



### Model Number

NBB15-U10-A2

### Features

- Sensor head bidirectional and rotatable
- 15 mm flush
- 4 LEDs indicator for 360° visibility
- With cable gland for cable diameters from 7 to 10.5 mm (extendable with different gasket)

### Accessories

MHW 01

Modular mounting bracket

## Technical Data

### General specifications

|                              |       |                |
|------------------------------|-------|----------------|
| Switching function           |       | complementary  |
| Output type                  |       | PNP            |
| 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 $r_{Cu}$    |       | 0.3            |
| Reduction factor $r_{304}$   |       | 0.74           |
| Reduction factor $r_{Brass}$ |       | 0.41           |
| Output type                  |       | 4-wire         |

### Nominal ratings

|                                |       |                            |
|--------------------------------|-------|----------------------------|
| Operating voltage              | $U_B$ | 10 ... 30 V                |
| Switching frequency            | $f$   | 0 ... 560 Hz               |
| Hysteresis                     | $H$   | typ. 5 %                   |
| Reverse polarity protection    |       | reverse polarity protected |
| Short-circuit protection       |       | pulsing                    |
| Voltage drop                   | $U_d$ | $\leq 2$ V                 |
| Design data                    |       |                            |
| Operating current              | $I_L$ | 0 ... 200 mA               |
| Off-state current              | $I_r$ | 0 ... 0.5 mA               |
| No-load supply current         | $I_0$ | $\leq 20$ mA               |
| Time delay before availability | $t_v$ | 80 ms                      |
| Operating voltage indicator    |       | LED, green                 |
| Switching state indicator      |       | LED, yellow                |

### Functional safety related parameters

|                          |        |
|--------------------------|--------|
| MTTF <sub>d</sub>        | 1230 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      | PG13.5 terminal compartment, core cross section $\leq 2.5$ mm <sup>2</sup> |
| Core cross-section   | $\leq 2.5$ mm <sup>2</sup>   |
| Housing material     | PA/metal with epoxy powder coating   |
| Sensing face         | PA   |
| Housing base         | plastic  |
| Degree of protection | IP68 / IP69K   |
| Mass                 | 225 g  |
| Note                 | Tightening torque: 1.8 Nm (housing)  |

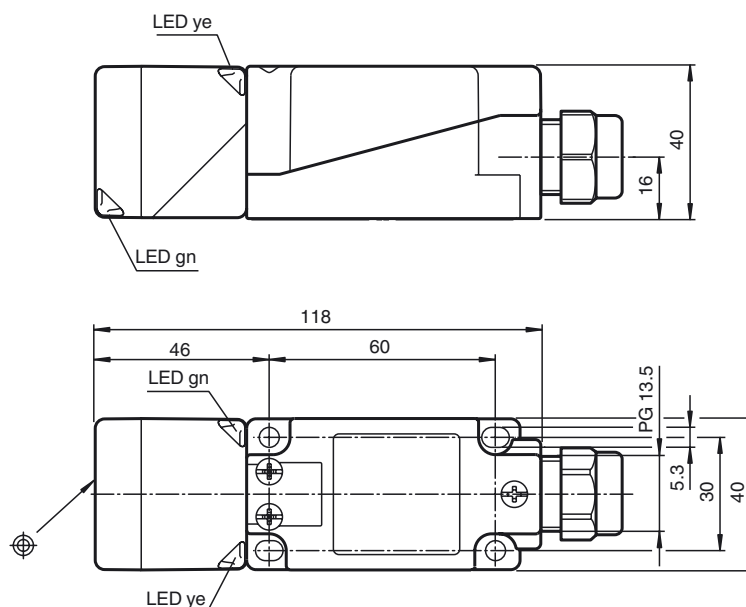
### Compliance with standards and directives

|                     |   |
|---------------------|---|
| Standard conformity |   |
| Standards           | EN 60947-5-2:2007<br>EN 60947-5-2/A1:2012<br>IEC 60947-5-2:2007<br>IEC 60947-5-2 AMD 1:2012 |

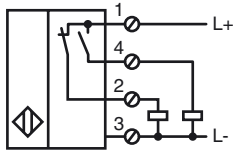
### Approvals and certificates

|              |  |
|--------------|--|
| UL approval  | cULus Listed, General Purpose                                      |
| CCC approval | CCC approval / marking not required for products rated $\leq 36$ V |

## Dimensions



Electrical Connection



Release date: 2018-11-13 10:44 Date of issue: 2018-11-13 203002\_eng.xml