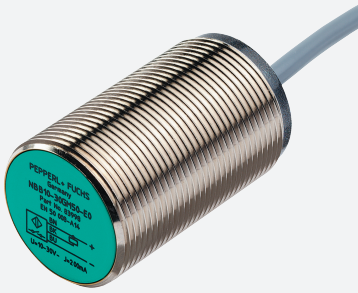


# Inductive sensor

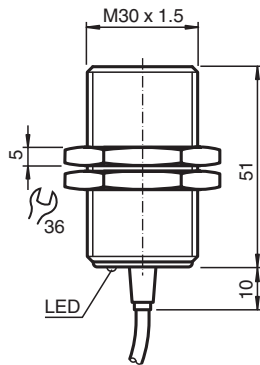
## NBB15-30GM50-E2-M



- 15 mm flush
- Extended temperature range  
-40 ... +85 °C
- E1-Type approval
- Increased noise immunity 100 V/m
- With increased sealing, protection class  
IP68 / IP69K
- Highly shock and vibration resistant



### Dimensions



### Technical Data

#### General specifications

|                              |       |                    |
|------------------------------|-------|--------------------|
| Switching function           |       | Normally open (NO) |
| Output type                  |       | PNP                |
| Rated operating distance     | $s_n$ | 15 mm              |
| Installation                 |       | flush              |
| Output polarity              |       | DC                 |
| Assured operating distance   | $s_a$ | 0 ... 12.15 mm     |
| Reduction factor $r_{Al}$    |       | 0.45               |
| Reduction factor $r_{Cu}$    |       | 0.4                |
| Reduction factor $r_{304}$   |       | 0.7                |
| Reduction factor $r_{Brass}$ |       | 0.5                |
| Output type                  |       | 3-wire             |

#### Nominal ratings

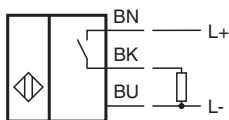
|                                  |       |                            |
|----------------------------------|-------|----------------------------|
| Operating voltage                | $U_B$ | 5 ... 60 V                 |
| Switching frequency              | $f$   | 0 ... 600 Hz               |
| Hysteresis                       | $H$   | typ. 5 %                   |
| Reverse polarity protection      |       | reverse polarity protected |
| Short-circuit protection         |       | pulsing                    |
| Inductive overvoltage protection |       | yes                        |
| Surge suppression                |       | yes                        |

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## Technical Data

|   |           |  |
|---|-----------|--|
| Voltage drop                                    | $U_d$     | $\leq 2 \text{ V}$                                   |
| Rated insulation voltage                        | $U_{BIS}$ | 60 V   |
| Operating current                               | $I_L$     | 0 ... 200 mA   |
| Off-state current                               | $I_r$     | 0 ... 0.5 mA typ. 6 $\mu\text{A}$ at 25 °C           |
| No-load supply current                          | $I_0$     | $\leq 7 \text{ mA}$                                  |
| Time delay before availability                  | $t_v$     | $\leq 220 \text{ ms}$                                |
| Switching state indicator                       |           | LED, yellow  |
| <b>Functional safety related parameters</b>     |           |  |
| MTTF <sub>d</sub>                               |           | 830.5 a  |
| Mission Time (T <sub>M</sub> )                  |           | 20 a   |
| Diagnostic Coverage (DC)                        |           | 0 %  |
| <b>Compliance with standards and directives</b> |           |  |
| Standard conformity                             |           |  |
| Standards                                       |           | EN IEC 60947-5-2                                     |
| <b>Approvals and certificates</b>               |           |  |
| UL approval                                     |           | cULus Listed, General Purpose, Class 2 Power Source  |
| CSA approval                                    |           | cCSAus Listed, General Purpose, Class 2 Power Source |
| CCC approval                                    |           | Certified by China Compulsory Certification (CCC)    |
| E1 Type approval                                |           | 10R-04   |
| <b>Ambient conditions</b>                       |           |  |
| Ambient temperature                             |           | -40 ... 85 °C (-40 ... 185 °F)                       |
| Storage temperature                             |           | -40 ... 85 °C (-40 ... 185 °F)                       |
| <b>Mechanical specifications</b>                |           |  |
| Connection type                                 |           | cable  |
| Housing material                                |           | brass, nickel-plated                                 |
| Sensing face                                    |           | PBT  |
| Degree of protection                            |           | IP68 / IP69K   |
| <b>Cable</b>                                    |           |  |
| Wire end ferrules                               |           | yes  |
| Cable diameter                                  |           | 6 mm $\pm$ 0.2 mm                                    |
| Bending radius                                  |           | > 6 x cable diameter                                 |
| Material  |           | PUR  |
| Color   |           | black  |
| Number of cores                                 |           | 3  |
| Core cross section                              |           | 0.75 mm <sup>2</sup>                                 |
| Length  | L         | 2 m  |
| Mass  |           | 190 g  |
| <b>Dimensions</b>                               |           |  |
| Length  |           | 61 mm  |
| Diameter  |           | 30 mm  |

## Connection Assignment



## Technical Features

Interference immunity in accordance with  
DIN ISO 11452-2: 100 V/m  
Frequency band 20 MHz up to 2 GHz

Mains-borne interference in accordance with ISO  
7637-2: Pulse 1 2a 2b 3a 3b 4 5  
Severity level III III III III III III III  
Failure criterion C A C A A A B

EN 61000-4-2: CD: 8 kV / AD: 15 kV  
Severity level IV IV  
EN 61000-4-3: 30 V/m (80...2500 MHz)  
Severity level IV  
EN 61000-4-4: 2 kV  
Severity level III  
EN 61000-4-6: 10 V (0.01...80 MHz)  
Severity level III  
EN 55011: Class A