



1) Sensing surface



### Basic features

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

### Display/Operation

Function indicator	yes
Power indicator	yes

### Electrical connection

Polarity reversal protected	yes
Protection against device mix-ups	yes
Short-circuit protection	yes

### Electrical data

Load capacitance max. at $U_e$	1 $\mu$ F
Min. operating current $I_m$	0 mA
No-load current $I_o$ max., damped	20 mA
No-load current $I_o$ max., undamped	12 mA
Operating voltage $U_b$	10...55 VDC
Output resistance $R_a$	33.0 kOhm + D/33.0 kOhm + D
Protection class	II
Rated insulation voltage $U_i$	250 V AC
Rated operating current $I_e$	200 mA
Rated operating voltage $U_e$ DC	24 V
Rated short circuit current	100 A
Ready delay $t_v$ max.	10 ms
Residual current $I_r$ max.	80 $\mu$ A
Ripple max. (% of $U_e$ )	15 %
Switching frequency	50 Hz
Utilization category	DC -13
Voltage drop static max.	2.5 V

Inductive Sensors  
**BES 517-139-M4-H**  
Order Code: **BES023P**

**BALLUFF**

**Environmental conditions**

Ambient temperature	-15...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)	455 a
--------------	-------

**Interface**

Cable fitting, thread size	M20x1.5
Switching output	PNP normally open/normally closed (NO/NC)

**Material**

Housing material	PBT
Material sensing surface	PBT

**Mechanical data**

Connection cross-section	2.5 mm <sup>2</sup>
Dimension	80 x 80 x 40 mm
Installation	for flush mounting
Size	80x80
Tightening torque	4...5 Nm (M20x1.5)
Tightening torque clamping screw	0.8 Nm

**Range/Distance**

Assured operating distance Sa	32 mm
Hysteresis H max. (% of Sr)	20.0 %
Rated operating distance Sn	40 mm
Real switching distance sr	40 mm
Repeat accuracy max. (% of Sr)	5.0 %
Temperature drift max. (% of Sr)	10 %
Tolerance Sr	±10 %

**Remarks**

LED 1: Function  
LED 2: Operating voltage  
Installation cut-out for flush mount in steel: 80 x 80 mm.  
The sensor is functional again after the overload has been eliminated.  
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**

