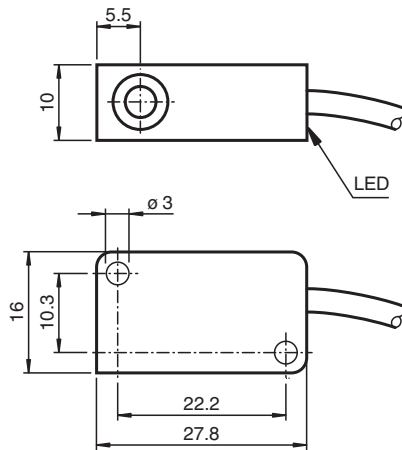


## Inductive sensor NBB3-V3-Z4-3G-3D

- 3 mm flush
- 2-wire DC
- 60 V DC output
- Switching status indicator, yellow LED
- ATEX-/IECEx-approvals for zone 2/22 (Ex ec/tc)



### Dimensions



### Technical Data

#### General specifications

|                              |       |                     |
|------------------------------|-------|---------------------|
| Switching function           |       | Normally open (NO)  |
| Output type                  |       | Two-wire            |
| Rated operating distance     | $s_n$ | 3 mm                |
| Installation                 |       | flush               |
| Output polarity              |       | DC                  |
| Assured operating distance   | $s_a$ | 0 ... 2.4 mm        |
| Actual operating distance    | $s_r$ | 2.7 ... 3.3 mm typ. |
| Reduction factor $r_{Al}$    |       | 0.45                |
| Reduction factor $r_{Cu}$    |       | 0.35                |
| Reduction factor $r_{304}$   |       | 0.8                 |
| Reduction factor $r_{Brass}$ |       | 0.5                 |
| Output type                  |       | 2-wire              |

#### Nominal ratings

|                     |       |               |
|---------------------|-------|---------------|
| Operating voltage   | $U_B$ | 5 ... 60 V DC |
| Switching frequency | $f$   | 0 ... 2000 Hz |
| Hysteresis          | $H$   | typ. 0.2 mm   |

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## Technical Data

|   |       |                                      |
|---|-------|--------------------------------------|
| Reverse polarity protection                               |       | reverse polarity protected           |
| Short-circuit protection                                  |       | no                                   |
| Inductive overvoltage protection                          |       | yes                                  |
| Voltage drop  | $U_d$ | $\leq 4 \text{ V}$                   |
| Voltage drop at $I_L$                                     |       |                                      |
| Voltage drop $I_L = 10 \text{ mA}$ , switching element on | $U_d$ | 3.4 ... 3.9 V typ. 3.6 V             |
| Operating current   | $I_L$ | 4 ... 100 mA                         |
| Lowest operating current                                  | $I_m$ | 4 mA                                 |
| Off-state current   | $I_r$ | 0.4 ... 0.55 mA typ. 0.46 mA         |
| Time delay before availability                            | $t_v$ | $\leq 1 \text{ ms}$                  |
| Switching state indicator                                 |       | LED, yellow                          |
| <b>Functional safety related parameters</b>               |       |                                      |
| MTTF <sub>d</sub>   |       | 1552 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        |
| CCC approval  |       |                                      |
| Hazardous Location  |       | 2024322315005962<br>2024322315005982 |
| <b>Ambient conditions</b>                                 |       |                                      |
| Ambient temperature                                       |       | -25 ... 85 °C (-13 ... 185 °F)       |
| <b>Mechanical specifications</b>                          |       |                                      |
| Connection type   |       | cable                                |
| Housing material  |       | PBT                                  |
| Sensing face  |       | PBT                                  |
| Degree of protection                                      |       | IP67                                 |
| Cable   |       |                                      |
| Wire end ferrules   |       | yes                                  |
| Cable diameter  |       | 3 mm $\pm$ 0.2 mm                    |
| Bending radius  |       | > 10 x cable diameter                |
| Material  |       | PVC                                  |
| Color   |       | grey                                 |
| Number of cores   |       | 2                                    |
| Core cross section  |       | 0.14 mm <sup>2</sup>                 |
| Length  | L     | 130 mm                               |
| Mass  |       | 10 g                                 |
| Tightening torque, fastening screws                       |       | $\leq 0.4 \text{ Nm}$                |
| Dimensions  |       |                                      |
| Height  |       | 10.2 mm                              |
| Width   |       | 27.8 mm                              |
| Length  |       | 16 mm                                |
| <b>General information</b>                                |       |                                      |

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## Technical Data

Use in the hazardous area

see instruction manuals

## Connection Assignment

