q173DCPU/Q172DCPU Programming Manual (Virtual Mode)	Meau.com
SH(NA)030084	MR-J3-B Safety Servo Amplifier Instruction Manual	Meau.com
SH(NA)030041	MR-J3 Servo Motor Instruction Manual	Meau.com

Cables for Q172DCPU/Q173DCPU to MR-J3-B Servo Amplifiers

Model Number	Description	Stocked Item
MR-J3BUS015M	0.15M SSCNET III (plastic) cable from Q172D/173DCPU to MR-J3-B Amplifier	S
MR-J3BUS03M	0.3M SSCNET III (plastic) cable from Q172D/173DCPU to MR-J3-B Amplifier	S
MR-J3BUS05M	0.5M SSCNET III (plastic) cable from Q172D/173DCPU to MR-J3-B Amplifier	S
MR-J3BUS1M	1M SSCNET III (plastic) cable from Q172D/173DCPU to MR-J3-B Amplifier	S
MR-J3BUS3M	3M SSCNET III (plastic) cable from Q172D/173DCPU to MR-J3-B Amplifier	S
MR-J3BUS5M-A	5M SSCNET III (plastic) cable from Q172D/173DCPU to MR-J3-B Amplifier	S
MR-J3BUS10M-A	10M SSCNET III (plastic) cable from Q172D/173DCPU to MR-J3-B Amplifier	S
MR-J3BUS20M-A	20M SSCNET III (plastic) cable from Q172D/173DCPU to MR-J3-B Amplifier	S
MR-J3BUS30M-B	30M SSCNET III (glass) cable from Q172D/173DCPU to MR-J3-B Amplifier	S
MR-J3BUS40M-B	40M SSCNET III (glass) cable from Q172D/173DCPU to MR-J3-B Amplifier	-
MR-J3BUS50M-B	50M SSCNET III (glass) cable from Q172D/173DCPU to MR-J3-B Amplifier	-

Cables and Connectors for Special Function Modules

Model Number	Description	Stocked Item
A6CON1	Q173DPX connector to use the manual pulse generator and incremental synchronous encoder or Q172DLX connector to use the servo external input signals	S
QD75MCBL-2M	2M I/O pigtail cable to use in place of the A6CON1 connector	S
QD75MCBL-5M	5M I/O pigtail cable to use in place of the A6CON1 connector	S
QD75MCBL-10M	10M I/O pigtail cable to use in place of the A6CON1 connector	S
A6TBXY36	Q172DLX Terminal Block Conversion Module - Sink Type I/O (Standard Type)	S
A6TBXY54	Q172DLX Terminal Block Conversion Module - Sink Type I/O (2-Wire Type)	-
A6TBXY70	Q172DLX Terminal Block Conversion Module - Sink Type I/O (3-Wire Type)	-
AC05TB	0.5M cable from Q172DLX to A6TBX_ _ _ Terminal Block Conversion Module	S
AC10TB	1M cable from Q172DLX to A6TBX_ _ _ Terminal Block Conversion Module	S
AC20TB	2M cable from Q172DLX to A6TBX_ _ _ Terminal Block Conversion Module	S
AC30TB	3M cable from Q172DLX to A6TBX_ _ _ Terminal Block Conversion Module	S
AC50TB	5M cable from Q172DLX to A6TBX_ _ _ Terminal Block Conversion Module	S
AC80TB	8M cable from Q172DLX to A6TBX_ _ _ Terminal Block Conversion Module	-
AC100TB	10M cable from Q172DLX to A6TBX_ _ _ Terminal Block Conversion Module	-
Q170ENCNS	Connector set for the Q170ENC absolute synchronous encoder	-
Q170ENCCBL2M	2M cable from the Q172DEX to the Q170ENC absolute synchronous encoder	S
Q170ENCCBL5M	5M cable from the Q172DEX to the Q170ENC absolute synchronous encoder	S
Q170ENCCBL10M	10M cable from the Q172DEX to the Q170ENC absolute synchronous encoder	S
Q170ENCCBL20M	20M cable from the Q172DEX to the Q170ENC absolute synchronous encoder	-
Q170ENCCBL30M	30M cable from the Q172DEX to the Q170ENC absolute synchronous encoder	-
Q170ENCCBL50M	50M cable from the Q172DEX to the Q170ENC absolute synchronous encoder	-

Cables for Forced Stop Input Connector (EMI)

Model Number	Description	Stocked Item
Q170DEMIBL05M	0.5M cable for EMI connector on CPU	S
Q170DEMIBL1M	1M cable for EMI connector on CPU	S
Q170DEMIBL3M	3M cable for EMI connector on CPU	S
Q170DEMIBL5M	5M cable for EMI connector on CPU	S
Q170DEMIBL10M	10M cable for EMI connector on CPU	S
Q170DEMIBL15M	15M cable for EMI connector on CPU	S
Q170DEMIBL20M	20M cable for EMI connector on CPU	S
Q170DEMIBL25M	25M cable for EMI connector on CPU	S
Q170DEMIBL30M	30M cable for EMI connector on CPU	S

G Operating • Programming Software

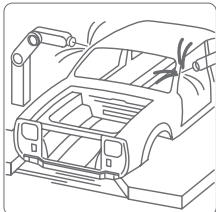
MT Developer Software

Conveyor assembly use
Motion SFC compatible

SV13

Dedicated language

SW8DNC-SV13QB (Q173DCPU)
SW8DNC-SV13QD (Q172DCPU)



Electronic component assembly, Inserter, Feeder, Molder, Conveying equipment, Paint applicator, Chip mounting, Wafer slicer, Loader/Unloader, Bonding machine, X-Y table

Linear interpolation (1 to 4 axes), Circular interpolation, Constant-speed, Fixed-pitch feed, Speed control with fixed position stop, Speed switching, Speed control, Speed/position switching

Automatic machinery use
Motion SFC compatible

SV22

Mechanical support language

SW8DNC-SV22QA (Q173DCPU)
SW8DNC-SV22QC (Q172DCPU)



Press feeder, Food processing, Food packaging, Winding machine, Spinning machine, Textile machine, Printing machine, Book binder, Tire molder, Paper-making machine

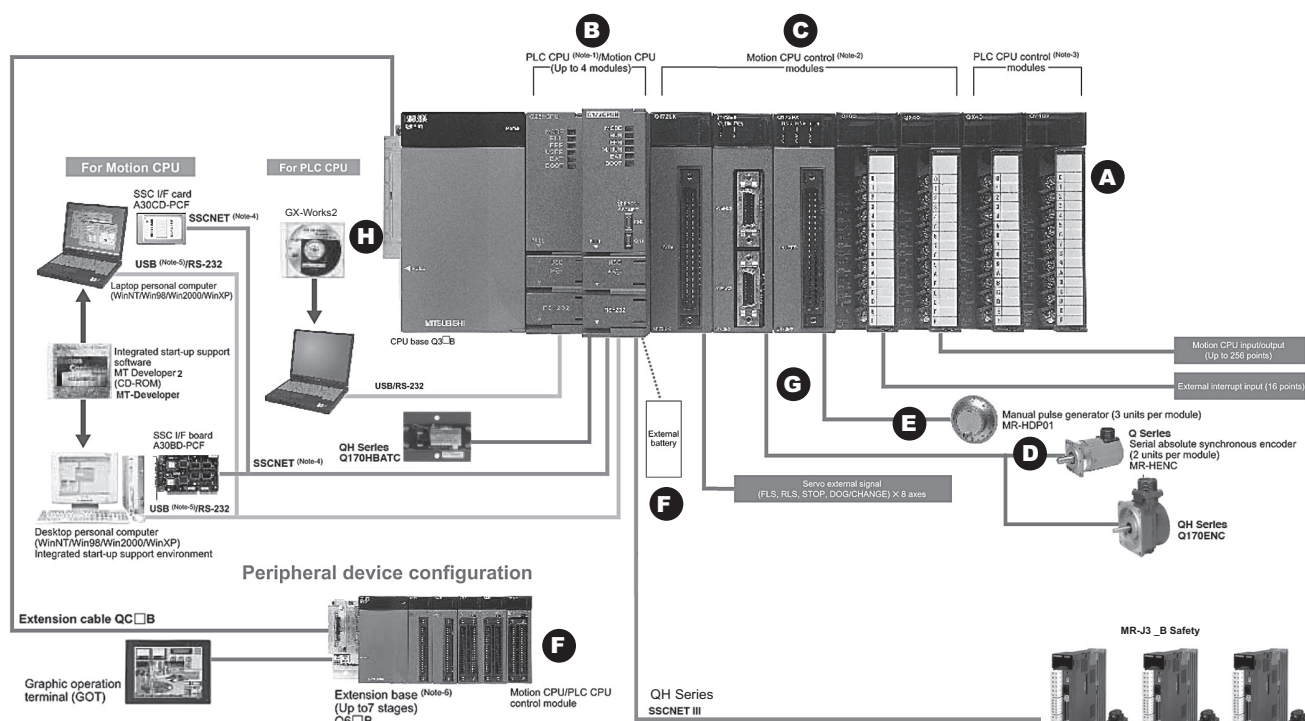
Synchronous control, Electronic shaft, Electronic clutch, Electronic cam, Draw control

Q Series Integrated Start-up Support Software Packages

Model Number	Stocked Item	Description	Details
MT-DEV2-C1	S	SW1DNC-MTW2-E (Integrated start-up support software)	Conveyor assembly software; Automatic machinery software; Cam data creation software; Digital oscilloscope software; Document print software; Help section
		QD Series Q172DCPU (SSCNET III) Operating Software (OS)	SW8DNC-SV13QD: For conveyor assembly SW8DNC-SV22QC: For automatic machinery
		QD Series Q173DCPU (SSCNET III) Operating Software (OS)	SW8DNC-SV13QB: For conveyor assembly SW8DNC-SV22QA: For automatic machinery
		Single user license - can be used on 1 computer at a time; Installation manual included	
MT-DEV2-C5	-	5 user license - can be used on up to 5 computers at a time	
MT-DEV2-C10	-	10 user license - can be used on up to 10 computers at a time	
MT-DEV2-C25	-	25 user license - can be used on up to 25 computers at a time	
MT-DEV2-C50	-	50 user license - can be used on up to 50 computers at a time	

QH Series Motion Controllers

The QH Series Motion Controllers meet your needs for higher performance and smaller size. Ideal for 1.5 axes to 96 control axes. Various motion controller operating system software packages are also available. With increased high-speed motion, flexibility and compatibility of the Q Series Automation Platform, the QH Series Motion Controllers are the best choice for next-generation motion control technology!



