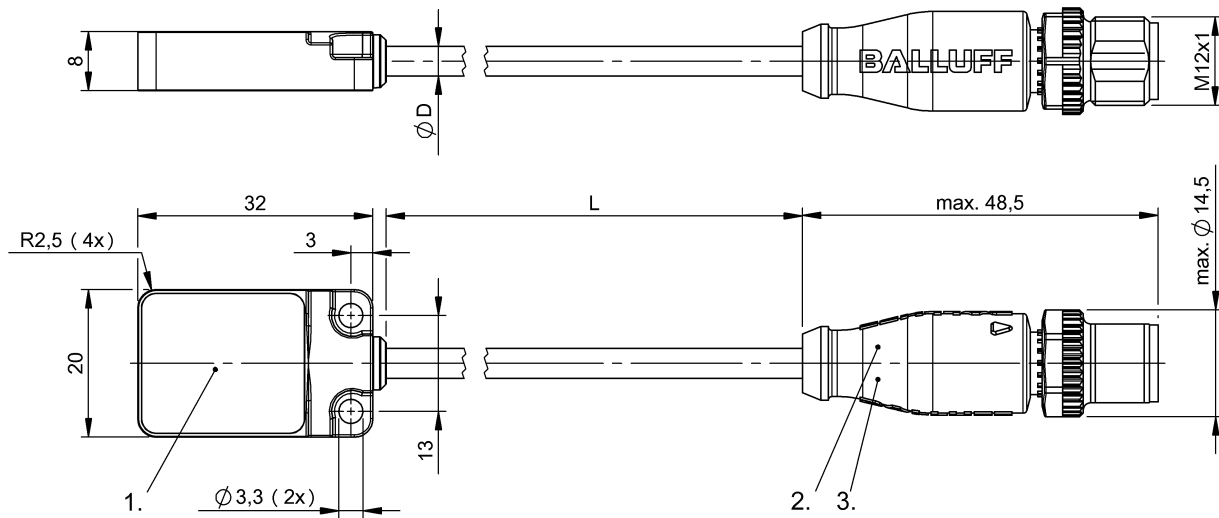


Inductive Sensors  
**BES R01EC-PSC50A-BS00,3-GS04-W51**  
**Order Code: BES04RE**

**BALLUFF**



1) Sensing surface, 2) LED yellow, 3) LED green



**Basic features**

<b>Additional features</b>	Factor 1 Housing resistant to weld spatter Weld immune
<b>Approval/Conformity</b>	CE UKCA cULus WEEE
<b>Basic standard</b>	IEC 60947-5-2
<b>Trademark</b>	Factor 1

**Display/Operation**

<b>Function indicator</b>	yes
<b>Power indicator</b>	yes

**Electrical connection**

<b>Cable diameter D</b>	4.20 mm
<b>Cable length L</b>	0.3 m
<b>Conductor cross-section</b>	0.14 mm <sup>2</sup>
<b>Connection</b>	M12x1-Male, 4-pin, A-coded
<b>Connection type</b>	Cable with connector, 0.30 m, Silicone
<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>Magnetic field strength, interference field</b>	100 kA/m
<b>Min. operating current I<sub>m</sub></b>	0 mA
<b>No-load current I<sub>o</sub> max., damped</b>	30 mA
<b>No-load current I<sub>o</sub> max., undamped</b>	25 mA
<b>Operating voltage U<sub>b</sub></b>	10...30 VDC
<b>Output resistance R<sub>a</sub></b>	33.0 kOhm + D
<b>Rated insulation voltage U<sub>i</sub></b>	75 V DC
<b>Rated operating current I<sub>e</sub></b>	200 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>	30 ms
<b>Residual current I<sub>r</sub> max.</b>	10 µA
<b>Ripple max. (% of U<sub>e</sub>)</b>	15 %
<b>Switching frequency</b>	20 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 g <sub>n</sub> , 11 ms Half-sinus, 100 g <sub>n</sub> , 2 ms, 3x8000
<b>EN 60068-2-6, Vibration</b>	55 Hz, amplitude 1 mm, 3x30 min 30 g, 10...2000 Hz
<b>IP rating</b>	IP67
<b>Magnetic field immune</b>	magnetic field immune (AC/DC)

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**Functional safety**

MTTF (40 °C) 335 a

**Interface**

Switching output PNP normally open (NO)

**Material**

Housing material Stainless steel, PTFE coated  
Material jacket Silicone  
Material sensing surface Stainless steel, W51 ceramic coating

**Mechanical data**

Dimension 32 x 20 x 8 mm  
Installation for flush mounting  
Size 32x20x8

**Range/Distance**

Assured operating distance Sa 4 mm  
Hysteresis H max. (% of Sr) 15.0 %  
Rated operating distance Sn 5 mm  
Real switching distance sr 5 mm  
Repeat accuracy max. (% of Sr) 5.0 %  
Temperature drift max. (% of Sr) 10 %  
Tolerance Sr ±10 %

**Remarks**

The sensor is functional again after the overload has been eliminated.  
LED yellow: Function  
LED green: Power  
Optical irregularities on the coating have no effect on function.

**Connector Drawings**



**Wiring Diagrams**

