SensaGuard™
Integrated Latch
Installation Instructions

Certifications

IMPORTANT:
SAVE THESE INSTRUCTIONS FOR FUTURE USE

Note: Refer to Technical Specifications for Certification information and ratings.
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Installation Instructions

Installation must be in accordance with the following steps and stated specifications and should be carried out by suitable competent personnel. Adherence to the recommended maintenance instructions forms part of the warranty.

This device is intended to be part of the safety related control system of a machine. Before installation, a risk assessment should be performed to determine whether the specifications of this device are suitable for all foreseeable operational and environmental characteristics of the machine to which it is to be fitted. Refer to Technical Specifications for Certification information and ratings.

ATTENTION: The presence of spare actuators compromise the integrity of the safety systems. Personal injury or death, property damage or economic loss can result. Appropriate management controls, working procedures and alternative protective measures should be introduced to control their use and availability.

Technical Specification

Safety Ratings

Standards
- IEC60947-5-3, IEC61508, ISO 13849-1

Safety Classification
- Cat. 4 Per ISO 13849-1, SIL CL3

Functional Safety Data
- PFH: 1.12 x 10^-9
- Dual channel interlock may be suitable for use in application up to PLe (according to ISO 13849-1) and for use up to SIL3 systems (according to IEC 62061) depending on application characteristics.

Certifications
- CE marked for all applicable directives, cULus (UL 508), and TÜV

Operating Characteristics

Sensing Distance, Assured ON
- Actuator in contact with sensor

Sensing Distance, Assured OFF
- 32 mm

Maximum output current (all outputs)
- 200 mA

Input Current
- 50 mA (no load supply current)

Operational Current, Min.
- < 1 mA DC

Off-state Current
- < 0.5 mA DC

Maximum number of switches, connected in series
- Unlimited, see unit response time section

Operating Voltage
- 24V DC +10% / -15% Class 2 SELV power supply

Utilization category according to IEC 60947-5-2
- DC-12 & DC-13

Operating Current
- 200mA

Frequency of operating cycle
- 0.25 Hz

Response Time (Off)
- 54 ms

Case Material
- Grilamid

Actuator Material
- Grilamid/PBT

Outputs (Guard door closed, Actuator in place)

Outputs | Description | Status
---|---|---
Safety | 2 x PNP, 0.2 A max. | ON (+24vdc)
Auxiliary | 1 x PNP, 0.2 A max. | OFF (0vdc)

Environmental

Operating Temperature
- -10...+55°C (+14...+131°F)

Operating Humidity
- 5%...95% relative

Washdown rating
- NEMA 3, 4X, 12, 13, IP65, IP67, IP69K

Shock & Vibration
- IEC 60068-2-27 | 30 g, 11 ms
- IEC 60068-2-6 | 10...55Hz

Radio Frequency
- IEC 61000-4-3
- IEC 61000-4-6
Protection

<table>
<thead>
<tr>
<th>Protection</th>
<th>Incorporated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-Circuit Protection</td>
<td></td>
</tr>
<tr>
<td>Current Limitation</td>
<td></td>
</tr>
<tr>
<td>Overload Protection</td>
<td></td>
</tr>
<tr>
<td>False Pulse Protection</td>
<td></td>
</tr>
<tr>
<td>Transient Noise Protection</td>
<td></td>
</tr>
<tr>
<td>Reverse Polarity Protection</td>
<td></td>
</tr>
<tr>
<td>Overvoltage protection</td>
<td></td>
</tr>
<tr>
<td>Thermal shutdown/restart</td>
<td></td>
</tr>
<tr>
<td>Electrical Life</td>
<td>$10^6$</td>
</tr>
</tbody>
</table>

Mode of Operation

**Status indicators:**
- “Status/Diag” LED illuminates Green - Door/Guard closed, safety outputs active.
- “Status/Diag” LED illuminates Red - Door/Guard open, safety outputs off.
- “Status/Diag” LED flashes Red or Green: - Unit failure. See Diagnostic section below.

