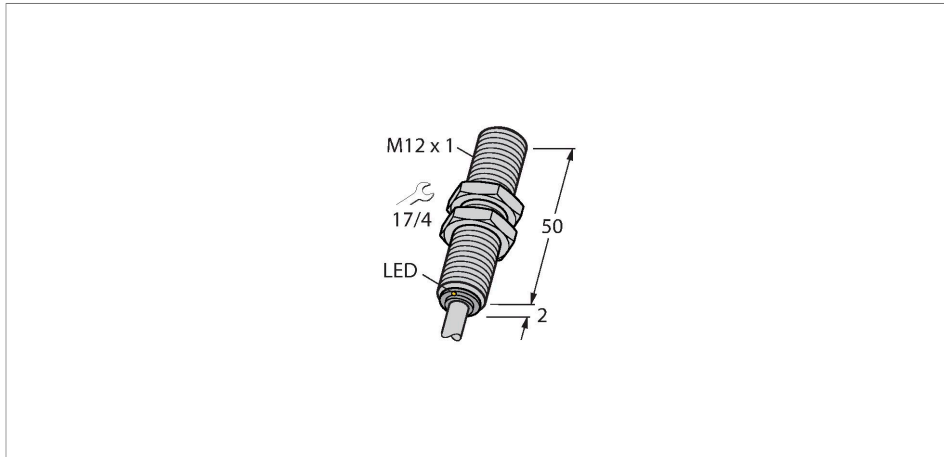


BI6-EG12FE-AP6X

Inductive Sensor – Stainless Steel Front



Features

- Threaded barrel, M12 x 1
- Stainless steel, 1.4305
- DC 3-wire, 10...30 VDC
- NO contact, PNP output
- Cable connection

Wiring diagram



Technical data

| | |
|---|---|
| Type | BI6-EG12FE-AP6X |
| ID | 4614720 |
| General data | |
| Rated switching distance | 6 mm |
| Mounting conditions | Flush |
| Secured operating distance | $\leq (0.81 \times S_n)$ mm |
| Correction factors | St37 = 1; Al = 1; Cu=0.85; stainless steel 1mm = 0.5; stainless steel 2mm = 0.9; Ms = 1.3 |
| Repeat accuracy | ≤ 5 % of full scale |
| Temperature drift | $\leq \pm 10$ % |
| Hysteresis | 15 % |
| Electrical data | |
| Operating voltage | 10...30 VDC |
| Residual ripple | ≤ 20 % U_{ss} |
| DC rated operational current | ≤ 200 mA |
| No-load current | 10 mA |
| Residual current | ≤ 0.1 mA |
| Isolation test voltage | ≤ 0.5 kV |
| Short-circuit protection | yes / Cyclic |
| Voltage drop at I_o | ≤ 2 V |
| Wire breakage/Reverse polarity protection | yes / Complete |
| Output function | 3-wire, NO contact, PNP |
| Switching frequency | 0.6 kHz |

Functional principle

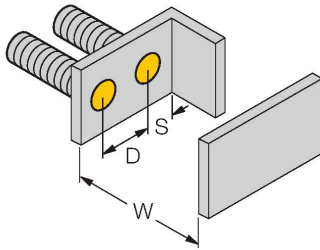
The inductive all-metal switches operate on the basis of the electromagnetic pulse method. Unlike standard inductive sensors, the magnetic field is not generated through oscillation but through short, periodic current pulses flowing through the coil. The magnetic field induces voltage in the object to be detected, which, for its part creates a current flow in this object. After switching off the current pulse, the current in the object also drops, now inducing voltage back in the emitter coil. This voltage is the wanted signal and remains unaffected by energy dissipation in the magnetic field. Only non-ferromagnetic or poorly conductive metals provide a low signal.

Technical data

| Mechanical data | |
|---------------------------------------|--|
| Design | Threaded barrel, M12 x 1 |
| Dimensions | 50 mm |
| Housing material | Stainless steel, 1.4305 (AISI 303) |
| Active area material | Stainless steel, 1.4305 (AISI 303) |
| Admissible pressure on front cap | ≤ 80 bar |
| Max. tightening torque of housing nut | 20 Nm |
| Electrical connection | Cable |
| Cable quality | Ø 5 mm, PUR, 2 m |
| Core cross-section | 3 x 0.34 mm ² |
| Environmental conditions | |
| Ambient temperature | -25...+70 °C |
| Vibration resistance | 55 Hz (1 mm) |
| Shock resistance | 30 g (11 ms) |
| Protection class | IP68 IP69K |
| MTTF | 336 years acc. to SN 29500 (Ed. 99) 20 °C |
| Switching state | LED, Yellow, LED flashing: 0.8 s, < s ≤ s, |

Mounting instructions

Mounting instructions/Description



Distance D 40 mm

Distance W 18 mm

Distance T 36 mm

Distance S 12 mm

Distance G 36 mm

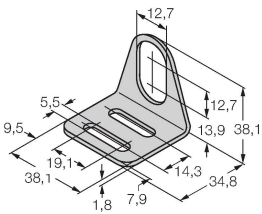
Diameter active area B \varnothing 12 mm

The following reduction factors apply when flush-mounted in:
 Steel: 0.7
 Aluminium: 1.15
 Brass: 1.05
 Stainless steel: 0.8

Accessories

MW-12

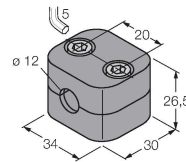
6945003



Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)

BSS-12

6901321



Mounting clamp for smooth and threaded barrel sensors; material: Polypropylene