

# Inductive sensor

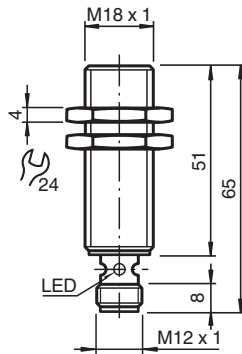
## NBB8-18GM50-E3-V1-M



- 8 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 closed (NC)       |
| Output type                  |       | PNP                        |
| Rated operating distance     | $s_n$ | 8 mm                       |
| Installation                 |       | flush                      |
| Output polarity              |       | DC                         |
| Assured operating distance   | $s_a$ | 0 ... 6.48 mm              |
| Reduction factor $r_{Al}$    |       | 0.4                        |
| Reduction factor $r_{Cu}$    |       | 0.3                        |
| Reduction factor $r_{304}$   |       | 0.7                        |
| Reduction factor $r_{Brass}$ |       | 0.45                       |
| Output type                  |       | 3-wire                     |
| Nominal ratings              |       |                            |
| Operating voltage            | $U_B$ | 5 ... 60 V                 |
| Switching frequency          | $f$   | 0 ... 1500 Hz              |
| Hysteresis                   | $H$   | typ. 5 %                   |
| Reverse polarity protection  |       | reverse polarity protected |

Release date: 2024-05-28 Date of issue: 2024-06-07 Filename: 240171\_eng.pdf

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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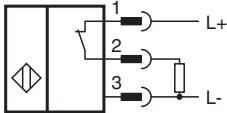
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Technical Data

|                                                 |                  |                                                      |
|-------------------------------------------------|------------------|------------------------------------------------------|
| Short-circuit protection                        |                  | pulsing                                              |
| Inductive overvoltage protection                |                  | yes                                                  |
| Surge suppression                               |                  | yes                                                  |
| Voltage drop                                    | U <sub>d</sub>   | ≤ 2 V                                                |
| Rated insulation voltage                        | U <sub>BIS</sub> | 60 V                                                 |
| Operating current                               | I <sub>L</sub>   | 0 ... 200 mA                                         |
| Off-state current                               | I <sub>r</sub>   | 0 ... 0.5 mA typ. 0.1 µA at 25 °C                    |
| No-load supply current                          | I <sub>0</sub>   | ≤ 7 mA                                               |
| Time delay before availability                  | t <sub>v</sub>   | ≤ 220 ms                                             |
| Switching state indicator                       |                  | Multihole-LED, yellow                                |
| <b>Functional safety related parameters</b>     |                  |                                                      |
| MTTF <sub>d</sub>                               |                  | 1085.5 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                                 |                  | Connector plug M12 x 1 , 3-pin                       |
| Housing material                                |                  | brass, nickel-plated                                 |
| Sensing face                                    |                  | PBT                                                  |
| Degree of protection                            |                  | IP68 / IP69K                                         |
| Mass                                            |                  | 46 g                                                 |
| Dimensions                                      |                  |                                                      |
| Length                                          |                  | 65 mm                                                |
| Diameter                                        |                  | 18 mm                                                |

Connection



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Connection Assignment



Wire colors in accordance with EN 60947-5-2

|   |    |         |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue)  |
| 4 | BK | (black) |

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                     |
| 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                |

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