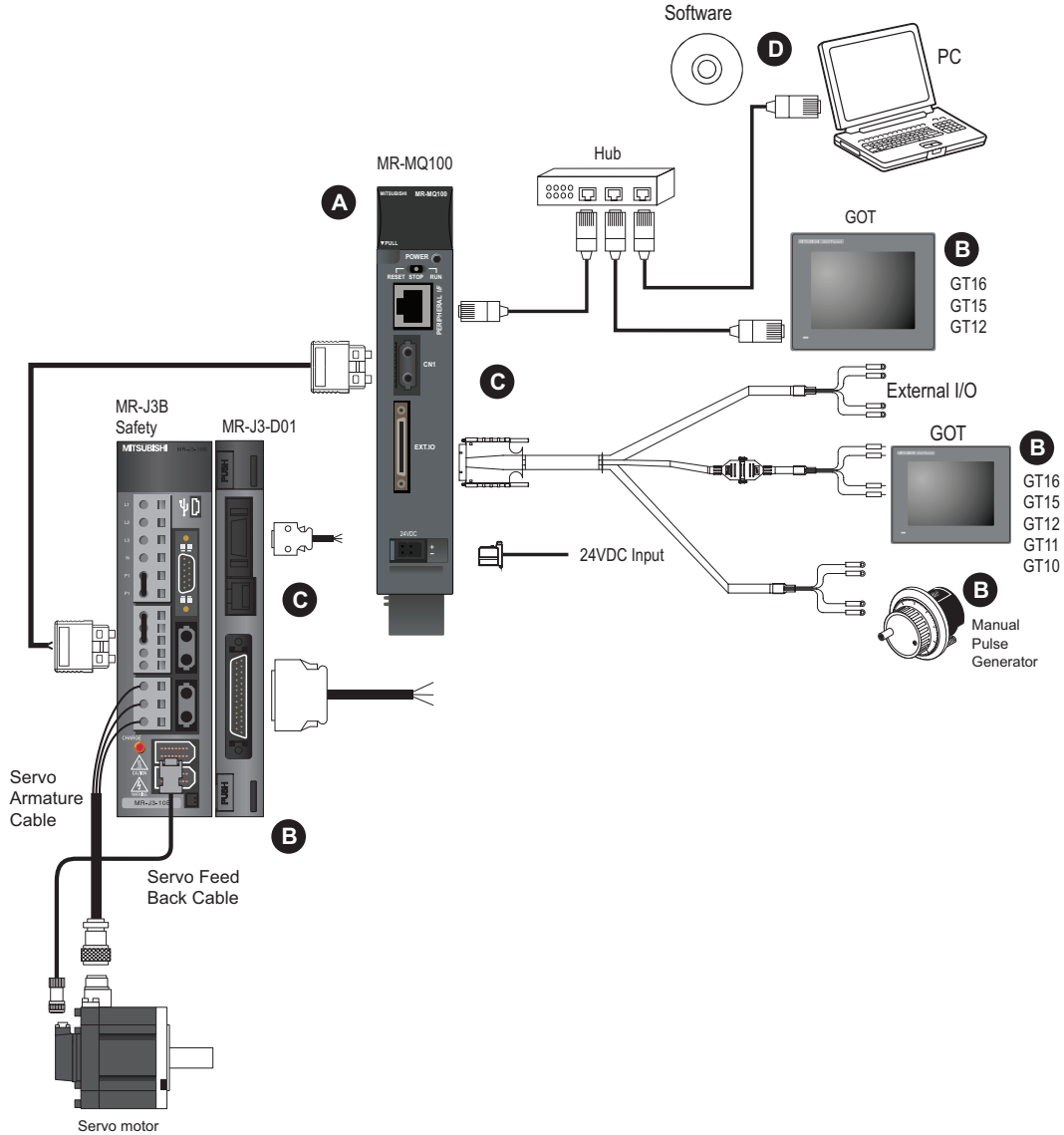


# MR-MQ100 Single Axis Motion Controller

The MR-MQ100 was designed to be the performance leader for single axis and 1.5 axis control. Combined with the speed and accuracy of the SSCNETIII fiber optic communication network as well as the power of the MR-J3-B Safety series servo amplifiers, machines can now perform at higher production levels where applications involving rotary cut, flying saw, labeling operation and other high speed applications are required. Intuitive software makes implementation of encoder following, CAM profiles, registration mark synchronization and even servo axis tuning very easy and quick.

## System Configuration



## A. MR-MQ100 Motion Controller

### Single Axis Motion Controller (OS included)

Model Number	MR-MQ100	
Stocked Item	S	
Power Supply	24VDC ±10% (Required Current Capacity 400mA)	
Digital Inputs*	20 Inputs (AI = 2, AO = 2)	
Digital Outputs*	18	
Synchronous Encoder	Signal Type	A/B Phase Pulse Train Input
	Voltage-Output / Open Collector Type (5VDC)	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 Axes	1 axis	
Operation Cycle	0.44ms	
Servo Amplifier	MR-J3B Safety Servo Amplifier	
Programming Language	Motion SFC, dedicated instruction, mechanical support language (SV22)	
Memory Backup	Q6BAT	
CAM Functions	Number of CAMs	Up to 256 CAM profiles may be stored internally
	Resolution Per Cycle	256, 512, 1024, 2048
	Stroke Resolution	32767
	Control Mode	Two-way CAM, fed CAM
Weight kg (lb)	0.7 (1.54)	
Dimensions W x H x D (mm)	30 x 178 x 135	



\*When combined with MR-J3-DO1 card.