Note-1: The PLC CPU for Multiple CPU can be used in Q-mode.
 Note-2: The Motion CPU control module which can be accessed from the PLC CPU is only input module.
 Note-3: The other CPU control module cannot be accessed from the Motion CPU.
 Note-4: Only 1 personal computer can be connected via SSCNET.
 Note-5: USB cannot be used in Windows NT® 4.0.
 Note-6: The module installed in the QA1S6-B cannot be controlled in the Motion CPU.

Note-7: The external battery for backup of the parameter/program is required at the continuously power off for 1000 hours or more. Refer to "SSCNET connecting method" for connection between the Motion CPU module and servo amplifier/external battery.

A. CPU Base Units / Power Supply Module / CPU Modules.....	219
B. Motion Controller CPU Modules	219
C. Special Function Modules.....	220
D. Synchronous Encoder.....	220
E. Manual Pulse Generator.....	221
F. Peripheral Equipment.....	222
G. Misc. Parts / Cables / Connectors / Manuals.....	222
H. Operating / Programming Software.....	224

A Q Series CPU Base Units

Q Series Base Information

Model Number	Q38B-E	Q35B-E	Q38B-E	Q312B-E	Q63B	Q65B	Q68B	Q612B
Type	Base Unit				Extension Base Unit			
Specifications and Extension Connection Cables	See Q section of this PSG for detailed information and specifications							

Power Supply Modules

Model Number	Q61P-A1	Q61P-A2	Q62P	Q63P	Q64P
Specifications	See Q section of this PSG for detailed information and specifications				

Sequence CPU Modules

Model Number	Q00CPU	Q01CPU	Q02CPU	Q02HCPU	Q06HCPU	Q12HCPU	Q25HCPU
Specifications	See Q section of this PSG for detailed information and specifications						

Cables for CPU to Extension Base Unit or Extension Base Unit to Extension Base Unit

Model Number	QC05B	QC06B	QC12B	QC30B	QC50B	QC100B
Specifications	See Q section of this PSG for detailed information and specifications					

B QH Series Motion Controller CPU Modules

Model Number		Q172HCPU (SSCNET III)	Q173HCPU (SSCNET III)
Stocked Item		S	S
Number of Control Axes		Up to 8 axes	Up to 32 axes
Operation Cycle (Default)	SV13	0.44ms / 1 to 3 axes 0.88ms / 4 to 8 axes	0.44ms / 1 to 3 axes 0.88ms / 4 to 10 axes 1.77ms / 11 to 20 axes 3.55ms / 21 to 32 axes
	SV22	0.88ms / 1 to 4 axes 1.77ms / 5 to 8 axes	0.88ms / 1 to 5 axes 1.77ms / 6 to 14 axes 3.55ms / 15 to 28 axes 7.11ms / 29 to 32 axes
Interpolation Functions		Linear interpolation (4 axes max.), circular interpolation (2 axes), Helical interpolation (3 axes)	
Control Modes		PTP (Point to Point) control, Speed control, Speed-position control, Fixed-pitch feed, Constant speed control, Position follow-up control, Speed switching control, High-speed oscillation control, Synchronous control (SV22)	
Acceleration/ Deceleration Control		Automatic trapezoidal acceleration/deceleration, S-curve acceleration/deceleration	
Compensation		Backlash compensation, electronic gear, phase compensation (SV22)	
Programming Language		Motion SFC, dedicated instruction, mechanical support language (SV22)	
Program Capacity		14k steps	
Number of Positioning Points		3200 points (Positioning data can be designated indirectly)	
Programming Tool		IBM PC/AT	
Peripheral I/F		USB / SSCNET III	
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 (Home position return re-try function provided, home position shift function provided)	
JOG Operation Function		Provided	
Manual Pulse Generator Operation Function		Possible to connect 3 modules	
Synchronous Encoder		Possible to connect 12 modules	Possible to connect 8 modules
M-Code Function		M-code output function provided M-code completion wait function provided	
Limit Switch Output Function		Number of output points 32 point/axis. Watch data: Motion control data/Word device	
Absolute Position System		Made compatible by setting battery to servo amplifier. (Possible to select the absolute data method or incremental method for each axis)	
Number of SSCNET II I/F		-	-
Number of SSCNET III Systems		1 systems	2 system
Manual Pulse Generator/ Synchronous Encoder/ Servo External Signals Interface Module		Q172LX: 1 module usable Q172EX: 4 modules usable Q173PX: 3 modules usable (*1)	Q172LX: 4 modules usable Q172EX: 6 modules usable Q173PX: 4 modules usable (*1)
Internal Current		1.14	1.25
Dimensions (W x H x D) mm (inch)		27.4 x 104.6 x 114.3 (1.08 x 4.12 x 4.50)	
Weight (kg)		0.22	0.23



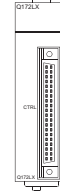
Note:

- When using the incremental synchronous encoder by using SV22, you can use 4 modules. When connecting the manual pulse generator, you can use only one module.

Special Function Modules

QH Series Servo External Signals Interface Module

The Q172LX is assigned a set of input numbers per axis. The system setting of the positioning software package is used to determine the I/O numbers corresponding to the axis numbers.

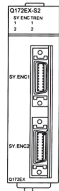


Model Number		Q172LX	
Stocked Item		S	
Number of Inputs		Servo external signals: 32 points (Upper stroke limit, Lower stroke limit, Stop input, Proximity DOG/Speed-position switching signal) (4 points x 8 axes) (Note)	
Input Method		Sink/Source type	
Isolation Method		Photocoupler	
Rated Input Voltage		12/24 VDC	
Rated Input Current		12 VDC 2mA/24 VDC 4mA	
Operating Voltage Range		10.2 to 26.4 VDC (12/24 VDC +10/-15%, ripple ratio 5% or less)	
ON Voltage/Current		Min. 10 VDC or more/2.0mA or more	
OFF Voltage/Current		Max. 1.8 VDC or less/0.18mA or less	
Input Resistance		Approx. 5.6KΩ	
Response time of the Upper/Lower Stroke Limit and STOP Signal	OFF to ON	1ms	
	ON to OFF		
Response Time of the Proximity DOG, Speed-Position Switching Signal	OFF to ON	0.4ms/0.6ms/1ms (CPU parameter setting, Default 0.4ms)	
	ON to OFF		
Common Terminal Arrangement		32 points/common (common terminal: B1, B2)	
Indicates to Display		ON indication (LED)	
External Connector Type		40 pin connector	
Applicable Wire Size		0.3mm²	
Applicable Connector for the External Connection		A6CON1 (Attachment), A6CON2, A6CON3 (Optional)	
Applicable Connector/Terminal Block Converter Module		A6TBXY36, A6TBXY54, A6TBXY70 (Optional)	
Number of I/O Occupying Points		32 points (I/O allocation: Intelligent, 32 points)	
Internal Current Consumption (5VDC) [A]		0.05	
Weight (kg)		0.15	
Dimensions [mm (inch)] (W x H x D)		27.4 x 98 x 89.3 (1.08 x 3.86 x 3.52)	

Servo External Signal	Application	Number of Points
Upper Stroke Limit Input (FLS)	For detection of upper and lower stroke limits	32 points (4 points/8 axes)
Lower Stroke Limit Input (RLS)		
Stop Signal Input (STOP)	For stopping under speed or positioning control	
Proximity DOG/Speed-Position Switching Input (DOG/CHANGE)	For detection of proximity DOG at proximity DOG or count type home position return or for switching from speed to position switching control.	

Note: Signal No. 1 to 8 can be assigned to the specified axis. To make the assignment, use the system settings of the positioning software package.

QH Series Serial Absolute Synchronous Encoder and Interface Module



Tracking Enable Signal Input

Model Number		Q172EX-S2	Q172EX-S3
Stocked Item		S	-
Number of Inputs		Tracking enable signal: 2 points	
Input Method		Sink/Source type	
Isolation Method		Photocoupler	
Rated Input Voltage		12/24 VDC	
Rated Input Current		12 VDC 2mA/24 VDC 4mA	
Operating Voltage Range		10.2 to 26.4 VDC (12/24 VDC +10 / -15%, ripple ratio 5% or less)	
ON Voltage/Current		10 VDC or more/2.0mA or more	
OFF Voltage/Current		1.8 VDC or less/0.18mA or less	
Input Resistance		Approx. 5.6KΩ	
Response Time	OFF to ON ON to OFF	0.4ms/0.6ms/1ms (CPU parameter setting, Default 0.4ms)	
Common Terminal Arrangement			
Display		ON indication (LED)	

Serial Absolute Synchronous Encoder Input

Model Number	Q172EX-S2	Q172EX-S3
Applicable Signal Types	Differential-output type : (SN75C1168 or equivalent)	
Transmission Method	Serial communications	
Synchronous Method	Counter-clock-wise (viewed from end of shaft)	
Communication Speed	2.5 Mbps	
Applicable Types	Q170ENC	
Position Detection Method	Absolute (ABS) method	
Resolution	262144 PLS/rev (18bit)	
Number of Modules	2/module	
External Connector Type	20 pin connector	
Applicable Connector for the External Connection	Q170ENCCNS (Optional)	
Applicable Wire	MB14B0023 12 Pair	
Recommended Cables	Q170ENCCBL_M; _ = cable length 2m (6.56 ft.), 5m (16.4 ft.), 10m (32.81 ft.), 20m (65.62 ft.), 30m (98.43 ft.), 50m (164.04 ft.) (Note)	
Cable Length	Up to 50m (164.04 ft.)	
Back up the Absolute Position	Depends on A6BAT/MR-BAT	
Battery Service Life Time (Value in Actual)	12000 [h], (Example of encoders x 2, ambient temperature 40°C (104°F)) 24000 [h], (Example of encoders x 1, ambient temperature 40°C (104°F))	
Memory of Data Exchange	None	Provided
Number of I/O Occupying Points	32 points (I/O allocation: Intelligent, 32 points)	
Internal Current Consumption (5VDC) [A]	0.07	
Dimensions [mm (inch)]	98 x 27.4 x 90 (3.86 x 1.08 x 3.54) H x W x D	
Weight [kg]	0.15	

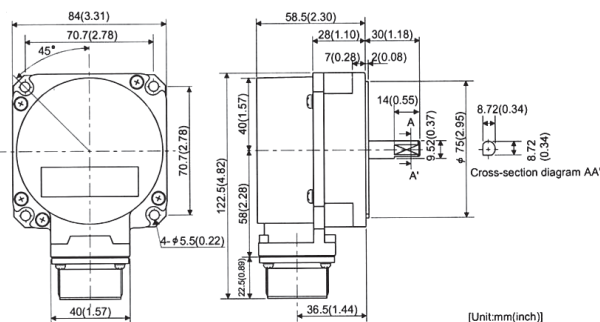
Note: Use these cables when the tracking enable signal is not used. Customer must make a cable when the tracking enable signal is used.

