



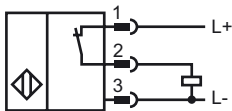
### Model Number

NBB2-12GM60-E3-V1

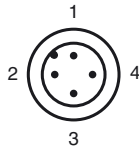
### Features

- 2 mm embeddable

### Connection



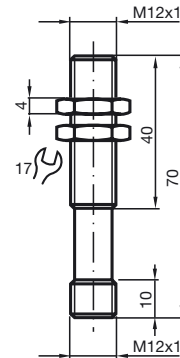
### Pinout



Wire colors in accordance with EN 60947-5-2

|   |    |
|---|----|
| 1 | BN |
| 2 | WH |
| 3 | BU |
| 4 | BK |

### Dimensions



### Technical Data

#### General specifications

|                            |            |               |
|----------------------------|------------|---------------|
| Switching element function | PNP        | NC            |
| Rated operating distance   | $s_n$      | 2 mm          |
| Installation               | embeddable |               |
| 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 $r_{V2A}$ | 0.7        |               |

#### Nominal ratings

|                                   |                            |  |
|-----------------------------------|----------------------------|--|
| Operating voltage                 | $U_B$                      | 10 ... 30 V                            |
| Switching frequency               | $f$                        | 0 ... 1500 Hz                          |
| 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            | $I_0$                      | $\leq 17$ mA                           |
| Indication of the switching state | without                    |  |

#### 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 |