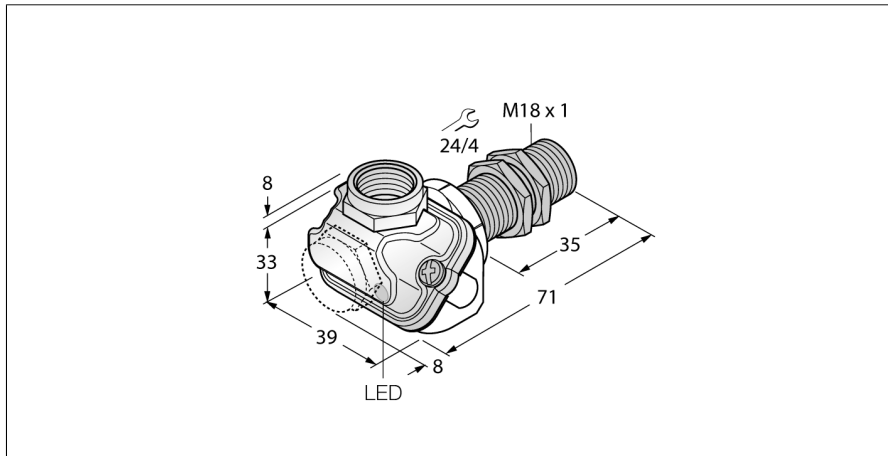


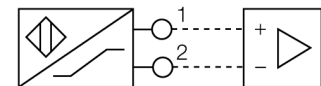
Inductive sensor
With extended temperature range
BI5-EM18WDTC-Y1X



- ATEX category II 1 G, Ex-zone 0 for temperatures up to +80 °C
- ATEX category II 2 G, Ex-zone 1
- ATEX category II 1 D, Ex-zone 20 for temperatures from -25 °C up to +70 °C
- SIL2 (Low Demand Mode) acc. to IEC 61508, PL c acc. to ISO 13849-1 at HFT0
- SIL3 (All Demand Mode) acc. to IEC 61508, PL e acc. to ISO 13849-1 with redundant configuration HTF1
- Threaded barrel, M18 x 1
- Stainless steel, 1.4404
- For temperatures of -40 °C...+100 °C
- High protection class IP69K, for harsh environments
- Special double-lip seal
- Protection against all common acid and alkaline cleaning agents
- For the food industry
- DC 2-wire, nom. 8.2 VDC
- Output acc. to DIN EN 60947-5-6 (NAMUR)
- Terminal chamber

Type designation	BI5-EM18WDTC-Y1X
Ident-No.	4012061
Rated switching distance S_n	5 mm
Mounting conditions	Flush
Secured operating distance	≤ (0,81 x S _n) mm
Correction factors	St37 = 1; Al = 0.3; stainless steel = 0.7; Ms = 0.4
Repeat accuracy	≤ 2 % of full scale
Temperature drift	≤ ± 10 % ≤ ± 20 %, ≤ -25 °C , ≥ +70 °C
Hysteresis	1...10 %
Ambient temperature	-40...+100 °C For explosion hazardous areas see instruction leaflet
Output function	2-wire, NAMUR
Switching frequency	1 kHz
Voltage	Nom. 8.2 VDC
Non-actuated current consumption	≥ 2.1 mA
Actuated current consumption	≤ 1.2 mA
Approval acc. to	KEMA 02 ATEX 1090X
Design	Threaded barrel, M18 x 1
Dimensions	71 mm
Housing material	Stainless steel, V4A (1.4404)
Terminal chamber cover material	plastic, Ultem
Terminal chamber housing material	plastic, LCP-GF30
Active area material	Plastic, LCP
Admissible pressure on front cap	≤ 15 bar
Max. tightening torque housing nut	25 Nm
Electrical connection	Terminal chamber, Removable cage clamp terminals suited for M16 x 1.5 cable glands
Clamping ability	≤ 1.5 mm ²
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP68 / IP69K
MTTF	6198 years acc. to SN 29500 (Ed. 99) 40 °C
Packaging unit	1
Switching state	LED, Yellow

Wiring Diagram



Functional principle

Inductive sensors detect metal objects contactless and wear-free. For this purpose they use a high-frequency electromagnetic AC field that interacts with the target. The sensors hosting a ferrite core coil generate the AC field through an LC resonant circuit.

Special versions are available for ambient temperatures between -60°C and +250°C.

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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 active area B	Ø 18 mm
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Accessories

Type code	Ident-No.	Description	
IMX12-DI01-2S-2T-0/ 24VDC	7580020	Isolating switching amplifier, 2-channel; SIL2 acc. to IEC 61508; Ex-proof version; 2 transistor outputs; input Namur signal; ON/OFF switchable monitoring of wire-break and short-circuit; toggle between NO/NC mode; signal doubling; removable screw terminals; 12.5 mm wide; 24 VDC power supply	
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	

Inductive sensor

With extended temperature range

BI5-EM18WDTC-Y1X

TURCK
works

Industrial
Automation

Operating manual

Intended use

This device fulfills the directive 2014/34/EC and is suited for use in explosion hazardous areas according to EN 60079-0:2012 + A11 and EN 60079-11:2012.

Further it is suited for use in safety-related systems, including SIL2 as per IEC 61508.

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 1 G and II 1 D (Group II, Category 1 G, electrical equipment for gaseous atmospheres and category 1 D, electrical equipment for dust atmospheres).

Marking (see device or technical data sheet)

Ⓔ II 1 G and Ex ia IIC T6 Ga acc. to EN60079-0 and -26 and Ⓔ II 1 D Ex ia IIIC T115°C Da acc. to EN60079-0

Local admissible ambient temperature

ATEX category II 2 G electrical equipment -40...+100 °C, category II 1 G -40...+80 °C and category II 1 D -25...+70 °C. The corresponding temperature classes are provided in the ATEX type-examination certificate. The device incorporates the custom-built /S97 and /S100 types.

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.

This device is only suited for connection to approved Exi circuits according to EN 60079-0 and EN 60079-11. Please observe the maximum admissible electrical values.

After connection to other circuits the sensor may no longer be used in Exi installations. When interconnected to (associated) electrical equipment, it is required to perform the "Proof of intrinsic safety" (EN60079-14).

Attention! When used in safety systems, all content of the security manual must be observed.

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.

If the devices and the cable could be subject to mechanical damage, they must be protected accordingly. They must also be shielded against strong electro-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

avoid static charging

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.