



1) Sensing surface



## Basic features

|                     |               |
|---------------------|---------------|
| Approval/Conformity | cULus         |
|                     | CE            |
|                     | EAC           |
|                     | WEEE          |
| Basic standard      | IEC 60947-5-2 |

## Display/Operation

|                    |     |
|--------------------|-----|
| Function indicator | yes |
| Power indicator    | no  |

## Electrical connection

|                                   |                  |
|-----------------------------------|------------------|
| Connection                        | M8x1-Male, 3-pin |
| Polarity reversal protected       | yes              |
| Protection against device mix-ups | yes              |
| Short-circuit protection          | yes              |

## Electrical data

|                                   |             |
|-----------------------------------|-------------|
| Load capacitance max. at Ue       | 1 µF        |
| Min. operating current Im         | 0 mA        |
| No-load current Io max., damped   | 6 mA        |
| No-load current Io max., undamped | 2 mA        |
| Operating voltage Ub              | 10...30 VDC |
| Output resistance Ra              | Open drain  |
| Rated insulation voltage Ui       | 75 V DC     |
| Rated operating current Ie        | 100 mA      |
| Rated operating voltage Ue DC     | 24 V        |
| Rated short circuit current       | 100 A       |
| Ready delay tv max.               | 21 ms       |
| Residual current Ir max.          | 10 µA       |
| Ripple max. (% of Ue)             | 10 %        |
| Switching frequency               | 5000 Hz     |
| Utilization category              | DC -13      |
| Voltage drop static max.          | 2 V         |

## Environmental conditions

|                         |                                 |
|-------------------------|---------------------------------|
| Ambient temperature     | -25...70 °C                     |
| Contamination scale     | 3                               |
| EN 60068-2-27, Shock    | Half-sinus, 30 gn, 11 ms        |
| EN 60068-2-6, Vibration | 55 Hz, amplitude 1 mm, 3x30 min |
| Protection degree       | IP67                            |

## Functional safety

|              |       |
|--------------|-------|
| MTTF (40 °C) | 305 a |
|--------------|-------|

**Material**

|                          |                 |
|--------------------------|-----------------|
| Housing material         | Stainless steel |
| Material sensing surface | PBT             |

**Mechanical data**

|              |                    |
|--------------|--------------------|
| Dimension    | Ø 4 x 41 mm        |
| Installation | for flush mounting |
| Size         | D4.0               |

**Range/Distance**

|                                  |         |
|----------------------------------|---------|
| Assured operating distance Sa    | 1.21 mm |
| Hysteresis H max. (% of Sr)      | 15.0 %  |
| Rated operating distance Sn      | 1.5 mm  |
| Real switching distance sr       | 1.5 mm  |
| Repeat accuracy max. (% of Sr)   | 5.0 %   |
| Switching distance marking       | ■ ■     |
| Temperature drift max. (% of Sr) | 10 %    |
| Tolerance Sr                     | ±10 %   |

**Output/Interface**

|                  |                        |
|------------------|------------------------|
| Switching output | PNP normally open (NO) |
|------------------|------------------------|

**Remarks**

The sensor is functional again after the overload has been eliminated.

EMC: Surge resistance

External protection circuit is required. Document 825345, Section 2.

For more information about MTTF and B10d see MTTF / B10d Certificate

Indication of the MTTF- / B10d value does not represent a binding composition and/or life expectancy assurance; these are simply experiential values with no warranty implications. These declared values also do not extend the expiration period for defect claims or affect it in any way.

**Connector Drawings****Wiring Diagrams**