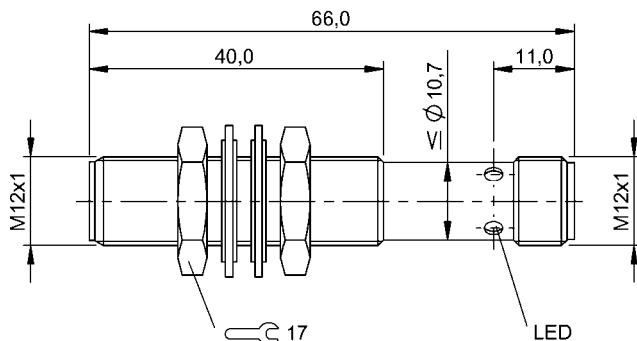


Inductive Sensors

BES M12EL-PSC20B-S04G-M01

Order Code: BES01PP

BALLUFF**Basic features**

| | |
|---------------------|---------------------|
| Additional features | Function monitoring |
| Approval/Conformity | CE |
| | UKCA |
| | cULus |
| | WEEE |
| Basic standard | IEC 60947-5-2 |

Display/Operation

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

Electrical connection

| | |
|-----------------------------------|----------------------------|
| Connection | M12x1-Male, 4-pin, A-coded |
| Polarity reversal protected | yes |
| Protection against device mix-ups | yes |
| Short-circuit protection | yes |

Electrical data

| | |
|-----------------------------------|----------------|
| Load capacitance max. at Ue | 0.5 µF |
| Min. operating current Im | 3 mA |
| No-load current Io max., damped | 8 mA |
| No-load current Io max., undamped | 6 mA |
| Operating voltage Ub | 10...30 VDC |
| Output resistance Ra | Open collector |
| Protection class | II |
| Rated insulation voltage Ui | 250 V AC |
| Rated operating current Ie | 200 mA |
| Rated operating voltage Ue DC | 24 V |
| Rated short circuit current | 100 A |
| Ready delay tv max. | 10 ms |
| Residual current Ir max. | 80 µA |
| Ripple max. (% of Ue) | 15 % |
| Switching frequency | 800 Hz |
| Utilization category | DC-13 |
| Voltage drop static max. | 3.5 V |

Environmental conditions

| | |
|-------------------------|---------------------------------------|
| Ambient temperature | -25...70 °C |
| Contamination scale | 3 |
| EN 60068-2-27, Shock | Half-sinus, 30 g _n , 11 ms |
| EN 60068-2-6, Vibration | 55 Hz, amplitude 1 mm, 3x30 min |
| IP rating | IP68 |

Functional safety

| | |
|--------------|-------|
| MTTF (40 °C) | 330 a |
|--------------|-------|

Interface

| | |
|------------------|------------------------|
| Switching output | PNP normally open (NO) |
|------------------|------------------------|

Material

| | |
|--------------------------|------------------------|
| Housing material | 1.4305 stainless steel |
| Material sensing surface | LCP |

Mechanical data

| | |
|-------------------|--------------------|
| Dimension | Ø 12 x 66 mm |
| Installation | for flush mounting |
| Mounting length | 40.00 mm |
| Size | M12x1 |
| Tightening torque | 20 Nm |

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) | 5.0 % |
| Temperature drift max. (% of Sr) | 10 % |
| Tolerance Sr | ±10 % |

Remarks

Monitor output: High level when the sensor is functional. The load capacity is 50 mA.

Load detection: System limited to 200 Hz. If the sensor is damped, at least 3 mA must flow through the output (pin 4). Otherwise a fault is detected.

Adjusting aid for installation: LED flashes when in range between Sr and Sa.

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**