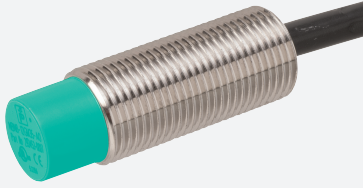


# Inductive sensor

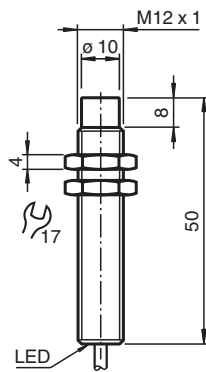
## NBN8-12GM50-E1-M1



- 8 mm non-flush
- Increased operating distance
- Extended temperature range  
-40 ... +85 °C
- With increased sealing, protection class  
IP68 / IP69K
- E1-Type approval



### Dimensions



### Technical Data

| General specifications       |       |                                                                             |
|------------------------------|-------|-----------------------------------------------------------------------------|
| Switching function           |       | Normally closed (NC)                                                        |
| Output type                  |       | NPN                                                                         |
| Rated operating distance     | $s_n$ | 8 mm                                                                        |
| Installation                 |       | non-flush                                                                   |
| Output polarity              |       | DC                                                                          |
| Assured operating distance   | $s_a$ | 0 ... 6.48 mm                                                               |
| Actuating element            |       | mild steel, e. g. 1.0037, SR235JR (formerly St37-2)<br>24 mm x 24 mm x 1 mm |
| Reduction factor $r_{Al}$    |       | 0.5                                                                         |
| Reduction factor $r_{Cu}$    |       | 0.45                                                                        |
| Reduction factor $r_{304}$   |       | 0.7                                                                         |
| Reduction factor $r_{Brass}$ |       | 0.5                                                                         |
| Output type                  |       | 3-wire                                                                      |
| Nominal ratings              |       |                                                                             |
| Operating voltage            | $U_B$ | 7 ... 30 V                                                                  |
| Switching frequency          | $f$   | 0 ... 1200 Hz                                                               |

Release date: 2024-05-27 Date of issue: 2024-05-31 Filename: 293454-0039\_eng.pdf

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

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.com

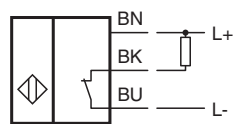
Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

 **PEPPERL+FUCHS**

Technical Data

|                                          |                |                                                              |
|------------------------------------------|----------------|--------------------------------------------------------------|
| Hysteresis                               | H              | typ. 5%                                                      |
| Reverse polarity protection              |                | reverse polarity protected                                   |
| Short-circuit protection                 |                | pulsing                                                      |
| Voltage drop                             | U <sub>d</sub> | ≤ 2 V                                                        |
| Operating current                        | I <sub>L</sub> | 0 ... 200 mA                                                 |
| Off-state current                        | I <sub>r</sub> | 0 ... 0.5 mA typ. 4 µA at 25 °C                              |
| No-load supply current                   | I <sub>0</sub> | ≤ 10 mA                                                      |
| Time delay before availability           | t <sub>v</sub> | ≤ 100 ms                                                     |
| Switching state indicator                |                | LED, yellow                                                  |
| Functional safety related parameters     |                |                                                              |
| MTTF <sub>d</sub>                        |                | 1484 a                                                       |
| Mission Time (T <sub>M</sub> )           |                | 20 a                                                         |
| Diagnostic Coverage (DC)                 |                | 0 %                                                          |
| Compliance with standards and directives |                |                                                              |
| Standard conformity                      |                |                                                              |
| Standards                                |                | EN IEC 60947-5-2                                             |
| Approvals and certificates               |                |                                                              |
| UL approval                              |                | cULus Listed, General Purpose, Class 2 Power Source          |
| CCC approval                             |                | CCC approval / marking not required for products rated ≤36 V |
| E1 Type approval                         |                | 10R-04                                                       |
| Ambient conditions                       |                |                                                              |
| Ambient temperature                      |                | -40 ... 85 °C (-40 ... 185 °F)                               |
| Storage temperature                      |                | -40 ... 85 °C (-40 ... 185 °F)                               |
| Mechanical specifications                |                |                                                              |
| Connection type                          |                | cablE PUR , 2 m                                              |
| Core cross section                       |                | 0.34 mm <sup>2</sup>                                         |
| Housing material                         |                | brass, nickel-plated                                         |
| Sensing face                             |                | PBT                                                          |
| Degree of protection                     |                | IP68 / IP69K                                                 |
| Mass                                     |                | 70 g                                                         |
| Dimensions                               |                |                                                              |
| Length                                   |                | 50 mm                                                        |
| Diameter                                 |                | 12 mm                                                        |
| General information                      |                |                                                              |
| Scope of delivery                        |                | 2 self locking nuts in scope of delivery                     |

Connection



Release date: 2024-05-27 Date of issue: 2024-05-31 Filename: 293454-0039\_eng.pdf

Technical Features

Mains-borne interference in accordance with ISO 7637-2:

|                   |     |     |     |     |     |     |
|-------------------|-----|-----|-----|-----|-----|-----|
| Pulse             | 1   | 2a  | 2b  | 3a  | 3b  | 4   |
| Severity level    | III | III | III | III | III | III |
| Failure criterion | A   | A   | C   | A   | A   | C   |

|                |                        |
|----------------|------------------------|
| EN 61000-4-2:  | CD: 8 kV / AD: 15 kV   |
| Severity level | IV IV                  |
| EN 61000-4-3:  | 36 V/m (80...2500 MHz) |
| Severity level | IV                     |
| EN 61000-4-4:  | 2 kV                   |
| Severity level | III                    |
| EN 61000-4-6:  | 30 V (0.01...80 MHz)   |
| Severity level | III                    |
| EN 55011:      | Class A                |

Release date: 2024-05-27 Date of issue: 2024-05-31 Filename: 293454-0039\_eng.pdf