

# Inductive sensor

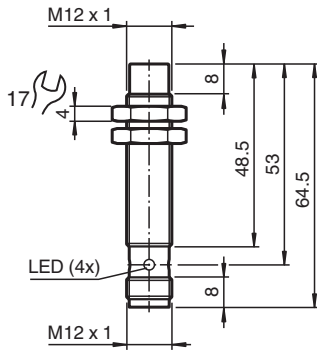
## NBN8-12GM50-E2-V1



- 8 mm non-flush
- Increased operating distance
- Extended temperature range  
-40 ... +85 °C
- Extended operating voltage range
- Flexible use with versatile mounting opportunities
- Extremely high switching frequency



### Dimensions



### Technical Data

#### General specifications

|                              |       |   |
|------------------------------|-------|---|
| Switching function           |       | Normally open (NO)  |
| Output type                  |       | PNP   |
| Rated operating distance     | $s_n$ | 8 mm  |
| Installation                 |       | non-flush   |
| Output polarity              |       | DC  |
| Assured operating distance   | $s_a$ | 0 ... 6.48 mm   |
| Actuating element            |       | mild steel, e. g. 1.0037, SR235JR (formerly St37-2)<br>24 mm x 24 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  |
| <b>Nominal ratings</b>       |       |   |
| Operating voltage            | $U_B$ | 6 ... 36 V  |
| Switching frequency          | $f$   | 0 ... 1650 Hz   |
| Hysteresis                   | $H$   | typ. 5 %  |
| Reverse polarity protection  |       | reverse polarity protected  |
| Short-circuit protection     |       | pulsing   |
| Voltage drop                 | $U_d$ | $\leq 1$ V  |

Release date: 2025-09-05 Date of issue: 2025-09-05 Filename: 326161-0052\_eng.pdf

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

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.com

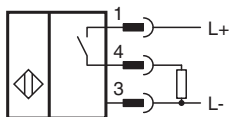
Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

**PF** PEPPERL+FUCHS

## Technical Data

|   |           |  |
|---|-----------|--|
| 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>                               |           | 1607 a   |
| Mission Time (T <sub>M</sub> )                  |           | 20 a   |
| Diagnostic Coverage (DC)                        |           | 0 %  |
| <b>Conformity</b>                               |           |  |
| PWIS conformity                                 |           | VDMA 24364-A1/B2/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                        | $U_i$     | 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 |
| 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                                 |           | Connector plug   |
| Housing material                                |           | brass , white bronze coated  |
| Sensing face                                    |           | PBT , green  |
| Degree of protection                            |           | IP65 / IP66 / IP67 / IP68  |
| Connector                                       |           |  |
| Threading                                       |           | M12 x 1  |
| Number of pins                                  |           | 3  |
| Mass  |           | 28 g   |
| Dimensions                                      |           |  |
| Length  |           | 64.5 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



## Connection Assignment

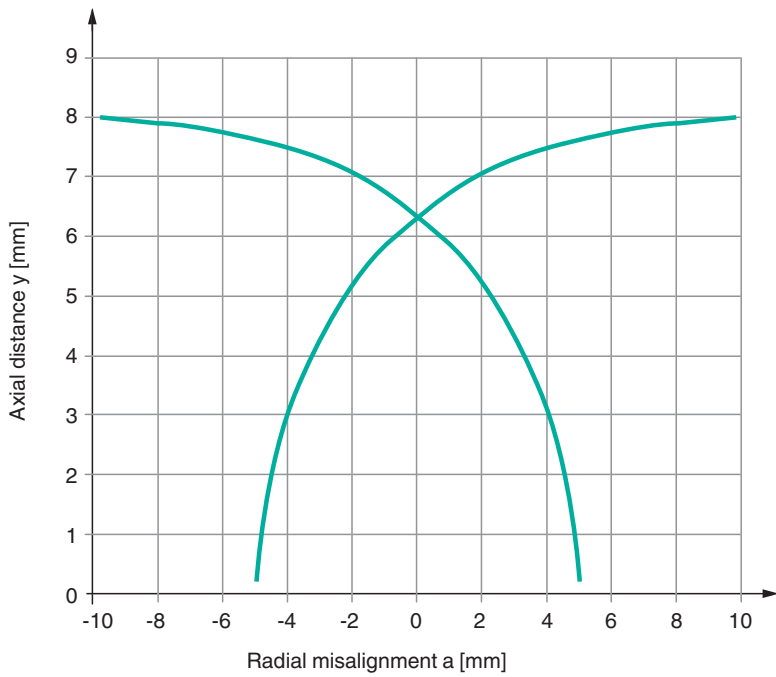


Wire colors in accordance with EN 60947-5-2

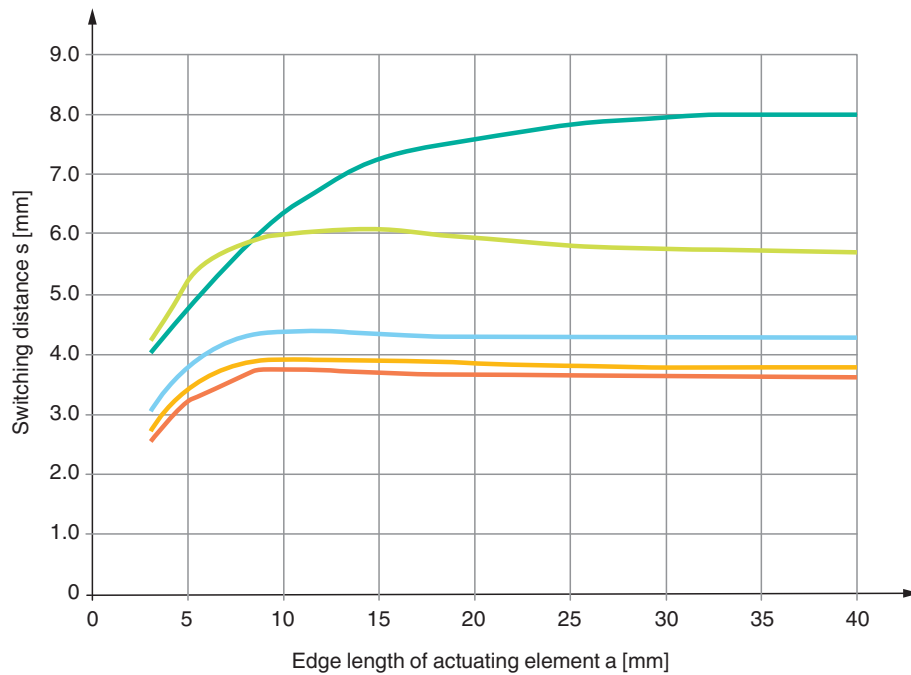
|   |    |         |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue)  |
| 4 | BK | (black) |

**Characteristic Curve**

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



**Switching distance depending on the actuating element**



- Steel
- Stainless steel
- Brass
- Aluminum
- Copper

Release date: 2025-09-05 Date of issue: 2025-09-05 Filename: 326161-0052\_eng.pdf

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