

SAFETY PRODUCTS

# Sense 7 Series

## Magnetic Non-Contact Safety Switch

### Data Sheet

Sense 7 is a coded 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 7 offers an interlocking function reaching Pl<sub>e</sub>/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

**Easier Troubleshooting**

LED indication gives visual status of the switch reducing downtime.

**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**

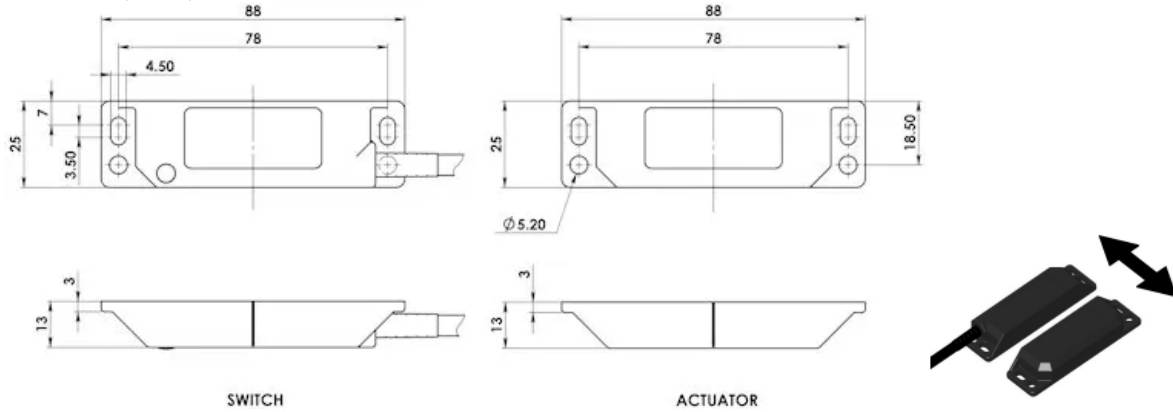
Description	Material Housing	Type	Order code
Sense 7, 2m cable, 2NC/1NO, LED	Polyester	Sense 7	2TLA050056R4100
Sense 7, 5m cable, 2NC/1NO, LED	Polyester	Sense 7	2TLA050056R5100
Sense 7, 10m cable, 2NC/1NO, LED	Polyester	Sense 7	2TLA050056R6100
Sense 7, QC cable, 2NC/1NO, LED	Polyester	Sense 7	2TLA050056R2100

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

**Accessories**

Description	Material Housing	Order code
Sense 7 Spare Actuator	Polyester	2TLA050040R0211

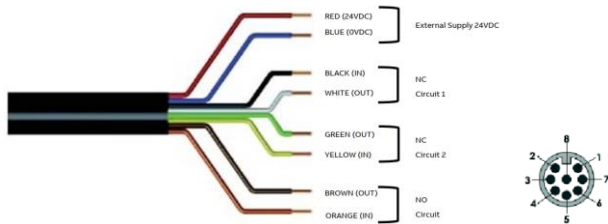
**Dimensions (in mm)**



**Wiring**

Quick Connect (QC) M12 8pin	Flying Lead Colors	Circuit (Actuator Present)	Output Types Solid State
2	Red	Supply 24VDC	Supply 24VDC +/- 10%
3	Blue	Supply 0VDC	
7	Black	Safety NC1 +ve	200mA Max. 24VDC
1	White	Safety NC1 -ve	
4	Yellow	Safety NC2 +ve	200mA Max. 24VDC
6	Green	Safety NC2 -ve	
8	Orange	Auxiliary NO	200mA Max. 24VDC
5	Brown	Auxiliary NO	

Note: The NC1 and NC2 Outputs are polarity sensitive.



**Technical Data**

<b>Manufacturer</b>	
Address	ABB Electrification Sweden AB SE-721 61 Västerås Sweden
<b>Electrical characteristics</b>	
Minimum switched current	10VDC 1mA
Dielectric withstand	250 VAC
Safety channel 1-NC	24VDC 0.2 A max. rating
Safety channel 2-NC	24VDC 0.2 A max. rating
Safety channel 3-NO	24VDC 0.2 A max. rating
Insulation resistance	100 MΩ
Power Consumption	25mA Max.
<b>General</b>	
Recommended setting gap	5 mm
Switching Distance (target to target)	S <sub>ao</sub> 10 mm close (ON) S <sub>ar</sub> 20 mm open (OFF)
Tolerance to misalignment	5 mm in any direction from 5 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)	60ms Maximum
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	88mm(length) x 25mm(width) x 14mm (height)
Material	UL approved polyester
Color	Red
Mounting Position	Any
Mounting Bolts	2 x M4 Tightening torque 1.0Nm
<b>Safety-related characteristic data and Conformity</b>	
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
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
<b>Safety data</b>	
PFH <sub>D</sub>	2.6 x 10 <sup>-10</sup> (1/h)
Proof test interval (life)	20 years
MTTF <sub>d</sub>	866 years
Certifications	TÜV, cULus
Information with regard to UL 508	Type 1 Enclosure Max. Temp: 50°C Maximum output 24V.dc 100mA. Powered by Class 2 or equivalent.

ABB Inc.  
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United States  
electrification.us.abb.com/  
products/machine-motor-control

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