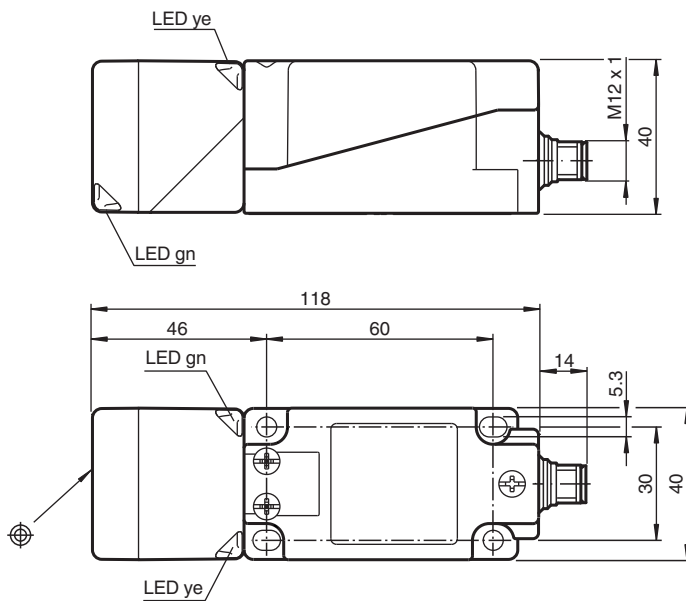


## Inductive sensor NBB15-U1-A2-V1

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



### Dimensions



### 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           |

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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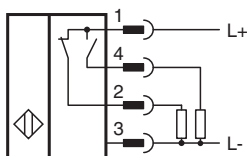
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**PF** PEPPERL+FUCHS

## Technical Data

|   |       |   |
|---|-------|---|
| Reduction factor $r_{\text{Brass}}$             |       | 0.41  |
| Output type                                     |       | 4-wire  |
| <b>Nominal ratings</b>                          |       |   |
| 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  |
| Operating current                               | $I_L$ | 0 ... 200 mA  |
| Off-state current                               | $I_r$ | 0 ... 0.5 mA  |
| No-load supply current                          | $I_o$ | $\leq 20$ mA  |
| Time delay before availability                  | $t_v$ | 80 ms   |
| Operating voltage indicator                     |       | LED, green  |
| Switching state indicator                       |       | LED, yellow   |
| <b>Functional safety related parameters</b>     |       |   |
| MTTF <sub>d</sub>                               |       | 1289 a  |
| Mission Time ( $T_M$ )                          |       | 20 a  |
| Diagnostic Coverage (DC)                        |       | 0 %   |
| <b>Compliance with standards and directives</b> |       |   |
| 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 |
| <b>Approvals and certificates</b>               |       |   |
| UL approval                                     |       | cULus Listed, General Purpose   |
| CCC approval                                    |       | CCC approval / marking not required for products rated $\leq 36$ V                          |
| <b>Ambient conditions</b>                       |       |   |
| Ambient temperature                             |       | -25 ... 85 °C (-13 ... 185 °F)  |
| <b>Mechanical specifications</b>                |       |   |
| Connection type                                 |       | Connector plug M12 x 1 , 4-pin  |
| 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)   |

## Connection







## Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

## Accessories

|   |                    |   |
|---|--------------------|---|
|    | <b>V1-W-2M-PUR</b> | Female cordset single-ended M12 angled A-coded, 4-pin, PUR cable grey   |
|    | <b>MHW 01</b>      | Modular mounting bracket  |
|   | <b>MH 04-2681F</b> | Mounting aid for VariKont, +U1+ and +U9*                                |
|  | <b>V1-G-2M-PUR</b> | Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable grey |

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