

Stand Alone Coded Non Contact Switches - Types: PSA-MSA



The PSA and MSA Non Contact Coded switches have been developed as a stand alone mountable device to provide a high level of fault detection and functional safety.

They can be mounted to guard doors to provide and maintain a high level of functional safety without the need to connect to external safety evaluators.

They have their own internal monitoring system and use force guided mechanical contacts and will maintain PLe / Category 4 (ISO13849-1) even with switches connected in series.

They are offered in high specification plastic housings or stainless steel housings and can be used in almost any environments including high pressure cleaning following contamination from foreign particles. The housings are compact and easy to fit on less than 40mm frame sections.

The PSA (Plastic) and the MSA (Stainless Steel 316) both have IP69K ingress protection and are suitable for most detergent washdown applications. The MSA Stainless Steel 316 version has a mirror polished (Ra4) surface finish and is suitable for CIP and SIP process applications.

Dual Actuator versions are available for use with "double door" guards

The typical sensing distance "on" is 12mm with wide tolerance to guard misalignment after setting.



Tested to ingress protection degree IP69K (high pressure hosing with detergent at 80C and 100psi)

Safety Reliability ISO13849-1 PLe Cat4

All standalone switches employ 2 Force Guided Mechanical Relays and incorporate internal checking to ensure both relays are operational after each safety demand. If one relay fails to open or becomes inoperative the switch will lock out safe. Switches can be connected in series to maintain PLe / Cat 4 to ISO13849-1.

Main user benefits

- 1) A standalone mountable device able to provide interlocking control without the need for special additional controllers.
- 2) Feedback circuit check option is included for use when incorporating reset buttons and external contactor feedback checks.
- 3) Maintains PLe Cat.4 by internally checking the internal mechanical relays at each safety demand.
- 4) Connect up to 20 switches in series.
- 5) Ability to connect other switches and E Stops in series.
- 6) Output contacts will switch up to 230V. ac 3A .

Functional Specification:

High Functional Safety to ISO 13849-1 - up to PLe / Cat 4 to ISO13849-1.

Coded actuation to provide high tamperproof interlock security on Guard Doors.

2 Diagnostic LED's:

- LED1 Green - Indication of Safety Circuits Closed (Guard Closed, Actuator present, Feedback Circuit checked)
- LED2 Yellow - Indication of Safety Circuits Open (Actuator removed)

Safety Outputs short circuit protected

1 Auxiliary circuit for indication of door open

M12 Male 8 way connector versions available (Flying Lead 250mm (10 inches)) and also optional series pluggable connectors.

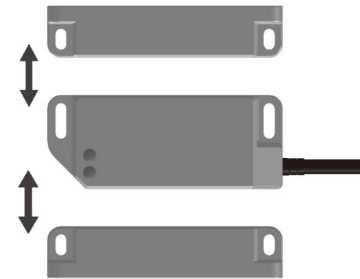
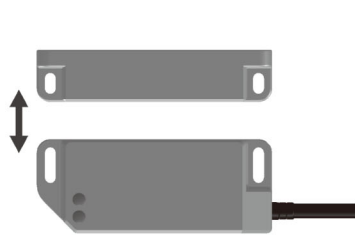
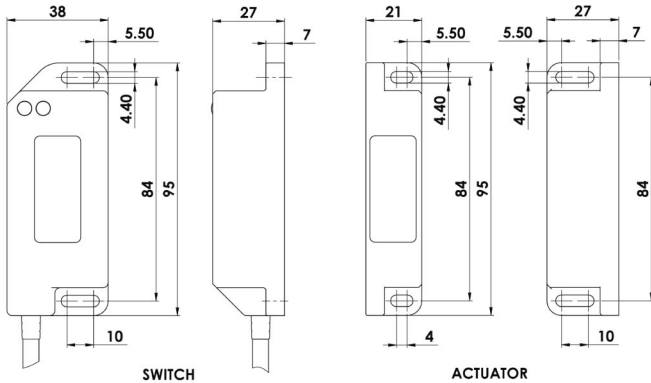
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Standards EN1088 IEC 60947-5-3 IEC 60947-5-1 EN 60204-1
ISO 13849-1 EN62061 EN 954-1 UL508

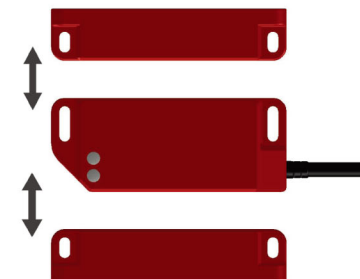
Safety Classification and Reliability Data:

Switching Reliability 3.3 x 10⁶ operations at 100mA load
1x10⁹ operations at full load 3A
ISO 13849-1 up to PLe depending upon system architecture
EN 62061 up to SIL3 depending upon system architecture
Safety Data - Annual Usage 8 cycles per hour / 24 hours per day / 365 days
PFHd 2.52 x 10⁻⁸
Proof Test Interval (Life) 47 years
MTTFd 470 years
Power Supply 24V.dc +/- 10% (Consumption 100mA max.)
Safety Output Maximum Rating 24V.dc 3A.
Auxiliary Output Maximum Rating 24V.dc 0.5A
Dielectric withstand 250V.ac
Insulation Resistance 100 Mohms
Recommended setting gap 5mm
Switching Distance: Sao 10mm Close
(Target to target) Sar 15mm Open
Tolerance to misalignment 5mm in any direction from 5mm setting gap
Approach speed 200mm/m. to 1000mm/s.
Body Material PSA High Specification Polyester
MSA Stainless Steel 316
Temperature Range -25 / 45C.
Shock Resistance IEC 68-2-27 11ms 30g
Vibration Resistance IEC 68-2-6 10-55 Hz. 1mm
Enclosure Protection IP69K / IP67
Cable Type PVC 10core 7mm O.D.
Mounting Bolts 2 x M4



Sales Number	Single Actuator Sensing	Body Material	Cable Length
130001	MSA	S/Steel 316	2M
130002	MSA	S/Steel 316	5M
130003	MSA	S/Steel 316	10M
130004	MSA	S/Steel 316	QC-M12

Sales Number	Dual Actuator Sensing (both actuators are required to be present to close the safety contacts)	Body Material	Cable Length
130101	MSA-D	S/Steel 316	2M
130102	MSA-D	S/Steel 316	5M
130103	MSA-D	S/Steel 316	10M
130104	MSA-D	S/Steel 316	QC-M12



Sales Number	Single Actuator Sensing	Body Material	Cable Length
117001	PSA	Plastic	2M
117002	PSA	Plastic	5M
117003	PSA	Plastic	10M
117004	PSA	Plastic	QC-M12

Sales Number	Dual Actuator Sensing (both actuators are required to be present to close the safety contacts)	Body Material	Cable Length
117101	PSA-D	Plastic	2M
117102	PSA-D	Plastic	5M
117103	PSA-D	Plastic	10M
117104	PSA-D	Plastic	QC-M12

140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way



130200	MSA Replacement Actuator
117200	PSA Replacement Actuator