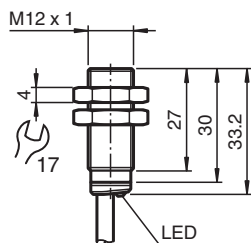


## Inductive sensor NBB4-12GM30-E2

- 4 mm flush
- Increased operating distance
- 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     | $s_n$ | 4 mm  |
| Installation                 |       | flush   |
| Output polarity              |       | DC  |
| Assured operating distance   | $s_a$ | 0 ... 3.24 mm   |
| Actuating element            |       | mild steel, e. g. 1.0037, SR235JR (formerly St37-2)<br>12 mm x 12 mm x 1 mm |
| Reduction factor $r_{Al}$    |       | 0.4   |
| Reduction factor $r_{Cu}$    |       | 0.35  |
| Reduction factor $r_{304}$   |       | 0.79  |
| Reduction factor $r_{Brass}$ |       | 0.49  |
| Output type                  |       | 3-wire  |

#### Nominal ratings

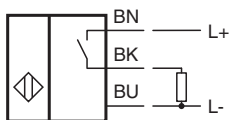
|                             |       |                            |
|-----------------------------|-------|----------------------------|
| Operating voltage           | $U_B$ | 6 ... 36 V                 |
| Switching frequency         | $f$   | 0 ... 2550 Hz              |
| Hysteresis                  | $H$   | 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      | $I_0$ | $\leq 10$ mA               |

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## Technical Data

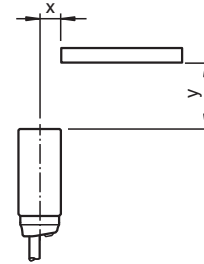
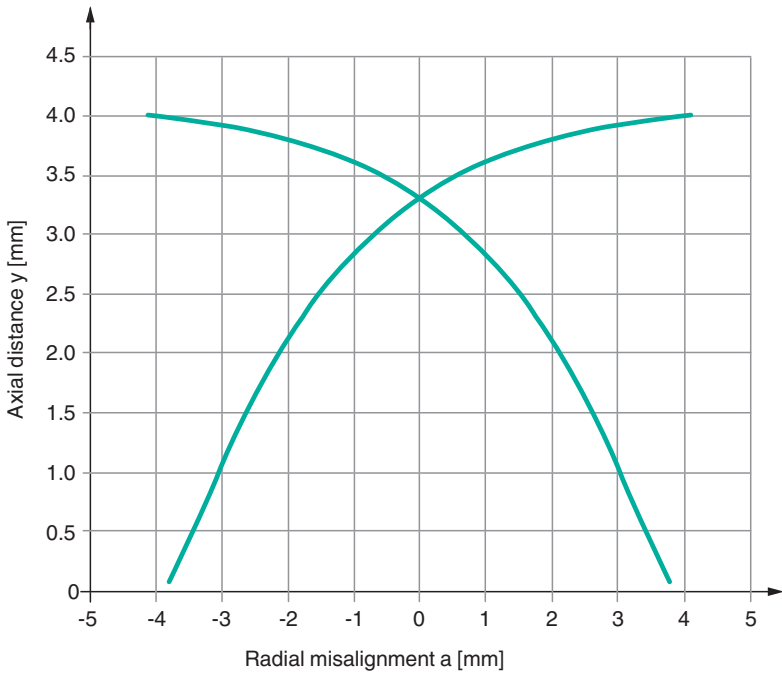
|   |                  |  |
|---|------------------|--|
| Time delay before availability                  | $t_v$            | $\leq 10$ ms   |
| Switching state indicator                       |                  | LED, yellow  |
| <b>Functional safety related parameters</b>     |                  |  |
| MTTF <sub>d</sub>                               |                  | 1607 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 IEC 60947-5-2   |
| <b>Approvals and certificates</b>               |                  |  |
| Protection class                                |                  | II   |
| Rated insulation voltage                        | U <sub>i</sub>   | 36 V   |
| Rated impulse withstand voltage                 | U <sub>imp</sub> | 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 |
| Marine approval                                 |                  | DNVGL TAA00003AK   |
| <b>Ambient conditions</b>                       |                  |  |
| Ambient temperature                             |                  | -40 ... 85 °C (-40 ... 185 °F)                                     |
| Storage temperature                             |                  | -40 ... 85 °C (-40 ... 185 °F)                                     |
| <b>Mechanical specifications</b>                |                  |  |
| Connection type                                 |                  | cable  |
| Housing material                                |                  | brass , white bronze coated  |
| Sensing face                                    |                  | PBT , green  |
| Degree of protection                            |                  | IP65 / IP66 / IP67 / IP68  |
| <b>Cable</b>                                    |                  |  |
| Wire end ferrules                               |                  | yes  |
| Cable diameter                                  |                  | 4.3 mm $\pm$ 0.15 mm   |
| Bending radius                                  |                  | > 10 x cable diameter  |
| Material  |                  | PVC  |
| Color   |                  | black  |
| Number of cores                                 |                  | 3  |
| Core cross section                              |                  | 0.34 mm <sup>2</sup>   |
| Length  | L                | 2 m  |
| Mass  |                  | 80 g   |
| <b>Dimensions</b>                               |                  |  |
| Length  |                  | 33 mm  |
| Diameter  |                  | 12 mm  |
| Mounting  |                  | with nuts, M12   |
| Tightening torque                               |                  | $\leq 10$ Nm   |
| <b>General information</b>                      |                  |  |
| Scope of delivery                               |                  | 2 self locking nuts in scope of delivery                           |

