

MECHAN CONTROLS



Installation Guide : MS8 & MS8-SS Safety Switches



Description:

MAGNASAFE MS8 safety switches are **extended range** non-contact, magnetically operated switch and actuator. Designed to work with safety relays that have a low inrush current on the switch input, these switches provide an economical method of switching for the higher category, dual channel circuits.

These safety switches are available in a robust ABS, or 316 Grade Stainless Steel housing, and both switch and actuator are fully sealed to IP67 making them suitable for use in wet or dusty environments. They are easy to install and tolerant to misalignment. With correct installation, these safety switches comply with the guidelines given in EN1088.

Magnasafe 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 amendments, Provision and Use of Work Equipment Regulations. Further information can be obtained from Mechan Controls.

| Technical Specifications | MS8 |
|------------------------------------|--|
| Contacts | 2 NO + 1 NC or 2 NO |
| Safety Contact Rating | 24Vdc / 400mA |
| Safety Contact Switching | 25mm ON / 35mm OFF (Switching face to face, see mounting instructions) 15mm ON / 25mm OFF (Switching side to side, see mounting instructions) |
| Auxiliary Contact Rating | 15W / 10VA |
| Auxiliary Contact Switching | 25mm OFF / 30mm ON |
| External Fuse (customer supplied) | 0.3Amps Fast Acting |
| Environmental Protection | IP67 |
| Construction | RED ABS, or 316 Grade Stainless Steel |
| Fixing | M4 Torx Security Screws, Tightening Torque 1.0 NM |
| IP Rating | -10 to 55C |
| Connection | Pre-wired or M12 Quick Disconnect |

Safety Related Data

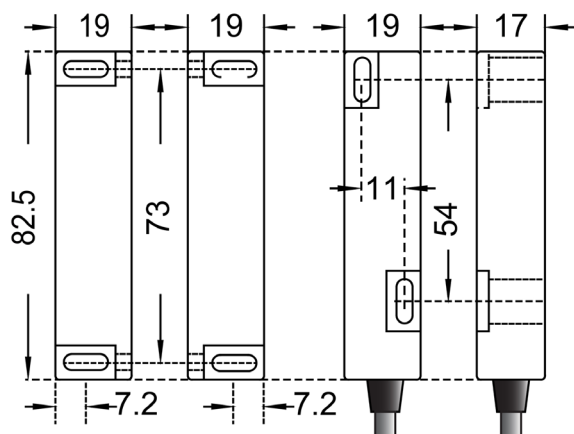
| | | | |
|--------------------|---|------|---------------------------------|
| B10d | 2,000,000 | PFH | 6.52×10^{-8} |
| TM (Mission Time) | > 20 Years | PFHd | 4.3×10^{-8} See Note 1 |
| DC | 99% | SFF | 98% |
| MTTFd | High > 100 Years (Based on usage rate of 360 Days/Year, 24 Hours/Day, 10 Operations/Hour) | | |
| Note 1 | Based on dual channel wiring according to CAT 3. Diagnostic coverage provided by downstream control logic. DC - medium, MTTFd = 100 Years May be suitable for performance level applications PLe according to ISO 13849-1. (SIL 3 or SIL 2 according to IEC 62061) | | |

Safety Standards

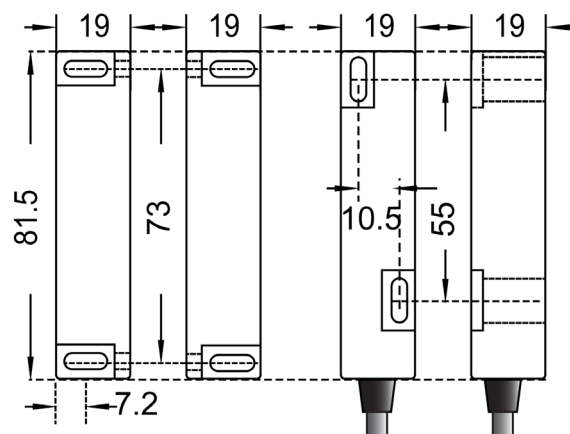
| | |
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| Approvals | CE Complies with all relevant sections of the CE Marking Directive, TUV Approved |
| European Directives | Machinery Directive 2006/42/EC, Low Voltage Directive 2006/95/EC; EMC Directive 2004/108/EC |
| European Standards | BS EN 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

MS8



MS8-SS

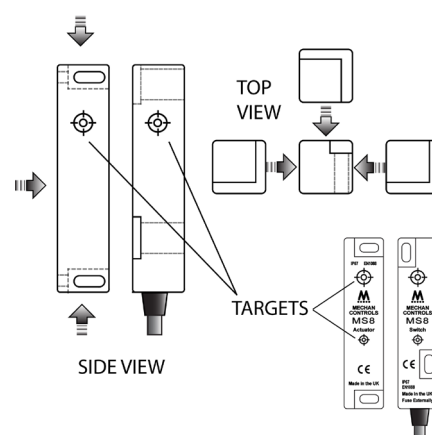


All Dimensions in MM

Operation

Magnasafe safety switches can approach each other from most directions. When closed the targets printed on the front face of the switches must be aligned.

The MS8 is more versatile and can be operated from each of the three sides with targets printed in them.



Mounting

WARNING

The MS8 Safety Switch & Actuator has been designed with increased switching distance to suit certain applications. When mounting the switch and actuator on the machine guard ensure the guard cannot be opened sufficiently to allow access to the hazardous parts of the machinery before the machine has stopped.

