



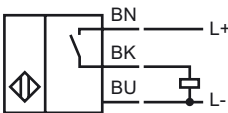
### Model Number

NBB20-U3-E2

### Features

- 20 mm embeddable
- 4 LEDs indicator for 360° visibility

### Connection

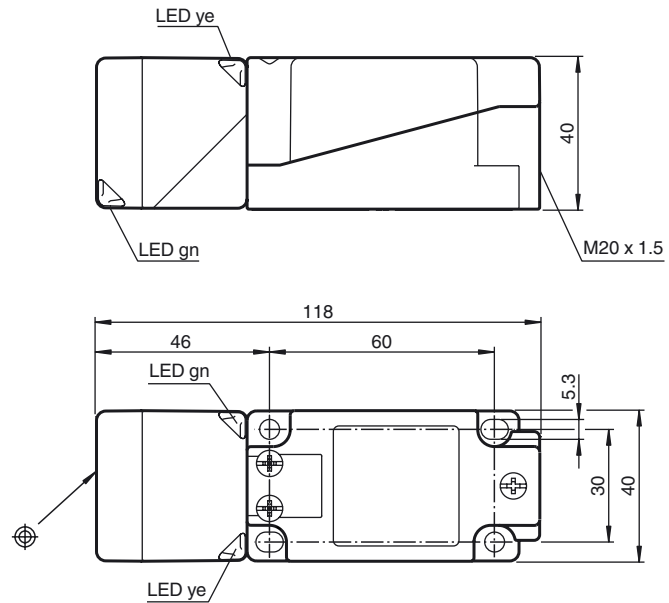


### Accessories

#### MHW 01

Modular mounting bracket

### Dimensions



### Technical Data

#### General specifications

|                              |            |               |
|------------------------------|------------|---------------|
| Switching element function   | PNP        | NO            |
| Rated operating distance     | $s_n$      | 20 mm         |
| Installation                 | embeddable |               |
| Output polarity              | DC         |               |
| Assured operating distance   | $s_a$      | 0 ... 16.2 mm |
| Reduction factor $r_{AI}$    | 0.33       |               |
| Reduction factor $r_{Cu}$    | 0.31       |               |
| Reduction factor $r_{303}$   | 0.74       |               |
| Reduction factor $r_{Brass}$ | 0.41       |               |

#### Nominal ratings

|                                   |                            |                           |
|-----------------------------------|----------------------------|---------------------------|
| Operating voltage                 | $U_B$                      | 10 ... 30 V               |
| Switching frequency               | $f$                        | 0 ... 150 Hz              |
| Hysteresis                        | $H$                        | typ. 5 %                  |
| Reverse polarity protected        | reverse polarity protected |                           |
| Short-circuit protection          | pulsing                    |                           |
| Voltage drop                      | $U_d$                      | $\leq 2$ V                |
| Operating current                 | $I_L$                      | 0 ... 200 mA              |
| Off-state current                 | $I_r$                      | 0 ... 0.5 mA typ. 0.01 mA |
| No-load supply current            | $I_0$                      | $\leq 20$ mA              |
| Operating voltage display         | LED, green                 |                           |
| Indication of the switching state | LED, yellow                |                           |

#### Functional safety related parameters

|                                |        |
|--------------------------------|--------|
| MTTF <sub>d</sub>              | 1460 a |
| Mission Time (T <sub>M</sub> ) | 20 a   |
| Diagnostic Coverage (DC)       | 0 %    |

#### Ambient conditions

|                     |                                |
|---------------------|--------------------------------|
| Ambient temperature | -25 ... 85 °C (-13 ... 185 °F) |
|---------------------|--------------------------------|

#### Mechanical specifications

|                    |   |
|--------------------|---|
| Connection type    | screw terminals   |
| Core cross-section | $\leq 2.5$ mm <sup>2</sup>  |
| Housing material   | PA/metal with epoxy powder coating  |
| Sensing face       | PA  |
| Housing base       | metal   |
| Protection degree  | IP68 / IP69K  |
| Mass               | 225 g   |
| Note               | Tightening torque: 1.8 Nm (housing)<br>Tightening torque: 1.0 Nm (Screw terminal) |

#### 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. |