## Connection Assignment

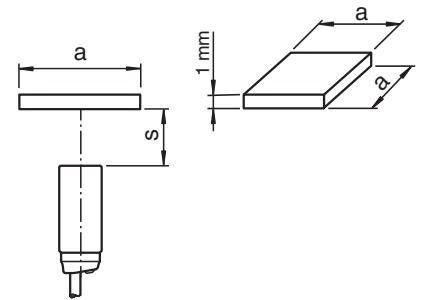
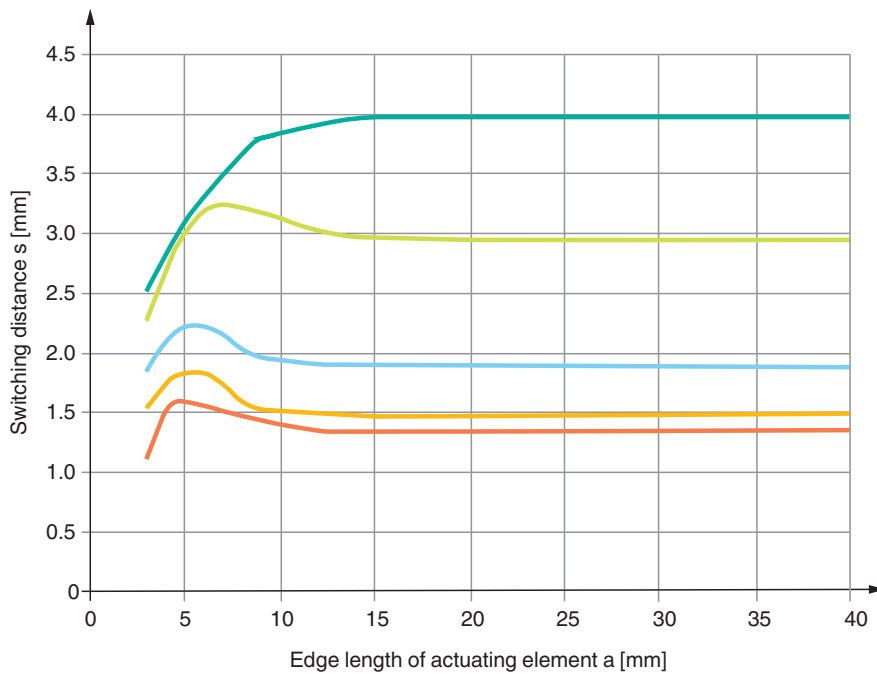


**Characteristic Curve**

**Actuation by radial approach (standard target)**



**Switching distance depending on the actuating element**



- Steel
- Stainless steel
- Brass
- Aluminum
- Copper

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