Product Information
EBG 171-EN

MITSUBISHI ELECTRIC
FACTORY AUTOMATION

Q Series

Positioning Module QD75MH

Add Movement to Your PLCs

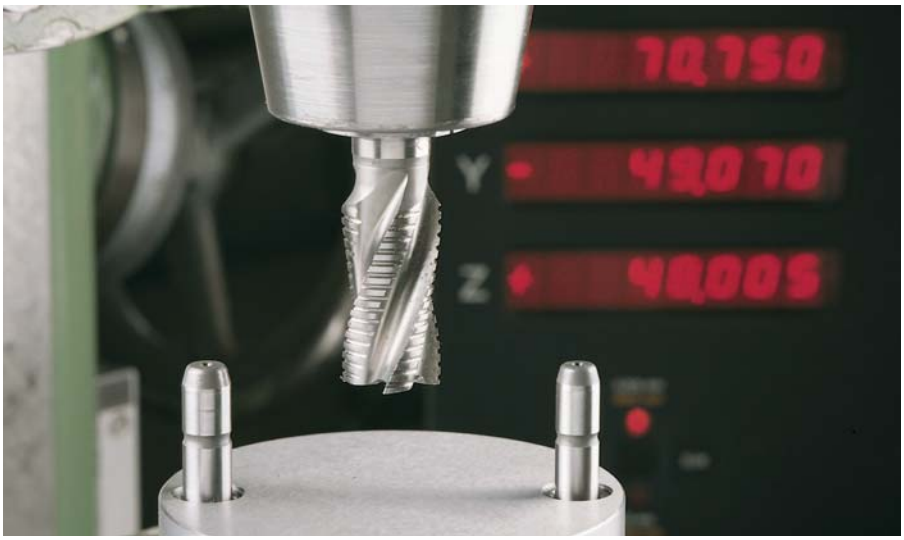
with Plug and Play positioning modules for your servo modules

Q Networking Solutions

SSCNET
SERVO SYSTEM CONTROLLER NETWORK

- **SPEED UP** — Fast, high-precision positioning for up to 4 axes per module
- **IMPROVED COMMUNICATION** — Communication with MR-J3-B servo amplifiers via high-speed SSCNET III
- **SIMPLER OPERATION** — Easy configuration and diagnostics with GX Configurator-QP
- **MORE FLEXIBILITY** — Extensive testing capabilities, even without a PLC program

QD75MH – Positioning Made Easy



Fast, high-precision positioning

Flexible and versatile

The QD75MH positioning module can be used for a wide range of applications – from stand-alone configurations for single-axis tasks to the coordinated movement of up to 4 axes per module.

Connection via SSCNET III

When MR-J3-B server amps are used the QD75M can be connected via the SSCNET III motion control network. In addition to precise positioning and control, this high-speed serial network also supports configuration of the servo amps and data monitoring in real time. SSCNET III also cuts costs by reducing wiring overheads.

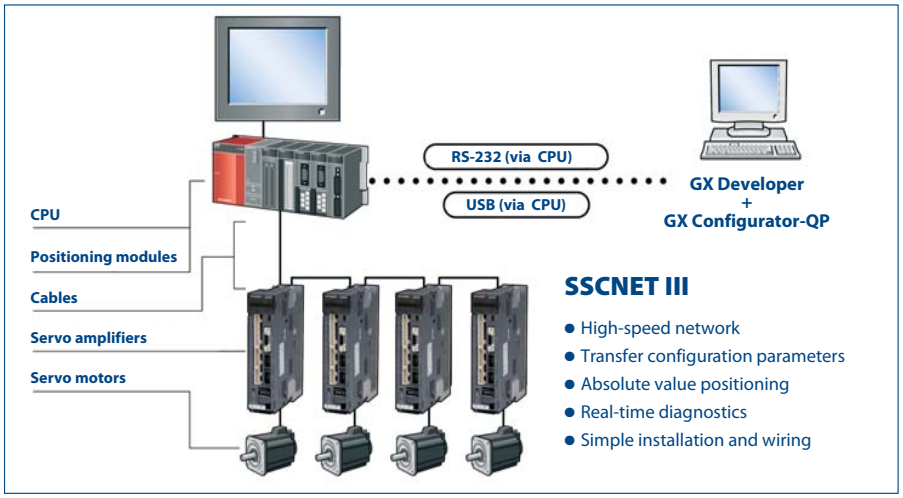
Configuration with GX Configurator-QP

You configure your position data and all the necessary associated parameters with GX Configurator-QP. This user-friendly software package has extensive testing features that enable you to check all the QD75MH's functions without a PLC program. Positioning can also be simulated offline, using the position data stored in the module. When you switch to Monitor mode GX Configurator-QP is also an excellent diagnostics tool.

Powerful and compact

The versions of the QD75MH differ only in the number of servo amplifiers that can be connected. You can choose the model to suit the needs of your application, for controlling 1, 2 or 4 axes.

Each positioning module occupies only one PLC slot and 32 I/O points. You can install up to 64 modules.



Fast positioning start-up

Positioning begins just 3.5 - 6 ms after the start signal is emitted by the CPU. This time can be made even shorter if the position values are read in before the start signal is triggered.

