



### Basic features

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

### Display/Operation

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

### Electrical connection

|                                   |                      |
|-----------------------------------|----------------------|
| Cable diameter D                  | 2.40 mm              |
| Cable length L                    | 5 m                  |
| Conductor cross-section           | 0.10 mm <sup>2</sup> |
| Connection type                   | Cable, 5.00 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 U <sub>e</sub>       | 0.15 µF     |
| Min. operating current I <sub>m</sub>         | 0 mA        |
| No-load current I <sub>o</sub> max., damped   | 2 mA        |
| No-load current I <sub>o</sub> max., undamped | 5 mA        |
| Operating voltage U <sub>b</sub>              | 10...30 VDC |
| Output resistance R <sub>a</sub>              | Open drain  |
| 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.               | 25 ms       |
| Residual current I <sub>r</sub> max.          | 10 µA       |
| Ripple max. (% of U <sub>e</sub> )            | 10 %        |
| Switching frequency                           | 3500 Hz     |
| Utilization category                          | DC -13      |
| Voltage drop static max.                      | 2 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 closed (NC) |
|------------------|--------------------------|

Inductive Sensors  
**BES M04EC-POC10B-EP05**  
Order Code: **BES040M**

**BALLUFF**

**Material**

|                          |                 |
|--------------------------|-----------------|
| Housing material         | Stainless steel |
| Material jacket          | PUR             |
| Material sensing surface | PBT             |

**Mechanical data**

|                   |                    |
|-------------------|--------------------|
| Dimension         | Ø 4 x 22 mm        |
| Installation      | for flush mounting |
| Size              | M4x0.5             |
| Tightening torque | 0.8 Nm             |

**Range/Distance**

|                                  |        |
|----------------------------------|--------|
| Assured operating distance Sa    | 0.8 mm |
| Hysteresis H max. (% of Sr)      | 15.0 % |
| Rated operating distance Sn      | 1 mm   |
| Real switching distance sr       | 1 mm   |
| Repeat accuracy max. (% of Sr)   | 5.0 %  |
| Switching distance marking       | ■ ■    |
| Temperature drift max. (% of Sr) | 10 %   |
| Tolerance Sr                     | ±10 %  |

**Remarks**

The sensor is functional again after the overload has been eliminated.  
EMC: Surge resistance  
External protection circuit is required. Document 825345, Section 2.  
The temperature drift can be below -15°C and above +60°C, up to 15% of Sr.  
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**

