

# Inductive sensor

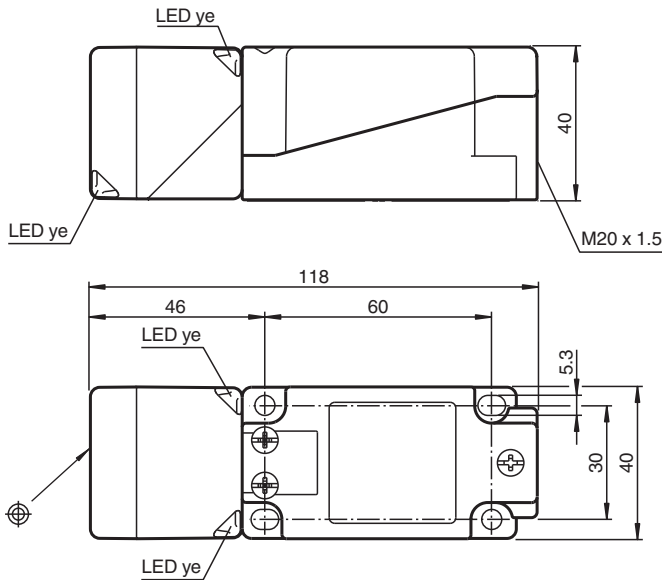
## NBB15-U1-Z2



- Sensor head bidirectional and rotatable
- 15 mm flush
- 2 LEDs indicator for 360° visibility



### Dimensions



### Technical Data

#### General specifications

|                            |       |                              |
|----------------------------|-------|------------------------------|
| Switching function         |       | Normally open/closed (NO/NC) |
| Output type                |       | Two-wire                     |
| Rated operating distance   | $s_n$ | 15 mm                        |
| Installation               |       | flush                        |
| Output polarity            |       | DC                           |
| Assured operating distance | $s_a$ | 0 ... 12.15 mm               |
| Actual operating distance  | $s_r$ | 13.5 ... 16.5 mm typ. 15 mm  |
| Reduction factor $r_{Al}$  |       | 0.3                          |
| Reduction factor $r_{Cu}$  |       | 0.3                          |
| Reduction factor $r_{304}$ |       | 0.7                          |
| Output type                |       | 2-wire                       |

#### Nominal ratings

|                   |       |            |
|-------------------|-------|------------|
| Operating voltage | $U_B$ | 5 ... 60 V |
|-------------------|-------|------------|

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

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## Technical Data

|   |       |   |
|---|-------|---|
| Switching frequency                               | f     | 0 ... 400 Hz  |
| Hysteresis  | H     | typ. 5 %  |
| Reverse polarity protection                       |       | reverse polarity tolerant   |
| Short-circuit protection                          |       | yes   |
| Voltage drop                                      | $U_d$ | $\leq 5$ V  |
| Voltage drop at $I_L$                             |       |   |
| Voltage drop $I_L = 100$ mA, switching element on | $U_d$ | ... 5 V   |
| Operating current                                 | $I_L$ | 2 ... 200 mA  |
| Off-state current                                 | $I_r$ | 0 ... 0.5 mA  |
| Switching state indicator                         |       | 2 LED, yellow   |
| <b>Safety-relevant product characteristics</b>    |       |   |
| MTTF <sub>d</sub>                                 |       | 1133 a  |
| Mission Time ( $T_M$ )                            |       | 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<br>Load Type: General Purpose<br>Circuitry: Class 2 Power Source<br>Enclosure Type Rating: Type 1<br>Supply/Switching Voltage: 60 V DC<br>Output Switching Current: 200 mA |
| CCC approval                                      |       | Certified by China Compulsory Certification (CCC)   |
| <b>Ambient conditions</b>                         |       |   |
| Ambient temperature                               |       | -25 ... 85 °C (-13 ... 185 °F)  |
| <b>Mechanical specifications</b>                  |       |   |
| Connection type                                   |       | screw terminals   |
| Information for connection                        |       | A maximum of two conductors with the same core cross section may be mounted on one terminal connection!<br>tightening torque 1.2 Nm + 10 %  |
| Core cross section                                |       | up to 2.5 mm <sup>2</sup>   |
| Minimum core cross-section                        |       | without wire end ferrules 0.5 mm <sup>2</sup> , with connector sleeves 0.34 mm <sup>2</sup>   |
| Maximum core cross-section                        |       | without wire end ferrules 2.5 mm <sup>2</sup> , with connector sleeves 1.5 mm <sup>2</sup>  |
| Housing material                                  |       | PA/metal with epoxy powder coating  |
| Sensing face                                      |       | PA  |
| Housing base                                      |       | plastic   |
| Degree of protection                              |       | IP68 / IP69K  |
| Mass  |       | 225 g   |
| Dimensions  |       |   |
| Height  |       | 40 mm   |
| Width   |       | 40 mm   |
| Length  |       | 118 mm  |
| Note  |       | Tightening torque: 1.8 Nm (housing)   |

## Connection Assignment

