XCSRC10M12
Safety RFID contactless switch - Single model -
Unique pairing

Main

Range of product
Preventa Safety detection

Product or component type
Preventa RFID safety switch

Component name
XCSRC

Complementary

Design
Rectangular, standard

Size
Transponder: 50 x 15 x 15 mm
Reader: 108.3 x 30 x 15 mm

Material
Valox

Electrical connection
1 male connector

Connector type
M12 male

Type of output stage
Solid-state, PNP

Safety outputs
2 NO

Number of poles
5

Local signalling
Green, orange and red 2 multi-colour LEDs

[Sao] assured operating sensing distance
10 mm face to face

[Sar] assured release sensing distance
35 mm face to face

Approach directions
3 directions-transponder with rotary sensing face

[Ue] rated operational voltage
24 V DC (-20...10 %) SELV or PELV conforming to EN/IEC 60204-1

[Ie] rated operational current
60 mA

[Ui] rated insulation voltage
30 V DC

[Uimp] rated impulse withstand voltage
0.8 kV IEC 60947-5-2

Protection type
Short-circuit protection

Maximum switching voltage
26.4 V DC

Switching capacity in mA
200 mA

Switching frequency
<= 0.5 Hz

Risk time
120 ms

Response time
120 ms typical

Maximum delay first up
5 s

Tightening torque
< 1.5 N.m
| Standards          | EN/IEC 60947-5-2  
|                   | ISO 14119  
|                   | EN/IEC 60947-5-3  
| Product certifications | EAC  
|                   | TÜV  
|                   | FCC  
|                   | IC  
|                   | CSA 22-2  
|                   | Ecolab  
|                   | E2  
|                   | RCM  
| Marking            | FCC  
|                   | TÜV  
|                   | RCM  
|                   | EAC  
|                   | IC  
|                   | CE  
|                   | CULus  
| Safety level       | SIL 3 conforming to EN/IEC 61508  
|                   | SILCL 3 conforming to EN/IEC 62061  
|                   | PL = e conforming to EN/ISO 13849-1  
|                   | Category 4 conforming to EN/ISO 13849-1  
| Safety reliability data | PFH<sub>D</sub> = 5E-10/h conforming to EN/IEC 62061  
|                   | PFH<sub>D</sub> = 5E-10/h conforming to EN/ISO 13849-1  
| Mission time       | 20 year(s)  
| Ambient air temperature for operation | -25...70 °C  
| Ambient air temperature for storage | -40...85 °C  
| Vibration resistance | 10 gn (f= 10…150 Hz) conforming to EN/IEC 60068-2-6  
| Shock resistance   | 30 gn for 11 ms conforming to EN/IEC 60068-2-27  
| Electrical shock protection class | Class III conforming to EN/IEC 61140  
| IP degree of protection | IP65 conforming to EN/IEC 60529  
|                   | IP66 conforming to EN/IEC 60529  
|                   | IP67 conforming to EN/IEC 60529  
|                   | IP69K conforming to DIN 40050  

**Offer Sustainability**

| REACh Regulation | REACh Declaration  
|                  |  
| EU RoHS Directive | Pro-active compliance (Product out of EU RoHS legal scope)  
|                   | EU RoHS Declaration  

Connections

M12 Connector, 5-pin

(1) + 24 VDC
(2) OSSD2
(3) 0 VDC
(4) OSSD1
(5) NC (Not connected)
Connections

Wiring Diagram: Connection to a Safety Relay
Cat. 4 / PL=e (EN/ISO 13849-1) / SIL3 (IEC 61508) / SILCL3 IEC 62061), if combined with an appropriate Preventa XPS Safety unit PL=e / SIL3

(1) Transponder
(2) Reader
(3) Logic
(4) Start
(5) ESC: External start conditions
(6) H1: indicator light deactivated
(7) Fuse. Operating status of internal electronic fuse
(8) To PLC
(9) Power circuit

NOTE: KM1 and KM2 contactors must have force-guided contacts.
Connections

Wiring Diagram: Connection to a Safety Controller

Cat. 4 / PL=e (EN/ISO 13849-1) / SIL3 (IEC 61508) / SILCL3 IEC 62061), if combined with an appropriate Preventa XPS Safety controller PL=e / SIL3

(1) Power supply
(2) 1 A max.
(3) Safety controller
(4) Feedback
(5) Restart
(6) Reader
(7) Transponder
(8) Power circuit

NOTE: KM1 and KM2 contactors must have force-guided contacts.
Face to Face Mounting (Preferred Configuration)

Example n°1

- Referred minimum mounting distance between transponder and reader: $e_{min} = 0.08$ in

Example n°2

- Referred minimum mounting distance between transponder and reader: $e_{min} = 0.08$ in
Face to Face Mounting (Preferred Configuration)

Example n°3

\[ e \text{ min.} > 2 \text{ mm.} \]  
\[ d : \text{Detection limit} \]
Mounting and Clearance

Side by Side Mounting
Correct Mounting Configuration

e: Recommended minimum mounting distance between transponder and reader.
## Mounting and Clearance

### Minimum Mounting Clearances between Safety Switches

<table>
<thead>
<tr>
<th>Dimension in mm</th>
<th>E1 min.</th>
<th>E2 min.</th>
<th>E3 min.</th>
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<tbody>
<tr>
<td>45</td>
<td>150</td>
<td>65</td>
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<table>
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<tr>
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<th>E2 min.</th>
<th>E3 min.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.77</td>
<td>5.91</td>
<td>2.56</td>
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</table>
Detection Curves

Face to Face Mounting (Preferred Configuration)
Sao and Sar sensing distances along Y axis as function of Z (longitudinal misalignment for X=0)

Sar: Assured release distance
Sao: Assured operating distance
(1) Recommended minimum mounting distance between transponder and reader.

Sao and Sar sensing distances along X axis as function of Z (transverse misalignment for Y=0)
Sar: Assured release distance
Sao: Assured operating distance
(1) Recommended minimum mounting distance between transponder and reader.
Detection Curves

Side by Side Mounting

Sao and Sar sensing distances along Y axis as function of X (longitudinal misalignment for Z=0mm)

Sar: Assured release distance
Sao: Assured operating distance
(1) X=0 for X<0
(2) X=0 for X>0
(3) Recommended minimum mounting distance between transponder and reader.

Sao and Sar sensing distances along Z axis as function of X (transverse misalignment for Y=0mm)
Sar: Assured release distance
Sao: Assured operating distance
(1) X=0 for X<0
(2) X=0 for X>0
(3) Recommended minimum mounting distance between transponder and reader.