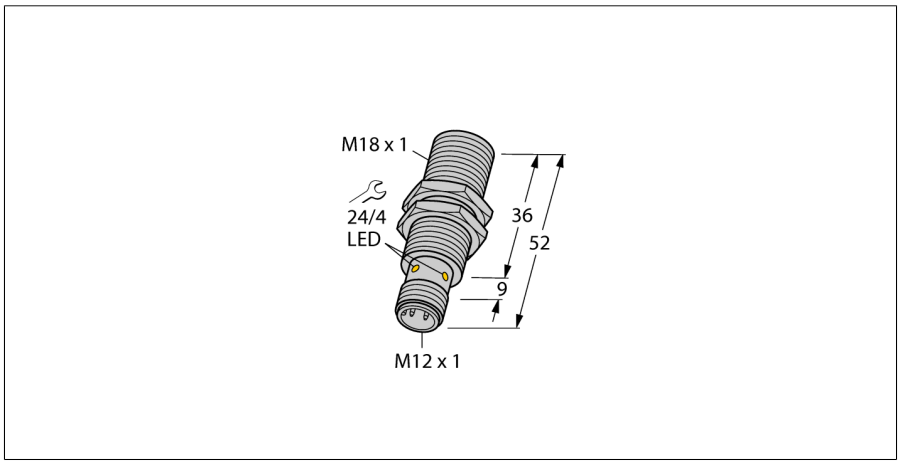
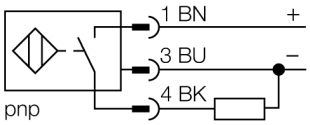
Inductive sensor
BI5U-EM18-AP6X-H1141/3GD



- **ATEX category II 3 G, Ex Zone 2**
- **ATEX category II 3 D, Ex Zone 22**
- **Threaded barrel, M18 x 1**
- **Stainless steel, 1.4301**
- **Factor 1 for all metals**
- **Protection class IP68**
- **Resistant to magnetic fields**
- **Extended temperature range**
- **High switching frequency**
- **DC 3-wire, 10…30 VDC**
- **NO contact, PNP output**
- **M12 x 1 male connector**

Type code	BI5U-EM18-AP6X-H1141/3GD
Ident no.	1635348
Rated switching distance Sn	5 mm
Mounting conditions	flush
Assured switching distance	≤ (0,81 x Sn) mm
Repeatability	≤ 2 % of full scale
Temperature drift	≤ ± 10 %
	≤ ± 15 %, ≤ -25 °C v ≥ +70 °C
Hysteresis	3…15 %
Ambient temperature	-30…+85 °C
	in the explosion hazardous area see instruction leaflet
Operating voltage	10…30VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 200 mA
No-load current I_0	≤ 20 mA
Residual current	≤ 0.1 mA
Rated insulation voltage	≤ 0.5 kV
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 1.8 V
Wire breakage / Reverse polarity protection	yes/ complete
Output function	3-wire, NO contact, PNP
Switching frequency	2.5 kHz
Approval acc. to	ATEX test certificate TURCK Ex-10002M X
Device designation	⟨Ex⟩ II 3 G Ex nA IIC T4 Gc/II 3 D Ex tIIIc T110°C Dc
Construction	threaded barrel, M18 x 1
Dimensions	52 mm
Housing material	stainless steel, V2A (1.4301)
Material active area	plastic, PBT
Max. tightening torque housing nut	25 Nm
Connection	male, M12 x 1
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
IP Rating	IP68
MTTF	874 years acc. to SN 29500 (Ed. 99) 40 °C
Switching state	LED yellow

