Safety Magnetic Switch
Sense7

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 affect 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/EN 60947-5-3, EN 60204-1, EN ISO 13849-1, EN 62061 and UL 508.

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

Approvals:

Application:
- Gates
- Hatches
- Position control

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

<table>
<thead>
<tr>
<th>Article number</th>
<th>Plastic</th>
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<tbody>
<tr>
<td>Sense7 - 2 m cable</td>
<td>2TLA050056R4100</td>
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<tr>
<td>Sense7 - 5 m cable</td>
<td>2TLA050056R5100</td>
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<tr>
<td>Sense7 - 10 m cable</td>
<td>2TLA050056R6100</td>
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<tr>
<td>Sense7 - 250 mm cable with M12 Stainless steel</td>
<td>2TLA050056R2100</td>
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<tr>
<td>Sense7Z - 2 m cable</td>
<td>2TLA050056R4120</td>
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<tr>
<td>Sense7Z - 5 m cable</td>
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<tr>
<td>Sense7Z - 10 m cable</td>
<td>2TLA050056R6120</td>
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<tr>
<td>Sense7Z - 250 mm cable with M12 Stainless steel</td>
<td>2TLA050056R2120</td>
</tr>
</tbody>
</table>

Level of Safety
- EN ISO 13849-1: Up to PL e/Cat. 4 depending upon system architecture
- EN 62061: Up to SIL3 depending upon system architecture

Safety data
- PFH<sub>c</sub>: 2.52 x 10<sup>-8</sup>
- Switching reliability: 3.3 x 10<sup>6</sup> operations at 100mA load, 47 years
- Proof test interval (life): 470 years (8 cycles per hour/24 hours per day/365 days)
- MTTF<sub>d</sub>: 47 years

Safety channel 1NC
- 24 VDC 0.2 A max. rating

Safety channel 2NC
- 24 VDC 0.2 A max. rating

Safety channel 3NO
- 24 VDC 0.2 A max. rating

Power supply
- 24 VDC ±10%

Minimum switched current
- 10 VDC 1mA

Dielectric withstand
- 250 VAC

Insulation resistance
- 100 MOhm

Recommended setting gap
- 5 mm

Switching distance (target to target)
- Sao 10 mm close (on)
- Sar 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

Enclosure protection
- IP67 and IP69K

Cable type
- PVC 8 core 6 mm O.D

Operating temperature
- Sense7: -25°C to +80°C
- Sense7Z: -25°C to +105°C

Material
- Sense7: UL approved polyester
- Sense7Z: Stainless steel 316

Colour
- Red or stainless steel

Mounting position
- Any

Mounting bolts (Tightening torque)
- 2 x M4 (1.0 Nm)

Electrical connection

M12 8pol Sense7 - 250 mm cable with M12 (Pin view from switch)

Colours

<table>
<thead>
<tr>
<th>Pin</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>White</td>
</tr>
<tr>
<td>2</td>
<td>Red</td>
</tr>
<tr>
<td>3</td>
<td>Blue</td>
</tr>
<tr>
<td>4</td>
<td>Yellow</td>
</tr>
<tr>
<td>5</td>
<td>Brown</td>
</tr>
<tr>
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<tr>
<td>7</td>
<td>Black</td>
</tr>
<tr>
<td>8</td>
<td>Orange</td>
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