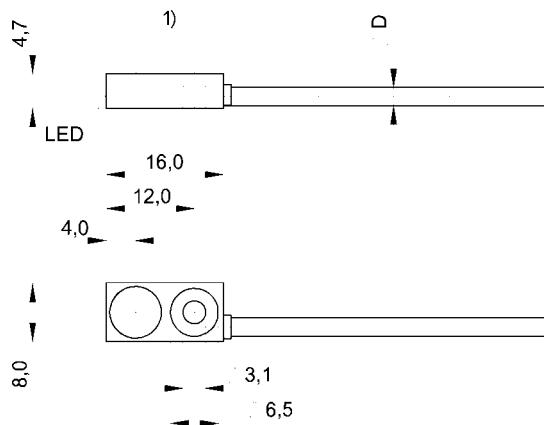


Inductive Sensors

BES R04MC-PSC20B-EP02-106

Order Code: BES04F6

**BALLUFF**

1) Sensing surface

**Basic features**

|                     |                     |
|---------------------|---------------------|
| Approval/Conformity | cULus<br>CE<br>WEEE |
| Basic standard      | IEC 60947-5-2       |

**Display/Operation**

|                    |     |
|--------------------|-----|
| Function indicator | yes |
| Power indicator    | no  |

**Electrical connection**

|                                   |                      |
|-----------------------------------|----------------------|
| Cable diameter D                  | 2.50 mm              |
| Cable length L                    | 2 m                  |
| Conductor cross-section           | 0.10 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 Ue                   | 0.2 µF         |
| No-load current I <sub>0</sub> max., damped   | 10 mA          |
| No-load current I <sub>0</sub> max., undamped | 3 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.          | 50 µA          |
| Ripple max. (% of U <sub>e</sub> )            | 15 %           |
| Switching frequency                           | 5000 Hz        |
| Utilization category                          | DC-12          |
| 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) | 305 a |
|--------------|-------|

Interface

Switching output PNP normally open (NO)

Material

Housing material Brass, Nickel-free coated  
Material jacket PUR  
Material sensing surface Ceramic

Mechanical data

Dimension 16 x 8 x 4.7 mm  
Installation for flush mounting  
Size 16x8x4.7

Range/Distance

|                                  |        |
|----------------------------------|--------|
| Assured operating distance Sa    | 1.6 mm |
| Hysteresis H max. (% of Sr)      | 15.0 % |
| Rated operating distance Sn      | 2 mm   |
| Real switching distance sr       | 2 mm   |
| Repeat accuracy max. (% of Sr)   | 1.0 %  |
| Switching distance marking       | ■■     |
| Temperature drift max. (% of Sr) | 10 %   |
| Tolerance Sr                     | ±10 %  |

Remarks

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

