Product Information
EBG203-EN

MITSUBISHI ELECTRIC
FACTORY AUTOMATION

iQ

Automation Platform

QD Motion CPU

More than just motion

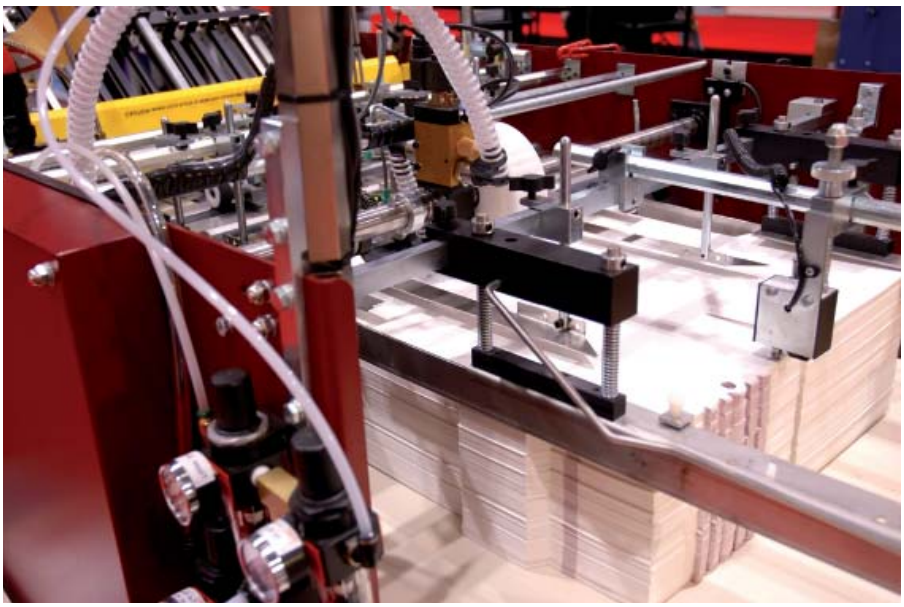
HIGHER PRODUCTIVITY — Significantly increase machine performance with accelerated processing speeds

UNMATCHED INTEGRATION — Easily combine motion with PLC, CNC and robot control if necessary

REDUCED TCO — Compatible with all iQ Platform parts, MR-J3 servos

RAPID ENGINEERING — Quickly develop & maintain motion systems

Multi-talented



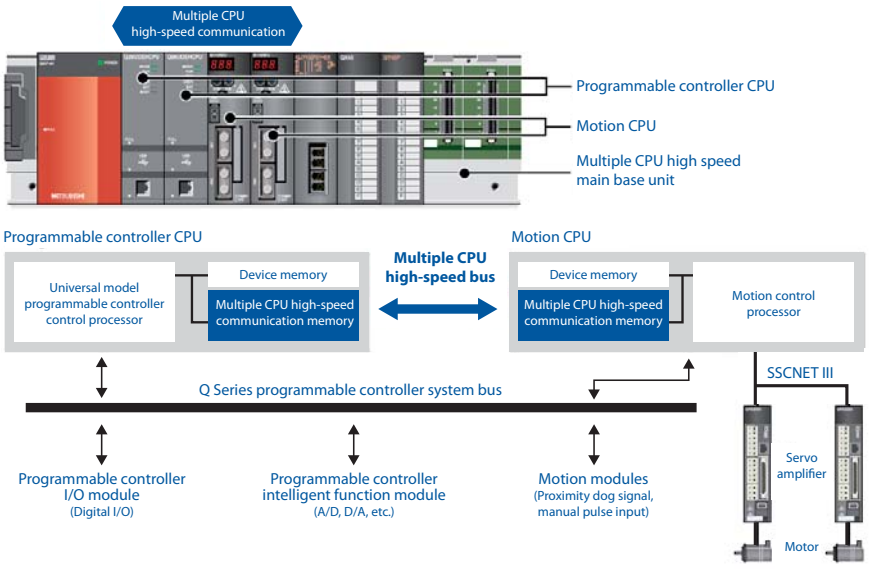
Use the QD motion CPU to tackle your toughest application challenges