QH Series Synchronous Encoder (optional)

Model Number	Q170ENC
Stocked Item	S
Resolution	262144 PLS/rev
Transmission Method	Serial Communications (Connected to Q172EX-S2/S3)
Direction on Increase	Counter clockwise (viewed from end of shaft)
Protective Construction (*1)	IP65 (dust proof, waterproof) except for the shaft-through portion
Permitted Speed at ON	3600 r/min
Permitted Speed at OFF (*2)	500 r/min
Permitted Axis Load	Radial load: Max 19.6N; Thrust load: Max 9.8N
Runout at Input Shaft Tip	0.02 mm (0.00079 in) or less; 15 mm (0.59 in) from tip
Recommended Coupling	Bellows coupling
Permissible Angular Acceleration	40,000 rad/s ²
Internal Current Consumption	0.2 (A)
Connecting Cable	Q170ENCCBL_M; _ = cable length 2m (6.56 ft.), 5m (16.4 ft.), 10m (32.8 ft.), 20m (65.6 ft.), 30m (98.4 ft.), 50m (164.04 ft.)
Communication Method	Differential driver/receiver conforming to RS-422A
Transmission Distance	Up to 50m (164.04 ft)
Operating Temperature	-5°C to 55°C (23 to 131°F)
Weight kg (lbs)	0.6 (1.3)

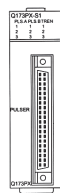
Notes:

1. If an "o-ring" is required, please purchase separately.
2. If it exceeds a permitted speed at power OFF, a position displacement is generated.



[Unit:mm(inch)]

QH Series Manual Pulse Generator and Interface Module



Tracking Enable Signal Input

Model Number	Q173PX-S1
Stocked Item	S
Number of Inputs	Tracking enable signal: 3 points
Input Method	Sink/Source type
Isolation Method	Photocoupler
Rated Input Voltage	12/24 VDC
Rated Input Current	12 VDC 2mA/24 VDC 4mA
Operating Voltage Range	10.2 to 26.4 VDC (12/24 VDC +10 / -15%, ripple ratio 5% or less)
ON Voltage/Current	10 VDC or more / 2.0 mA or more
OFF Voltage/Current	1.8 VDC or less / 0.18 mA or less
Input Resistance	Approx. 5.6kΩ
Common Terminal Arrangement	1 point/common (Common terminal: TREN.COM)
Display	ON indication (LED)

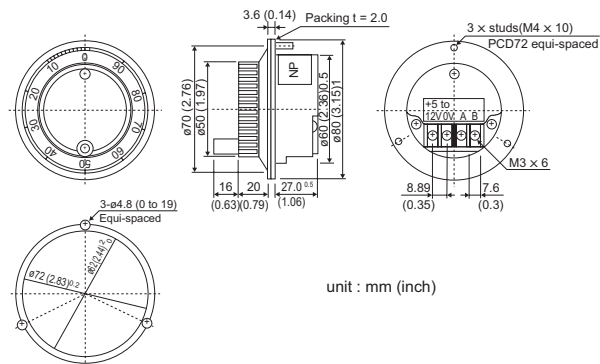
Manual Pulse Generator Input

Model Number	Q173PX-S1
Stocked Item	S
Number of Modules (Max.)	3 per CPU
Voltage-Output/ Open Collector	High Voltage 3.0 to 5.25 VDC Low Voltage 0 to 1.0 VDC
Differential-output type (26LS31 or equivalent)	High Voltage 2.0 to 5.25 VDC Low Voltage 0 to 0.8 VDC
Input Frequency	Max. 200kpps (After magnification by 4)
Applicable Types	Voltage-output type/Open-collector type (5 VDC), Recommended product: MR-HDP01; Differential-output type: (26LS31 or equivalent)
External Connector Type	40 pin connector
Applicable Wire Size	0.3mm ²
Applicable Connector for the External Connection	A6CON1 (Attachment) A6CON2, A6CON3 (Optional)
Applicable Connector/ Terminal Block Converter Module	A6TBXY36, A6TBXY54, A6TBXY70 (Optional)
Cable Length	Voltage-Output/Open Collector Output Type 30m (98.43 ft.) Differential-Output Type (Open collector output type: 10m (32.81 ft.))
Memory for Data Exchange	Provided
Number of I/O Occupying Points	32 points (I/O allocation: Intelligent, 32 points)
Internal Current Consumption	0.11
Dimensions [mm (inch)] H x W x D	98 x 27.4 x 90 (3.86 x 1.08 x 3.54)
Weight [kg]	0.15

QH Series Manual Pulse Generator (optional)

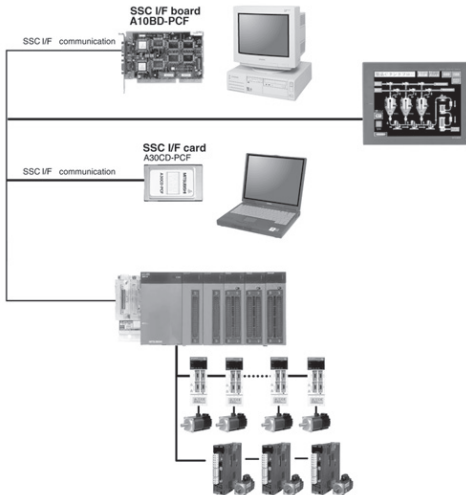
Model Number	MR-HDP01
Stocked Item	S
Pulse Resolution Method	25 PLS/rev (100 PLS/rev at magnification of 4) Voltage - output (power supply voltage - 1V or more), Output current = Up to 20 mA
Power Supply Voltage	4.5 to 13.2 VDC
Consumption Current	60
Life	1,000,000 revolutions at 200 r/min
Permitted Axis Load	Radial load : Max. 19.6N; Thrust load : Max. 9.8N
Pulse Signal Status	2 signals: A phase, B: phase, 90° phase difference
Friction Torque	0.1N/m (at 20°C (68°F))
Operating Temperature	-10°C to +60°C (14°F to 140°F)
Weight kg (lbs)	0.4 (0.88)

Notes: If using an external power supply, it needs to be 5 VDC.



unit : mm (inch)

Peripheral Equipment



Operating Environment

Item	WindowsNT® 4.0 (Service Pack 2 or later) or Windows® 98	Windows® 2000	Windows® XP
CPU	Recommended Pentium® 133MHz or more	Recommended Pentium® II 233MHz or more	Recommended Pentium® II 450MHz or more
Memory Capacity	Recommended 32MB or more	Recommended 64MB or more	Recommended 192MB or more
Hard Disk Free Space	SW6RNC-GSVE: 333MB + SW6RNC-GSVHELPE: 155 MB (Possible to select installation)		
Display	SVGA (resolution 800 x 600 pixels, 256 colors) or more		
Application Software	Word 97, Excel 97 or Word 2000, Excel 2000 (For document printing) Visual C++ 4.0 or more, Visual Basic 4.03 (32 bit) or more (For communication API function)		

Note: WindowsNT®, Windows®, Word, Excel, Visual C++ and Visual Basic are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. Pentium® is a trademark or registered trademark of Intel Corporation or its subsidiaries in the United States and/or other countries.

Peripheral Equipment

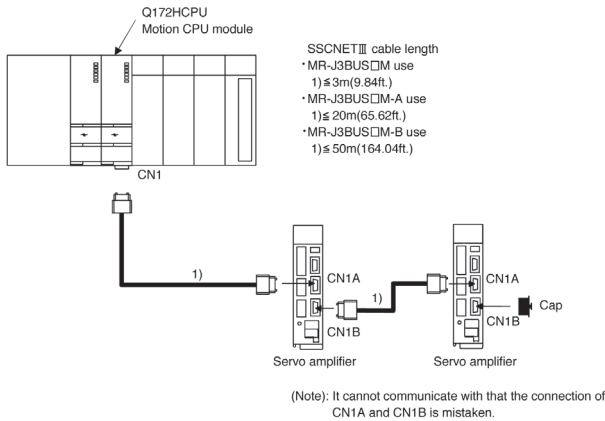
Model Number	Description	Stocked Item
A10BD-PCF	SSC I/F PCI slot board for PC	-
A30CD-PCF (Note)	SSC I/F PCMCIA card for laptop	S
HMI	Please select the HMI from the GOT1000/ E Series Human Machine Interfaces section in this Product Selection Guide	N/A

Note: I/F card only - See Programming Software section model number MT-DEV-SET-__ for the complete I/F Kit. (Software, PCMCIA, Cable). When using the A30CD-PCF, the PC card driver for WindowsNT® provided by the personal computer manufacturer must be used.

QH Misc Parts • Cables • Connectors • Manuals

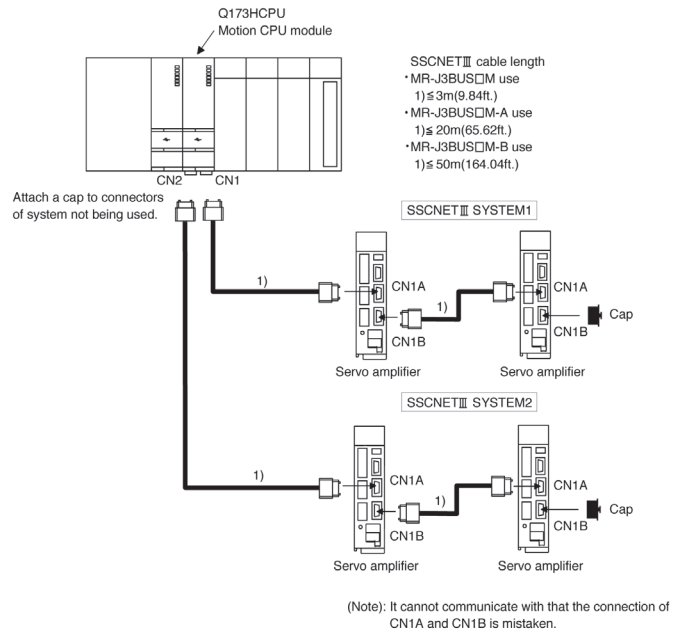
QH Series • Q172HCPU

Connection between Q172HCPU and MR-J3-B Safety servo amplifiers



QH Series • Q173HCPU

Connection between Q173HCPU and MR-J3-B Safety servo amplifiers



Miscellaneous Parts for the System

Model Number	Description	Stocked Item
MR-BAT or A6BAT	Battery to be used with the Q173DV, Q170BAT or Q170ENC	S
Q6BAT	Battery for IC-RAM memory backup of the Q173HCPU/Q172HCPU module.	S
Q170HBATC	Battery holder for Q6BAT (Battery is not supplied, order Q6BAT separately)	S

