

SAFETY PRODUCTS

Sense 12 Series

Magnetic Non-Contact Safety Switch

Data Sheet

Sense 12 is a magnetic non-contact safety switch used for interlocking doors and hatches.

The switch is mounted on the frame and the actuator on the moving part of the guard.

Sense 12 offers an interlocking function reaching PLe/SIL 3 with low level coding.



Easy to install

Compact size

Compact in size to make it easy to position and hide on gates and hatches.

Large sensing distance

With a large sensing distance and a high tolerance for misalignment makes it easy to install.



Continuous operation

Robust Design

High specification polyester is used for the housing and integral back plate.

No wear, no mechanical breakage

Non-contact sensing means no mechanical wear and the large sensing tolerance gives a better tolerance to vibrations, resulting in fewer unwanted process stops.



Optimum Interface

Small Design

Small footprint makes it easy to install in restricted space.

Industry Footprint

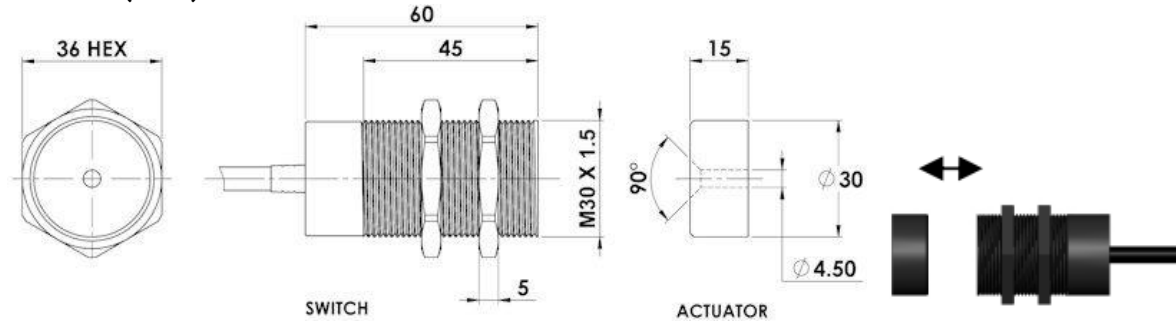
Standard industry footprint for smaller magnetic non-contact switches.

Ordering Information

Description	Material Housing	Type	Order code
Sense 12, 2m cable, Rt, 2NC/1NO	Polyester	Sense 12	2TLA050080R4100
Sense 12, 5m cable, Rt, 2NC/1NO	Polyester	Sense 12	2TLA050080R5100
Sense 12, 10m cable, Rt, 2NC/1NO	Polyester	Sense 12	2TLA050080R6100
Sense 12, QC cable, Rt, 2NC/1NO	Polyester	Sense 12	2TLA050080R2100

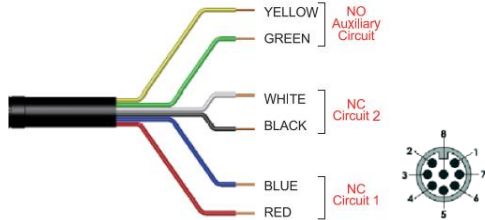
Note: Quick connect M12 versions fitted with 250mm (10") cable

Dimensions (in mm)



Wiring

Quick Connect (QC) M12 8pin	Flying Lead Colors	Circuit (Actuator Present)
2	Red	NC1
3	Blue	NC1
7	Black	NC2
1	White	Safety NC2
4	Yellow	Auxiliary NO
6	Green	Auxiliary NO



Technical Data

Manufacturer	
Address	ABB Electrification Sweden AB SE-721 61 Västerås Sweden
Electrical characteristics	
Minimum switched current	10VDC 1mA
Dielectric withstand	250 VAC
Safety channel 1-NC	250VAC 0.5A max. rating
Safety channel 2-NC	250VAC 0.5A max. rating
Safety channel 3-NO	24VDC 0.2 A max. rating
Insulation resistance	100 MOhms
Fuse	External 0.5 (F) (User)
General	
Recommended setting gap	5 mm
Switching Distance (target to target)	S _{ao} 8 mm close (ON) S _{ar} 20 mm open (OFF)
Tolerance to misalignment	4 mm in any direction from 4 mm setting gap
Switching frequency	1.0 Hz maximum
Approach speed	200 mm/m to 1000 mm/s
Vibration resistance	IEC 68-2-6, 10-55 Hz 1 mm
Shock resistance	IEC 68-2-27, 11 ms, 30 g
Protection class	IP67
Response Time (OFF)	<2ms
Cable Type	PVC 8 core 6 mm O.D
Ambient temperature	-25 °C to +50 °C, +80 °C for short duration during CIP/SIP cleaning
Size	60mm(length)
Material	UL approved polyester
Color	Red
Mounting Position	Any
Mounting Bolts	2 x M4 Tightening torque 1.0Nm
Safety-related characteristic data and Conformity	
Conformity	European Machinery Directive 2006/42/EC EN ISO 12100:2010, EN ISO 14119:2013, EN ISO 13849-1:2015, EN 60947-5-3:2013, EN60204-1
EN ISO 13849-1	Up to PLe Category 4 (if both channels are used with a PLe control device)
EN 62061	Up to SIL3 depending on system architecture
Coding Level according to EN ISO 14119	Low
Safety data	
B10d	3,300,000 cycles at 100mA load
Usage	8 cycles/hour 24hours/365 days per year MTTFd is 470 years
Certifications	TÜV, cULus
Information with regard to UL 508	Type 1 Enclosure Max. Temp: 80°C Maximum output 24V.dc 200mA. Powered by Class 2 or equivalent.

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electrification.us.abb.com/
products/machine-motor-control

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