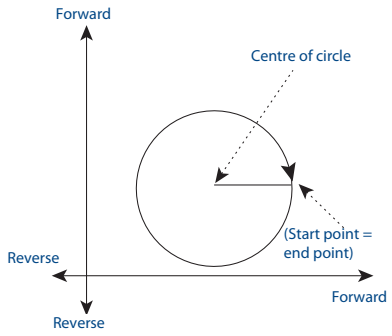
SSCNET
SERVO SYSTEM CONTROLLER NETWORK

Large choice of positioning modes

A large selection of positioning modes are supported, enabling you to handle virtually all industrial positioning tasks – for example point-to-point positioning, positioning with a constant feed rate, positioning with speed control and positioning with switching between speed and position control.

Linear and circular interpolation

A single positioning module can control up to 4 axes with linear interpolation and up to 2 axes with circular interpolation.



Circular interpolation

Internal position data storage

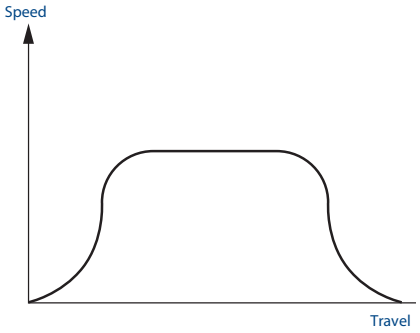
Each QD75MH can store up to 600 position data records for each axis in its internal Flash EPROM. In addition to the positions the data records contain additional information such as the speed and the M code.

The Flash EPROM is also used to store other important data and requires no battery. With the QD75MH, battery replacement is something that you no longer need to worry about!

Acceleration and deceleration

Up to four independently-programmable acceleration and deceleration times provide versatility for a wide range of applications.

The QD75MH supports two different start-up and braking modes: Automatic, trapezoidal acceleration and deceleration with linear ramps and S-form acceleration and deceleration that is more gentle on the servo drive and mechanical components.



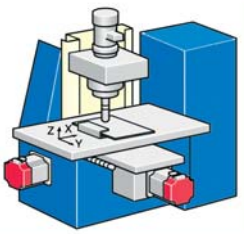
Up to four acceleration curves are programmable

External signals

The QD75MH can process external signals directly, without having to pass them through the PLC's CPU – for example start and stop signals and switches for return to zero and for limiting travel. A manual rotary control can be connected for manual operation of an axis.

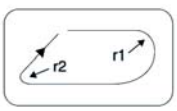
X/Y Stage

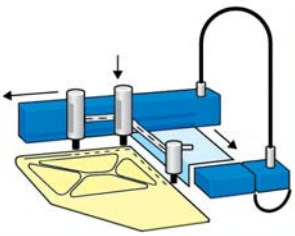
- Linear interpolation of 2 axes
- Linear interpolation of 3 axes
- Circular interpolation of 2 axes
- Movement with constant speed



Application of Seals

- Movement with constant speed
- Linear and circular interpolation
- Movement with high speed and precision





Specifications ///

Specifications		QD75MH1	QD75MH2	QD75MH4
Number of control axes		1	2	4
Linear interpolation axes		—	2	2, 3 or 4
Circular interpolation axes		—	2	2
Positioning control system		PTP (point to point) control, path control (both linear and arc can be set), speed control, speed-position switching control and position-speed switching control		
Control unit		mm, inch, degree, pulse		
Points per axis		600 data (can be set with peripheral device or PLC program)		
Data backup		Parameter and positioning data can be saved on a Flash ROM. A battery is not necessary for backup.		
Positioning	method	PTP control, speed-position switching control and path control: absolute/incremental system Position-speed switching control: incremental		
	range	Absolute data: –214748364.8 to 214748364.7 µm –21474.83648 to 21474.836 47 inch 0 to 359.99999 degree –2147483648 to 2147483647 pulse Incremental method: –214748364.8 to 214748364.7 µm –21474.83648 to 21474.83647 inch –21474.83648 to 21474.83647 degree –2147483648 to 2147483647 pulse Speed/position switching control: 0 to 25413214748364.7 µm 0 to 21474.83647 inch 0 to 21474.83647 degree 0 to 2147483647 pulse		
	speed	0.010 to 20 000 000.00 mm/min 0.001 to 2 000 000.000 inch/min 0.001 to 2 000 000.000 degree/min 1 to 1 000 000 pulse/s		
	acceleration/deceleration processing	Automatic trapezoidal or S-pattern acceleration and deceleration or automatic S-pattern acceleration and deceleration		
	acceleration and deceleration time	1 to 8388608 ms (4 patterns, each can be set)		
	rapid stop decceleration time	1 to 8388608 ms		
Starting time		Between 3.5 and 6 ms		
Interface for external signals		40-pin connector at the front side		
Connectable servo amplifier type		MR-J3-B		
Connection to servo amplifiers		Via SSCNET III fibre cable		
Max. SSCNET cable over all length		30 m		
No. of occupied I/O points		32		
Internal power consumption (5 V DC)		600 mA		
Dimensions (W × H × D)		(27.4 × 98 × 90) mm		
Weight		0.15 kg	0.15 kg	0.16 kg

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