

# MECHAN CONTROLS



## Installation Guide : MS-FI Safety Switches



### Description:

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

These safety switches are available in a robust ABS, 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 EN14119.

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.

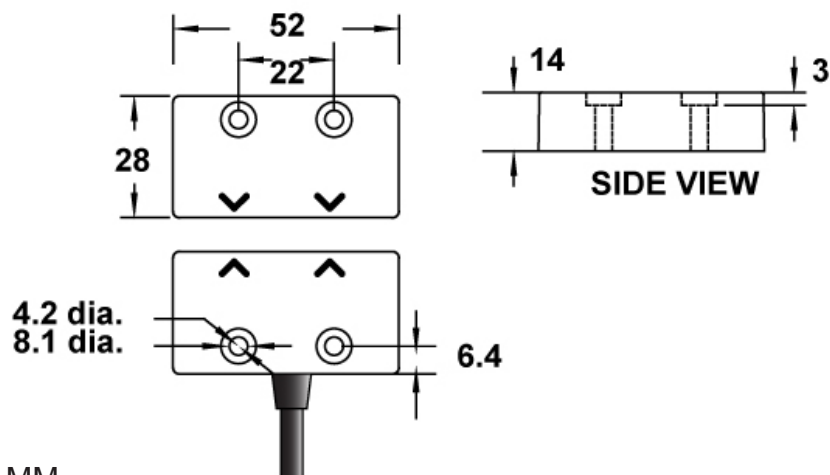
### Keep this guide for future reference

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

Technical Specifications		MS-FI		
Contacts		Max 2 NO		
Safety Contact Rating		24Vdc / 300mA		
Safety Contact Switching		14mm ON / 18mm OFF		
External Fuse ( customer supplied)		0.2Amps Fast Acting		
Construction		RED ABS		
IP Rating		IP67		
Operating Temperature		-25°C to +55°C		
Fixing		M4 Torx security screws, Tightening 1.0NM		
Connection		Pre-wired		
Operation		Target to Target		
Safety Related Data				
B10d		2,000,000	PFH	6.52 x 10 <sup>-8</sup>
TM ( Mission Time )		> 20 Years	PFHd	4.3 x 10 <sup>-8</sup> 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				
Approvals		CE Complies with all relevant sections of the CE Marking Directive		
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 14119 Safety of Machinery. Interlocking devices associated with guards. Principles for design and selection. 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.		

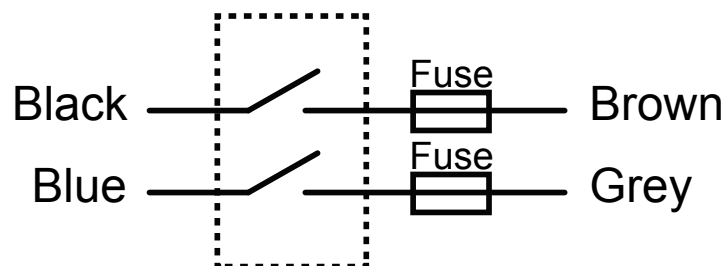
## Dimensions

### MS-FI



All Dimensions in MM

## Connections and Fuses



### CONTACT OPERATION:

The NO contacts on the Mechan switches are open when the actuator is away from the switch

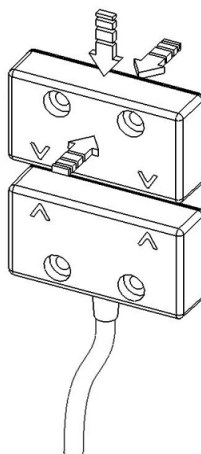
When the actuator is within the specified operating distance the NO contact(s) will close.

### FUSES

All safety contacts should be externally 0.2 Amps Fast Acting

## 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.



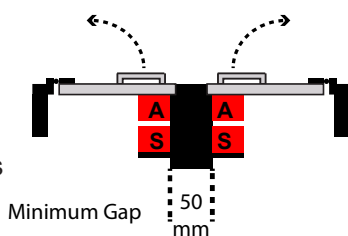
## Mounting

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

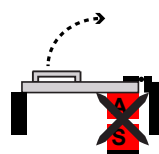
Mount the switch on to the machine frame and the actuator on to the opening edge of the door.

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

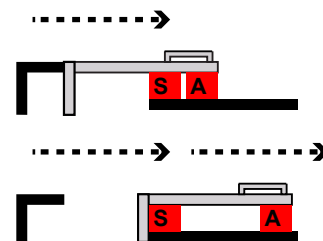
Minimum separation 50mm between adjacent switches.



DO NOT mount on hinged side of the guard.



EN14119 : Hide the actuator where possible.



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### **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.

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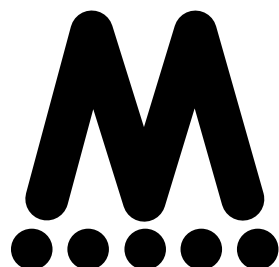
### **Declaration of Conformity**

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](http://www.mechancontrols.co.uk) or by contacting Mechan directly Tel : + 44 1695 722264

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### **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.



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