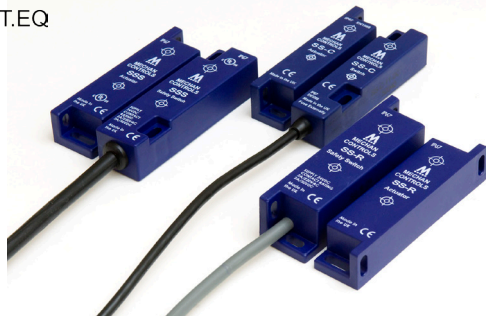


MECHAN CONTROLS



Installation Guide : SSS, SS-R, SS-C Safety Switches



Description:

The S-Type safety switches are electronic, non-contact, safety switch and actuator, suitable for use in machine guarding.

The S-Type safety switches are designed to be used in part of safety related control system. A risk assessment should take place to establish that the specifications of these safety switches are suitable for the application required. See Technical Specifications below or contact Mechan Controls for further information.

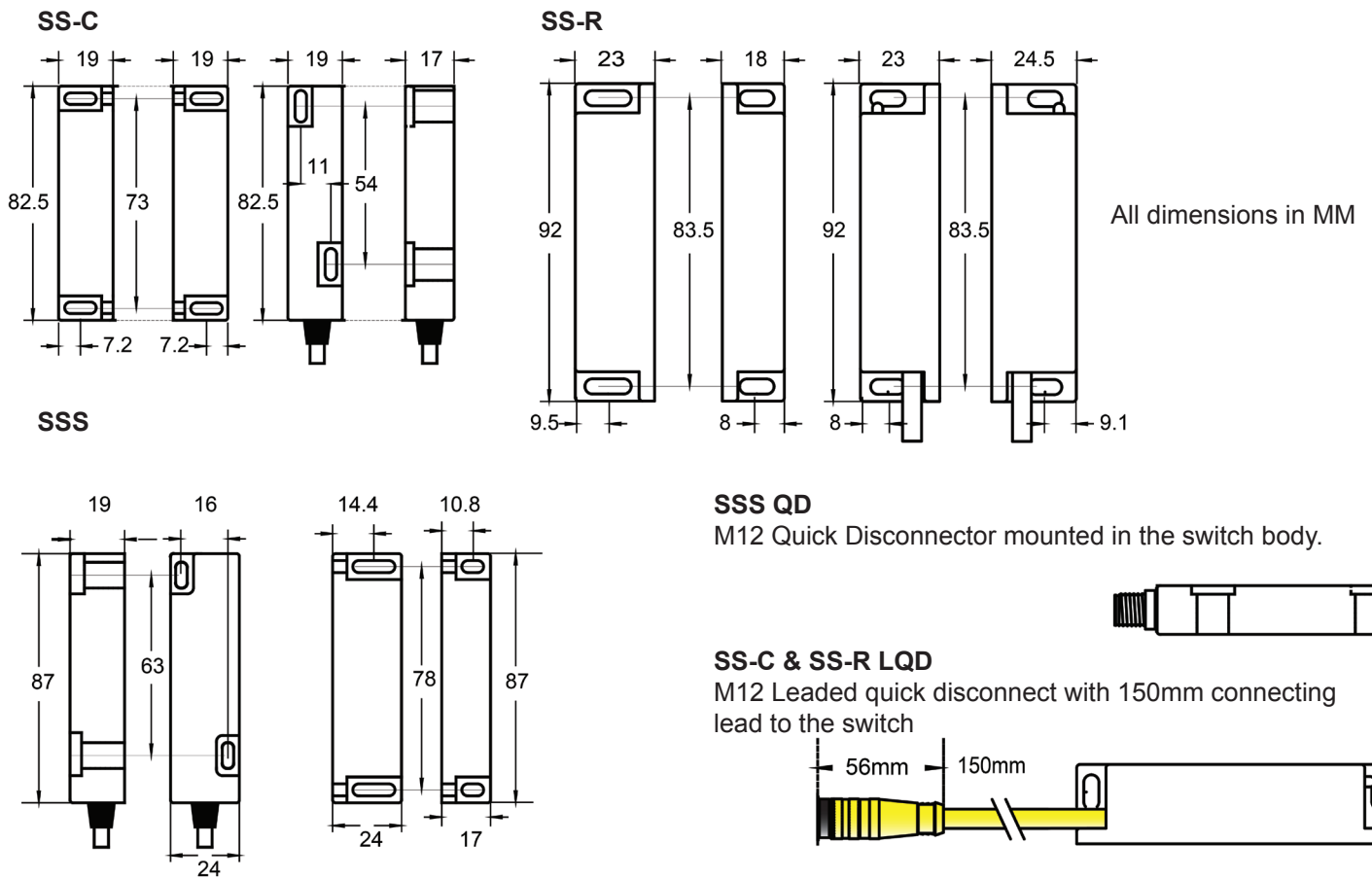
Keep this guide for future reference This information is designed to help suitably qualified personnel install and operate Mechan Safety equipment. Before using this product, read this guide thoroughly along with any relevant European and/or National standards e.g. Machinery Directive 2006/42/EC and it's amendments, Provision and Use of Work Equipment Regulations. Further information can be obtained from Mechan Controls.

