



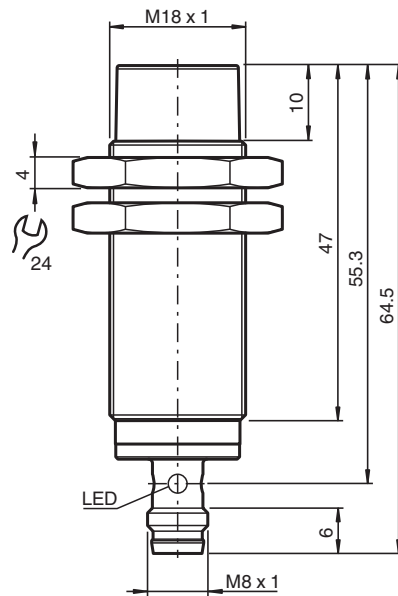
# Inductive sensor

## NBN12-18GM50-E3-V3

- 12 mm non-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

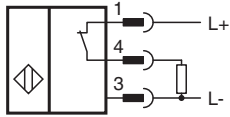
|                            |       |   |
|----------------------------|-------|---|
| Switching function         |       | Normally closed (NC)  |
| Output type                |       | PNP   |
| Rated operating distance   | $s_n$ | 12 mm   |
| Installation               |       | non-flush   |
| Output polarity            |       | DC  |
| Assured operating distance | $s_a$ | 0 ... 9.72 mm   |
| Actuating element          |       | mild steel, e. g. 1.0037, SR235JR (formerly St37-2)<br>36 mm x 36 mm x 1 mm |
| Reduction factor $r_{AI}$  |       | 0.49  |

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## Technical Data

|   |           |  |
|---|-----------|--|
| Reduction factor $r_{Cu}$                       |           | 0.46   |
| Reduction factor $r_{304}$                      |           | 0.75   |
| Reduction factor $r_{Brass}$                    |           | 0.55   |
| Output type                                     |           | 3-wire   |
| <b>Nominal ratings</b>                          |           |  |
| Operating voltage                               | $U_B$     | 6 ... 36 V   |
| Switching frequency                             | $f$       | 0 ... 1300 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   |
| Time delay before availability                  | $t_v$     | $\leq 10$ ms   |
| Switching state indicator                       |           | Multihole-LED, yellow  |
| <b>Functional safety related parameters</b>     |           |  |
| MTTF <sub>d</sub>                               |           | 1598 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                        | $U_i$     | 36 V   |
| Rated impulse withstand voltage                 | $U_{imp}$ | 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 |
| <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                                 |           | Connector plug   |
| Housing material                                |           | brass , white bronze coated  |
| Sensing face                                    |           | PBT , green  |
| Degree of protection                            |           | IP67   |
| Connector                                       |           |  |
| Threading                                       |           | M8 x 1   |
| Number of pins                                  |           | 3  |
| Mass  |           | 58 g   |
| Dimensions                                      |           |  |
| Length  |           | 64.5 mm  |
| Diameter  |           | 18 mm  |
| Mounting  |           | with nuts, M18   |
| Tightening torque                               |           | $\leq 30$ Nm   |
| <b>General information</b>                      |           |  |
| Scope of delivery                               |           | 2 self locking nuts in scope of delivery                           |

