

iQ

Automation Platform

The Universal Automation Solution

for maximum return on investment



LATEST STANDARDS 

Minimized TCO across the whole system lifecycle

MORE FLEXIBILITY 

Seamless integration of all key automation disciplines

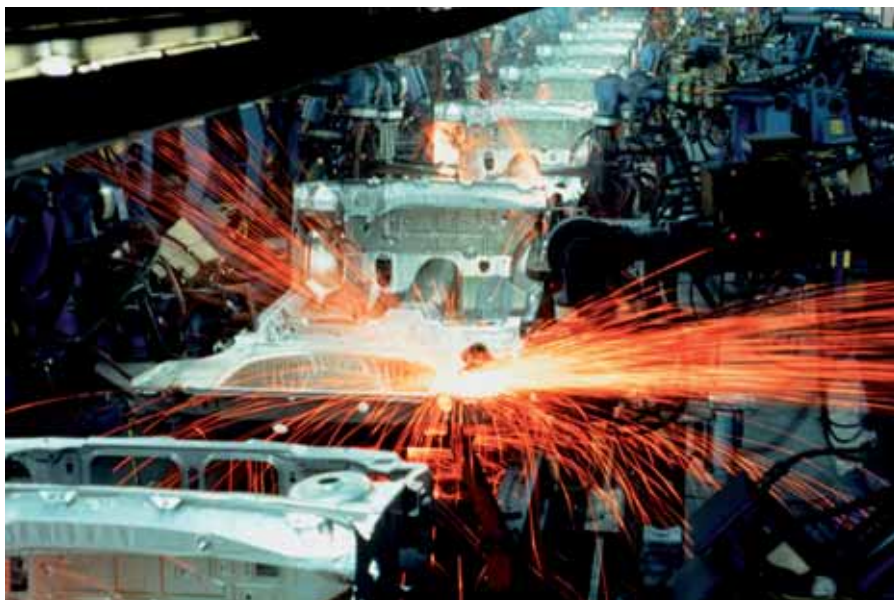
IMPROVED PERFORMANCE 

Maximized productivity from the highest performance platform available

IMPROVED COMMUNICATION 

Transparent connectivity between plant systems and enterprise IT

Transform your automation



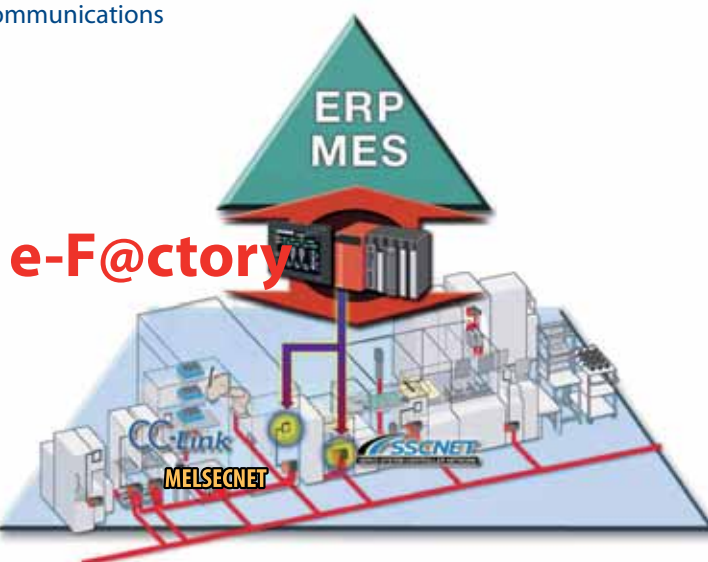
Automized production in an automotive plant is one important iQ domain.

Mitsubishi's iQ Automation Platform is the enabling hardware for our e-F@ctory concept. This is an automation strategy developed from our own global manufacturing expertise. The iQ's key benefits are:

- Minimized TCO (total cost of ownership)
- Seamless integration
- Maximized productivity
- Transparent communications

Minimized TCO

iQ reduces costs across your operations at all phases of the automation lifecycle. Development is faster, productivity is enhanced, maintenance less costly and information more easily accessed.



Seamless integration

iQ is the world's only control platform combining all common automation disciplines on a single rack. Complete integration offers significant cost reduction.

Maximized productivity

Combining all system elements on a single backplane optimizes throughput. Hence cycle times reduce to the minimum possible.