Technical Specifications	SSS	SS-R	SS-C
Supply	24 Vdc	24Vdc	24 Vdc
Contacts	2NO or 1NO+1NC	2NO + 1NC	2NO or 1NO+1NC or 1NO
Safety Contact Rating	230Vac / 2A 30Vdc / 2A	230Vac / 2A 30Vdc / 2A	110Vac / 500mA 24Vdc / 500mA
Safety Contact Switching	7mm ON / 11mm OFF	7mm ON / 11mm OFF	7mm ON / 11mm OFF
Auxiliary Contact Rating	230Vac / 2A or 30Vdc / 2A	230Vac / 2A or 30Vdc / 2A	110Vac or 24Vdc / 500mA
Auxiliary Contact Switching	7mm OFF / 11mm ON	7mm OFF / 11mm ON	7mm OFF / 11mm ON
Internal Fuse	-	-	1 Amp fast acting
Indication	Green LED	Red/Green LED	Red/Green LED
External Fuse (Customer supplied)	3 Amps fast acting	3 Amps fast acting	0.3 Amps fast acting
Construction	Blue ABS, resin filled	Blue ABS, resin filled	Blue ABS, resin filled
IP Rating	IP67	IP67	IP67
Temperature	Operating -25°C to +55°C	Operating -25°C to +55°C	Operating -25°C to +55°C
Fixing	M4 Torx security screws Tightening Torque 1.0 NM	M4 Torx security screws Tightening Torque 1.0 NM	M4 Torx security screws Tightening Torque 1.0 NM
Connection	Pre-wired or M12 Quick Disconnect	Pre-wired or M12 Leaded Quick Disconnect	Pre-wired or M12 Leaded Quick Disconnect

Safety Related Data			
B10d	2,000,000	PFH	6.52 x 10 ⁻⁸
TM (Mission Time)	> 20 Years	DC	99%
PFHd	4.3 x 10 ⁻⁸ See Note 1	SFF	99%
MTTFd	High > 100 Years (Based on usage rate of 360 Days/Year, 24 Hours/Day, 10 Ops/Hour)		
Note 1	Based on dual channel wiring according to Category 3. Diagnostic coverage provided by downstream control logic. DC - medium, MTTFd=100 Years. May be suitable for performance level applications PLe or PLd according to ISO 13849-1. SIL 3 or 2 according to IEC 62061		

Safety Standards	
Approvals	CE Complies with all relevant sections of the CE Marking Directive UL 508 Industrial Control Equipment TUV Approved
European Directives	Machinery Directive 20006/42/EC; Low Voltage Directive 2006/95/EC; EMC Directive 2004/108/EC
European Standards	BS EN 12100 Safety of Machinery. General principles for design. BS EN 1088 Safety of Machinery. Interlocking devices associated with guards. BS EN ISO 13849 Safety of Machinery. Safety related parts of control systems. BS EN ISO 62061 Safety of Machinery. Functional safety of safety related electrical, electronic and programmable electronic control systems BS EN 60204 Safety of Machinery. Electrical equipment of machines. BS EN 60947-5-1 Low-voltage switchgear and controlgear. BS EN 60947-5-3 Low-voltage switchgear and controlgear.

