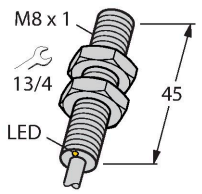
BI3-EG08FE-AP6X
Inductive Sensor – Stainless Steel Front



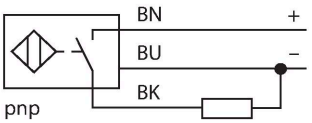
Technical data

Type	BI3-EG08FE-AP6X
ID	4614704
General data	
Rated switching distance	3 mm
Mounting conditions	Flush
Secured operating distance	≤ (0.81 × Sn) mm
Correction factors	St37 = 1; Al = 1; Cu=0.85; stainless steel 1mm = 0.3; stainless steel 2mm = 0.6; Ms = 1.35
Repeat accuracy	≤ 5 % of full scale
Temperature drift	≤ ±10 %
Hysteresis	20 %
Electrical data	
Operating voltage U_B	10…30 VDC
Ripple U_{ss}	≤ 20 % U_{Bmax}
DC rated operating current I_e	≤ 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_e	≤ 2 V
Wire break/reverse polarity protection	yes/Complete
Output function	3-wire, NO contact, PNP
Switching frequency	1 kHz

Features

- Threaded barrel, M8 x 1
- Stainless steel, 1.4305
- DC 3-wire, 10…30 VDC
- NO contact, PNP output
- Cable connection

Wiring diagram



Functional principle

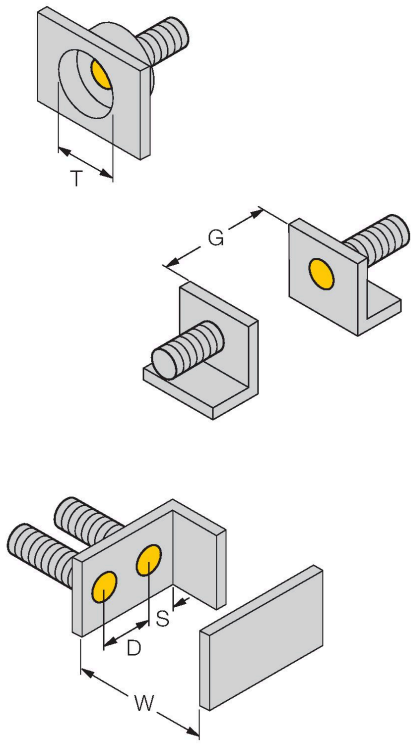
The inductive all-metal switches operate on the basis of the electromagnetic pulse method. Unlike standard inductive sensors, the magnetic field is not generated through oscillation but through short, periodic current pulses flowing through the coil. The magnetic field induces voltage in the object to 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, M8 x 1
Dimensions	45 mm
Housing material	Stainless steel, 1.4305 (AISI 303)
Active area material	Stainless steel, 1.4305 (AISI 303)
Admissible pressure on front cap	≤ 100 bar
Max. tightening torque of housing nut	10 Nm
Electrical connection	Cable
Cable quality	Ø 3.5 mm, PUR, 2 m
Core cross-section	3 x 0.14 mm^2
Environmental conditions	
Ambient temperature	-25…+85 °C
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67 IP68
MTTF	409 years acc. to SN 29500 (Ed. 99) 20 °C
Switching state	LED, Yellow, LED flashing: 0.8 s_r < s ≤ s_r

Mounting instructions

Mounting instructions/Description

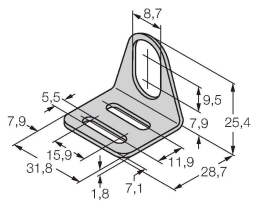


Distance D	22 mm
Distance W	9 mm
Distance T	24 mm
Distance S	6 mm
Distance G	18 mm
Diameter active area B	Ø 8 mm

The reduction factors listed below apply when flush-mounted in the following metals:
Steel: 1.0
Aluminum: 0.9
Brass: 0.9
Stainless steel: 1.0

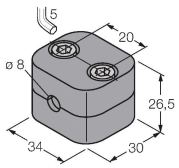
Accessories

MW08	6945008



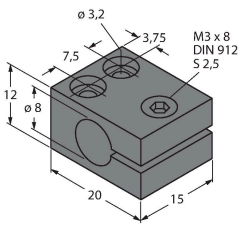
Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)

BSS-08	6901322



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

MBS80	69479



Mounting clamp for smooth barrel sensors; mounting block material: Anodized aluminum