

System Q

Safety Relay Module QS90SR2SP

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

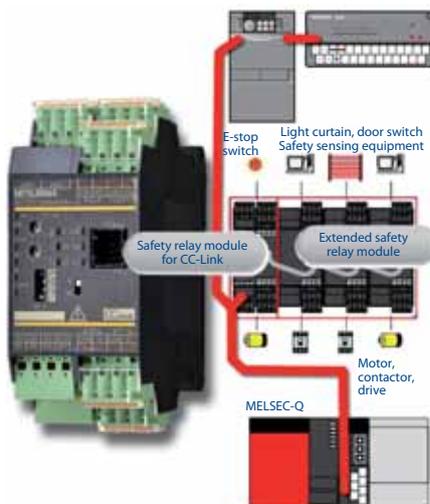
Across the global market, MELSEC System Q has established itself as a leading choice for automation with over six million systems in service. Its unique ability to combine multiple control disciplines with world class reliability and performance makes it a natural choice for addressing a key concern 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.

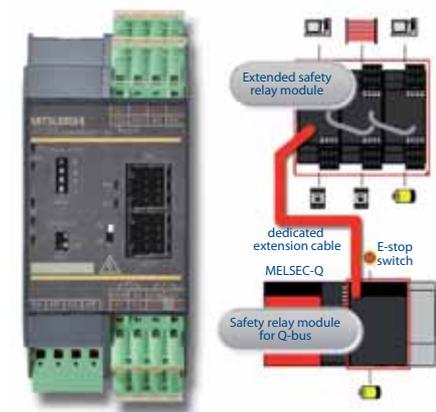


Add safety I/O to a standard CC-Link network along with non-safety devices

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 sys-



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.



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

tem 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.

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)	mm	45 x 111 x 111	55.2 x 98 x 112
			45 x 111 x 111

EUROPEAN BRANCHES

MITSUBISHI ELECTRIC EUROPE B.V. Radlická 714/113a CZ-158 00 Praha 5 Phone: +420 (0)251 551 470	CZECH REPUBLIC
MITSUBISHI ELECTRIC EUROPE B.V. 25, Boulevard des Bouvets F-92741 Nanterre Cedex Phone: +33 (0)1 / 55 68 55 68	FRANCE
MITSUBISHI ELECTRIC EUROPE B.V. Gothaer Straße 8 D-40880 Ratingen Phone: +49 (0)2102 / 486-0	GERMANY
MITSUBISHI ELECTRIC EUROPE B.V. Westgate Business Park, Ballymount IRL-Dublin 24 Phone: +353 (0)1 4198800	IRELAND
MITSUBISHI ELECTRIC EUROPE B.V. Viale Colleoni 7 I-20041 Agrate Brianza (MI) Phone: +39 039 / 60 53 1	ITALY
MITSUBISHI ELECTRIC EUROPE B.V. Carrera de Rubi 76-80 E-08190 Sant Cugat del Vallés (Barcelona) Phone: 902 131121 // +34 935653131	SPAIN
MITSUBISHI ELECTRIC EUROPE B.V. Travellers Lane UK-Hatfield, Herts. AL10 8XB Phone: +44 (0)1707 / 27 61 00	UK