Transparent communications

iQ supports all key open networks. The industry leading, gigabit Ethernet based CC-Link IE allows information to flow freely throughout the enterprise with practically unlimited bandwidth. Now everyone can make the right decisions in a timely manner.

How the iQ Automation can benefit your operations

iQ is the world's first automation platform combining all key automation types on one controller. Avoid wasting valuable engineering resources trying to make different vendors' systems work together. With iQ, Mitsubishi takes care of system integration. iQ offers an extensive array of controller types that seamlessly operate together on the same backplane. Now your engineering staff concentrate on the demands of the application itself right from the beginning.

Reduce costs

Throughout the automation lifecycle, iQ reduces your costs. First, project lead time is reduced due to the high level of integration and the iQ Works suite of engineering tools. iQ Works allows a system to be developed and commissioned faster thanks to powerful simulation tools and reduced programming. iQ Works supports all key iQ control types, whether it's PLC, motion, or even HMI screen design.

All Mitsubishi products are engineered to very high levels of reliability. However if maintenance is required, technicians' productivity is improved in several ways. The open CC-Link network architecture and iQ Works allows a maintenance technician to troubleshoot an entire network of iQ controllers from one place. Line problems can be quickly located and addressed. If cabinets need to be opened, service personnel arrive prepared to take the correct steps immediately.

Do more, faster

iQ's CPUs lead the industry in performance. Combined with an advanced backplane architecture to optimize system communications, these provide faster ROI due to reduced cycle times and increased productivity. iQ's PLC CPUs execute programs in microseconds while handling thousands of I/O. Advanced motion capabilities control dozens of axes simultaneously via the



More productivity with lower TCO e.g. in a gear plant.

noise immune 50Mbit/s SSCNET/III network. In food and beverage applications, this eliminates mechanically based packaging systems. Machine design is simplified; lead times are shorter and job changes faster. Industries requiring automated assembly benefit from the iQ's integration of a

The iQ Equation

PLC + Motion

+ CNC + Robot + Process + IT + C++

Common platform for any combination of application types.

fully featured robotic controller. Combining process and discrete control on the same system also allows the iQ to handle a range of hybrid applications. Even complex systems such as transfer lines, requiring machining, motion and sequence control, can easily be handled in a single controller.

Free flow of information

iQ is compatible with a wide variety of networks for engineering complete plant systems. This includes the open CC-Link architecture, allowing a seamless flow of information throughout all levels of a plant, to enterprise IT systems and beyond. iQ also takes full advantage of CC-Link IE, the world's first gigabit Ethernet open automation network. No longer does your network limit the productivity of your enterprise as information becomes freely available to those who need it.

There's an iQ for you

A final key point is the iQ's scalability. While capable of automating whole lines, it is equally at home running single machines. Configure the platform as a PLC or motion controller alone when high performance on small scale systems is critical. Whatever your needs, there is an iQ solution that meets them precisely.

Specifications ///

General features	
Backplane type	Dual channel (separate I/O and CPU communications), up to 1Gbps
Maximum number of CPUs per system	4
CPU types available	PLC, Motion, CNC & Robot Also compatible with System Q Process, PC & C++ based CPUs

QnUD(H) PLC CPU	
Minimum instruction execution time	9.5 ns
Average instructions/microseconds	60
Maximum I/O capacity/CPU	8192
Maximum number of programs	124 (IEC 61131 compliant)
Maximum program memory size (steps)	60,000
Data storage capacity	Up to 8MB on removable memory cards

Q17nD Motion CPU	
Maximum number of simultaneously controlled axes/CPU	32
Axis update time	6 axes in 0.44ms
Interpolation types available	Linear, circular & helical
Axis communication link	Via SSCNET III motion control network (50Mbit/s); direct CPU-amplifier connection
Network media	Optical fiber
Maximum number of programs	256 SFC motion programs
Maximum number of positioning points	3200

Q173DR Robot CPU	
Robot communication link	Via SSCNET III
Maximum I/O capacity/CPU	8192
Maximum number of positioning points	13,000 points
Maximum number of programs	256 MELFA BASIC IV programs

Q173NC CNC CPU	
Maximum number of control axes	16
Maximum number of spindles	7
Maximum number of contour control axes	4
Maximum number of NC axes	8
Other functions	Built-in PLC capability

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