

# Inductive sensor

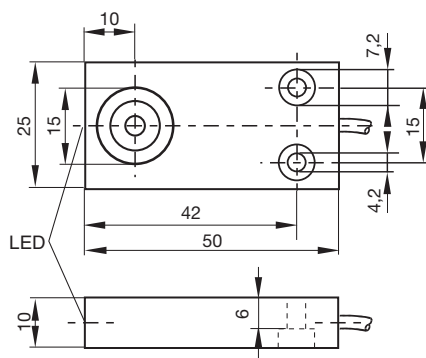
## NBB5-F33M-E2



- 5 mm flush
- 3-wire DC
- Metal housing



### Dimensions



### Technical Data

| General specifications     |       |                    |
|----------------------------|-------|--------------------|
| Switching function         |       | Normally open (NO) |
| Output type                |       | PNP                |
| Rated operating distance   | $s_n$ | 5 mm               |
| Installation               |       | flush              |
| Output polarity            |       | DC                 |
| Assured operating distance | $s_a$ | 0 ... 4.05 mm      |
| Reduction factor $r_{AI}$  |       | 0.3                |
| Reduction factor $r_{Cu}$  |       | 0.2                |
| Reduction factor $r_{304}$ |       | 0.6                |
| Output type                |       | 3-wire             |
| Nominal ratings            |       |                    |
| Operating voltage          | $U_B$ | 10 ... 30 V DC     |
| Switching frequency        | $f$   | 0 ... 500 Hz       |

## Technical Data

|                                                 |       |                                                                                             |
|-------------------------------------------------|-------|---------------------------------------------------------------------------------------------|
| Hysteresis                                      | H     | typ. 5 %                                                                                    |
| Reverse polarity protection                     |       | reverse polarity protected                                                                  |
| Short-circuit protection                        |       | pulsing                                                                                     |
| Voltage drop                                    | $U_d$ | $\leq 3 \text{ V}$                                                                          |
| Operating current                               | $I_L$ | 0 ... 200 mA                                                                                |
| Off-state current                               | $I_r$ | 0 ... 0.5 mA typ. 0.1 $\mu\text{A}$                                                         |
| No-load supply current                          | $I_0$ | $\leq 15 \text{ mA}$                                                                        |
| Time delay before availability                  | $t_v$ | $\leq 10 \text{ ms}$                                                                        |
| Switching state indicator                       |       | LED                                                                                         |
| <b>Functional safety related parameters</b>     |       |                                                                                             |
| MTTF <sub>d</sub>                               |       | 1840 a                                                                                      |
| Mission Time ( $T_M$ )                          |       | 20 a                                                                                        |
| Diagnostic Coverage (DC)                        |       | 0 %                                                                                         |
| <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>               |       |                                                                                             |
| UL approval                                     |       | cULus Listed, General Purpose                                                               |
| CSA approval                                    |       | cCSAus 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 PVC , 2 m                                                                             |
| Core cross section                              |       | 0.34 mm <sup>2</sup>                                                                        |
| Housing material                                |       | metal                                                                                       |
| Sensing face                                    |       | PBT                                                                                         |
| Degree of protection                            |       | IP67                                                                                        |

## Connection

