



## Inductive sensor NBB20-L2-A2-V1-3G-3D

- Sensor head bidirectional and rotatable
- 20 mm flush
- 4-wire DC
- Quick mounting bracket
- 4-way LED indicator
- ATEX-/IECEX-approvals for zone 2/22 (Ex ec/tc)



### 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          |

Release date: 2024-05-28 Date of issue: 2024-06-05 Filename: 70126063\_eng.pdf

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

|   |       |                                |
|---|-------|--------------------------------|
| 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 IEC 60947-5-2               |
| <b>Approvals and certificates</b>               |       |                                |
| IECEx approval                                  |       |                                |
| Equipment protection level Gc (ec)              |       | IECEx TUR 21.0019X             |
| Equipment protection level Dc (tc)              |       | IECEx TUR 21.0020X             |
| ATEX approval                                   |       |                                |
| Equipment protection level Gc (ec)              |       | TÜV 20 ATEX 8525 X             |
| Equipment protection level Dc (tc)              |       | TÜV 20 ATEX 8526 X             |
| UL approval                                     |       | cULus Listed, General Purpose  |
| Marine approval                                 |       | DNVGL TAA0000160               |
| <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                            |       | IP69K                          |
| Cable   |       |                                |
| Cable diameter                                  |       | 3.3 mm $\pm$ 0.15 mm           |
| Mass  |       | 130 g                          |
| Dimensions                                      |       |                                |
| Height  |       | 40 mm                          |
| Width   |       | 40 mm                          |
| Length  |       | 67 mm                          |
| <b>General information</b>                      |       |                                |
| Use in the hazardous area                       |       | see instruction manuals        |

Release date: 2024-05-28 Date of issue: 2024-06-05 Filename: 70126063\_eng.pdf

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

Pepperl+Fuchs Group  
www.pepperl-fuchs.comUSA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.comGermany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.comSingapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

**PEPPERL+FUCHS**

**Connection**



**Connection Assignment**

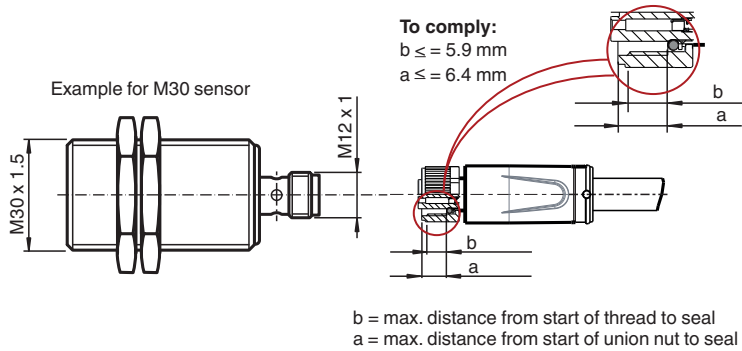


Wire colors in accordance with EN 60947-5-2

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

**Installation**

**Requirement for male cordset to achieve IP degree of protection**



Release date: 2024-05-28 Date of issue: 2024-06-05 Filename: 70126063\_eng.pdf