

# Safety Magnetic Switch Sense7



## Approvals:



## Application:

Gates  
Hatches  
Position control

## Features:

Small size  
Up to IP69K  
LED  
2NC + 1NO  
Solid State outputs

### Switch operational description

The coded non-contact switches Sense7 are designed to interlock hinged, sliding or removable guard doors. Its design makes it advantageous to operate in environments that require the highest level of safety.

The magnetic switch is small in size which makes it easy to position and hide on gates and hatches. Sense7 is resistant to both dirt and water, and has no dust collecting cavities, which make it useful in environments where hygiene is paramount. The magnetic switch has a long working life since no mechanical contact is necessary for operation. Sensing distance of Sense7 is 14 mm and it has a high tolerance to misalignment. Actuator is always delivered with the non-contact switch.

### Material

The Sense7 switch is available in UL approved polyester and in stainless steel 316. The stainless steel has a mirror polished finished (Ra4) suitable for CIP cleaning - food splash zones according to EHEDG guidelines.

### Protection from unauthorised or incidental access

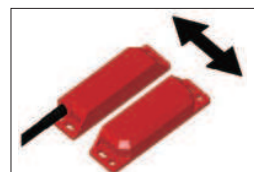
To avoid unauthorised operation of the Sense7 switch, it is only possible to actuate the coded magnetic switch with the coded magnet. Other magnets, screwdrivers and tools have no effect on the switch contacts.

### Safety level

The Sense7 has two closing and one opening contact. Two contacts have to be monitored to achieve the highest level of safety regulations, PL e, Cat. 4 according to EN ISO13849-1 together with safety relay or Safety Pluto PLC.

### Regulations and Standards

The Sense7 is designed and approved in accordance to relevant standards. Examples of relevant standards are EN1088, IEC/EN60947-5-3, EN60204-1, EN ISO13849-1, EN62061 and UL508.



Sensing distance 14 mm

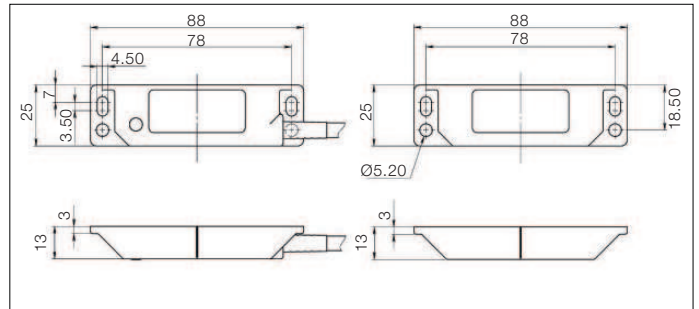


Quick connected version fitted with 250 mm cable and M12.

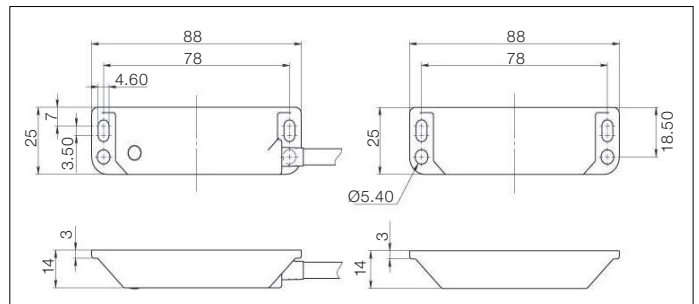
**Note!** Sense7 versions have 2NC and 1NO circuits. For all Sense7 switches the NC circuits are closed when the guard is closed and the actuator present.

Technical data – Sense7 series	
<b>Supplier</b>	ABB AB Jokab Safety, Sweden
<b>Article number/ Ordering data</b>	
<b>Plastic</b>	
Sense7 - 2 m cable	2TLA050056R4100
Sense7 - 5 m cable	2TLA050056R5100
Sense7 - 10 m cable	2TLA050056R6100
Sense7 - 250 mm cable with M12	2TLA050056R2100
<b>Stainless steel</b>	
Sense7Z - 2 m cable	2TLA050056R4120
Sense7Z - 5 m cable	2TLA050056R5120
Sense7Z - 10 m cable	2TLA050056R6120
Sense7Z - 250 mm cable with M12	2TLA050056R2120
<b>EN ISO13849-1</b>	Up to PL e, Cat. 4 depending upon system architecture
<b>EN62061</b>	Up to SIL3 depending upon system architecture
<b>Safety data</b>	
<b>PFH<sub>D</sub></b>	2.52 x 10 <sup>-8</sup>
<b>Switching reliability</b>	3.3 x 10 <sup>6</sup> operations at 100mA load
<b>Proof test interval (life)</b>	47 years
<b>MTTF<sub>d</sub></b>	470 years (8 cycles per hour/24 hours per day/365 days)
<b>Safety channel 1NC</b>	24VDC 0.2 A max. rating
<b>Safety channel 2NC</b>	24VDC 0.2 A max. rating
<b>Safety channel 3NO</b>	24VDC 0.2 A max. rating
<b>Power supply</b>	24VDC ±10%
<b>Minimum switched current</b>	10VDC 1mA
<b>Dielectric withstand</b>	250VAC
<b>Insulation resistance</b>	100 MOhm
<b>Recommended setting gap</b>	5 mm
<b>Switching distance (target to target)</b>	Sao 10 mm close (on) Sar 20 mm open (off)
<b>Tolerance to misalignment</b>	5 mm in any direction from 5 mm setting gap
<b>Switching frequency</b>	1.0 Hz maximum
<b>Approach speed</b>	200 mm/m to 1000 mm/s
<b>Vibration resistance</b>	IEC 68-2-6, 10-55 Hz 1 mm
<b>Shock resistance</b>	IEC 68-2-27, 11 ms, 30 g
<b>Enclosure protection</b>	IP67, IP69K

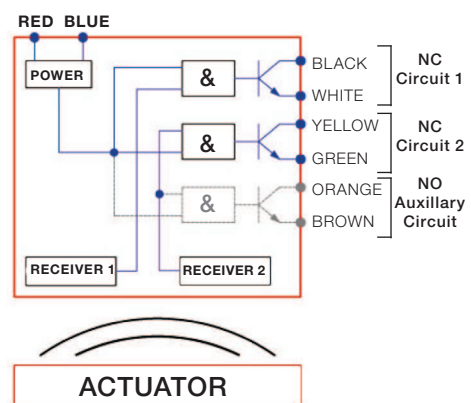
<b>Cable type</b>	PVC 8 core 6 mm O.D
<b>Operating temperature</b>	
Sense7	-25°C to +80°C
Sense7Z	-25°C to +105°C
<b>Material</b>	
Sense7	UL approved polyester
Sense7Z	Stainless steel 316
<b>Colour</b>	Red or stainless steel
<b>Mounting position</b>	Any
<b>Mounting bolts (Tightening torque)</b>	2 x M4 (1.0 Nm)



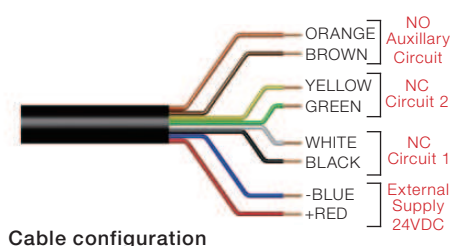
Dimension Sense7



Dimension Sense7Z



Electrical connection



Cable configuration

M12 8pol	Sense7 - 250 mm cable with M12 (Pin view from switch)	Colours
1	1	White
2	2	Red
3	3	Blue
4	4	Yellow
5	5	Brown
6	6	Green
7	7	Black
8	8	Orange