



1) Sensing surface



### Basic features

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

### Display/Operation

Function indicator	yes
Power indicator	no

### Electrical connection

Cable diameter D	3.00 mm
Cable length L	2 m
Conductor cross-section	0.14 mm <sup>2</sup>
Connection type	Cable, 2.00 m, PUR
Number of conductors	3
Polarity reversal protected	yes
Protection against device mix-ups	yes
Short-circuit protection	yes

### Electrical data

Load capacitance max. at U <sub>e</sub>	0.5 µF
Min. operating current I <sub>m</sub>	0 mA
No-load current I <sub>o</sub> max., damped	10 mA
No-load current I <sub>o</sub> max., undamped	8 mA
Operating voltage U <sub>b</sub>	10...30 VDC
Output resistance R <sub>a</sub>	Open collector
Rated insulation voltage U <sub>i</sub>	75 V DC
Rated operating current I <sub>e</sub>	100 mA
Rated operating voltage U <sub>e</sub> DC	24 V
Rated short circuit current	100 A
Ready delay t <sub>v</sub> max.	20 ms
Residual current I <sub>r</sub> max.	10 µA
Ripple max. (% of U <sub>e</sub> )	10 %
Switching frequency	3000 Hz
Utilization category	DC -13
Voltage drop static max.	2.5 V

### Environmental conditions

Ambient temperature	-25...70 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 g <sub>n</sub> , 11 ms
EN 60068-2-6, Vibration	55 Hz, amplitude 1 mm, 3x30 min
IP rating	IP67

### Functional safety

MTTF (40 °C)	735 a
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Inductive Sensors  
**BES M05ED-PSC50F-EP02**  
Order Code: BES013E

**BALLUFF**

**Interface**

**Switching output** PNP normally open (NO)

**Material**

**Housing material** Stainless steel  
**Material jacket** PUR  
**Material sensing surface** PET-C

**Mechanical data**

**Dimension** Ø 5 x 35 mm  
**Installation** non-flush  
**Size** M5x0.5  
**Tightening torque** 1 Nm

**Range/Distance**

**Assured operating distance Sa** 4.05 mm  
**Hysteresis H max. (% of Sr)** 20.0 %  
**Rated operating distance Sn** 5 mm  
**Real switching distance sr** 5 mm  
**Repeat accuracy max. (% of Sr)** 10.0 %  
**Switching distance marking** ■■■  
**Temperature drift max. (% of Sr)** 10 %  
**Tolerance Sr** ±10 %

**Remarks**

Cannot be flush mounted: see installation instructions for inductive sensors with extended switching distance 939224. Avoid pressure and contact in the area of the clear zone cap.

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

EMC: For operating conditions with noise sources

External protection circuit is required. Document 825345.

When using an AC bridge, an electrolytic capacitor  $\geq 10\mu\text{F}/40\text{V}$  parallel to Vs is recommended.

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.

**Wiring Diagrams**