EUROPEAN REPRESENTATIVES

GEVA Wiener Straße 89 AT-2500 Baden Phone: +43 (0)2252 / 85 55 20	AUSTRIA	B:TECH A.S. U Borové 69 CZ-58001 Havlíkův Brod Phone: +420 (0)569 777 777	CZECH REPUBLIC	Beijer Electronics SIA Vestienas iela 2 LV-1035 Riga Phone: +371 (0)784 / 2280	LATVIA	CONSYS Promyshlennaya st. 42 RU-190099 St. Petersburg Phone: +7 812 / 325 36 53	RUSSIA	CS MTrade Slovensko, s.r.o. Vajanskeho 58 SK-92101 Piestany Phone: +421 (0)33 / 7742 760	SLOVAKIA	ILAN & GAVISH Ltd. 24 Shenkar St., Kiryat Arie IL-49001 Petah-Tiqva Phone: +972 (0)3 / 922 18 24	ISRAEL
TEHNIKON Oktjabrskaya 16/5, Off. 703-711 BY-220030 Minsk Phone: +375 (0)17 / 210 46 26	BELARUS	Beijer Electronics A/S Lykkegårdsvej 17, 1. DK-4000 Roskilde Phone: +45 (0)46 / 75 76 66	DENMARK	Beijer Electronics UAB Savanoriu Pr. 187 LT-02300 Vilnius Phone: +370 (0)5 / 232 3101	LITHUANIA	ELECTROTECHNICAL SYSTEMS Derbenevskaya st. 11A, Office 69 RU-115114 Moscow Phone: +7 495 / 744 55 54	RUSSIA	INEA d.o.o. Stegne 11 SI-1000 Ljubljana Phone: +386 (0)1 / 513 8100	SLOVENIA	TEXEL ELECTRONICS Ltd. 2 Ha'umanut, P.O.B. 6272 IL-42160 Netanya Phone: +972 (0)9 / 863 08 91	ISRAEL
Koning & Hartman b.v. Wolwelaan 31 BE-1800 Vilvoorde Phone: +32 (0)2 / 257 02 40	BELGIUM	Beijer Electronics Eestõ OÜ Pärnu mnt.1601 EE-11317 Tallinn Phone: +372 (0)6 / 51 81 40	ESTONIA	INTEHSIS srl bld. Traian 23/1 MD-2060 Kishinev Phone: +373 (0)22 / 66 4242	MOLDOVA	ELEKTROSTILY Rubzovskaja nab. 4-3, No. 8 RU-105082 Moscow Phone: +7 495 / 545 3419	RUSSIA	Beijer Electronics AB Box 426 SE-20124 Malmö Phone: +46 (0)40 / 35 86 00	SWEDEN	CBI Ltd. Private Bag 2016 ZA-1600 Isando Phone: +27 (0)11 / 928 2000	SOUTH AFRICA
INEA BH d.o.o. Aleja Lipa 56 BA-71000 Sarajevo Phone: +387 (0)33 / 921 164	BOSNIA AND HERZEG.	Beijer Electronics OY Jaakonkatu 2 FIN-01620 Vantaa Phone: +352 (0)207 / 463 500	FINLAND	Koning & Hartman b.v. Haarlerbergweg 21-23 NL-1101 CH Amsterdam Phone: +31 (0)20 / 587 76 00	NETHERLANDS	NPP "URALELEKTRA" Sverdlova 11A RU-620027 Ekaterinburg Phone: +7 343 / 353 2745	RUSSIA	Econotec AG Hinterdorfstr. 12 CH-8309 Nürensdorf Phone: +41 (0)44 / 838 48 11	SWITZERLAND		
AKHNATON 4 Andrej Ljapchev Blvd. Pb 21 BG-1756 Sofia Phone: +359 (0)2 / 817 6004	BULGARIA	UTECO A.B.E.E. 5, Mavrogenous Str. GR-18542 Piraeus Phone: +30 211 / 1206 900	GREECE	Beijer Electronics AS Postboks 487 NO-3002 Drammen Phone: +47 (0)32 / 24 30 00	NORWAY	Craft Con. & Engineering d.o.o. Bulevar Svetog Cara Konstantina 80-86 SER-18106 Nis Phone: +381 (0)18 / 292-24-45	SERBIA	GTS Darulaceze Cad. No. 43 KAT. 2 TR-34384 Okmeydanı-Istanbul Phone: +90 (0)212 / 320 1640	TURKEY		
INEA CR d.o.o. Losinjska 4 a HR-10000 Zagreb Phone: +385 (0)1 / 36940-01/-02/-03	CROATIA	MELTRADE Ltd. Fertő utca 14. HU-1107 Budapest Phone: +36 (0)1 / 431-9726	HUNGARY	MPL Technology Sp. z o.o. Ul. Krakowska 50 PL-32-083 Balice Phone: +48 (0)12 / 630 47 00	POLAND	INEA SR d.o.o. Izletnicka 10 SER-113000 Smederevo Phone: +381 (0)26 / 617 163	SERBIA	CSC Automation Ltd. 15, M. Raskova St., Fl. 10, Office 1010 UA-02002 Kiev Phone: +380 (0)44 / 494 33 55	UKRAINE		
AutoCont C.S.s.r.o. Technologická 374/6 CZ-708 00 Ostrava-Pustkovec Phone: +420 595 691 150	CZECH REPUBLIC	KAZPROMAUTOM. Ltd. Mustafina Str. 7/2 KAZ-470046 Karaganda Phone: +7 7212 / 50 11 50	KAZAKHSTAN	Sirius Trading & Services Aleea Lacul Morii Nr. 3 RO-060841 Bucuresti, Sector 6 Phone: +40 (0)21 / 430 40 06	ROMANIA	AutoCont Control s.r.o. Radlinského 47 SK-02601 Dolny Kubin Phone: +421 (0)43 / 5868210	SLOVAKIA				



Mitsubishi Electric Europe B.V. /// FA - European Business Group /// Gothaer Straße 8 /// D-40880 Ratingen /// Germany
Tel.: +49(0)2102-4860 /// Fax: +49(0)2102-4861120 /// info@mitsubishi-automation.com /// www.mitsubishi-automation.com

Specifications subject to change /// Art. no. 220923-A /// 12.2008

All trademarks and copyrights acknowledged.