



1) Sensing surface



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



### Basic features

Approval/Conformity	CE cULus EAC 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	5 m
Conductor cross-section	0.14 mm <sup>2</sup>
Connection type	Cable, 5.00 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 gn, 11 ms
EN 60068-2-6, Vibration	55 Hz, amplitude 1 mm, 3x30 min
Protection degree	IP67

### Material

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

Inductive Sensors  
**BES M05ED-POC50F-EP05**  
Order Code: BES0138

**BALLUFF**

**Mechanical data**

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

**Output/Interface**

Switching output	PNP normally closed (NC)
------------------	--------------------------

**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.

**Wiring Diagrams**

