



## Inductive full-metal sensor

IFB3004BBPKG/AM/5M/PUR



1 LED yellow



## Product characteristics

|                    |                  |
|--------------------|------------------|
| Electrical design  | PNP              |
| Output function    | normally open    |
| Sensing range [mm] | 4                |
| Housing            | Threaded type    |
| Dimensions [mm]    | M12 x 1 / L = 40 |

## Application

|                         |                                                                     |
|-------------------------|---------------------------------------------------------------------|
| System                  | Drag chain suitability; Increased sensing range; Full-metal housing |
| Application             | Oils and coolants                                                   |
| Pressure rating         | 50 bar 5 MPa                                                        |
| Note on pressure rating | sensing face                                                        |

## 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]                          | 100           |
| Short-circuit protection                             | yes           |
| Overload protection                                  | yes           |

## Monitoring range

|                               |              |
|-------------------------------|--------------|
| Sensing range [mm]            | 4            |
| Real sensing range $S_r$ [mm] | $4 \pm 10\%$ |
| Operating distance [mm]       | 0...3.24     |
| Increased sensing range       | yes          |

## Accuracy / deviations

|                   |                                                                            |
|-------------------|----------------------------------------------------------------------------|
| Correction factor | steel: 1 / stainless steel: 0.7 / brass: 0.6 / aluminum: 0.5 / copper: 0.2 |
|-------------------|----------------------------------------------------------------------------|

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|                                      |                                          |                                                                                                                                       |
|--------------------------------------|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Hysteresis                           | [% of Sr]                                | 3...15                                                                                                                                |
| Switch-point drift                   | [% of Sr]                                | -10...10                                                                                                                              |
| <b>Operating conditions</b>          |                                          |                                                                                                                                       |
| Ambient temperature                  | [°C]                                     | -40...85                                                                                                                              |
| Protection                           |                                          | IP 65; IP 66; IP 67; IP 68; IP 69K                                                                                                    |
| <b>Tests / approvals</b>             |                                          |                                                                                                                                       |
| 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                                                                                                                               |
| Impact resistance                    |                                          | 1 J                                                                                                                                   |
| Vibration resistance                 | EN 60068-2-6 Fc                          | 20 g (10...3000 Hz) / 50 sweep cycles per frequency; 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 changes             | 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]                                  | 1258                                                                                                                                  |
| Embedded software included           |                                          | yes                                                                                                                                   |
| <b>Mechanical data</b>               |                                          |                                                                                                                                       |
| Weight                               | [g]                                      | 137.5                                                                                                                                 |
| Housing                              |                                          | Threaded type                                                                                                                         |
| Mounting                             |                                          | flush mountable                                                                                                                       |
| Dimensions                           | [mm]                                     | M12 x 1 / L = 40                                                                                                                      |
| Thread designation                   |                                          | M12 x 1                                                                                                                               |
| Material                             |                                          | stainless steel (1.4404 / 316L); sensing face: stainless steel (1.4404 / 316L); LED window: PEI; lock nuts: brass white bronze coated |
| Tightening torque                    | [Nm]                                     | 15                                                                                                                                    |
| Drag chain suitability               |                                          | yes                                                                                                                                   |
| Drag chain suitability               | Bending radius for flexible applications | min. 10 x cable diameter                                                                                                              |
|                                      | Bending cycles                           | > 5 Mio.                                                                                                                              |
| Full-metal housing                   |                                          | yes                                                                                                                                   |
| <b>Displays / operating elements</b> |                                          |                                                                                                                                       |
| Display                              | Switching status                         | LED, yellow                                                                                                                           |
| <b>Accessories</b>                   |                                          |                                                                                                                                       |
| Items supplied                       |                                          | lock nuts: 2                                                                                                                          |
| <b>Remarks</b>                       |                                          |                                                                                                                                       |
| Pack quantity                        |                                          | 1 pcs.                                                                                                                                |

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### Electrical connection

Cable: 5 m, PUR, Ø 4 mm; burning behaviour to ECE R118 rev. 2; 3 x 0.34 mm<sup>2</sup>

### Connection



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