



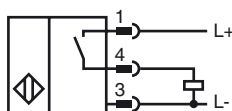
### Model Number

NBB2-12GM30-E2-V1

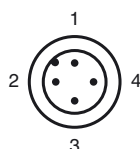
### Features

- Basic series
- 2 mm flush

### Connection



### Pinout



Wire colors in accordance with EN 60947-5-2

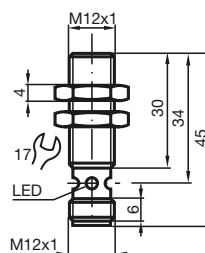
|   |    |         |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue)  |
| 4 | BK | (black) |

### Accessories

#### EXG-12

Quick mounting bracket with dead stop

### Dimensions



### 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 |
| Reduction factor $r_{AI}$  |       | 0.3           |
| Reduction factor $r_{Cu}$  |       | 0.2           |
| Reduction factor $r_{304}$ |       | 0.7           |

#### Nominal ratings

|                            |       |                                        |
|----------------------------|-------|----------------------------------------|
| Operating voltage          | $U_B$ | 10 ... 30 V                            |
| Switching frequency        | $f$   | 0 ... 800 Hz                           |
| Hysteresis                 | $H$   | typ. 10 %                              |
| Reverse polarity protected |       | reverse polarity protected             |
| Short-circuit protection   |       | pulsing                                |
| Voltage drop               | $U_d$ | $\leq 3$ 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     | $I_0$ | $\leq 15$ mA                           |

#### Functional safety related parameters

|                          |        |
|--------------------------|--------|
| MTTF <sub>d</sub>        | 2690 a |
| Mission Time ( $T_M$ )   | 20 a   |
| Diagnostic Coverage (DC) | 0 %    |

#### Ambient conditions

|                     |                                |
|---------------------|--------------------------------|
| Ambient temperature | -25 ... 70 °C (-13 ... 158 °F) |
|---------------------|--------------------------------|

#### Mechanical specifications

|                   |                                 |
|-------------------|---------------------------------|
| Connection type   | Device connector M12 x 1, 4-pin |
| Housing material  | brass, nickel-plated            |
| Sensing face      | PBT                             |
| Protection degree | IP67                            |

#### 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 | Products with a maximum operating voltage of $\leq 36$ V do not bear a CCC marking because they do not require approval. |