CE

## Model Number

**NBB4-12GM50-E2-V1-3D**

## Features
- **Basic series**
- **increased operating distance**

## Connection

E2

| 1/BN | L+ |
| 4/BK | |
| 3/BU | L- |
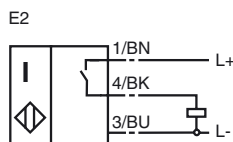
## Accessories

**BF 12**
Mounting flange

**EXG-12**
Mounting aid

## Dimensions



M12x1
49
55
65
4
17
6
LED
M12x1
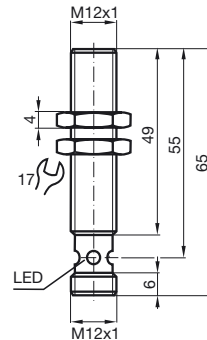
## Technical Data

**General specifications**

| | | |
|---|---|---|
| Switching element function | | PNP Make function |
| Rated operating distance | $s_n$ | 4 mm |
| Installation | | embeddable |
| Output polarity | | DC |
| Assured operating distance | $s_a$ | 0 ... 3.24 mm |
| Reduction factor $r_{Al}$ | | 0.45 |
| Reduction factor $r_{Cu}$ | | 0.35 |
| Reduction factor $r_{V2A}$ | | 0.7 |

**Nominal ratings**

| | | |
|---|---|---|
| Operating voltage | $U_B$ | 10 ... 30 V |
| Switching frequency | f | 0 ... 1000 Hz |
| Hysteresis | H | typ. 5 % |
| Reverse polarity protection | | protected against reverse polarity |
| Short-circuit protection | | pulsing |
| Voltage drop | $U_d$ | ≤ 3 V |
| Operating current | $I_L$ | 0 ... 150 mA |
| Off-state current | $I_r$ | 0 ... 0.5 mA typ. 0.1 µA at 25 °C |
| No-load supply current | $I_0$ | ≤ 15 mA |
| Indication of the switching state | | Multihole-LED, yellow |

**Standard conformity**

| | |
|---|---|
| Standards | IEC / EN 60947-5-2:2004 |

**Ambient conditions**

| | |
|---|---|
| Ambient temperature | -25 ... 70 °C (248 ... 343 K) |

**Mechanical specifications**

| | |
|---|---|
| Connection type | V1-connector |
| Cable version | PBT |
| Housing material | brass, nickel-plated |
| Sensing face | PBT |
| Protection degree | IP67 |

**General information**

| | |
|---|---|
| Use in the hazardous area | see instruction manuals |
| Category | 3D |

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**ATEX 3D**

| | |
|---|---|
| Instruction | **Manual electrical apparatus for hazardous areas** |
| **Device category 3D** | for use in hazardous areas with non-conducting combustible dust |
| Directive conformity | 94/9/EG |
| Standard conformity | EN 50281-1-1<br>Protection via housing<br>Use is restricted to the following stated conditions |
| CE symbol | $C \epsilon$ |
| Ex-identification | ⟨Ex⟩ II 3D IP67 T 92 °C X The Ex-significant identification is on the enclosed adhesive label |
| General | The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual.<br>The data stated in the data sheet are restricted by this operating instruction! The special conditions must be adhered to! |
| Installation, Comissioning | Laws and/or regulations and standards governing the use or intended usage goal must be observed.<br>The adhesive label provided must be affixed in the immediate vicinity of the sensor! The surface to which the label is applied must be clean, flat and free from grease!<br>The affixed adhesive label must be readable and durable, taking account of the possibility of chemical corrosion! |
| Maintenance | No changes can be made to apparatus, which are operated in hazardous areas.<br>Repairs to these apparatus are not possible. |
| [Fett]Special conditions | |
| Maximum operating current $I_L$ | The maximum permissible load current must be restricted to the values given in the following list.<br>High load currents and load short-circuits are not permitted. |
| Maximum operating voltage UBmax | The maximum permissible operating voltage UBmax must be restricted to the values given in the following list. Tolerances are not permitted. |
| Maximum heating (Temperature rise) | dependant of the load current $I_L$ and the max. operating voltage $U_{Bmax.}$<br>Information can be taken from the following list. The maximum surface temperature at maximum ambient temperature is given in the Ex identification of the apparatus. |
| at $U_{Bmax}$=30 V, $I_L$=150 mA | 22 °C |
| at $U_{Bmax}$=30 V, $I_L$=100 mA | 19 °C |
| at $U_{Bmax}$=30 V, $I_L$=50 mA | 16 °C |
| Plug connector | The plug connector must not be disconnected under voltage. The proximity switch is marked as follows: "DO NOT DISCONNECT UNDER VOLTAGE!" When the plug connector is disconnected the ingress of dirt into the inner areas (i.e. the areas, which are not accessible in the plugged-in condition) must be prevented.<br>The plug connection can only be separated using a tool. This is achieved by using the locking protection V1-Clip (Mounting accessory from Pepperl + Fuchs). |
| Protection from mechanical danger | The sensor must not be mechanically damaged. |
| Electrostatic charging | Electrostatic charges on the metal housing components must be avoided. Dangerous electrostatic charges on the metal housing components can be avoided by incorporating these components in the equipotential bonding. |