## Connection Assignment



## Connection Assignment

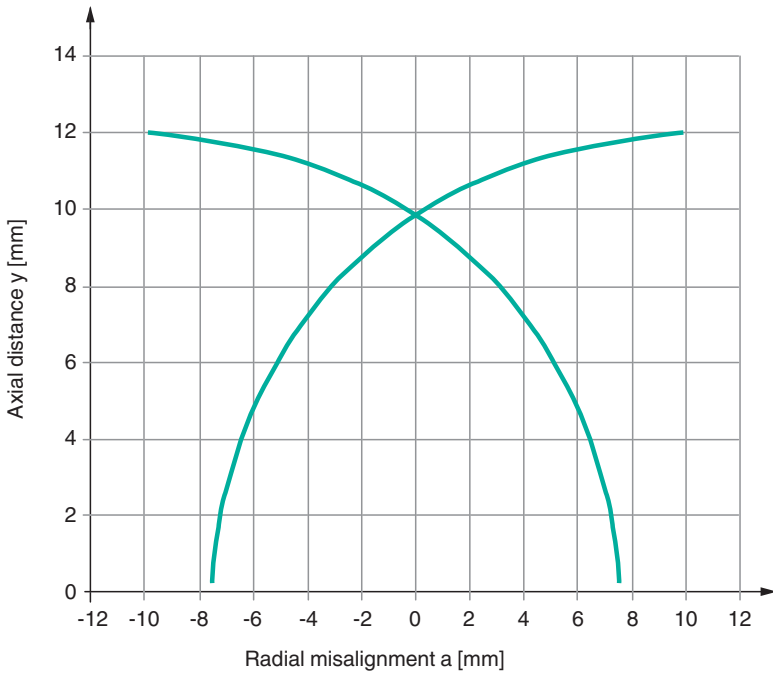


Wire colors in accordance with EN 60947-5-2

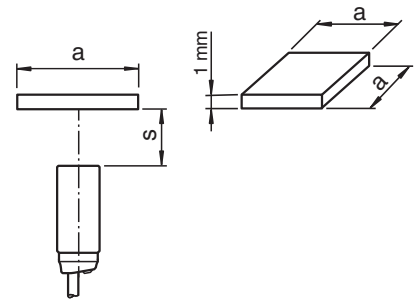
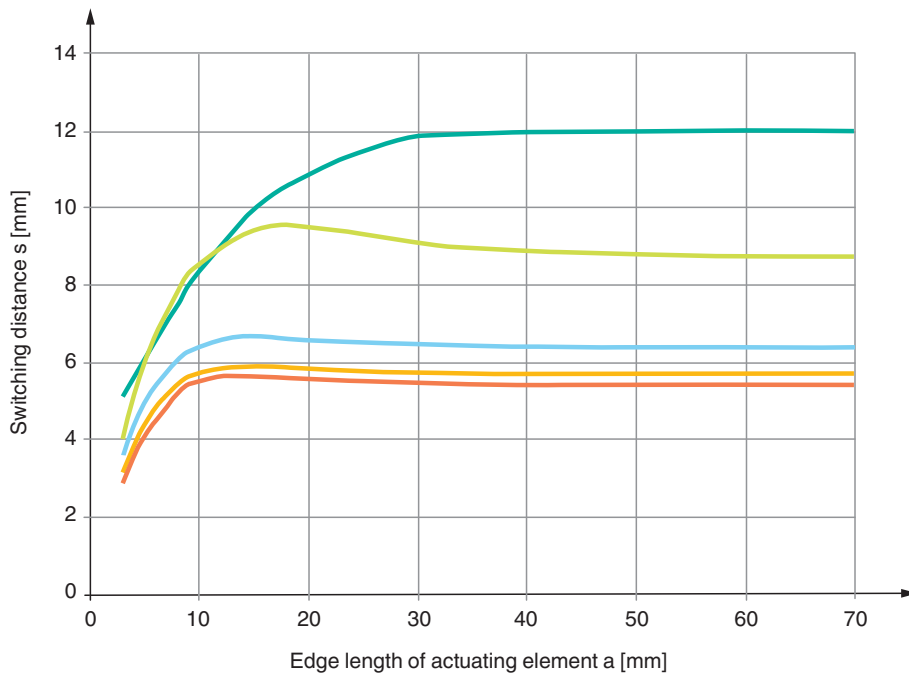
|   |    |         |
|---|----|---------|
| 1 | BN | (brown) |
| 3 | BU | (blue)  |
| 4 | BK | (black) |

**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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