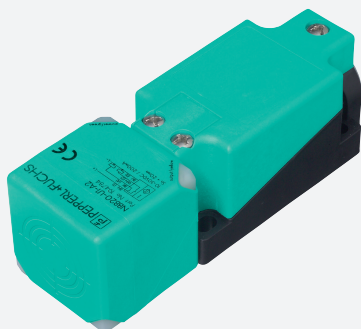


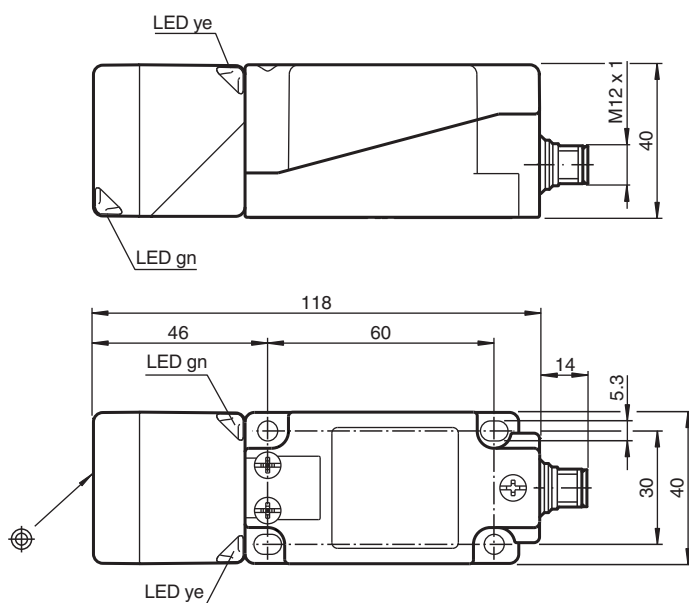


## Inductive sensor NBB20-U1-A2-V1

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



### 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 |
| Reduction factor $r_{AI}$  |       | 0.33          |
| Reduction factor $r_{Cu}$  |       | 0.31          |
| Reduction factor $r_{304}$ |       | 0.74          |

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

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.com

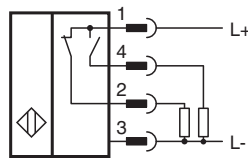
Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

**PEPPERL+FUCHS**

Technical Data

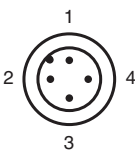
|                                                 |       |                                                                    |
|-------------------------------------------------|-------|--------------------------------------------------------------------|
| Output type                                     |       | 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 IEC 60947-5-2                                                   |
| <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                                                              |
| Dimensions                                      |       |                                                                    |
| Height                                          |       | 40 mm                                                              |
| Width                                           |       | 40 mm                                                              |
| Length                                          |       | 118 mm                                                             |
| Note                                            |       | Tightening torque: 1.8 Nm (housing)                                |

Connection



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Connection Assignment



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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