Another face of the iQ Platform

The iQ Platform has established itself as groundbreaking technology. The toughest application challenges with multiple types of control can easily be handled by a single iQ controller incorporating a QD motion CPU alongside other CPU types. Hence large systems such as transfer lines can be engineered more quickly and perform to higher standards. Alternatively, the focus can be narrowed to address complex motion applications. Either way, the benefits are simpler engineering by use of a single platform, and elimination of integration problems. Valuable engineering time and skills can be freed to concentrate on the application itself.

Don't miss the bus

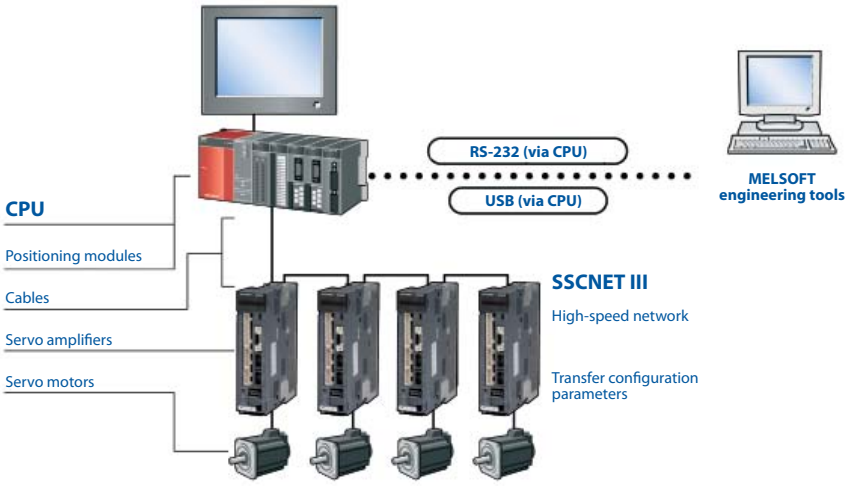
The QD motion CPU is specifically designed to integrate with other iQ control disciplines, providing up to 32 axes of motion that can be operated harmoniously with PLC, CNC and robot control if necessary. Add additional QD CPUs for a fully scalable solution to large system designs. The key enabling technology for this is Mitsubishi's unique high speed bus that allows dedicated, secure communication between multiple iQ CPUs. This effectively allows them to share data and function as a single system. Furthermore, the operation of this bus is transparent to the designer and has no impact on motion cycle times or PLC scan times. Hence all control processes run in parallel, providing a true multi-processing capability for maximum performance.



Unique bus technology removes potential system communication bottlenecks

Motion at the speed of light

The QD motion CPU takes full advantage of Mitsubishi's SSCNET III motion control network. This high bandwidth optical fiber network has become a leading choice for motion system designers. It reduces costs by using a simple daisy chain connection directly from the CPU to the amplifiers, while insuring reliability with noise immune optical communications. SSCNET III also permits full transparency of the amplifier configuration and data, allowing simplified monitoring, set-up and maintenance. The network is compatible with the full range of MR-J3-B amplifiers & motors, ranging from 50W to 55kW (200V and 400V)



SSCNET III: Simple connections, lowered cost, high performance

Higher productivity

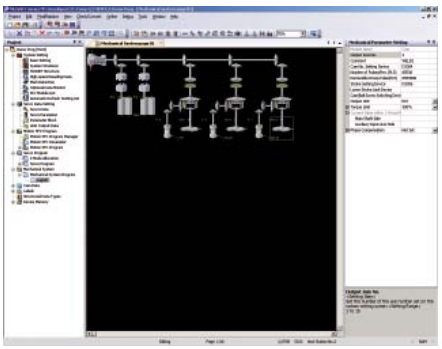
While able to communicate at high speed with other iQ CPUs, of course the QD is also designed for maximum motion performance. Both axis control cycle time and motion program execution are up to four times faster than previous Mitsubishi designs. This means that any mechanical system has the potential to offer significantly increased productivity just by incorporating an QD based iQ motion system.