Wiring diagram



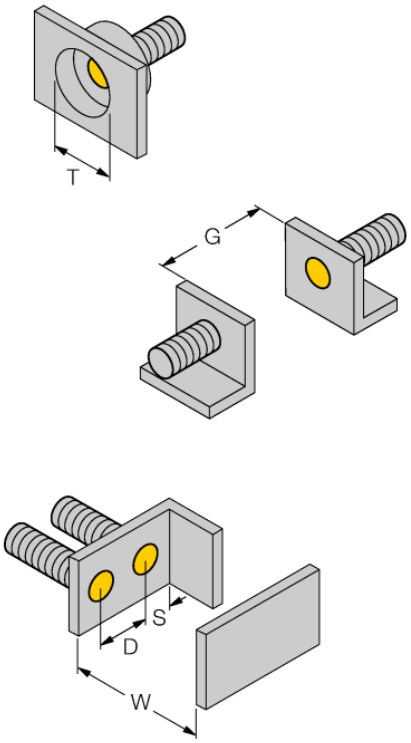
Functional principle

Inductive sensors detect metal objects contactless and wear-free. *uprox*® Factor 1 sensors have significant advantages due to their patented ferrite-coreless multicoil system. They detect all metals at the same large switching distance and are resistant to magnetic fields.

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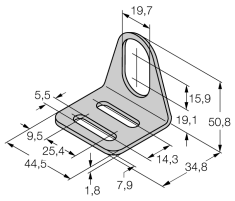
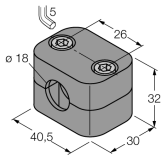
Distance D	2 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn

Diameter of the active area B	Ø 18 mm



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Accessories

Type code	Ident no.	Description	Design
MW-18	6945004	Mounting bracket for threaded barrel devices; material: Stainless steel A2 1.4301 (AISI 304)	
BSS-18	6901320	Mounting bracket for smooth and threaded barrel devices; material: Polypropylene	

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Operating manual

Intended use

This device fulfills the directive 94/9/EC and is suited for use in explosion hazardous areas according to EN60079-0:2009, EN60079-15:2010 and EN60079-31:2009.
In order to ensure correct operation to the intended purpose it is required to observe the national regulations and directives.

For use in explosion hazardous areas conform to classification

II 3 G and II 3 D (Group II, Category 3 G, electrical equipment for gaseous atmospheres and category 3 D, electrical equipment for dust atmospheres).

Marking (see device or technical data sheet)

Ⓔx II 3 G Ex nA IIC T4 Gc acc. to EN 60079-0:2009 and EN 60079-15:2010 and Ⓔx II 3 D Ex t IIIC T110°C Dc acc. to EN 60079-0:2009 and EN 60079-31:2009

Local admissible ambient temperature

-25…+70 °C

Installation / Commissioning

These devices may only be installed, connected and operated by trained and qualified staff. Qualified staff must have knowledge of protection classes, directives and regulations concerning electrical equipment designed for use in explosion hazardous areas.
Please verify that the classification and the marking on the device comply with the actual application conditions.

Installation and mounting instructions

Avoid static charging of cables and plastic devices. Please only clean the device with a damp cloth. Do not install the device in a dust flow and avoid build-up of dust deposits on the device.
The devices must be protected against strong magnetic fields.
The pin configuration and the electrical specifications can be taken from the device marking or the technical data sheet.
In order to avoid contamination of the device, please remove possible blanking plugs of the cable glands or connectors only shortly before inserting the cable or opening the cable socket.

Special conditions for safe operation

For devices with M12 connectors please use the supplied safety clip SC-M12/3GD.
Do not disconnect the plug-in connection or cable when energised.
Please attach a warning label permanently in an appropriate fashion in close proximity to the plug-in connection with the following inscription:
Nicht unter Spannung trennen / Do not separate when energized.
The device must be protected against any kind of mechanical damage and degrading UV-radiation.
The connectors are fully IP rated only in combination with the O-ring.
Load voltage and operating voltage of this equipment must be provided by power supplies featuring safe isolation (IEC 60 364/ UL 508), which ensures that the rated voltage (24 VDC +20% = 28.8 VDC) of the equipment is not exceeded by more than 40%.

service / maintenance

Repairs are not possible. The approval expires if the device is repaired or modified by a person other than the manufacturer. The most important data from the approval are listed.

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