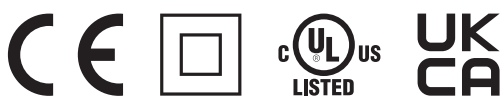




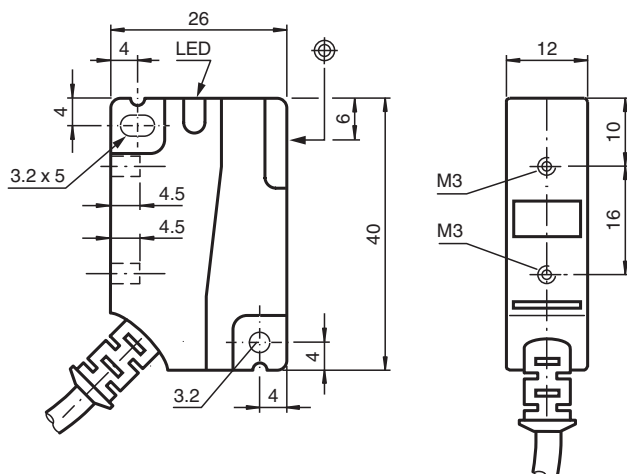
## Inductive sensor

NBB4-F1-E3

- 4 mm flush
- 3-wire DC



### Dimensions



### Technical Data

#### General specifications

|                              |       |                      |
|------------------------------|-------|----------------------|
| Switching function           |       | Normally closed (NC) |
| Output type                  |       | PNP                  |
| Rated operating distance     | $s_n$ | 4 mm                 |
| Installation                 |       | flush                |
| Output polarity              |       | DC                   |
| Assured operating distance   | $s_a$ | 0 ... 3.24 mm        |
| Reduction factor $r_{Al}$    |       | 0.4                  |
| Reduction factor $r_{Cu}$    |       | 0.45                 |
| Reduction factor $r_{304}$   |       | 0.8                  |
| Reduction factor $r_{Brass}$ |       | 0.55                 |
| Output type                  |       | 3-wire               |

#### Nominal ratings

|                             |       |                            |
|-----------------------------|-------|----------------------------|
| Operating voltage           | $U_B$ | 10 ... 30 V DC             |
| Switching frequency         | $f$   | 0 ... 1400 Hz              |
| Hysteresis                  | $H$   | typ. 5%                    |
| Reverse polarity protection |       | reverse polarity protected |

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

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**PEPPERL+FUCHS**

## Technical Data

|                                                 |           |                                                                            |
|-------------------------------------------------|-----------|----------------------------------------------------------------------------|
| Short-circuit protection                        |           | pulsing                                                                    |
| Voltage drop                                    | $U_d$     | $\leq 2.5 \text{ V}$                                                       |
| Rated insulation voltage                        | $U_{BIS}$ | 60 V                                                                       |
| Operating current                               | $I_L$     | 0 ... 250 mA                                                               |
| Off-state current                               | $I_r$     | 0 ... 0.01 mA typ. 0.1 $\mu\text{A}$ at 25 °C                              |
| No-load supply current                          | $I_0$     | $\leq 15 \text{ mA}$                                                       |
| Switching state indicator                       |           | LED, yellow                                                                |
| <b>Functional safety related parameters</b>     |           |                                                                            |
| MTTF <sub>d</sub>                               |           | 1640 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>               |           |                                                                            |
| Protection class                                |           | II                                                                         |
| Rated insulation voltage                        | $U_i$     | 60 V                                                                       |
| Rated impulse withstand voltage                 | $U_{imp}$ | 800 V                                                                      |
| UL approval                                     |           | cULus Listed, General Purpose                                              |
| CCC approval                                    |           | CCC approval / marking not required for products rated $\leq 36 \text{ V}$ |
| <b>Ambient conditions</b>                       |           |                                                                            |
| Ambient temperature                             |           | -25 ... 70 °C (-13 ... 158 °F)                                             |
| <b>Mechanical specifications</b>                |           |                                                                            |
| Connection type                                 |           | cable                                                                      |
| Housing material                                |           | PA                                                                         |
| Sensing face                                    |           | PA                                                                         |
| Degree of protection                            |           | IP67                                                                       |
| Cable                                           |           |                                                                            |
| Wire end ferrules                               |           | yes                                                                        |
| Cable diameter                                  |           | 5.2 mm $\pm$ 0.2 mm                                                        |
| Bending radius                                  |           | > 10 x cable diameter                                                      |
| Material                                        |           | PVC                                                                        |
| Color                                           |           | grey                                                                       |
| Number of cores                                 |           | 3                                                                          |
| Core cross section                              |           | 0.5 mm <sup>2</sup>                                                        |
| Length                                          | L         | 2 m                                                                        |
| Tightening torque, fastening screws             |           | Threading M3 $\leq$ 1.1 Nm                                                 |
| Dimensions                                      |           |                                                                            |
| Height                                          |           | 40 mm                                                                      |
| Width                                           |           | 12 mm                                                                      |
| Length                                          |           | 26 mm                                                                      |

## Connection Assignment

