

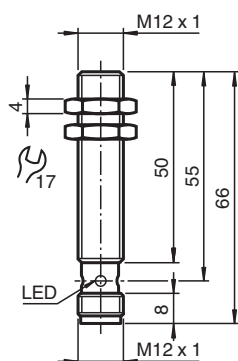


## Inductive sensor NBB4-12GM50-EI-V1-M1

- 4 mm flush
- Extended temperature range  
-40 ... +85 °C
- Digital current output
- E1-Type approval



### Dimensions



### Technical Data

#### General specifications

|                              |       |                                                                             |
|------------------------------|-------|-----------------------------------------------------------------------------|
| Output type                  |       | Digital current output                                                      |
| Rated operating distance     | $s_n$ | 4 mm                                                                        |
| Installation                 |       | flush                                                                       |
| Output polarity              |       | DC                                                                          |
| Assured operating distance   | $s_a$ | 0 ... 3.24 mm                                                               |
| Actuating element            |       | mild steel, e. g. 1.0037, SR235JR (formerly St37-2)<br>12 mm x 12 mm x 1 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   | $U_B$ | 9 ... 30 V DC |
| Switching frequency | $f$   | 0 ... 1800 Hz |
| Hysteresis          | $H$   | 2 ... 15 %    |

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

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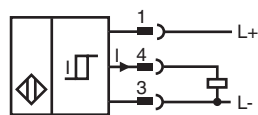
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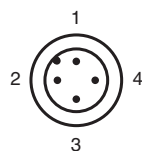
Technical Data

|                                                 |                |                                                                   |
|-------------------------------------------------|----------------|-------------------------------------------------------------------|
| Reverse polarity protection                     |                | reverse polarity protected                                        |
| Short-circuit protection                        |                | yes                                                               |
| Temperature drift                               |                | ≤ 10 %                                                            |
| Time delay before availability                  | t <sub>v</sub> | ≤ 5 ms                                                            |
| Load resistor                                   |                | 100 ... 250 Ohm                                                   |
| Switching state indicator                       |                | LED, yellow                                                       |
| <b>Functional safety related parameters</b>     |                |                                                                   |
| MTTF <sub>d</sub>                               |                | 1595 a                                                            |
| Mission Time (T <sub>M</sub> )                  |                | 20 a                                                              |
| Diagnostic Coverage (DC)                        |                | 0 %                                                               |
| <b>Digital output</b>                           |                |                                                                   |
| Output value                                    |                | object detected: 10 mA ± 1 mA<br>object not detected: 5 mA ± 1 mA |
| <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               |
| 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 , 4-pin                                    |
| Housing material                                |                | brass, nickel-plated                                              |
| Sensing face                                    |                | PBT                                                               |
| Degree of protection                            |                | IP68 / IP69K                                                      |
| Mass                                            |                | 28 g                                                              |
| Dimensions                                      |                |                                                                   |
| Length                                          |                | 65 mm                                                             |
| Diameter                                        |                | 12 mm                                                             |
| <b>General information</b>                      |                |                                                                   |
| Scope of delivery                               |                | 2 self locking nuts in scope of delivery                          |

Connection



Connection Assignment



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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) |

## Characteristic Curve