Cables for Q172H/173HCPU (SSCNET III) to MR-J3-B Safety Servo Amplifiers

Model Number	Description	Stocked Item
MR-J3BUS015M	0.15M SSCNET III (plastic) cable from Q172H/173HCPU to MR-J3-B Safety Amplifier	S
MR-J3BUS03M	0.3M SSCNET III (plastic) cable from Q172H/173HCPU to MR-J3-B Safety Amplifier	S
MR-J3BUS05M	0.5M SSCNET III (plastic) cable from Q172H/173HCPU to MR-J3-B Safety Amplifier	S
MR-J3BUS1M	1M SSCNET III (plastic) cable from Q172H/173HCPU to MR-J3-B Safety Amplifier	S
MR-J3BUS3M	3M SSCNET III (plastic) cable from Q172H/173HCPU to MR-J3-B Safety Amplifier	S
MR-J3BUS5M-A	5M SSCNET III (plastic) cable from Q172H/173HCPU to MR-J3-B Safety Amplifier	S
MR-J3BUS10M-A	10M SSCNET III (plastic) cable from Q172H/173HCPU to MR-J3-B Safety Amplifier	S
MR-J3BUS20M-A	20M SSCNET III (plastic) cable from Q172H/173HCPU to MR-J3-B Safety Amplifier	S
MR-J3BUS30M-B	30M SSCNET III (glass) cable from Q172H/173HCPU to MR-J3-B Safety Amplifier	S
MR-J3BUS40M-B	40M SSCNET III (glass) cable from Q172H/173HCPU to MR-J3-B Safety Amplifier	-
MR-J3BUS50M-B	50M SSCNET III (glass) cable from Q172H/173HCPU to MR-J3-B Safety Amplifier	-

Connectors for Servo Amplifiers

Model Number	Description	Stocked Item
Connector Cap	Comes with 2 caps on the MR-J3-B Safety amplifiers standard	-

Cables, Connectors and Parts for Special Function Modules

Model Number	Description	Stocked Item
A6CON1	Q173PX connector to use the manual pulse generator and incremental synchronous encoder or Q172LX connector to use the servo external input signals.	S
QD75MCBL-2M	2M I/O pigtail cable to use in place of the A6CON1 connector.	S
QD75MCBL-5M	5M I/O pigtail cable to use in place of the A6CON1 connector.	S
QD75MCBL-10M	10M I/O pigtail cable to use in place of the A6CON1 connector.	S
A6TBXY36	Q172LX Terminal Block Conversion Module - Sink Type Input/Output (Standard Type)	S
A6TBXY54	Q172LX Terminal Block Conversion Module - Sink Type Input/Output (2-wire Type)	-
AC05TB	0.5M cable from Q172LX to A6TBXYoo Terminal Block Conversion Module	S
AC10TB	1M cable from Q172LX to A6TBXYoo Terminal Block Conversion Module	S
AC20TB	2M cable from Q172LX to A6TBXYoo Terminal Block Conversion Module	S
AC30TB	3M cable from Q172LX to A6TBXYoo Terminal Block Conversion Module	S
AC50TB	5M cable from Q172LX to A6TBXYoo Terminal Block Conversion Module	S
AC80TB	8M cable from Q172LX to A6TBXYoo Terminal Block Conversion Module	-
AC100TB	10M cable from Q172LX to A6TBXYoo Terminal Block Conversion Module	-
Q170ENCNS	Connector set for the Q170ENC absolute synchronous encoder	-
Q170ENCBL2M	2M cable from the Q172EX-S2/S3 to the Q170ENC absolute synchronous encoder	-
Q170ENCBL5M	5M cable from the Q172EX-S2/S3 to the Q170ENC absolute synchronous encoder	-
Q170ENCBL10M	10M cable from the Q172EX-S2/S3 to the Q170ENC absolute synchronous encoder	-
Q170ENCBL20M	20M cable from the Q172EX-S2/S3 to the Q170ENC absolute synchronous encoder	-
Q170ENCBL30M	30M cable from the Q172EX-S2/S3 to the Q170ENC absolute synchronous encoder	-
Q170ENCBL50M	50M cable from the Q172EX-S2/S3 to the Q170ENC absolute synchronous encoder	-

Cables for Peripheral Equipment

Model Number	Description	Stocked Item
Q170BDCBL3M	3M cable for SSC I/F PCI slot board for PC	-
Q170BDCBL5M	5M cable for SSC I/F PCI slot board for PC	-
Q170BDCBL10M	10M cable for SSC I/F PCI slot board for PC	-
Q170CDCBL3M (Note)	3M cable for SSC I/F PCMCIA card for laptop	S
Q170CDCBL5M (Note)	5M cable for SSC I/F PCMCIA card for laptop	-
Q170CDCBL10M (Note)	10M cable for SSC I/F PCMCIA card for laptop	-

Note: I/F cable only - see programming software section model number MT-DEV-SET-C_ for the complete I/F kit. (software, PCMCIA card and cable)

Manuals

Model Number	Description	Stocked Item
IB(NA)0300110	Q172HCPU/Q173HCPU motion controller user's manual	-
IB(NA)0300111	Q172HCPU/Q173HCPU motion controller programming manual (Common)	-
IB(NA)0300112	Q172HCPU/Q173HCPU motion controller (SV13/SV22) programming manual (SFC)	-
IB(NA)0300113	Q172HCPU/Q173HCPU motion controller (SV13/SV22) programming manual (REAL)	-
IB(NA)0300114	Q172HCPU/Q173HCPU motion controller (SV22) programming manual (VIRTUAL)	-
SH(NA)030084	MR-J3-B Safety servo amplifier instruction manual	S
SH(NA)030041	MR-J3 servo motor instruction manual	S

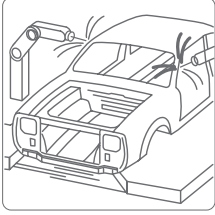
Operating • Programming Software MT Developer Software

Conveyor assembly use
Motion SFC compatible

SV13

Dedicated language

SW6RN-SV13QK (Q173HCPU)
SW6RN-SV13QM (Q172HCPU)



Electronic component assembly, Inserter, Feeder, Molder, Conveying equipment, Paint applicator, Chip mounting, Wafer slicer, Loader/Unloader, Bonding machine, X-Y table

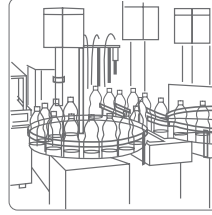
Linear interpolation (1 to 4 axes), Circular interpolation, Constant-speed, Fixed-pitch feed, Speed control with fixed position stop, Speed switching, Speed control, Speed/position switching

Automatic machinery use
Motion SFC compatible

SV22

Mechanical support language

SW6RN-SV22QJ (Q173HCPU)
SW6RN-SV22QL (Q172HCPU)



Press feeder, Food processing, Food packaging, Winding machine, Spinning machine, Textile machine, Printing machine, Book binder, Tire molder, Paper-making machine

Synchronous control, Electronic shaft, Electronic clutch, Electronic cam, Draw control

QH Series Integrated Start-up Support Software Packages

Model Number	Stocked Item	Description	Details
MT-DEV2-C1	S	SW1DNC-MTW2-E (Integrated start-up support software)	Conveyor assembly software; Automatic machinery software; Cam data creation software; Digital oscilloscope software; Document print software; Help section
		QH Series Q172HCPU (SSCNET III) Operating Software (OS)	SW6RN-SV13QM: For conveyor assembly SW6RN-SV22QL: For automatic machinery
		QH Series Q173HCPU (SSCNET III) Operating Software (OS)	SW6RN-SV13QK: For conveyor assembly SW6RN-SV22QJ: For automatic machinery
		Single user license - can be used on 1 computer at a time; Installation manual included	
MT-DEV2-C5	-	5 user license - can be used on up to 5 computers at a time	
MT-DEV2-C10	-	10 user license - can be used on up to 10 computers at a time	
MT-DEV2-C25	-	25 user license - can be used on up to 25 computers at a time	
MT-DEV2-C50	-	50 user license - can be used on up to 50 computers at a time	

Note:

1. Select the user license necessary

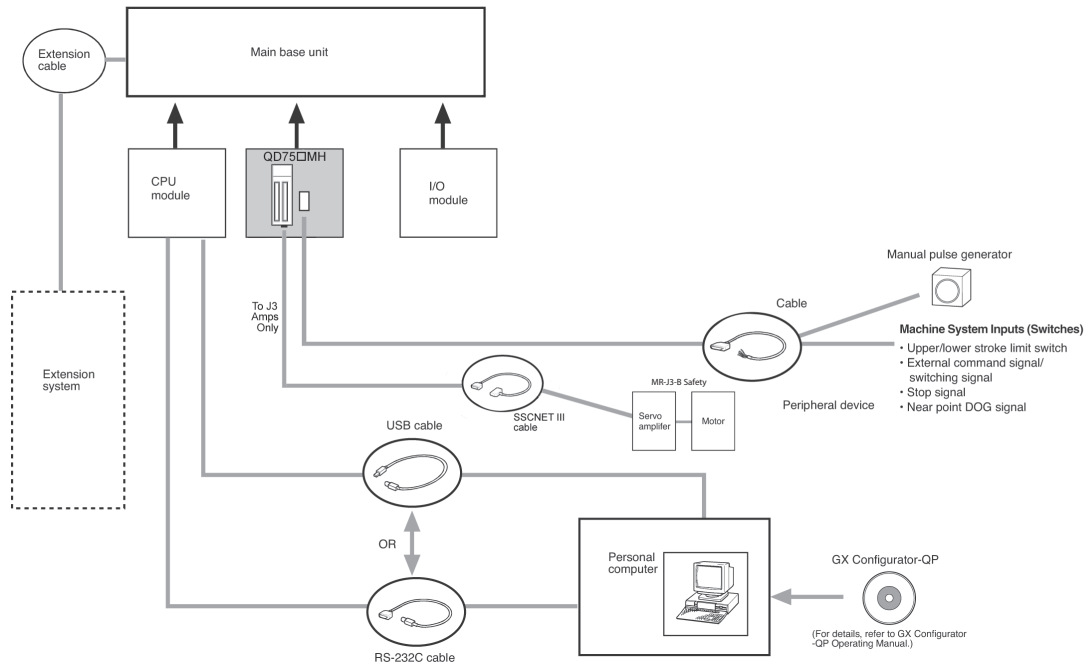
Model Number	Description	Stocked Item
C1	Single user license - can be used on 1 computer at a time	S
C5	5 user license - can be used on up to 5 computers at a time	-
C10	10 user license - can be used on up to 10 computers at a time	-
C25	25 user license - can be used on up to 25 computers at a time	-
C50	50 user license - can be used on up to 50 computers at a time	-

QD75MH Positioning Modules for QH Series Automation Platform

One of Q Series' strengths is the ability to integrate motion control directly onto your system. If a Q Series motion CPU is not required the QD75MH positioning modules provide a range of alternative motion control capabilities. The QD75MH is connected to MR-J3-B Safety servo amplifiers by means of the Servo System Control Network (SSCNET III). This allows compatibility with absolute position systems, between the QD75MH and servo amplifiers (overall distance of 30 meters). Key features include: one, two and four axis versions available; 1MHz output capacity; Support up to 256 axes; 4 axis linear interpolation; Circular interpolation; variety of control schemes (point to point, fixed feed, speed, speed/position & position/speed).

