



## Inductive sensor

IEB3003BBPKG/V4A/2M/PUR



### Product characteristics

|                    |                   |
|--------------------|-------------------|
| Electrical design  | PNP               |
| Output function    | normally open     |
| Sensing range [mm] | 3                 |
| Housing            | threaded type     |
| Dimensions [mm]    | M8 x 1 / L = 27.5 |

### Application

|                 |                                                                                                                                                           |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special feature | Increased sensing range                                                                                                                                   |
| Application     | Suitable for industrial, mobile, cooling and lubricating applications; Industrial applications / factory automation; Use in mobile and harsh applications |

### Electrical data

|                             |            |
|-----------------------------|------------|
| Operating voltage [V]       | 10...30 DC |
| Current consumption [mA]    | < 10       |
| Protection class            | III        |
| Reverse polarity protection | yes        |

### Outputs

|                                                      |               |
|------------------------------------------------------|---------------|
| Electrical design                                    | PNP           |
| Output function                                      | normally open |
| Max. voltage drop switching output DC [V]            | 2.5           |
| Permanent current rating of switching output DC [mA] | 100           |
| Switching frequency DC [Hz]                          | 1500          |
| Short-circuit protection                             | yes           |
| Overload protection                                  | yes           |

### Detection zone

|                               |               |
|-------------------------------|---------------|
| Sensing range [mm]            | 3             |
| Real sensing range $S_r$ [mm] | $3 \pm 10 \%$ |
| Operating distance [mm]       | 0...2.43      |
| Increased sensing range       | yes           |

### Accuracy / deviations

|                                  |                                                                             |
|----------------------------------|-----------------------------------------------------------------------------|
| Correction factor                | steel: 1 / stainless steel: 0.7 / brass: 0.4 / aluminium: 0.4 / copper: 0.3 |
| Hysteresis [% of $S_r$ ]         | 1...20                                                                      |
| Switch point drift [% of $S_r$ ] | -10...10                                                                    |

# IES238



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| Operating conditions          |                           |                                                                                                                       |
|-------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Ambient temperature           | [°C]                      | -40...85                                                                                                              |
| Protection                    |                           | IP 65; IP 66; IP 67; IP 68; IP 69K                                                                                    |
| Tests / approvals             |                           |                                                                                                                       |
| EMC                           | EN 61000-4-2 ESD          | 4 kV CD / 8 kV AD                                                                                                     |
|                               | EN 61000-4-3 HF radiated  | 10 V/m                                                                                                                |
|                               | EN 61000-4-4 Burst        | 2 kV                                                                                                                  |
|                               | EN 61000-4-6 HF conducted | 10 V                                                                                                                  |
|                               | EN 55011                  | class B                                                                                                               |
| Vibration resistance          | EN 60068-2-6 Fc           | 20 g (10...3000 Hz) / 50 sweep cycles, 1 octave per minute, in 3 axes                                                 |
| Shock resistance              | EN 60068-2-27 Ea          | 100 g 11 ms half-sine; 3 shocks each in every direction of the 3 coordinate axes                                      |
| Continuous shock resistance   | EN 60068-2-27 Ea          | 40 g 6 ms; 4000 shocks each in every direction of the 3 coordinate axes                                               |
| Fast temperature change       | EN 60068-2-14 Na          | TA = -40 °C; TB = 85 °C; t1 = 30 min; t2 = < 10 s; 50 cycles                                                          |
| Salt spray test               | EN 60068-2-52 Kb          | severity level 5 (4 test cycles)                                                                                      |
| MTTF                          | [years]                   | 1465                                                                                                                  |
| Embedded software included    |                           | yes                                                                                                                   |
| UL approval                   | Ta                        | -25...70 °C                                                                                                           |
|                               | Enclosure type            | Type 1                                                                                                                |
|                               | power supply              | Limited Voltage/Current                                                                                               |
|                               | UL Approval no.           | A032                                                                                                                  |
|                               | File number UL            | E174191                                                                                                               |
| Mechanical data               |                           |                                                                                                                       |
| Weight                        | [g]                       | 38.6                                                                                                                  |
| Housing                       |                           | threaded type                                                                                                         |
| Mounting                      |                           | flush mountable                                                                                                       |
| Dimensions                    | [mm]                      | M8 x 1 / L = 27.5                                                                                                     |
| Thread designation            |                           | M8 x 1                                                                                                                |
| Materials                     |                           | stainless steel (1.4404 / 316L); sensing face: LCP white; LED window: PEI; lock nuts: stainless steel (1.4404 / 316L) |
| Tightening torque             | [Nm]                      | A = 5 mm: 2 Nm; B: 5 Nm                                                                                               |
| Displays / operating elements |                           |                                                                                                                       |
| Display                       | switching status          | 1 x LED, yellow                                                                                                       |
| Accessories                   |                           |                                                                                                                       |
| Items supplied                |                           | lock nuts: 2                                                                                                          |
| Remarks                       |                           |                                                                                                                       |
| Pack quantity                 |                           | 1 pcs.                                                                                                                |

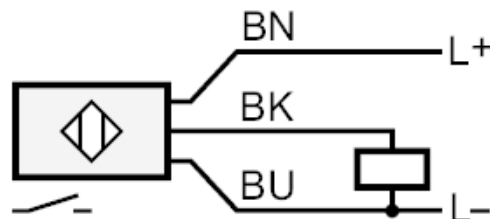
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### Electrical connection

Cable: 2 m, PUR, Ø 2.9 mm; 3 x 0.14 mm<sup>2</sup>

### Connection



### Core colours

|    |       |
|----|-------|
| BN | brown |
| BK | black |
| BU | blue  |

### Diagrams and graphs

#### Installation