Dimensions



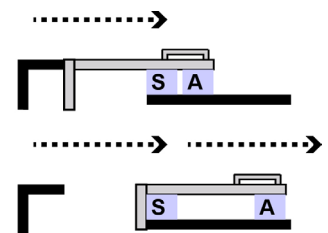
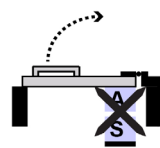
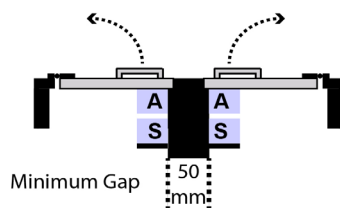
Mounting

Do not use safety switches as a stop. 1 mm separation when closed provides the best results.

Minimum separation 50mm between adjacent switches.

DO NOT mount on hinged side of the guard.

EN1088 : Hide the actuator where possible.

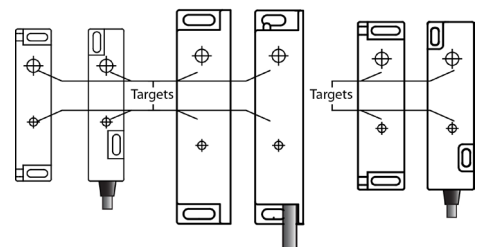
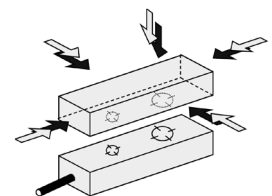


Operation

Mechan S-Type safety switches can approach each other from most directions.

When closed the targets printed on the front face of the switches must be aligned. Large target to large target and small target to small target as shown opposite.

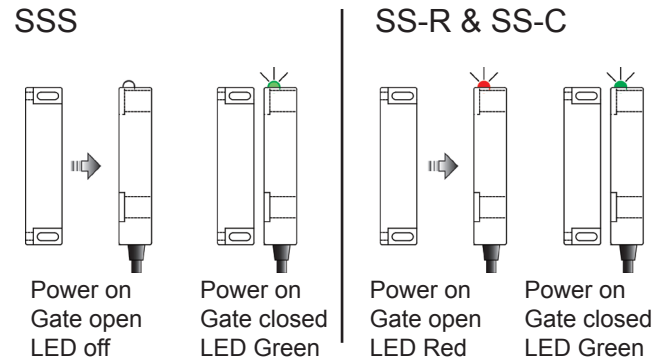
When the power is on and the switch and actuator are apart the NO contact(s) will be open and the NC contact will be closed. When the actuator is brought within the specified switching distance (see page 1) the NO contact(s) will close and the NC contact will open.



LED Indication

SSS has a green LED which is illuminated when the switch is powered and the gate is closed.

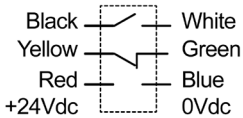
The SS-R and SS-C have a dual colour LED (Red & Green) Red when the power is on and gate open, green when the gate is closed.