System Configuration

The general image of the system, including the QD75M and peripheral devices is shown below.



QD75MH Parts List

Model Number	Description	Stocked Item
QD75MH1	SSCNET III Single axis motion controller for Q Series Automation Platform	S
QD75MH2	SSCNET III Dual axis motion controller for Q Series Automation Platform	S
QD75MH4	SSCNET III 4 axis motion controller for Q Series Automation Platform	S
GX-CONFIG-QP-C1	Programming software for QD75M and QD75MH motion modules	S
MR-HDP01	Optional manual pulse generator	S
Cables and Accessories		
A6CON1	Spare I/O connector, solder type	S
A6CON2	Spare I/O connector, crimp type	S
A6CON3	Spare I/O connector, IDC type	S
A6CON4	Spare I/O connector, low profile type	-
QD75MCBL-2M	I/O cable - pigtail (order 2 for QD75M4 or QD75MH4) 2M	S
QD75MCBL-5M	I/O cable - pigtail (order 2 for QD75M4 or QD75MH4) 5M	S
QD75MCBL-10M	I/O cable - pigtail (order 2 for QD75M4 or QD75MH4) 10M	S
MR-J3BUS015M	SSCNET III (plastic) cable (QD75MH to MR-J3-BS) and (MR-J3-BS to MR-J3-BS) 0.15M	S
MR-J3BUS03M	SSCNET III (plastic) cable (QD75MH to MR-J3-BS) and (MR-J3-BS to MR-J3-BS) 0.3M	S
MR-J3BUS05M	SSCNET III (plastic) cable (QD75MH to MR-J3-BS) and (MR-J3-BS to MR-J3-BS) 0.5M	S
MR-J3BUS1M	SSCNET III (plastic) cable (QD75MH to MR-J3-BS) and (MR-J3-BS to MR-J3-BS) 1M	S
MR-J3BUS3M	SSCNET III (plastic) cable (QD75MH to MR-J3-BS) and (MR-J3-BS to MR-J3-BS) 3M	S
MR-J3BUS5M-A	SSCNET III (plastic) cable (QD75MH to MR-J3-BS) and (MR-J3-BS to MR-J3-BS) 5M	S
MR-J3BUS10M-A	SSCNET III (plastic) cable (QD75MH to MR-J3-BS) and (MR-J3-BS to MR-J3-BS) 10M	S
MR-J3BUS20M-A	SSCNET III (plastic) cable (QD75MH to MR-J3-BS) and (MR-J3-BS to MR-J3-BS) 20M	S
MR-J3BUS30M-B	SSCNET III (glass) cable (QD75MH to MR-J3-BS) and (MR-J3-BS to MR-J3-BS) 30M	S
MR-J3BUS40M-B	SSCNET III (glass) cable (QD75MH to MR-J3-BS) and (MR-J3-BS to MR-J3-BS) 40M	-
MR-J3BUS50M-B	SSCNET III (glass) cable (QD75MH to MR-J3-BS) and (MR-J3-BS to MR-J3-BS) 50M	-
Manuals		
IB(NA)66900	GX-CONFIG-QP-C1 software operating manual	-
IB(NA)0300117	QD75MH user manual (details)	-
IB(NA)0300099	QD75MH user manual (hardware)	-

Note: Please refer to the Servomotor and Amplifiers Section in this Product Selection Guide to select servo amplifier and motor model numbers.

QD75MH Performance Specifications

Model Number		QD75MH1	QD75MH2	QD75MH4
No. of Control Axes		1 Axis	2 Axis	4 Axis
Interpolation Function		None	2-axis linear interpolation 2-axis circular interpolation	2-, 3-, or 4-axis linear interpolation 2-axis circular interpolation
Control System		PTP (Point To Point) control, path control (both linear and arc can be set), speed control, speed position switching control, position-speed switching control		
Control Unit		mm, inch, degree, PLS		
Positioning Data		600 data (positioning data Nos. 1 to 600)/axis (Can be set with peripheral device or PLC program.)		
Backup		Parameters, positioning data, and block start data can be saved on flash ROM (battery-less backup)		
Positioning	Positioning System	PTP control: Incremental system/absolute system; Speed-position switching control: Incremental system/absolute system (*1); Position-speed switching control: Incremental system; Path control: Incremental system/absolute system		
	In Absolute System	-214748364.8 to 214748364.7 (μm) • -21474.83648 to 21474.83647 (inch) 0 to 359.99999 (degree) • -2147483648 to 2147483647 (PLS)		
	In incremental System	-214748364.8 to 214748364.7 (μm) • -21474.83648 to 21474.83647 (inch) -21474.83648 to 21474.83647 (degree) • -2147483648 to 2147483647 (PLS)		
	In Speed-Position Switching Control (INC mode) / Position-Speed Switching Control	0 to 214748364.7 (μm) • 0 to 21474.83647 (inch) 0 to 21474.83647 (degree) • 0 to 2147483647 (PLS)		
	In Speed-Position Switching Control (ABS Mode) (*1) Positioning Range	0 to 359.99999 (degree)		
	Speed Command	0.01 to 20000000.00 (mm/min) • 0.001 to 2000000.000 (inch/min) 0.001 to 2000000.000 (degree/min) (*3) • 1 to 50000000 (PLS/s)		
	Acceleration/ Deceleration Process	Automatic trapezoidal acceleration/deceleration, S-pattern acceleration/deceleration		
	Acceleration/ Deceleration Time	1 to 8388608 (ms): Four patterns can be set for each of acceleration time and deceleration time		
	Sudden Stop Deceleration Time	1 to 8388608 (ms)		
Starting Time (ms) (*2)		1-axis linear control: 3.5	Factors in starting time extension. The following times will be added to the starting time in the described conditions: • S-pattern acceleration/deceleration is selected: 0.5 • Other axis is in operation: 1.5 • During continuous positioning control: 0.2 • During continuous path control: 1.0	
		1-axis speed control: 3.5		
		2-axis linear interpolation control (Composite speed): 4.0		
		2-axis linear interpolation control (Reference axis speed): 4.0		
		2-axis circular interpolation control: 4.0		
		2-axis speed control: 3.5		
		3-axis linear interpolation control (Composite speed): 4.0		
		3-axis linear interpolation control (Reference axis speed): 4.0		
		3-axis speed control: 3.5		
		4-axis linear interpolation control: 4.0		
4-axis speed control: 4.0				
External Wiring Connection System		40-pin connector		
Applicable Wire Size		0.3 mm² (when A6CON1 and A6CON4 are used), AWG#24 to 28 (when A6CON2 is used), AWG#28 (twisted)/AWG#30 (single wire) (when A6CON3 is used)		
Applicable Connector for External Device		A6CON1, A6CON2, A6CON3, A6CON4 (sold separately)		
SSCNET III Cable	MR-J3BUS_ _M (*4)	• Connection between QD75MH and MR-J3- _B Safety. • Connection between MR-J3- _B Safety and MR-J3- _B Safety. • Standard code for inside panel. • 0.15m (0.49ft.), 0.3m (0.98ft.), 0.5m (1.64ft.), 1m (3.28ft.), 3m (9.84ft.)		
	MR-J3BUS_ _M-A (*4)	• Connection between QD75MH and MR-J3-B Safety. • Connection between MR-J3- _B Safety and MR-J3- _B Safety. • Standard code for outside panel. • 5m (16.40ft.), 10m (32.81ft.), 20m (65.62ft.)		
	MR-J3BUS_ _M-B (*4)	• Connection between QD75MH and MR-J3- _B Safety. • Connection between MR-J3- _B Safety and MR-J3- _B Safety. • Long distance cable. • 30m (98.43ft.), 40m (131.23ft.), 50m (164.04ft.)		
SSCNET III Cable Overall Length (m)		50	50	50
Internal Current Consumption (5VDC)		QD75MH1 : 0.60A	QD75MH2 : 0.60A	QD75MH4 : 0.60A
Flash ROM Write Count		Max. 100000 times		
No. of Occupied I/O Points (Points)		32 (I/O assignment: 32 points for intelligent function module)		
Dimensions (mm (inch)) H x W x D		98 x 27.4 x 90 (3.86 x 1.08 x 3.54)		
Weight kg (lbs)		0.15 (0.33)		

Notes:

1. In speed-position switching control (ABS mode), the control unit available is "degree" only. (For details, refer to "Section 9.2.17 Speed position switching control (ABS mode)".)
2. Using the "Pre-reading start function", the virtual start time can be shortened. (For details, refer to "Section 12.7.8 Pre-reading start function".)
3. When "Speed control 10 x multiplier setting for degree axis function" is valid, this will be the setting range 0.01 to 20000000.00 (degree/min).
4. _ _ = Cable length. (015: 0.15m (0.49ft.), 03: 0.3m (0.98ft.), 05: 0.5m (1.64ft.), 1: 1m (3.28ft.), 3: 3m (9.84ft.), 5: 5m (16.40ft.), 10: 10m (32.80ft.), 20: 20m (65.62ft.), 30: 30m (98.43ft.), 40: 40m (131.23ft.), 50: 50m (164.04ft.))