## B. Peripheral Equipment

### MR-J3-DO1 Specifications (When used with MR-MQ100 Motion Module)

Model Number	MR-J3-DO1	
Stocked Item	S	
Power Supply For Interface	24VDC ±10% (required current capacity: 0.8A (*1, *2))	
Digital Input	30 points, photocoupler insulation, sink/source compatible	
Digital Output	16 points, photocoupler insulation, sink/source compatible	
Analog Input	2ch, 0 to ±10VDC (input impedance: 10 to 12kΩ)	
Analog Output	2ch, 0 to ±12VDC	
Power Supply for Analog Input Signal	P15R: DC+15V, permissible current: 30mA N12R: DC-12V, permissible current: 30mA (*3)	
Structure	Natural-cooling open (IP00)	
Environment	Ambient Temperature	0 to 55°C (32 to 131°F) (non-freezing), storage: -20 to 65°C (-4 to 149°F) (non-freezing)
	Ambient Humidity	90% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust
	Elevation	1000m or less above sea level
Vibration	5.9m/s <sup>2</sup> or less at 10 to 55Hz (direction of X, Y and Z axes)	
Weight g (lbs)	140 (0.31)	



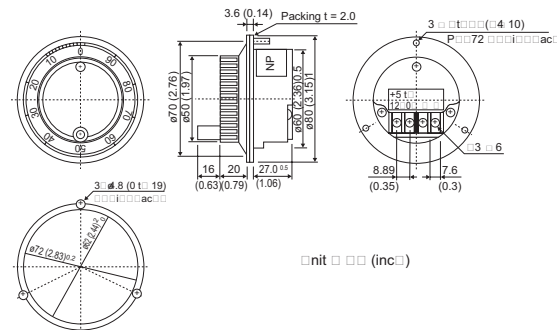
#### Notes:

- 0.8A is the value when all of the input/output points are used. The current capacity can be stepped down according to the number of input/output points in use.
- A 24VDC power supply for input/output signals can be shared by the servo amplifier and MR-J3-DO1. In this case, secure the power supply capacity corresponding to the points of the input/output signals to be used.
- P15R can be used as a power supply for TLA and VC. N12R can be used as a power supply for VC. Note that the power voltage varies between -12V to -15V.

## 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 13.2VDC
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 5VDC.



## HMI's Available to Connect to the MR-MQ100

Model	Description	Stocked Item
GT16 Series	Advanced Models (Machine, Factory, Enterprise Level)	(*1)
GT15 Series	Full-Spec Models (Machine, Factory, Enterprise Level)	(*1)
GT12 Series	Standard Models (Machine, Factory Level)	(*1)
GT11 Series	Standard Models (Machine Level)	(*1)
GT10 Series	Compact Models (Machine Level)	(*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

## C. Cables and Connectors

### Cables and Connectors for MR-MQ100

Model Number	Description	Stocked Item
MR-J3BUS015M	SSCNET III cable, 0.15 Meters	S
MR-J3BUS03M	SSCNET III cable, 0.3 Meters	S
MR-J3BUS05M	SSCNET III cable, 0.5 Meters	S
MR-J3BUS1M	SSCNET III cable, 1 Meter	S
MR-J3BUS3M	SSCNET III cable, 3 Meters	S
MR-J3BUS5M-A	SSCNET III cable, 5 Meters	S
MR-J3BUS10M-A	SSCNET III cable, 10 Meters	S
MR-J3BUS20M-A	SSCNET III cable, 20 Meters	S
MR-J3BUS30M-B	SSCNET III cable, 30 Meters	S
MR-J3BUS40M-B	SSCNET III cable, 40 Meters	-
MR-J3BUS50M-B	SSCNET III cable, 50 Meters	-
MR-MQEXT422CBL-3M	Cable for EXT I/O - RS-422 connector on MR-MQ100, 3 Meter	S
MR-MQPWRCBL-3M	Cable for 24VDC power to MR-MQ100, 3 Meters	S
Q170MIOCON	50 pin solder connector for the EXT I/O connector	Included with MR-MQ100 Module
Q170MPWCON	24VDC connector and pins for the power input	Included with MR-MQ100 Module
Q170MPWCBL2M-E	Cable for 24VDC power with EMI terminal jumper	S
MR-J3D01MQ20-3M	20 Pin Pigtail Cable for MR-MQ100/MR-J3-D01 Only - 3 Meters	S
MR-J3D01MQ50-3M	50 Pin Pigtail Cable for MR-MQ100/MR-J3-D01 Only - 3 Meters	S

### Manual for MR-MQ100

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

## D. Software

### MR-Configurator (MRJW3-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.

- This software can set up and tune your servo system easily with a personal computer.
- 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.
- Test operations with a personal computer: Test operation of the servo motors can be performed with a personal computer using multiple test mode menus.
- 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 MRJW3-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)	-