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

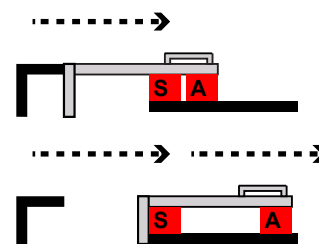
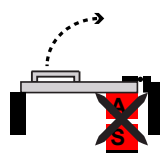
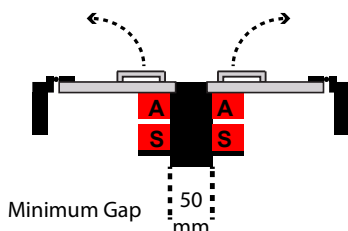
Minimum separation 50mm between adjacent switches.

DO NOT mount on hinged side of the guard.

EN1088 : Hide the actuator where possible.

Mount the switch on to the machine frame and the actuator on to the opening edge of the door.

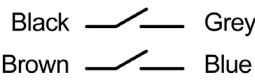
Always try to mount the switch on non-ferrous material. (Ferrous materials may reduce the switching distance.)



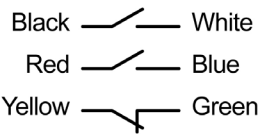
Connections and Fuses

PRE-WIRED

MS8-20

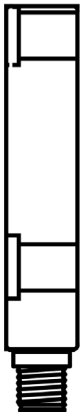
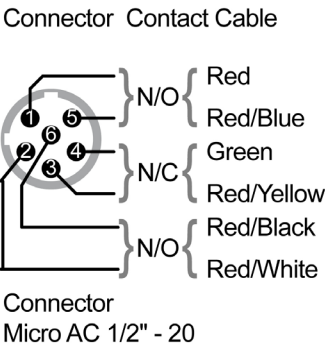


MS8-21 & MS8-SS-21



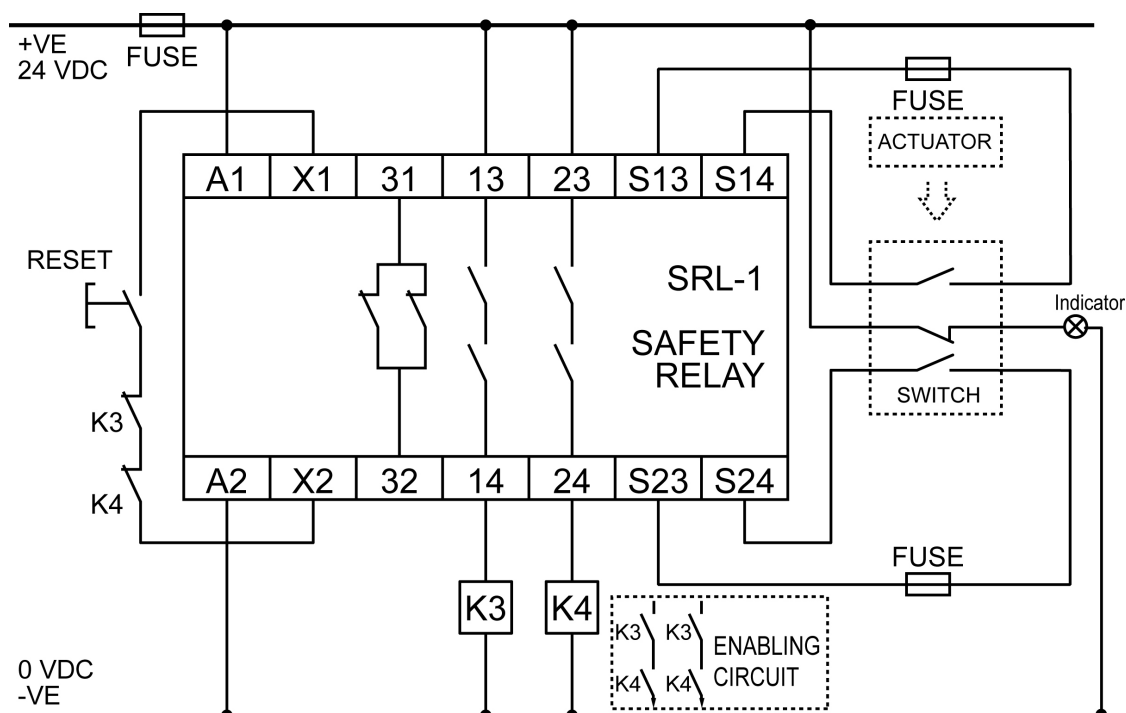
QUICK DISCONNECT

MS8-21-DC-QD



| | |
|-------------------|--|
| Contact Operation | <p>The NO contacts on the Mechan switches are open when the actuator is away from the switch.</p> <p>When the actuator is within the specified operating distance the NO contact(s) will close and the NC contact will open.</p> |
| Fuses | <p>All safety contacts should be externally fused.</p> <p>MS8 0.3 Amps Fast Acting</p> |

Recommended Safety Control Unit



IMPORTANT

CONNECTION TO A SAFETY RELAY

The MS8 non-contact safety switches are designed to work with safety relays that have a low inrush current on the switch input.

All control contacts should be externally fused.

Recommended Safety Control Unit Mechan Part Number : SRL-1 24VAC/DC

Maintenance

It is recommended to check the safe operation 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.