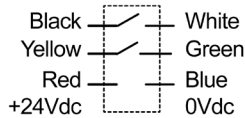
Connections and Fuses

PRE-WIRED

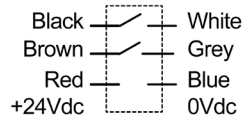
SSS-11 SS-C-11



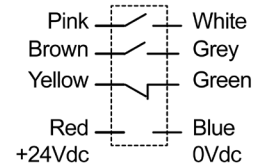
SS-C-20



SSS-20

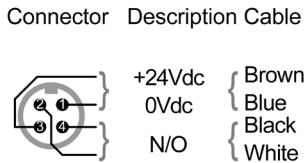


SS-R-21



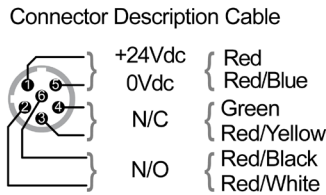
QUICK DISCONNECT

SS-C-10



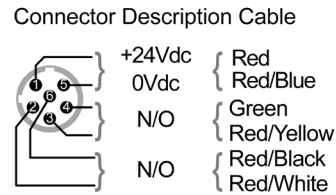
Connector
M12
4 Pole, Single Key way

SSS-11



Connector
Micro AC 1/2" - 20
6 Pole, Dual Key Way

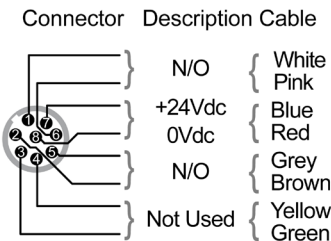
SSS-20



Connector
Micro AC 1/2" - 20
6 Pole, Dual Key Way

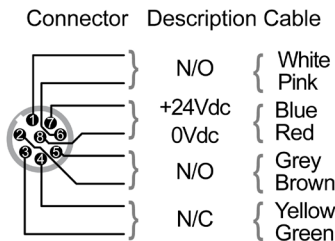
LEADED QUICK DISCONNECT

SS-C-20



Connector
150mm Lead, M12
8 Pole, Single Key way

SS-R-21



Connector
150mm Lead, M12
8 Pole, Single Key way

Contact Operation

The N/O contacts on the Mechan switches are open when the actuator is away from the switch. When the actuator is within the specified operating distance the N/O contact will close and the N/C contact will open.

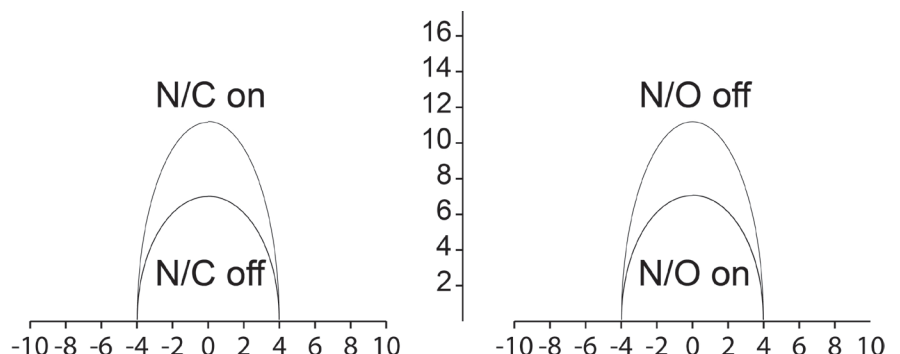
Fuses

All safety contacts should be fused externally
SS-C CONTACTS = 0.3 Amps Quick Blow Fuse
SS-S CONTACTS = 3 Amps Quick Blow
SS-R CONTACTS = 3 Amps Quick Blow