The CPU also benefits from a range of specialist I/O modules that solve specific application issues, such as interrupt signals and manual pulse generator inputs.

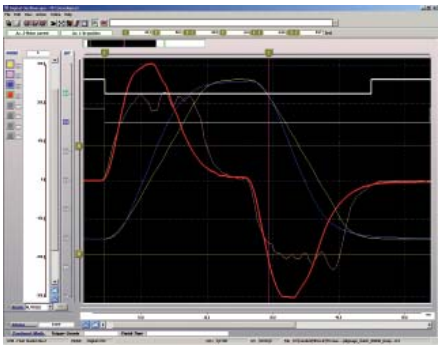
Intuitive engineering

Without a suite of intuitive and efficient engineering tools, hardware performance would provide an incomplete solution. The QD CPU is backed up by the next generation MT Developer 2 engineering suite to provide a full set of tools for system development, testing and maintenance.

In addition to engineering tools, the CPU can also use custom operating systems that allow its capabilities to be tailored to the needs of specific application types.



Mechanical support language allows systems to be described with familiar mechanical components



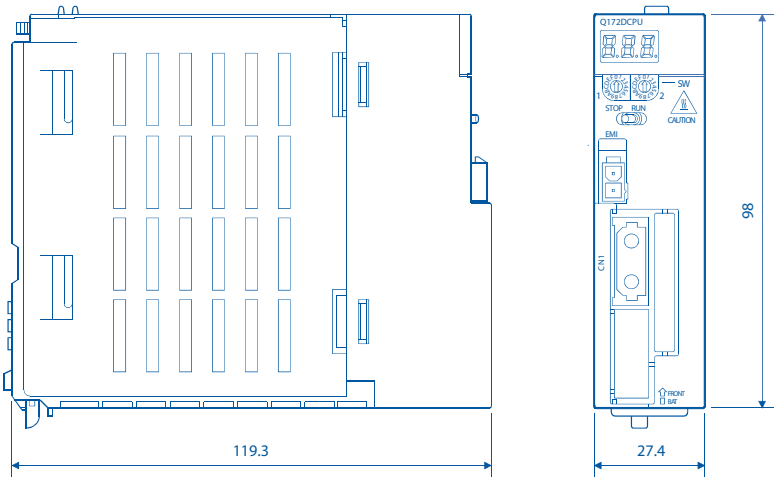
A digital oscilloscope allows system problems to be found quickly

Specifications ///

Items	Q172DCPU	Q173DCPU
Number of axes	Up to 8 axes	Up to 32 axes
Operation Cycle Time (with SV13 Operating System)	0.44ms / 1 to 6 axes 0.88ms / 7 to 8 axes	0.44ms / 1 to 4 axes 0.88ms / 5 to 12 axes 1.77ms / 13 to 28 axes 3.55ms / 29 to 32 axes
Operation Cycle (with SV22 Operating System)	0.44ms / 1 to 4 axes 0.88ms / 5 to 8 axes	0.44ms / 1 to 4 axes 0.88ms / 5 to 12 axes 1.77ms / 13 to 28 axes 3.55ms / 29 to 32 axes
Compatible PLC CPUs	Universal model (QnUD(E)(H)CPU)	
Compatible main base units	Multiple CPU high speed main base units (Q38DB/Q312DB)	
Shared memory capacity with PLC CPU	Up to 14k words transferred in 0.88ms	
Axis communication	Via SSCNET III (daisy chain connection)	
Compatible amplifiers	MR-J3-B family	
Available motion input modules	Q172DLX (for external servo signals), Q172DEX (for absolute encoders), Q173DPX (for manual pulse generators)	

Dimensions

Q172DCPU & Q173DCPU



All dimensions in mm

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