QD75MH Input/Output (X/Y) Comparisons

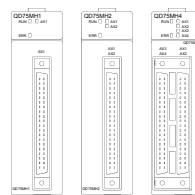
Input (X)	
Name	QD75MH_
(QD75) READY	X00
Axis 1 Start Complete	X10
Axis 2 Start Complete	X11
Axis 3 Start Complete	X12
Axis 4 Start Complete	X13
Axis 1 BUSY	X0C
Axis 2 BUSY	X0D
Axis 3 BUSY	X0E
Axis 4 BUSY	X0F
Axis 1 Positioning Complete	X14
Axis 2 Positioning Complete	X15
Axis 3 Positioning Complete	X16
Axis 4 Positioning Complete	X17
Axis 1 Error Detection	X08
Axis 2 Error Detection	X09
Axis 3 Error Detection	X0A
Axis 4 Error Detection	X0B
Axis 1 M Code ON	X04
Axis 2 M Code ON	X05
Axis 3 M Code ON	X06
Axis 4 M Code ON	X07
Synchronization Flag	X01
Use Prohibited	X02, X03, X18 to X1F

Output (Y)	
Name	QD75MH_
Axis 1 Positioning Start	Y10
Axis 2 Positioning Start	Y11
Axis 3 Positioning Start	Y12
Axis 4 Positioning Start	Y13
Axis 1 STOP	Y04
Axis 2 STOP	Y05
Axis 3 STOP	Y06
Axis 4 STOP	Y07
All Axis Servo ON	Y01
Axis 1 Forward Run JOG Start	Y08
Axis 1 Reverse Run JOG Start	Y09
Axis 2 Forward Run JOG Start	Y0A
Axis 2 Reverse Run JOG Start	Y0B
Axis 3 Forward Run JOG Start	Y0C
Axis 3 Reverse Run JOG Start	Y0D
Axis 4 Forward Run JOG Start	Y0E
Axis 4 Reverse Run JOG Start	Y0F
PLC READY	Y00
Axis 1 Execution Prohibition Flag	Y14
Axis 2 Execution Prohibition Flag	Y15
Axis 3 Execution Prohibition Flag	Y16
Axis 4 Execution Prohibition Flag	Y17
Use Prohibited	Y02, Y03, Y18 to Y1F

Pin Layout	Axis 2 (AX2)		Axis 1 (AX1)	
	Pin No.	Signal Name	Pin No.	Signal Name
B20 B19 B18 B17 B16 B15 B14 B13 B12 B11 B10 B9 B8 B7 B6 B5 B4 B3 B2 B1 ○ A20 A19 A18 A17 A16 A15 A14 A13 A12 A11 A10 A9 A8 A7 A6 A5 A4 A3 A2 A1 Front view of the module	1B20	PULSER B-	1A20	PULSER B+
	1B19	PULSER 1-	1A19	PULSER A+
	1B18	No connect	1A18	No connect
	1B17	No connect	1A17	No connect
	1B16	No connect	1A16	No connect
	1B15	5V	1A15	5V
	1B14	SG	1A14	SG
	1B13	No connect	1A13	No connect
	1B12	No connect	1A12	No connect
	1B11	No connect	1A11	No connect
	1B10	No connect	1A10	No connect
	1B9	No connect	1A9	No connect
	1B8	EMI.COM	1A8	EMI
	1B7	COM	1A7	COM
	1B6	COM	1A6	COM
	1B5	CHG	1A5	CHG
	1B4	STOP	1A4	STOP
	1B3	DOG	1A3	DOG
	1B2	RLS	1A2	RLS
	1B1	FLS	1A1	FLS

Note:

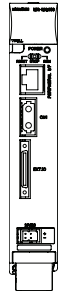
- The pin arrangement of the axis 3 (AX3)/axis 4 (AX4) of QD75MHnn and QD75Mnn is the same.



A MR-MQ100 Motion Controller

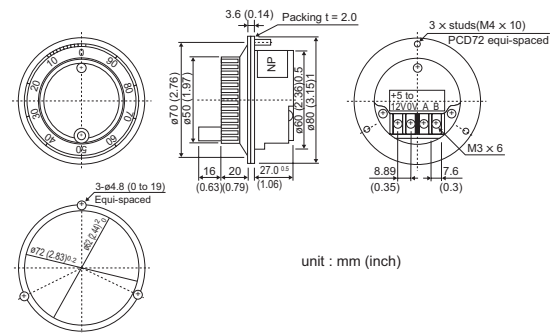
Single Axis Motion Controller (Connectors and OS included)

Model Number		MR-MQ100
Stocked Item		S
Power Supply		24VDC $\pm$ 10% (Required Current Capacity 400mA)
Mass kg (lb)		0.7 (1.54)
Dimensions (mm) H x W x D		178 x 30 x 135
Digital Inputs (Mark Sensors)		4 inputs (24VDC), up to 30 μ s
Digital Outputs		2 outputs (24VDC), up to 1ms
Synchronous Encoder	Signal Type	A/B phase pulse train input, differential line driver or open collector
	Voltage Output / Open Collector Type 5 VDC	Up to 800kpps (After magnification by 4), up to 10m
	Differential-Output Type	Up to 4Mpps (After magnification by 4), up to 30m
Peripheral Interface		100 Mbps/10Mbps Ethernet (for programming and additional operation)
Number of Control Axis		1 axis
Operation Cycle		0.44ms
Servo Amplifier		MR-J3B servo amplifier (over SSCNETIII)
Programmable Language		Motion SFC, dedicated instruction, mechanical support language (SV22)
Memory Back-Up		Q6BAT
Cam Function	Number of Cams	Up to 256 cam profiles may be stored internally
	Resolution Per Cycle	256, 512, 1024, 2048
	Stroke Resolution	32,767
	Control Mode	Two-way cam, feed cam



B Manual Pulse Generator

Model Number	MR-HDP01
Stocked Item	S
Pulse Resolution Method	25 PLS/rev (100 PLS/rev at magnification of 4) Voltage - output (power supply voltage - 1V or more), Output current = Up to 20 mA
Power Supply Voltage	4.5 to 13.2 VDC
Consumption Current	60
Life	1,000,000 revolutions at 200 r/min
Permitted Axis Load	Radial load : Max. 19.6N; Thrust load : Max. 9.8N
Pulse Signal Status	2 signals: A phase, B phase, 90° phase difference
Friction Torque	0.1N/m (at 20°C (68°F))
Operating Temperature	-10°C to +60°C (14°F to 140°F)
Weight kg (lbs)	0.4 (0.88)



unit : mm (inch)

Note: If using an external power supply, it needs to be 5 VDC.

C Peripheral Equipment

HMI's Available to Connect to the MR-MQ100

Model	Description	Stocked Item
GT1595 Series	15"XGA - TFT Color LCD - 65,536 colors	(*1)
GT1585 Series	12.1"SVGA - TFT Color LCD - 65,536 colors	(*1)
GT1572 Series	10.4"VGA - TFT Color LCD - 16 colors	(*1)
GT1575 Series	10.4"VGA/SVGA - TFT Color LCD - 256/65,536 colors	(*1)
GT1562 Series	8.4"VGA - TFT Color LCD - 16 colors	(*1)
GT1565 Series	8.4"VGA - TFT Color LCD - 65,536 colors	(*1)
GT1550 Series	5.7"QVGA - STN Monochrome LCD - 16 gray scales	(*1)
GT1555 Series	5.7"QVGA/VGA - STN/TFT Color LCD - 4096/65,536 colors	(*1)

*Note:

- For more information on HMI's please refer to page Human Machine Interface section in this catalog.

Servo Amplifiers Available to Connect to the MR-MQ100

Model	Description	Stocked Item
MR-J3-B Safety Series	Advanced SSCNETIII optical communication interface	(*1)
MR-J3-B-RJ004 Series	Linear Servo using SSCNETIII optical communication interface	(*1)

Note:

- For more information on Servo Systems please refer to the Servomotors and Amplifiers section in this catalog.

Replacement Batteries for MR-MQ100

Model Number	Description	Stocked Item
Q6BAT	Battery, replacement for memory back-up	S
Q7BAT	Battery, high capacity replacement for memory back-up	S

D Cables • Connectors • Manuals

Cables and Connectors for MR-MQ100

Model Number	Description	Stocked Item
MR-J3BUS015M	SSCNET III cable, 0.15M	S
MR-J3BUS03M	SSCNET III cable, 0.3M	S
MR-J3BUS05M	SSCNET III cable, 0.5M	S
MR-J3BUS1M	SSCNET III cable, 1M	S
MR-J3BUS3M	SSCNET III cable, 3M	S
MR-J3BUS5M-A	SSCNET III cable, 5M	S
MR-J3BUS10M-A	SSCNET III cable, 10M	S
MR-J3BUS20M-A	SSCNET III cable, 20M	S
MR-J3BUS30M-B	SSCNET III cable, 30M	S
MR-J3BUS40M-B	SSCNET III cable, 40M	-
MR-J3BUS50M-B	SSCNET III cable, 50M	-
MR-MQEXTCBL-3M	Cable for EXT I/O connector on MR-MQ100, 3M	S
MR-MQPWRCBL-3M	Cable for 24VDC power to MR-MQ100, 3M	S
EXT I/O Connector	50 pin solder connector for the EXT I/O connector	Included with MR-MQ100 Module
24VDC Connector	24VDC connector and pins for the power input	Included with MR-MQ100 Module

Manual for MR-MQ100

Model Number	Description	Stocked Item
IB(NA)0300150	MR-MQ100 User's Manual (Details)	meau.com

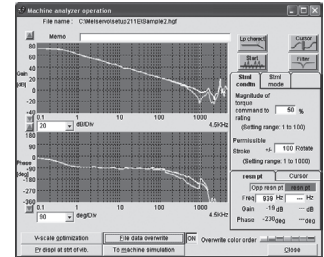
E Software

MR-Configurator (MRZJW3-SETUP221E)

This software makes it easy to perform setup, tuning, monitor display, diagnostics, reading and writing of parameters, and test operations with a personal computer. User-satisfying functions that enable the balance with the machine system, optimum control and short start up time are available.

1. This software can set up and tune your servo system easily with a personal computer.
2. Multiple monitor functions: Graphic display functions are provided to display the servo motor status with the input signal triggers, such as the command pulse, droop pulse and speed.
3. Test operations with a personal computer: Test operation of the servo motors can be performed with a personal computer using multiple test mode menus.
4. Further advanced tuning is possible with the improved advanced functions.

Description	Model Number	Stocked Item
Windows Communication Software	MR-CONFIGURATOR	S
Communication Cable	MR-J3USBCBL3M	S

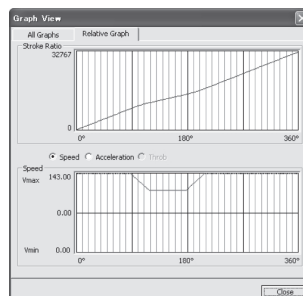


Note: MR-Configurator CD Version 7.00A and higher or MRZJW3-SETUP221E Version C1 and higher must be used with MR-J3-B series amplifiers when using MR-MQ100 motion controller.

MT-Developer2-MQ Software (SW1DNC-MTW2MQ-E)

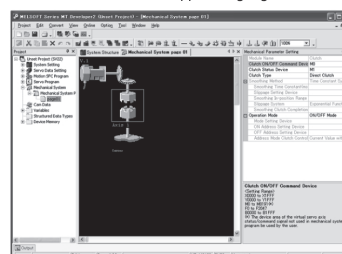
Model Number	Description	Stocked Item
MT-DEV2-MQ-C1	Software for MR-MQ100 Only (1 User License)	S
MT-DEV2-MQ-C5	Software for MR-MQ100 Only (5 User License)	-
MT-DEV2-MQ-C10	Software for MR-MQ100 Only (10 User License)	-
MT-DEV2-MQ-C25	Software for MR-MQ100 Only (25 User License)	-
MT-DEV2-MQ-C50	Software for MR-MQ100 Only (50 User License)	-
MT-DEV2-MQ-C100	Software for MR-MQ100 Only (100 User License)	-

CAM function



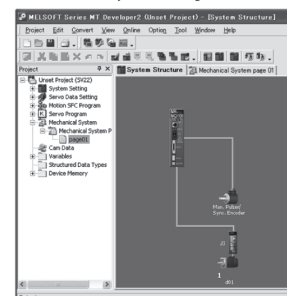
Easy to use menu and graphical interfaces.