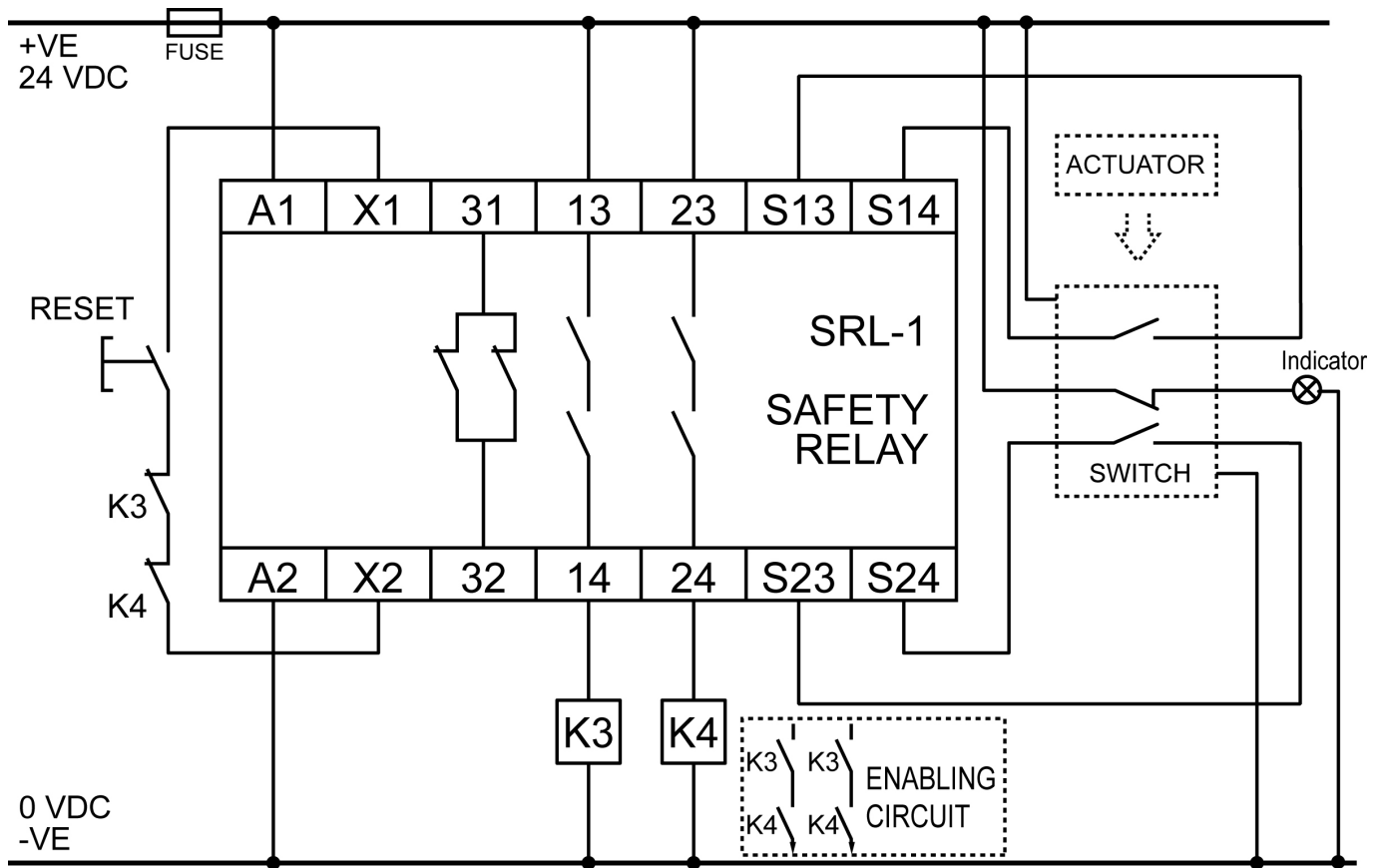
Switching Characteristics

SSS, SS-R & SS-C

The chart shows the switching points in millimetres.



Recommended Safety Control Unit



Recommended Safety Control Unit

Mechan Part Number : SRL-1 24VAC/DC

Maintenance

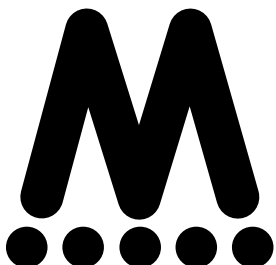
It is recommended to check the safe operation of the of the switches and look for signs of damage or excessive wear on a weekly basis. Damaged units should be replaced or returned to the manufacturer for repair where practical.

Declaration of Conformity

Mechan Controls declares that the products shown conform to the Essential Health and Safety Requirements of the European Machinery Directive. The above products have been third party tested to conform to the requirements of EN-13849-1 and EN 62061. Full declaration of conformity can be downloaded from the Mechan Controls web site www.mechancontrols.co.uk or by contacting Mechan directly Tel : + 44 1695 722264

NOTES

In the interest of product development specifications are subject to change without notice. It is the responsibility of the user to ensure compliance with any acts or by-laws in place. All information regarding Mechan equipment is believed to be accurate at the time of printing. Responsibility cannot be accepted for errors or omissions.



MECHAN CONTROLS PLC

14/16 SEDDON PLACE, STANLEY INDUSTRIAL ESTATE
SKELMERSDALE, LANCASHIRE WN8 8EB
UNITED KINGDOM

Telephone :+44(0)1695 722264

Web : www.mechancontrols.co.uk

Document Number 360-400-IDv1.2