



1) Sensing surface



IND. CONT. EQ.  
 81U2  
 Class 2 Type 1

### Basic features

<b>Approval/Conformity</b>	cULus CE EAC WEEE
<b>Basic standard</b>	IEC 60947-5-2

### Display/Operation

<b>Function indicator</b>	yes
<b>Power indicator</b>	no

### Electrical connection

<b>Connection</b>	M8x1-Male, 3-pin
<b>Polarity reversal protected</b>	yes
<b>Protection against device mix-ups</b>	yes
<b>Short-circuit protection</b>	yes

### Electrical data

<b>Load capacitance max. at Ue</b>	1 µF
<b>Min. operating current I<sub>m</sub></b>	0 mA
<b>No-load current I<sub>o</sub> max., damped</b>	6 mA
<b>No-load current I<sub>o</sub> max., undamped</b>	2 mA
<b>Operating voltage U<sub>b</sub></b>	10...30 VDC
<b>Output resistance R<sub>a</sub></b>	Open drain
<b>Rated insulation voltage U<sub>i</sub></b>	75 V DC
<b>Rated operating current I<sub>e</sub></b>	100 mA
<b>Rated operating voltage U<sub>e</sub> DC</b>	24 V
<b>Rated short circuit current</b>	100 A
<b>Ready delay t<sub>v</sub> max.</b>	21 ms
<b>Residual current I<sub>r</sub> max.</b>	10 µA
<b>Ripple max. (% of U<sub>e</sub>)</b>	10 %
<b>Switching frequency</b>	5000 Hz
<b>Utilization category</b>	DC -13
<b>Voltage drop static max.</b>	2 V

### Environmental conditions

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

### Functional safety

<b>MTTF (40 °C)</b>	305 a
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**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)
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**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**

