

# Inductive sensor

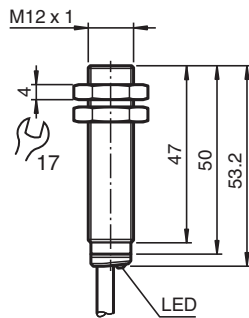
## NBB2-12GM50-E2-9M-Y0146



- 2 mm flush
- Extended temperature range  
-40 ... +85 °C
- Extended operating voltage range
- Flexible use with versatile mounting opportunities



### Dimensions



### Technical Data

| General specifications       |       |   |
|------------------------------|-------|---|
| Switching function           |       | Normally open (NO)  |
| Output type                  |       | PNP   |
| Rated operating distance     | $s_n$ | 2 mm  |
| Installation                 |       | flush   |
| Output polarity              |       | DC  |
| Assured operating distance   | $s_a$ | 0 ... 1.62 mm   |
| Actuating element            |       | mild steel, e. g. 1.0037, SR235JR (formerly St37-2)<br>12 mm x 12 mm x 1 mm |
| Reduction factor $r_{Al}$    |       | 0.29  |
| Reduction factor $r_{Cu}$    |       | 0.23  |
| Reduction factor $r_{304}$   |       | 0.78  |
| Reduction factor $r_{Brass}$ |       | 0.42  |
| Output type                  |       | 3-wire  |
| Nominal ratings              |       |   |
| Operating voltage            | $U_B$ | 5 ... 36 V  |
| Switching frequency          | $f$   | 0 ... 3500 Hz   |

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

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## Technical Data

|   |           |   |
|---|-----------|---|
| Hysteresis                                      | H         | typ. 5 %  |
| Reverse polarity protection                     |           | reverse polarity protected  |
| Short-circuit protection                        |           | pulsing   |
| Voltage drop                                    | $U_d$     | $\leq 1$ V  |
| Operating current                               | $I_L$     | 0 ... 200 mA  |
| Off-state current                               | $I_r$     | max. 20 $\mu$ A   |
| No-load supply current                          | $I_o$     | $\leq 10$ mA  |
| Time delay before availability                  | $t_v$     | $\leq 10$ ms  |
| Switching state indicator                       |           | LED, yellow   |
| <b>Functional safety related parameters</b>     |           |   |
| MTTF <sub>d</sub>                               |           | 1721 a  |
| Mission Time (T <sub>M</sub> )                  |           | 20 a  |
| Diagnostic Coverage (DC)                        |           | 0 %   |
| <b>Conformity</b>                               |           |   |
| PWIS conformity                                 |           | VDMA 24364-C1/T100°C-W  |
| <b>Compliance with standards and directives</b> |           |   |
| Standard conformity                             |           |   |
| Standards                                       |           | EN 60947-5-2:2007<br>EN 60947-5-2/A1:2012<br>IEC 60947-5-2:2007<br>IEC 60947-5-2 AMD 1:2012 |
| <b>Approvals and certificates</b>               |           |   |
| Protection class                                |           | II  |
| Rated insulation voltage                        | $U_i$     | 36 V  |
| Rated impulse withstand voltage                 | $U_{imp}$ | 500 V   |
| UL approval                                     |           | cULus Listed, General Purpose, Class 2 Power Source   |
| CCC approval                                    |           | CCC approval / marking not required for products rated $\leq 36$ V                          |
| <b>Ambient conditions</b>                       |           |   |
| Ambient temperature                             |           | sensor: -40 ... 85 °C (-40 ... 185 °F)<br>Cable: -25 ... 75 °C (-13 ... 167 °F)             |
| Storage temperature                             |           | -40 ... 80 °C (-40 ... 176 °F)  |
| <b>Mechanical specifications</b>                |           |   |
| Connection type                                 |           | cable shielded  |
| Housing material                                |           | brass , white bronze coated   |
| Sensing face                                    |           | PBT , green   |
| Degree of protection                            |           | IP68  |
| Cable   |           |   |
| Wire end ferrules                               |           | yes   |
| Cable diameter                                  |           | 3 mm - 0.2 mm   |
| Bending radius                                  |           | > 10 x cable diameter   |
| Material  |           | PVC   |
| Color   |           | grey (similar to RAL 7001)  |
| Number of cores                                 |           | 3   |
| Core cross section                              |           | 0.14 mm <sup>2</sup>  |
| Length  | L         | 9 m   |
| Tightening torque                               |           | 0 ... 10 Nm   |
| <b>General information</b>                      |           |   |
| Scope of delivery                               |           | 2 self locking nuts in scope of delivery  |

**Connection**



**Accessories**

|   |                  |                                       |
|---|------------------|---------------------------------------|
|  | <b>BF 12</b>     | Mounting flange, 12 mm                |
|  | <b>BF 12-F</b>   | Plastic mounting adapter, 12 mm       |
|  | <b>MH-EXG-12</b> | Quick mounting bracket with dead stop |

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