

## Inductive sensor

IEB3003BBNKG/V4A/AS



### Product characteristics

|                    |                 |
|--------------------|-----------------|
| Electrical design  | NPN             |
| Output function    | normally closed |
| Sensing range [mm] | 3               |
| Housing            | threaded type   |
| Dimensions [mm]    | M8 x 1 / L = 30 |

### Application

|                 |                                                                                                                     |
|-----------------|---------------------------------------------------------------------------------------------------------------------|
| Special feature | Gold-plated contacts; Increased sensing range                                                                       |
| Application     | Suitable for industrial, mobile, cooling and lubricating applications; Industrial applications / factory automation |

### Electrical data

|                             |            |
|-----------------------------|------------|
| Operating voltage [V]       | 10...30 DC |
| Current consumption [mA]    | < 20       |
| Protection class            | III        |
| Reverse polarity protection | yes        |

### Outputs

|                                                      |                 |
|------------------------------------------------------|-----------------|
| Electrical design                                    | NPN             |
| Output function                                      | normally closed |
| 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...15                                                                      |
| Switch point drift [% of $S_r$ ] | -10...10                                                                    |



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| Operating conditions          |                           |                                                                                                                   |
|-------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------|
| Ambient temperature           | [°C]                      | -40...85                                                                                                          |
| Protection                    |                           | IP 65; IP 66; IP 67; IP 68; IP 69K; (with ifm socket duly screwed on)                                             |
| 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             | 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]                   | 1440                                                                                                              |
| Embedded software included    |                           | yes                                                                                                               |
| UL approval                   | Ta                        | -25...80 °C                                                                                                       |
|                               | Enclosure type            | Type 1                                                                                                            |
|                               | power supply              | Limited Voltage/Current                                                                                           |
|                               | UL Approval no.           | A017                                                                                                              |
|                               | File number UL            | E174191                                                                                                           |
| Mechanical data               |                           |                                                                                                                   |
| Weight                        | [g]                       | 15.2                                                                                                              |
| Housing                       |                           | threaded type                                                                                                     |
| Mounting                      |                           | flush mountable                                                                                                   |
| Dimensions                    | [mm]                      | M8 x 1 / L = 30                                                                                                   |
| Thread designation            |                           | M8 x 1                                                                                                            |
| Materials                     |                           | stainless steel (316L/1.4404); sensing face: LCP white; LED window: PEI; lock nuts: stainless steel (316L/1.4404) |
| Tightening torque             | [Nm]                      | A = 5 mm: 2 Nm; B: 5 Nm                                                                                           |
| Displays / operating elements |                           |                                                                                                                   |
| Display                       | switching status          | 4 x 90° LED, yellow                                                                                               |
| Accessories                   |                           |                                                                                                                   |
| Items supplied                |                           | lock nuts: 2                                                                                                      |
| Remarks                       |                           |                                                                                                                   |
| Pack quantity                 |                           | 1 pcs.                                                                                                            |

# IES221



## Inductive sensor

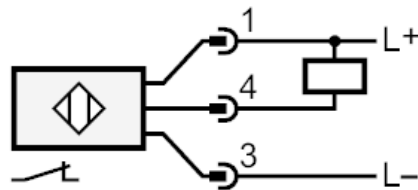
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### Electrical connection - plug

Connector: 1 x M8; coding: A; Contacts: gold-plated



### Connection



### Diagrams and graphs

#### Installation

