

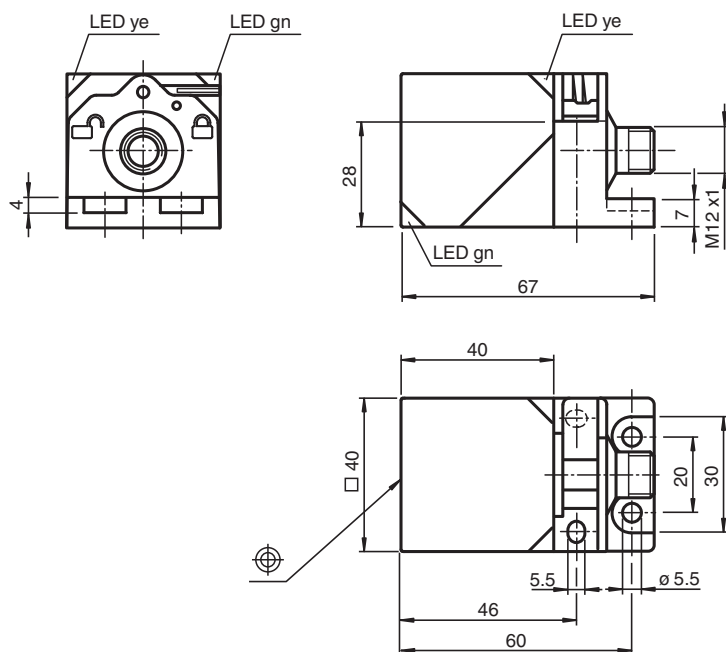


## Inductive sensor NBB20-L2-E2-C-V1

- Sensor head bidirectional and rotatable
- 20 mm flush
- 3-wire DC
- Weld Immune
- Quick mounting bracket
- 4-way LED indicator



### Dimensions



### Technical Data

#### General specifications

|                            |       |                    |
|----------------------------|-------|--------------------|
| Switching function         |       | Normally open (NO) |
| 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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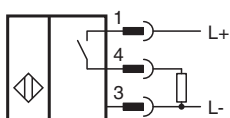
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**PEPPERL+FUCHS**

## Technical Data

|                                                 |           |                                                                    |
|-------------------------------------------------|-----------|--------------------------------------------------------------------|
| Reduction factor $r_{304}$                      |           | 0.74                                                               |
| Reduction factor $r_{Brass}$                    |           | 0.41                                                               |
| Output type                                     |           | 3-wire                                                             |
| <b>Nominal ratings</b>                          |           |                                                                    |
| Operating voltage                               | $U_B$     | 10 ... 30 V DC                                                     |
| Switching frequency                             | $f$       | 0 ... 5 Hz                                                         |
| Hysteresis                                      | $H$       | typ. 5 %                                                           |
| Reverse polarity protection                     |           | reverse polarity protected                                         |
| Short-circuit protection                        |           | pulsing                                                            |
| Voltage drop                                    | $U_d$     | $\leq 3$ 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                  | $t_v$     | 300 ms                                                             |
| Operating voltage indicator                     |           | LED, green                                                         |
| Switching state indicator                       |           | LED, yellow                                                        |
| <b>Functional safety related parameters</b>     |           |                                                                    |
| MTTF <sub>d</sub>                               |           | 1170 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>               |           |                                                                    |
| 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                             |           | -25 ... 85 °C (-13 ... 185 °F)                                     |
| <b>Mechanical specifications</b>                |           |                                                                    |
| Connection type                                 |           | Connector plug M12 x 1 , 4-pin                                     |
| Housing material                                |           | PA                                                                 |
| Sensing face                                    |           | PA                                                                 |
| Degree of protection                            |           | IP69K                                                              |
| Mass                                            |           | 130 g                                                              |
| Dimensions                                      |           |                                                                    |
| Height                                          |           | 40 mm                                                              |
| Width                                           |           | 40 mm                                                              |
| Length                                          |           | 67 mm                                                              |

## Connection



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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