

## Model Number

**NBB15-U4-E2-V1**

## Features

- **Sensor head bidirectional and rotatable**
- **4 LEDs indicator for 360° visibility**
- **15 mm flush**

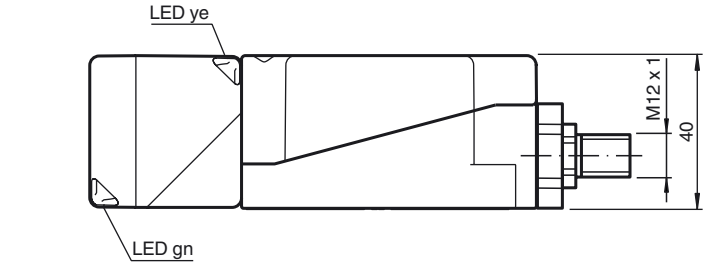
## Accessories

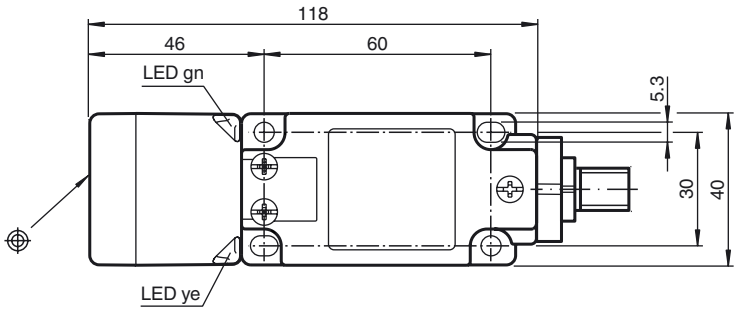
**MHW 01**
Modular mounting bracket
**V1-G**
Female connector, M12, 4-pin, field attachable
**V1-W**
Female connector, M12, 4-pin, field attachable

## Technical Data

| | | |
|---|---|---|
| **General specifications** | | |
| Switching element function | | PNP NO |
| Rated operating distance | $s_n$ | 15 mm |
| Installation | | flush |
| Output polarity | | DC |
| Assured operating distance | $s_a$ | 0 ... 12.15 mm |
| Reduction factor $r_{Al}$ | | 0.33 |
| Reduction factor $r_{Cu}$ | | 0.31 |
| Reduction factor $r_{304}$ | | 0.74 |
| Reduction factor $r_{Brass}$ | | 0.41 |
| **Nominal ratings** | | |
| Operating voltage | $U_B$ | 10 ... 30 V |
| Switching frequency | f | 0 ... 200 Hz |
| Hysteresis | H | typ. 5 % |
| Reverse polarity protection | | reverse polarity protected |
| Short-circuit protection | | pulsing |
| Voltage drop | $U_d$ | ≤ 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 | $I_0$ | ≤ 20 mA |
| Time delay before availability | $t_v$ | 80 ms |
| Operating voltage indicator | | LED, green |
| Switching state indicator | | LED, yellow |
| **Functional safety related parameters** | | |
| $MTTF_d$ | | 1460 a |
| Mission Time ($T_M$) | | 20 a |
| Diagnostic Coverage (DC) | | 0 % |
| **Ambient conditions** | | |
| Ambient temperature | | -25 ... 85 °C (-13 ... 185 °F) |
| **Mechanical specifications** | | |
| Connection type | | Connector M12 x 1 , 4-pin |
| Housing material | | PA/metal with epoxy powder coating |
| Sensing face | | PA |
| Housing base | | metal |
| Degree of protection | | IP68 / IP69K |
| Mass | | 225 g |
| Note | | Tightening torque: 1.8 Nm (housing) |
| **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 | | CCC approval / marking not required for products rated ≤36 V |

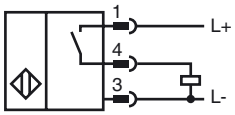
## Dimensions



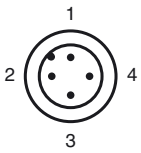




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## Electrical Connection




## Pinout




Wire colors in accordance with EN 60947-5-2

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

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