## Model Number

**NBB4-12GK50-E0-M**

## Features

- **4 mm flush**
- **E1-Type approval**
- **Increased noise immunity 100 V/m**
- **Extended temperature range -40 ... +85 °C**
- **With increased sealing, protection class IP68 / IP69K**
- **Highly shock and vibration resistant**

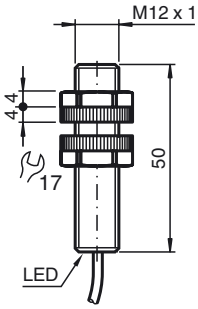
## Accessories

**BF 12**
Mounting flange, 12 mm

## Technical Data

| | | |
|---|---|---|
| **General specifications** | | |
| Switching function | | Normally open (NO) |
| Output type | | NPN |
| Rated operating distance | $s_n$ | 4 mm |
| Installation | | 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) 12 mm x 12 mm x 1 mm |
| Reduction factor $r_{Al}$ | | 0.35 |
| Reduction factor $r_{Cu}$ | | 0.25 |
| Reduction factor $r_{304}$ | | 0.7 |
| Reduction factor $r_{Brass}$ | | 0.4 |
| Output type | | 3-wire |
| **Nominal ratings** | | |
| Operating voltage | $U_B$ | 5 ... 60 V |
| Switching frequency | f | 0 ... 2500 Hz |
| Hysteresis | H | typ. 5 % |
| Reverse polarity protection | | reverse polarity protected |
| Short-circuit protection | | pulsing |
| Inductive overvoltage protection | | yes |
| Surge suppression | | yes |
| Voltage drop | $U_d$ | ≤ 2 V |
| Rated insulation voltage | $U_{BIS}$ | 60 V |
| Operating current | $I_L$ | 0 ... 200 mA |
| Off-state current | $I_r$ | 0 ... 0.5 mA typ. 0.1 µA at 25 °C |
| No-load supply current | $I_0$ | ≤ 7 mA |
| Time delay before availability | $t_v$ | ≤ 200 ms |
| Switching state indicator | | LED, yellow |
| **Functional safety related parameters** | | |
| $MTTF_d$ | | 1183 a |
| Mission Time ($T_M$) | | 20 a |
| Diagnostic Coverage (DC) | | 0 % |
| **Ambient conditions** | | |
| Ambient temperature | | -40 ... 85 °C (-40 ... 185 °F) |
| Storage temperature | | -40 ... 85 °C (-40 ... 185 °F) |
| **Mechanical specifications** | | |
| Connection type | | cable PUR , 2 m |
| Core cross-section | | 3 x 0.75 $mm^2$ |
| Housing material | | PBT |
| Sensing face | | PBT |
| Degree of protection | | IP68 / IP69K |
| Mass | | 110 g |
| **Compliance with standards and directives** | | |
| Standard conformity | | |
| Standards | | EN 60947-5-2:2007<br>IEC 60947-5-2:2007 |
| **Approvals and certificates** | | |
| UL approval | | cULus Listed, General Purpose |
| CSA approval | | cCSAus Listed, General Purpose |
| CCC approval | | Certified by China Compulsory Certification (CCC) |
| E1 Type approval | | 10R-04 |

## Dimensions

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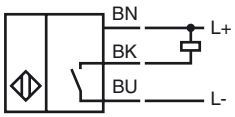
## Electrical Connection




## Installation Hint

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 | III |
| Failure criterion | C | A | C | A | A | A | B |

| | | |
|---|---|---|
| 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 | |

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Refer to “General Notes Relating to Pepperl+Fuchs Product Information”.

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