Mechanical support language

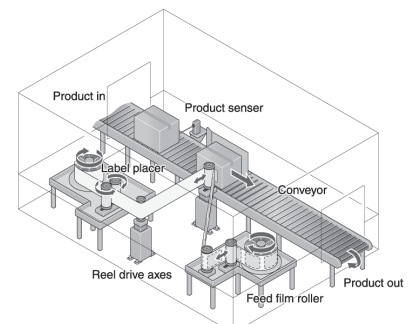


Mechanical Support Language for drag-and-drop creation of electronic clutches, gears and CAMs.

System setting



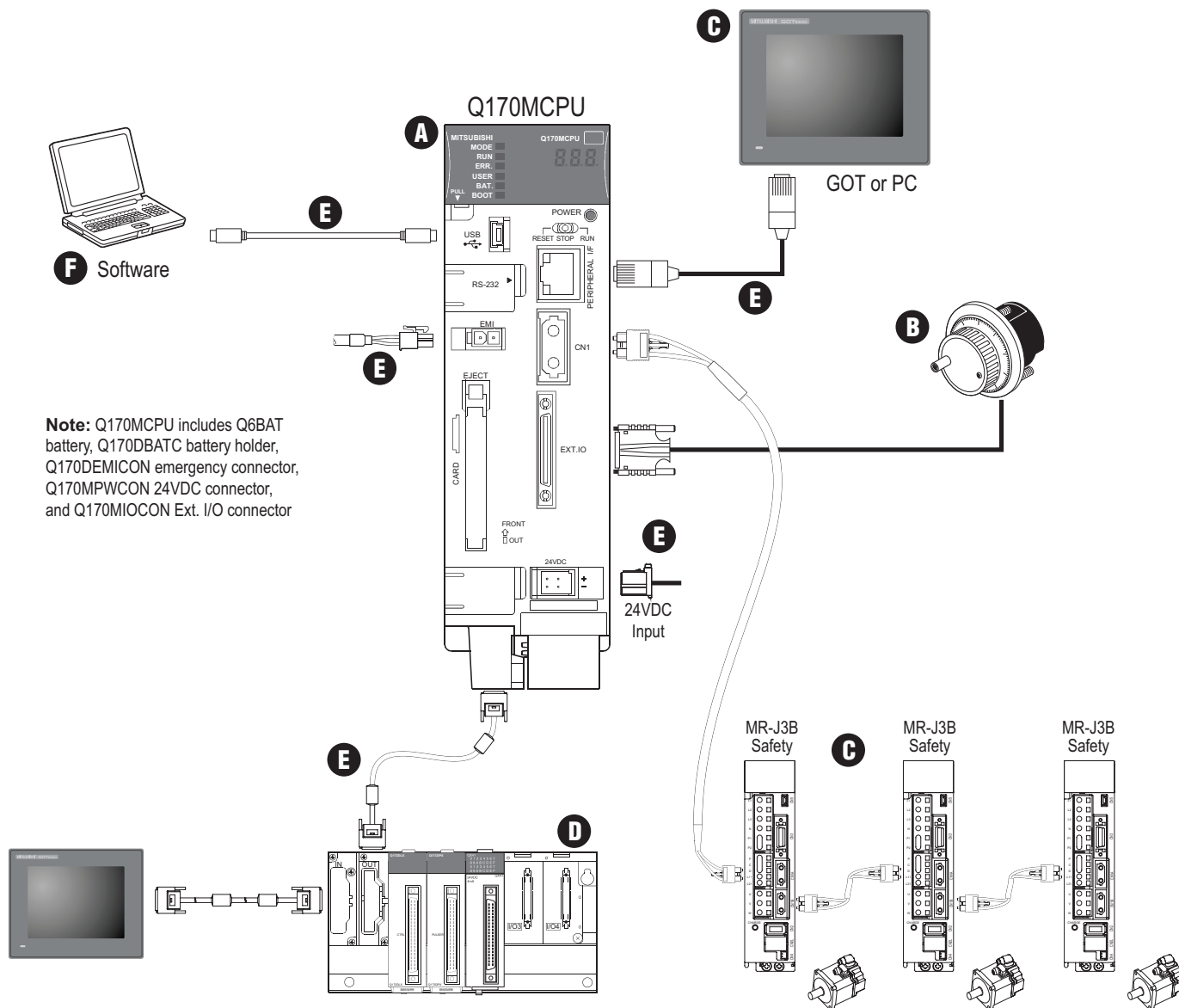
Compatible with all MR-J3B amplifiers for access to time saving functions like Model Adaptive Tuning, Real Time Auto-Tuning and Auto Gain Finding.



Suitable for many applications such as flying saw, labeling, rotary cut and more.

Q170MCPU - Stand-Alone Motion Controller

The new Q170MCPU stand-alone motion controller offers high-performance control of positioning, speed, synchronous phase and torque, and offers on-the-fly mode switching and registration through electronic cam and gearing. This motion controller delivers a compact design, side-by-side mounting with MR-J3B Safety servo drives (50W-55KW) for reduced panel space requirements, and the ability to operate rotary and linear motors and fully closed loop systems. Quick release connectors reduce wiring and setup time and the amplifiers are plug-and-play. All operating parameters are instantly downloaded at power up, and servo axis tuning and in-plant replacement of servo drives are quick and easy.

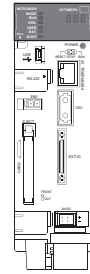


A. Q170MCPU Motion Controller	232
B. Manual Pulse Generator	232
C. Peripheral Equipment	233
D. Extension Base Unit & Modules	233
E. Misc Parts/Cables/Connectors/Manuals	233
F. Operating/Programming Software	235

A Q170MCPU Motion Controller

Stand-Alone Motion Controller (Connectors included)

Item	Q170MCPU	Q170MCPU-S1
Stocked Item	S	
Number of Control Axes	Up to 16 axes	
Operation Cycle (Default)	SV13	0.44ms / 1 to 6 axes 0.88ms / 7 to 16 axes
	SV22	0.44ms / 1 to 4 axes 0.88ms / 5 to 12 axes 1.77ms / 13 to 16 axes
Interpolation Functions	Linear interpolation (Up to 4 axes), Circular interpolation (2 axes), Helical interpolation (3 axes)	
Control Modes	PTP (Point to Point) control, Speed control, Speed-position control (External input signal (DOG) of servo amplifier usable), Fixed-pitch feed, Constant speed control, Position follow-up control, Speed control with fixed position stop, Speed switching control, High-speed oscillation control, Synchronous control (SV22)	
Acceleration/Deceleration Control	Automatic trapezoidal acceleration/deceleration, S-curve acceleration/deceleration	
Compensation	Backlash compensation, Electronic gear, Phase compensation (SV22)	
Programming Language	Motion SFC, Dedicated instruction, Mechanical support language (SV22)	
Servo Program Capacity	16k steps	30k steps
Number of Positioning Points	3200 points (Positioning data can be designated indirectly)	
Peripheral I/F	USB/RS-232 (PLC CPU area), PERIPHERAL I/F (Motion CPU area)	
Home Position Return Function	Proximity dog type (2 types), Count type (3 types, External input signal (DOG) of servo amplifier usable), Data set type (2 types), Dog cradle type, Stopper type (2 types), Limit switch combined type Home position return re-try function provided, home position shift function provided	
JOG Operation Function	Provided	
Manual Pulse Generator Operation Function	Possible to connect 3 modules	
Synchronous Encoder Operation Function	Possible to connect 8 modules (SV22 use, Incremental only)	
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 Operation Function	Provided	
External Input Signal	Q172DLX, External input signal (FLS/RLS/DOG) of servo amplifier	
High-Speed Reading Function	Provided (Via input module, Via tracking of Q173DPX)	
Forced Stop	Motion controller forced stop (EMI terminal, System setting), Forced stop terminal of servo amplifier	
Number of I/O Points	256 points	512 points
Clock Function	Provided	
Security Function	Provided	
All Clear Function	Provided	
Remote Operation	Remote RUN/STOP, Remote latch clear	
Digital Oscillation Function	Provided	
Absolute Position System	Made compatible by setting battery to servo amplifier. (Possible to select the absolute data method or incremental method for each axis)	
Number of SSCNET Systems (*1)	1 system	
Motion Related Interface Module	Q172DLX : 2 module usable Q173DPX : 3 modules usable (*2)	



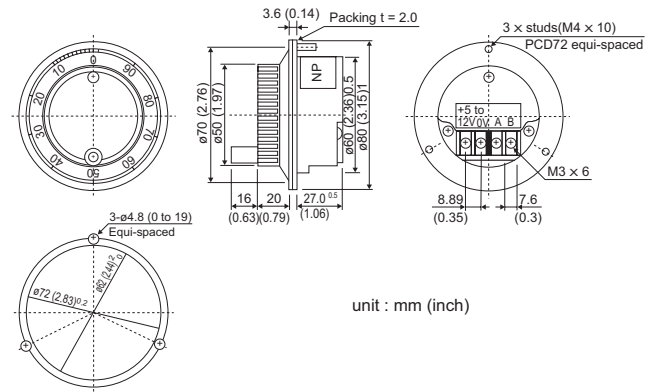
Notes:

1. The servo amplifiers for SSCNET cannot be used.
2. When using the incremental synchronous encoder (SV22 use), you can use above number of modules. When connecting the manual pulse generator, you can use only 1 module.

B Manual Pulse Generator 25ppr (optional)

Model Number	MR-HDP01
Stocked Item	S
Pulse Resolution	25 PLS/rev (100 PLS/rev at magnification of 4)
Output Method	Voltage - output (power supply voltage - 1V or more), Output current = Up to 20 mA
Power Supply Voltage	4.5 to 13.2 VDC
Consumption Current	60
Life	1,000,000 revolutions at 200 r/min
Permitted Axis Load	Radial load: Max. 19.6N; Thrust load: Max. 9.8N
Pulse Signal Status	2 signals: A phase, B phase, 90° phase difference
Friction Torque	0.1N/m (at 20°C (68°F))
Operating Temperature	-10°C to +60°C (14°F to 140°F)
Weight kg (lbs)	0.4 (0.88)

Note: If using an external power supply, it needs to be 5 VDC.



