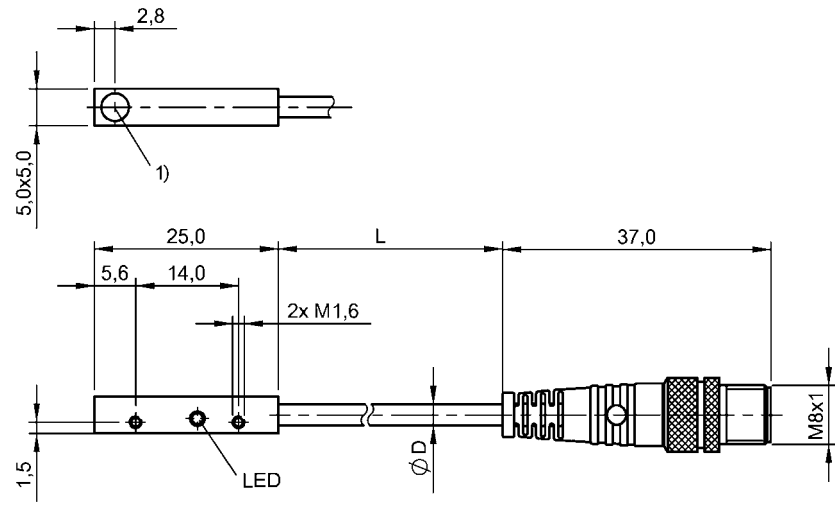


Inductive Sensors

BES 516-3040-I02-C-S49-00,3

Order Code: BES019W

**BALLUFF**



1) Sensing surface



Basic features

|                     |                             |
|---------------------|-----------------------------|
| Approval/Conformity | cULus<br>CE<br>UKCA<br>WEEE |
| Base type deviation | PIGTAIL M8 / 0.3M           |
| 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                    | 0.3 m                             |
| Connection                        | M8x1-Male, 3-pin                  |
| Connection type                   | Cable with connector, 0.30 m, PUR |
| Polarity reversal protected       | yes                               |
| Protection against device mix-ups | yes                               |
| Short-circuit protection          | yes                               |

Electrical data

|                                               |                |
|-----------------------------------------------|----------------|
| Load capacitance max. at Ue                   | 0.2 $\mu$ F    |
| Min. operating current I <sub>m</sub>         | 1 mA           |
| No-load current I <sub>o</sub> max., damped   | 10 mA          |
| No-load current I <sub>o</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.               | 15 ms          |
| Residual current I <sub>r</sub> max.          | 10 $\mu$ A     |
| 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) | 830 a |
|--------------|-------|

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Interface

Switching output PNP normally open (NO)

Material

Housing material Aluminium, Anodized  
Material jacket PUR  
Material sensing surface PBT

Mechanical data

Dimension 25 x 5 x 5 mm  
Installation for flush mounting  
Size 5x5

Range/Distance

Assured operating distance Sa 0.65 mm  
Hysteresis H max. (% of Sr) 15.0 %  
Rated operating distance Sn 0.8 mm  
Real switching distance sr 0.8 mm  
Repeat accuracy max. (% of Sr) 5.0 %  
Temperature drift max. (% of Sr) 20 %  
Tolerance Sr  $\pm 10$  %

Remarks

ESD requirements met if housing is grounded.  
EMC: For operating conditions with noise sources  
External protection circuit is required. Document 825345.  
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.

Connector Drawings



Wiring Diagrams

