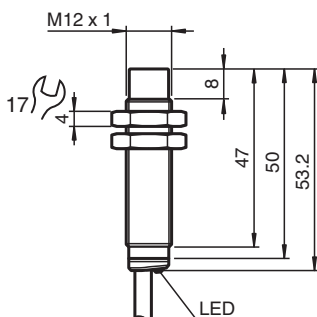


## Inductive sensor NBN4-12GM50-E0

- Use in harsh environments
- High shock resistance
- Extended temperature range  
-40 ... +85 °C
- Extended operating voltage range
- Extremely high switching frequency



### Dimensions



### Technical Data

#### General specifications

|                              |       |                                                                             |
|------------------------------|-------|-----------------------------------------------------------------------------|
| Switching function           |       | Normally open (NO)                                                          |
| Output type                  |       | NPN                                                                         |
| Rated operating distance     | $s_n$ | 4 mm                                                                        |
| Installation                 |       | non-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 $r_{Al}$    |       | 0.47                                                                        |
| Reduction factor $r_{Cu}$    |       | 0.43                                                                        |
| Reduction factor $r_{304}$   |       | 0.85                                                                        |
| Reduction factor $r_{Brass}$ |       | 0.55                                                                        |
| Output type                  |       | 3-wire                                                                      |

#### Nominal ratings

|                             |       |                            |
|-----------------------------|-------|----------------------------|
| Operating voltage           | $U_B$ | 6 ... 36 V                 |
| Switching frequency         | $f$   | 0 ... 2650 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               |

Release date: 2026-03-11 Date of issue: 2026-03-11 Filename: 326161-0070\_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

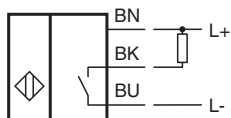
Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

**PEPPERL+FUCHS**

## Technical Data

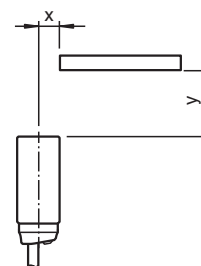
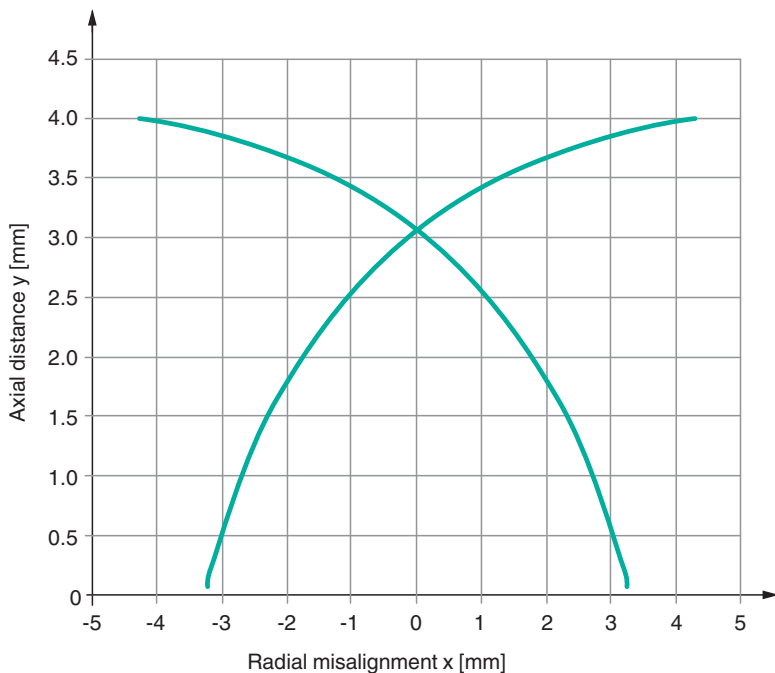
|                                                 |           |                                                                                                                                                                                         |
|-------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Off-state current                               | $I_r$     | max. 150 $\mu$ A                                                                                                                                                                        |
| No-load supply current                          | $I_0$     | $\leq 10$ mA                                                                                                                                                                            |
| Time delay before availability                  | $t_v$     | $\leq 10$ ms                                                                                                                                                                            |
| Switching state indicator                       |           | LED, yellow                                                                                                                                                                             |
| <b>Safety-relevant product characteristics</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                        | $U_i$     | 36 V                                                                                                                                                                                    |
| Rated impulse withstand voltage                 | $U_{imp}$ | 500 V                                                                                                                                                                                   |
| UL approval                                     |           | cULus Listed<br>Load Type: General Purpose<br>Circuitry: Class 2 Power Source<br>Enclosure Type Rating: Type 1<br>Supply/Switching Voltage: 36 V DC<br>Output Switching Current: 200 mA |
| 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 / IP69                                                                                                                                                        |
| <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                                            |           | 84 g                                                                                                                                                                                    |
| <b>Dimensions</b>                               |           |                                                                                                                                                                                         |
| Length                                          |           | 53 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

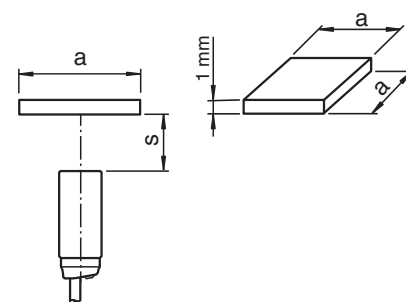
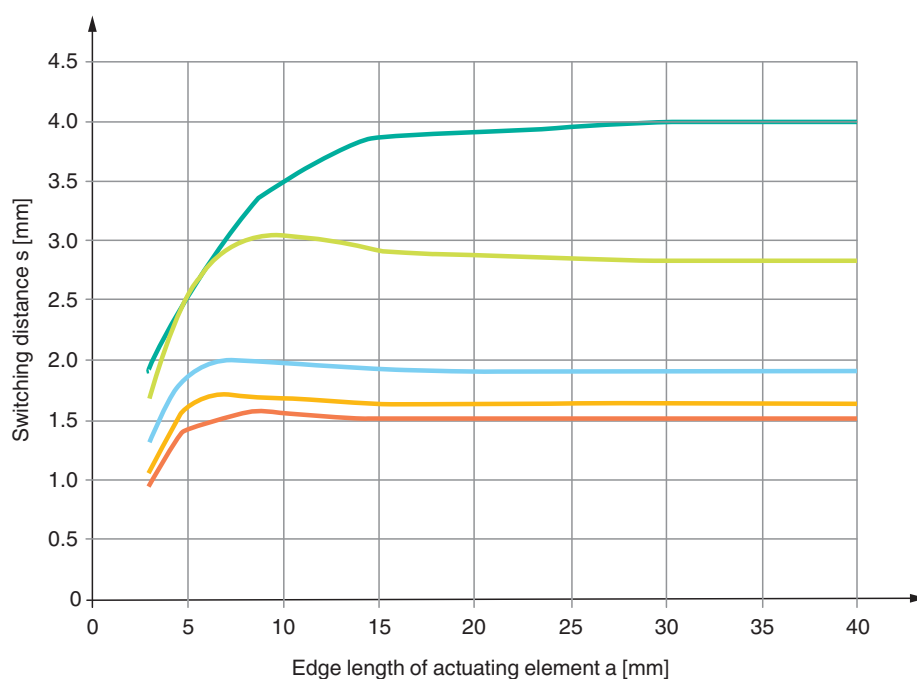


## Characteristic Curve

### Actuation by radial approach (standard target)



### Switching distance depending on the actuating element



- Steel
- Stainless steel
- Brass
- Aluminum
- Copper