Ⓒ Peripheral Equipment

HMI's Available to Connect to the Q170MCPU

Model	Description	Stocked Item
GT16 Series	All models that are available	(*1)
GT15 Series	All models that are available	(*1)
GT11 Series	All models that are available	(*1)

Note:

- For more information on HMI's please refer to the HMI section in this catalog.

Servo Amplifiers Available to Connect to the Q170MCPU

Model	Description	Stocked Item
MR-J3-B Safety Series	Advanced SSCNETIII optical communication interface	(*1)
MR-J3-B-RJ004 Series	Linear Servo using SSCNETIII optical communication interface	(*1)

Note:

- For more information on Servo Systems please refer to the Servo section in this catalog.

Ⓓ Extension Base Unit & Modules

Extension Base Units and the Modules that can be used with the Q170MCPU

Model	Description	Applicable Model	Stocked Items
Q52B	2 slot extension base unit	Q170MCPU(-S1)	S
Q55B	5 slot extension base unit		S
Q63B (*3)	3 slot extension base unit	Q170MCPU-S1	-
Q65B (*3)	5 slot extension base unit		S
Q68B (*3)	8 slot extension base unit		S
Q612B (*3)	12 slot extension base unit		S
Q172DLX	External signal interface module (*1)	Q170MCPU(-S1)	S
Q173DPX	Manual pulse generator interface module (*1)		S
Other PAC Modules	I/O Modules, Analog Output Modules, etc. (*2)		S

Notes:

- For specifications on these modules refer to the QD Series Motion Controllers section in this catalog.
- For specifications on these modules refer to the iQ Platform section in this catalog.
- Requires separate power supply.

Ⓔ Misc Parts • Cables • Connectors • Manuals

Miscellaneous Parts for the System

Model	Description	Stocked Items
Q6BAT	Replacement battery for memory data backup of SRAM built-in Motion CPU	S
Q7BAT	Large capacity battery for memory data backup of SRAM built-in Motion CPU (includes Q170MBAT-SET)	S
Q170DBATC	Replacement battery holder for Q6BAT (Battery Not Included)	S
Q170MBAT-SET	Battery holder for the Q7BAT (Battery Not Included)	-
MR-J3USBCBL3M	USB cable from PC to Q170MCPU	S
SC-Q	RS232 cable from PC to Q170MCPU	S
GT01-C30R2-6P	RS232 cable from GOT to Q170MCPU	S

Cables for Forced Stop Input Connector (EMI)

Model Number	Description	Stocked Item
Q170DEMICON	Connector for emergency stop input cable (provided with Q170MCPU)	-
Q170DEMICBL05M	0.5M cable for EMI connector on CPU	S
Q170DEMICBL1M	1M cable for EMI connector on CPU	S
Q170DEMICBL3M	3M cable for EMI connector on CPU	S
Q170DEMICBL5M	5M cable for EMI connector on CPU	S
Q170DEMICBL10M	10M cable for EMI connector on CPU	S
Q170DEMICBL15M	15M cable for EMI connector on CPU	S
Q170DEMICBL20M	20M cable for EMI connector on CPU	S
Q170DEMICBL25M	25M cable for EMI connector on CPU	S
Q170DEMICBL30M	30M cable for EMI connector on CPU	S

Cables and Connectors Q170MCPU to MR-J3-B Safety Servos

Model	Description	Stocked Items
MR-J3BUS015M	SSCNET III Cable, 0.15 M	S
MR-J3BUS03M	SSCNET III Cable, 0.3 M	S
MR-J3BUS05M	SSCNET III Cable, 0.5 M	S
MR-J3BUS1M	SSCNET III Cable, 1 M	S
MR-J3BUS3M	SSCNET III Cable, 3 M	S
MR-J3BUS5M-A	SSCNET III Cable, 5 M	S
MR-J3BUS10M-A	SSCNET III Cable, 10 M	S
MR-J3BUS20M-A	SSCNET III Cable, 20 M	S
MR-J3BUS30M-B	SSCNET III Cable, 30 M	S
MR-J3BUS40M-B	SSCNET III Cable, 40 M	-
MR-J3BUS50M-B	SSCNET III Cable, 50 M	-

Cables for Q170MCPU to the Extension Base Unit

Model	Description	Stocked Items
QC05B	0.45 meter extension cable	S
QC06B	0.6 meter extension cable	S
QC12B	1.2 meter extension cable	S
QC30B	3 meter extension cable	S
QC50B	5 meter extension cable	S
QC100B	10 meter extension cable	S

Cable and Connectors for the Special Function Modules

Model	Description	Stocked Items
A6CON1	Q172DLX connector to use the servo external input signals.	S
QD75MCBL-2M	2 meter I/O pigtail cable to use in place of the A6CON1 connector.	S
QD75MCBL-5M	5 meter I/O pigtail cable to use in place of the A6CON1 connector.	S
QD75MCBL-10M	10 meter I/O pigtail cable to use in place of the A6CON1 connector.	S
A6TBXY36	Q172DLX Terminal Block Conversion Module - Sink Type I/O (Standard Type)	S
A6TBXY54	Q172DLX Terminal Block Conversion Module - Sink Type I/O (2-Wire Type)	-
A6TBXY70	Q172DLX Terminal Block Conversion Module - Sink Type I/O (3-Wire Type)	-
AC05TB	0.5 Meter cable from Q172DLX to A6TBX_ _ _ Terminal Block Conversion Module	S
AC10TB	1 Meter cable from Q172DLX to A6TBX_ _ _ Terminal Block Conversion Module	S
AC20TB	2 Meter cable from Q172DLX to A6TBX_ _ _ Terminal Block Conversion Module	S
AC30TB	3 Meter cable from Q172DLX to A6TBX_ _ _ Terminal Block Conversion Module	S
AC50TB	5 Meter cable from Q172DLX to A6TBX_ _ _ Terminal Block Conversion Module	S

I/O and Power Cables and Connectors for the Q170MCPU

Model	Description	Stocked Items
MR-MQEXTCBL-3M	Cable for EXT I/O connector on Q170MCPU, 3 meter	S
MR-MQPWRCBL-3M	Cable for 24VDC power to Q170MCPU, 3 Meter	S
Q170MPWCBL2M-E	24VDC power cable with 2 meter EMI terminal with crimp terminal R1.25-3.5. Cable for disabling the emergency stop input on the front of the Q170MCPU by short-circuiting the EMI terminal to the 24VDC power supply.	-
Q170MIOCON	50 Pin solder connector for the EXT I/O connector	Comes w/ Q170MCPU
Q170MPWCON	24VDC connector and pins for the power input	Comes w/ Q170MCPU

Manuals

Model	Description	Stocked Items
IB-(NA)-0300156	Q170MCPU Motion Controller Users Manual	Meau.com
IB-(NA)-0300134	Q173DCPU/Q172DCPU Motion Controller Programming Manual (Common)	Meau.com
IB-(NA)-0300135	Q173DCPU/Q172DCPU Motion Controller (SV13/22) Programming Manual (Motion SFC)	Meau.com
IB-(NA)-0300136	Q173DCPU/Q172DCPU Motion Controller (SV13/22) Programming Manual (Real Mode)	Meau.com
IB-(NA)-0300137	Q173DCPU/Q172DCPU Motion Controller (SV22) Programming Manual (Virtual Mode)	Meau.com
SH(NA)030084	MR-J3-B Safety servo amplifier instruction manual	Meau.com
SH(NA)030041	MR-J3 servo motor instruction manual	Meau.com

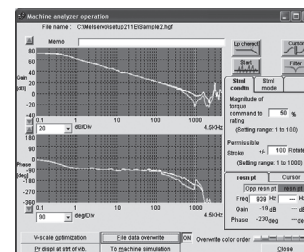
F Software

MR-Configurator (MRZJW3-SETUP221E)

This software makes it easy to perform setup, tuning, monitor display, diagnostics, reading and writing of parameters, and test operations with a personal computer. User-satisfying functions that enable the balance with the machine system, optimum control and short start up time are available.

1. This software can set up and tune your servo system easily with a personal computer.
2. Multiple monitor functions: Graphic display functions are provided to display the servo motor status with the input signal triggers, such as the command pulse, droop pulse and speed.
3. Test operations with a personal computer: Test operation of the servo motors can be performed with a personal computer using multiple test mode menus.
4. Further advanced tuning is possible with the improved advanced functions.

Description	Model Number	Stocked Item
Windows Communication Software	MR-CONFIGURATOR	S
Communication Cable	MR-J3USBCBL3M	S



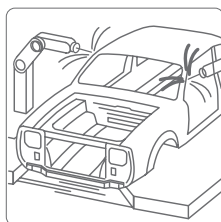
Note: MR-Configurator CD Version 7.00A and higher or MRZJW3-SETUP221E Version C1 and higher must be used with MR-J3-B series amplifiers when using MR-MQ100 motion controller.

MT-Developer2 Software

Conveyor assembly use
Motion SFC compatible

SV13

Dedicated language SW8DNC-SV13QG



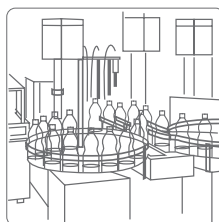
Electronic component assembly, Inserter, Feeder, Molder, Conveying equipment, Paint applicator, Chip mounting, Wafer slicer, Loader/Unloader, Bonding machine, X-Y table

Linear interpolation (1 to 4 axes), Circular interpolation, Constant-speed, Fixed-pitch feed, Speed control with fixed position stop, Speed switching, Speed control, Speed/position switching

Automatic machinery use
Motion SFC compatible

SV22

Mechanical support language SW8DNC-SV22QF



Press feeder, Food processing, Food packaging, Winding machine, Spinning machine, Textile machine, Printing machine, Book binder, Tire molder, Paper-making machine

Synchronous control, Electronic shaft, Electronic clutch, Electronic cam, Draw control

Q Series Integrated Start-up Support Software Packages

Model Number	Stocked Item	Description	Details
MT-DEV2-C1 (version 1.06G or higher)	S	SW1DNC-MTW2-E (Integrated start-up support software)	Conveyor assembly software; Automatic machinery software; Cam data creation software; Digital oscilloscope software; Document print software; Help section
		SW8DNC-SV13QG (SV13 Operating Software (OS))	
		SW8DNC-SV22QF (SV22 Operating Software (OS))	
		Single user license - can be used on 1 computer at a time; Installation manual included	
MT-DEV2-C5	-	5 user license - can be used on up to 5 computers at a time	
MT-DEV2-C10	-	10 user license - can be used on up to 10 computers at a time	
MT-DEV2-C25	-	25 user license - can be used on up to 25 computers at a time	
MT-DEV2-C50	-	50 user license - can be used on up to 50 computers at a time	

