



## Inductive sensor

### NBB15-U1-E2

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



## Dimensions



## Technical Data

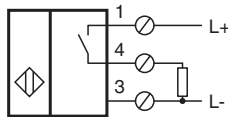
### General specifications

|                              |       |                             |
|------------------------------|-------|-----------------------------|
| Switching function           |       | Normally open (NO)          |
| Output type                  |       | PNP                         |
| 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 $r_{Al}$    |       | 0.33                        |
| Reduction factor $r_{Cu}$    |       | 0.31                        |
| Reduction factor $r_{304}$   |       | 0.74                        |
| Reduction factor $r_{Brass}$ |       | 0.41                        |
| Output type                  |       | 3-wire                      |

# Technical Data

|                                                 |       |                                                                                                                                            |
|-------------------------------------------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Nominal ratings</b>                          |       |                                                                                                                                            |
| Operating voltage                               | $U_B$ | 10 ... 30 V                                                                                                                                |
| Switching frequency                             | $f$   | 0 ... 560 Hz                                                                                                                               |
| Hysteresis                                      | $H$   | typ. 5 %                                                                                                                                   |
| Reverse polarity protection                     |       | reverse polarity protected                                                                                                                 |
| Short-circuit protection                        |       | pulsing                                                                                                                                    |
| Voltage drop                                    | $U_d$ | $\leq 2$ V                                                                                                                                 |
| Operating current                               | $I_L$ | 0 ... 200 mA                                                                                                                               |
| Off-state current                               | $I_r$ | 0 ... 0.5 mA typ. 0.01 mA                                                                                                                  |
| No-load supply current                          | $I_0$ | $\leq 20$ mA                                                                                                                               |
| Time delay before availability                  | $t_v$ | 80 ms                                                                                                                                      |
| Operating voltage indicator                     |       | LED, green                                                                                                                                 |
| Switching state indicator                       |       | LED, yellow                                                                                                                                |
| <b>Functional safety related parameters</b>     |       |                                                                                                                                            |
| MTTF <sub>d</sub>                               |       | 1289 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, General Purpose                                                                                                              |
| CCC approval                                    |       | CCC approval / marking not required for products rated $\leq 36$ V                                                                         |
| <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



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