



### Model Number

**NBB2-12GM50-E2-T-V1**

### Features

- 2 mm flush
- Extended operating voltage range
- Extended temperature range

### Accessories

#### BF 12

Mounting flange, 12 mm

#### V1-G

Female connector, M12, 4-pin, field attachable

#### V1-W

Female connector, M12, 4-pin, field attachable

#### V1-G-2M-PUR

Female cordset, M12, 4-pin, PUR cable

#### V1-W-2M-PUR

Female cordset, M12, 4-pin, PUR cable

## Technical Data

### General specifications

|                              |       |   |    |
|------------------------------|-------|---|----|
| Switching element function   |       | PNP   | NO |
| Rated operating distance     | $s_n$ | 2 mm  |    |
| Installation                 |       | flush   |    |
| Output polarity              |       | DC  |    |
| Assured operating distance   | $s_a$ | 0 ... 1.62 mm   |    |
| Actuating element            |       | mild steel, e. g. 1.0037, SR235JR (formerly St37-2)<br>12 mm x 12 mm x 1 mm |    |
| Reduction factor $r_{Al}$    |       | 0.35  |    |
| Reduction factor $r_{Cu}$    |       | 0.2   |    |
| Reduction factor $r_{304}$   |       | 0.7   |    |
| Reduction factor $r_{Brass}$ |       | 0.4   |    |

### Nominal ratings

|                                  |       |                       |
|----------------------------------|-------|-----------------------|
| Operating voltage                | $U_B$ | 10 ... 65 V           |
| Switching frequency              | $f$   | 0 ... 1200 Hz         |
| Hysteresis                       | $H$   | 0.02 ... 0.44         |
| Reverse polarity protection      |       | yes                   |
| Short-circuit protection         |       | yes                   |
| Overload resistance              |       | yes                   |
| Wire breakage protection         |       | yes                   |
| Inductive overvoltage protection |       | yes                   |
| Surge suppression                |       | yes                   |
| Ripple                           |       | 10 %                  |
| Voltage drop                     | $U_d$ | $\leq 2.5$ V          |
| Repeat accuracy                  | $R$   | 0.1 mm                |
| Operating current                | $I_L$ | 0 ... 300 mA          |
| Off-state current                | $I_r$ | 0.01 mA               |
| No-load supply current           | $I_0$ | $\leq 10$ mA          |
| Time delay before availability   | $t_v$ | $\leq 40$ ms          |
| Switching state indicator        |       | Multihole-LED, yellow |

### Functional safety related parameters

|                                |        |
|--------------------------------|--------|
| MTTF <sub>d</sub>              | 1510 a |
| Mission Time (T <sub>M</sub> ) | 20 a   |
| Diagnostic Coverage (DC)       | 0 %    |

### Ambient conditions

|                     |                                 |
|---------------------|---------------------------------|
| Ambient temperature | -25 ... 100 °C (-13 ... 212 °F) |
| Storage temperature | -40 ... 100 °C (-40 ... 212 °F) |

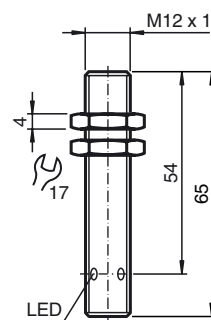
### Mechanical specifications

|                      |                          |
|----------------------|--------------------------|
| Connection type      | 4-pin, M12 x 1 connector |
| Housing material     | brass, nickel-plated     |
| Sensing face         | PBT                      |
| Degree of protection | IP67                     |
| Mass                 | 20 g                     |

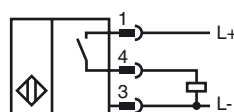
### Compliance with standards and directives

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

## Dimensions



## Electrical Connection



Pinout



Wire colors in accordance with EN 60947-5-2

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