Mounting Information

Do not over torque the mounting hardware.
Position the switch and actuator so they are aligned with each other.
Mount the switch and actuator to removable guard, door or gate.
Recommended fastener size - M6

Nut Torque Specification
Switch/Actuator: 2.20 N·M (19.5 in·lbs)

Minimum Distance Between Sensors [mm (in.)]

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Diagram showing the installation instructions.
Dimensions - [mm (in.)]

[Diagram showing dimensions in millimeters and inches]
Mounting Information

LATCH FORCE SETTING

LOW
MEDIUM
HIGH

15N Typical

45N Typical

Sliding Door

Hinged Door

COVER PLATE (OPTIONAL)
Technical Data

BOTH POLE PIECES MUST BE IN CONTACT WITH STRIKER PLATE
Diagnostic

Unit Indicators (per IEC 60073)

<table>
<thead>
<tr>
<th>Status/Diag LED</th>
<th>State</th>
<th>Status</th>
<th>Troubleshooting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>Not Powered</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Red</td>
<td>Not Safe, OSSD not active</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Green</td>
<td>Safe, OSSD active</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Green flash</td>
<td>Power up test or OSSD inputs not valid</td>
<td>Check 24V DC or OSSD inputs (yellow and red wire)</td>
<td></td>
</tr>
<tr>
<td>Red flash</td>
<td>1 Hz Flash OSSD Fault</td>
<td>OSSD fault —check OSSD outputs are not shorted to GND, 24V DC or each other. Cycle power.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 Hz Flash Recoverable / Non-recoverable Fault</td>
<td>OSSD fault —check OSSD outputs are not shorted to GND, 24V DC or each other. Cycle power.</td>
<td></td>
</tr>
</tbody>
</table>

Typical Wiring Diagram

<table>
<thead>
<tr>
<th>Description</th>
<th>Plastic</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-Pin Micro (M12)</td>
<td></td>
</tr>
<tr>
<td>Grey</td>
<td>Safety A</td>
</tr>
<tr>
<td>Red</td>
<td>Safety A+</td>
</tr>
<tr>
<td>Pink</td>
<td>Safety B</td>
</tr>
<tr>
<td>Yellow</td>
<td>Safety B+</td>
</tr>
<tr>
<td>White</td>
<td>Aux A</td>
</tr>
<tr>
<td>Brown</td>
<td>24V DC+</td>
</tr>
<tr>
<td>Blue</td>
<td>0V</td>
</tr>
<tr>
<td>Green</td>
<td>N/A</td>
</tr>
<tr>
<td>8-Pin Cordset 889D-F8AB-* or cable version</td>
<td></td>
</tr>
</tbody>
</table>

* Replace symbol with 2 (2m), 5 (5m) or 10 (10m) for standard cable lengths.

Note: Refer to Technical Specifications for Certification information and ratings.
Troubleshooting
Series Circuit

Note: Refer to Technical Specifications for Certification information and ratings.
Unit Response Time (does not include safety relay response time)

Note: Refer to Technical Specifications for Certification information and ratings.
Application Wiring Examples

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Application Wiring Examples

Note: Refer to Technical Specifications for Certification information and ratings.
Notes
List of recommended relays
MSR126, MSR127, MSR123, MSR124, MSR131, MSR138, MSR211, MSR121, MSR200 Family (Except MSR210), MSR300 Family, SmartGuard, 1791 DS DeviceNet™ Safety I/O.
Relay must have light curtain inputs.

Maintenance
Every month.
Check the correct operation of the switching circuit. Also check for signs of abuse or tampering. Inspect the switch casing for damage. Inspect the magnet poles and clean off any dirt or debris.

Repair
If there is any malfunction or damage, no attempts at repair should be made. The unit should be replaced before machine operation is allowed.

Declaration of Conformity
This is to declare that the products shown on this document conforms with the Essential Health and Safety Requirements (EHSR's) of the European Machinery Directive 2006/42/EC. These products also conform to EN 60947-5-3, EN 1088, EN ISO 12100, EN 60204-1 and have Third Party Approval.
For a comprehensive certificate please visit: www.ab.com/safety.