



### Model Number

NBN12-18GM50-E0-M

### Features

- Basic series
- 12 mm non-flush
- E1-Type approval
- Extended temperature range  
-40 ... +85 °C
- Increased noise immunity 100 V/m

### Accessories

#### BF 18

Mounting flange, 18 mm

## Technical Data

### General specifications

|                            |                     |
|----------------------------|---------------------|
| Switching function         | Normally open (NO)  |
| Output type                | NPN                 |
| Rated operating distance   | $s_n$ 12 mm         |
| Installation               | non-flush           |
| Output polarity            | DC                  |
| Assured operating distance | $s_a$ 0 ... 9.72 mm |
| Reduction factor $r_{AI}$  | 0.45                |
| Reduction factor $r_{Cu}$  | 0.4                 |
| Reduction factor $r_{304}$ | 0.7                 |
| Output type                | 3-wire              |

### Nominal ratings

|                             |       |  |
|-----------------------------|-------|--|
| Operating voltage           | $U_B$ | 10 ... 60 V                            |
| Switching frequency         | $f$   | 0 ... 200 Hz                           |
| Hysteresis                  | $H$   | type 5 %                               |
| Reverse polarity protection |       | reverse polarity protected             |
| Short-circuit protection    |       | pulsing                                |
| Voltage drop                | $U_d$ | $\leq 2.5$ V                           |
| Operating current           | $I_L$ | 0 ... 200 mA                           |
| Off-state current           | $I_r$ | 0 ... 0.5 mA typ. 0.1 $\mu$ A at 25 °C |
| No-load supply current      | $I_0$ | $\leq 12$ mA                           |
| Switching state indicator   |       | LED, yellow                            |

### Functional safety related parameters

|                                |        |
|--------------------------------|--------|
| MTTF <sub>d</sub>              | 1900 a |
| Mission Time (T <sub>M</sub> ) | 20 a   |
| Diagnostic Coverage (DC)       | 0 %    |

### Ambient conditions

|                     |                                |
|---------------------|--------------------------------|
| Ambient temperature | -40 ... 85 °C (-40 ... 185 °F) |
|---------------------|--------------------------------|

### Mechanical specifications

|                      |                          |
|----------------------|--------------------------|
| Connection type      | cable POC, 2 m           |
| Core cross-section   | 3 x 0.75 mm <sup>2</sup> |
| Housing material     | brass, nickel-plated     |
| Sensing face         | PBT                      |
| Degree of protection | IP68 / IP69K             |

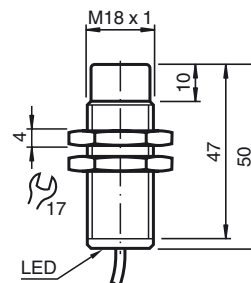
### Compliance with standards and directives

|                     |   |
|---------------------|---|
| Standard conformity |   |
| Standards           | EN 60947-5-2:2007<br>IEC 60947-5-2:2007 |

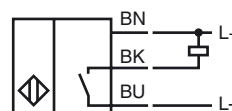
### Approvals and certificates

|                  |        |
|------------------|--------|
| E1 Type approval | 10R-04 |
|------------------|--------|

## Dimensions



## Electrical Connection



**Installation Hint**

Emitted interference and interference immunity in accordance with motor vehicle directive 2006/28/EG (e1 Type approval)  
 Interference immunity in accordance with DIN ISO 11452-2: 100 V/m  
 Frequency band 20 MHz up to 2 GHz

Mains-borne interference in accordance with ISO 7637-2: Pulse

|                   |     |     |     |     |     |     |    |
|-------------------|-----|-----|-----|-----|-----|-----|----|
|                   | 1   | 2a  | 2b  | 3 a | 3b  | 4   | 5  |
| Severity level    | III | III | III | III | III | III | IV |
| Failure criterion | C   | A   | C   | A   | A   | A   | C  |

|                |                        |
|----------------|------------------------|
| EN 61000-4-2:  | CD: 8 kV / AD: 15 kV   |
| Severity level | IV IV                  |
| EN 61000-4-3:  | 30 V/m (80...2500 MHz) |
| Severity level | IV                     |
| EN 61000-4-4:  | 2 kV                   |
| Severity level | III                    |
| EN 61000-4-6:  | 10 V (0.01...80 MHz)   |
| Severity level | III                    |
| EN 55011:      | Class A                |