Product Information
EBG 191-EN

MITSUBISHI ELECTRIC
FACTORY AUTOMATION

System Q

Programmable Logic Controllers

Safety for all systems

Scalable, flexible and integrated

- **INTEGRATED SAFETY** — Combine safety and conventional PLC control directly; no separate controller required
- **DESIGN FLEXIBILITY** — Locate safety I/O directly on the rack, as remote I/O or on a CC-Link network for optimum cost design
- **SCALABLE SOLUTION** — Add as many safety I/O as necessary to your System Q controller to meet system needs
- **OPEN NETWORKS** — Combine safety I/O with conventional CC-Link I/O and devices to reduce cost and complexity

Performance, reliability and safety together

Keep plant personnel safe from harm

Flexible implementation

It's obvious that the safety solution has to protect workers from dangerous machinery and environments. However, from a cost perspective, it should also be simple to implement and flexible enough to meet the needs of any system design. System Q meets these requirements with a unique, multi-faceted safety solution. Rather than requiring a separate, dedicated safety controller, the safety control is integrated onto a normal System Q rack. The safety functions can either be directly mounted on the rack, be decentralized I/O, or sit on the open CC-Link network.

Specify with confidence

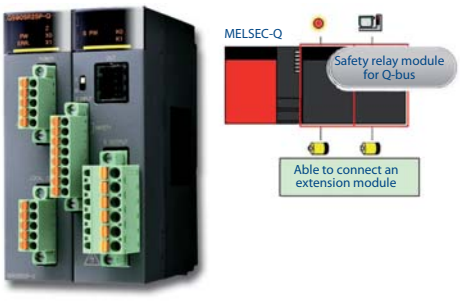
The System Q safety solution has been fully certified by all applicable safety organizations to EN954-1 Cat. 4 and ISO13849-1/2006 PL e

Simple but elegant

The simplest System Q safety option is to fit a dedicated safety I/O module on the rack alongside all other system components. In this way, a system which is mostly used for conventional control can also meet safety requirements without the need for the cost of a dedicated safety controller. The dedicated module provides the right number of safety I/O without any special programming.

World leading performance and reliability

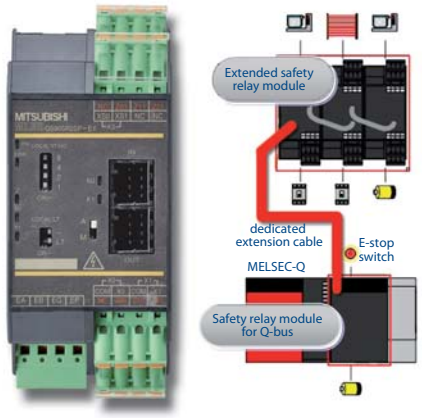
Across the global market, MELSEC System Q has established itself as a leading choice for automation with over six million systems in service. Its unique ability to combine multiple control disciplines with world class reliability and performance makes it a natural choice for addressing a key concern of modern applications: safety control. Corporate social responsibility and brand image, increasing legislative pressure and the costs of non-compliance all make safety a vital business issue to address.



Safety and conventional I/O on the same rack

Safety where you need it

More complex machinery may need I/O both on the rack itself, as well as in other locations around the system. System Q reduces wiring costs by offering a safety extension I/O module solution to address these needs. The extension module offers additional "plug and play" safety I/O by connecting directly to the safety I/O module on the rack. Hence the expense of a wiring harness to bring this I/O back to the controller is avoided with a single cable to the extension module. The integrated nature of the modules with the System Q rack also provides monitoring and diagnostic capabilities not possible with discrete wiring.

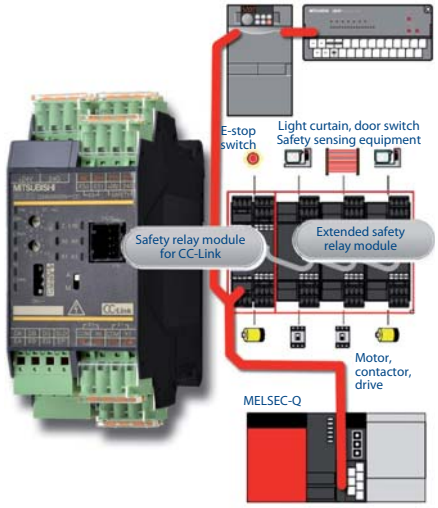


Combine local and decentralized I/O on the same system without complexity

The modular form of the safety I/O permits safety zones to be established without programming. This allows partial shutdowns to occur, thus safeguarding plant workers while still allowing unaffected areas to continue operation. Hence production need not suffer from unnecessary shut downs.

Safety for all

Finally, many times the need arises where safety I/O has to co-exist with other system devices. System Q provides the flexibility to take a conventional CC-Link network and add safety I/O to it alongside other CC-Link devices such as inverters, I/O or HMI units. Hence an entire system with safety and conventional control can be economically integrated on the same open network.



Add safety I/O to a standard CC-Link network along with non-safety devices

This offers major cost savings over running discrete circuits for safety devices. Moreover, the CC-Link network offers the ability to specify third party devices in addition to providing diagnostic capabilities and 10Mbit bandwidth across all network stations.

More than just safety

While safety is undeniably essential, it is only one part of an automation system. Mitsubishi Electric is able to provide a complete solution that addresses all aspects of the conventional system control requirements. System Q forms the heart of the system by combining PLC, motion, PC and process control if required. Along with this are Mitsubishi inverters, servos, HMI, I/O and other essential system components.

Mitsubishi Electric offers a complete product range for a complete automation solution.

Specifications ///

Items		Safety Relay Module		Extension Module
		CC-Link Type QS90SR2SP-CC (215801, P Type) QS90SR2SN-CC (215803, N type)	Q-Bus Type QS90SR2SP-Q (215799, P Type) QS90SR2SN-Q (215800, N Type)	QS90SR2SP-EX (215804, P Type) QSSR2SN-EX (215805, N Type)
Safety Standard		EN 954-1 Category 4		
Safety Input		1 pt (dual wiring)		
Startup Input		1 point		
Safety Output		1 point (dual/triple wiring)		
Rated load current		Category 4 3.6A/point Up to Category 3 5.0A/point AC250V/DC30V		
Response time	Shutoff output	< 20ms		
	Startup output	< 50ms		
Module power supply		DC24V		Supplied from a safety relay module
Output power supply		DC24V		Supplied from a safety relay module
Extended modules		Up to 3 extended modules		–
Terminal type		Spring clamp		
Lifetime (Relay)	Mechanical	>5,000,000 times		
	Electrical	>100,000 times		
Dimensions (WxHxD)		45 x 111 x 111mm	55.2 x 98 x 112mm	45 x 111 x 111mm

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Specifications subject to change /// Art. no. XXXXXX-A /// 11.2008