

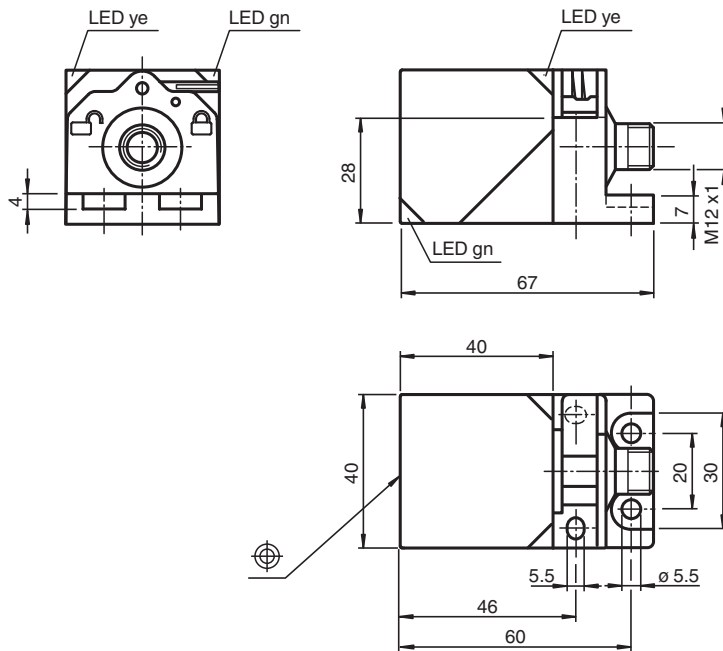


## Inductive sensor NBB20-L2-A2-V1

- Sensor head bidirectional and rotatable
- 4 LEDs indicator for 360° visibility
- 20 mm flush
- 4-wire DC
- Quick mounting bracket



### Dimensions



### Technical Data

#### General specifications

|                            |       |               |
|----------------------------|-------|---------------|
| Switching function         |       | complementary |
| Output type                |       | PNP           |
| Rated operating distance   | $s_n$ | 20 mm         |
| Installation               |       | flush         |
| Output polarity            |       | DC            |
| Assured operating distance | $s_a$ | 0 ... 16.2 mm |
| Actual operating distance  | $s_r$ | 18 ... 22 mm  |
| Reduction factor $r_{AI}$  |       | 0.33          |
| Reduction factor $r_{Cu}$  |       | 0.31          |

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

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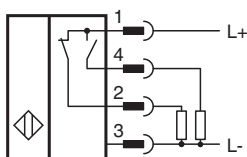
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## Technical Data

|   |           |   |
|---|-----------|---|
| Reduction factor $r_{304}$                      |           | 0.74  |
| Reduction factor $r_{Brass}$                    |           | 0.41  |
| Output type                                     |           | 4-wire  |
| <b>Nominal ratings</b>                          |           |   |
| Operating voltage                               | $U_B$     | 10 ... 30 V DC  |
| Switching frequency                             | $f$       | 0 ... 440 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                          | $I_0$     | $\leq 20$ 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>               |           |   |
| EAC conformity                                  |           | TR CU 020/2011  |
| Protection class                                |           | II  |
| Rated insulation voltage                        | $U_i$     | 253 V   |
| Rated impulse withstand voltage                 | $U_{imp}$ | 4000 V  |
| 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)  |
| Storage temperature                             |           | -40 ... 85 °C (-40 ... 185 °F)  |
| <b>Mechanical specifications</b>                |           |   |
| Connection type                                 |           | Connector plug M12 x 1 , 4-pin  |
| Housing material                                |           | PA  |
| Sensing face                                    |           | PA  |
| Degree of protection                            |           | IP68 / IP69K  |
| Cable   |           |   |
| Cable diameter                                  |           | 3.3 mm $\pm$ 0.15 mm  |
| Mass  |           | 130 g   |

## 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-G-2M-PUR</b> | Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable grey |
|    | <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 02-L</b>     | Mounting aid for VariKont-L   |

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