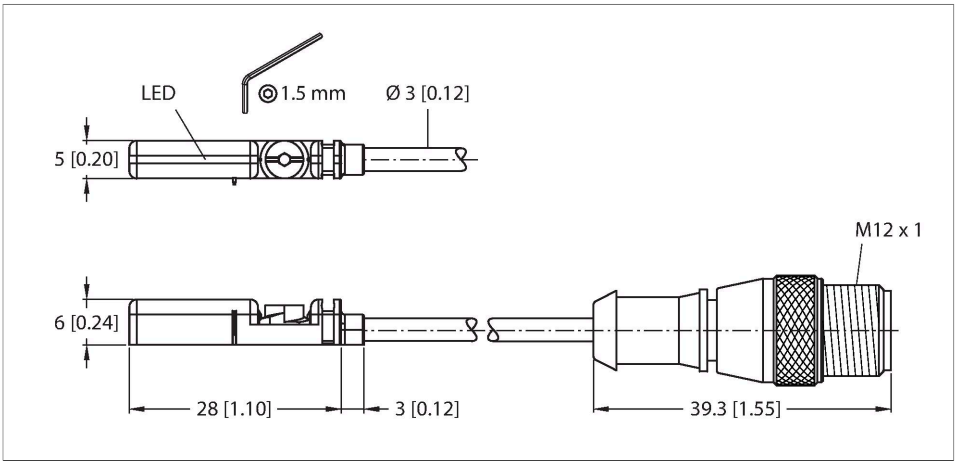
BIM-UNT-AP6X-0.3-RS4/3GD
Magnetic Field Sensor – For Pneumatic Cylinders



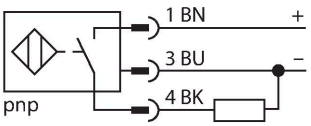
Features

- For T-groove cylinders without mounting accessories
- Optional accessories for mounting on other cylindrical housings.
- One-hand mounting possible
- Fine adjustment tool and stopper directly mountable on the sensor
- Stable mounting
- Magneto-resistive sensor
- DC 3-wire, 10…30 VDC
- NO contact, PNP output
- Pigtail with male end, M12 x 1
- ATEX category II 3 G, Ex zone 2
- ATEX category II 3 D, Ex zone 22

Technical data

Type	BIM-UNT-AP6X-0.3-RS4/3GD
Ident. no.	4685869
Pass speed	≤ 10 m/s
Repeatability	≤ ± 0.1 mm
Temperature drift	≤ 0.1 mm
Hysteresis	≤ 1 mm
Ambient temperature	-25…+70 °C
	For explosion hazardous areas see instruction leaflet
Operating voltage	10…30 VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 150 mA
No-load current	≤ 15 mA
Residual current	≤ 0.1 mA
Isolation test 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	1 kHz
Approval acc. to	ATEX declaration of conformity TURCK Ex-07001M X
Device marking	Ⓔx II 3 G Ex nA IIC T4 Gc/II 3 D Ex tc IIIC T110 °C Dc
Warning	Do not unplug connector under voltage

Wiring diagram



Functional principle

Magnetic field sensors are activated by magnetic fields and are used, in particular, for the detection of the piston position in pneumatic cylinders. As magnetic fields can permeate non-magnetizable metals, they detect a permanent magnet attached to the piston through the aluminium cylinder wall.

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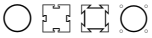
Technical data

Design	Rectangular, UNT
Dimensions	28 x 5 x 6 mm
Housing material	Plastic, PP
Active area material	Plastic, PP
Tightening torque fixing screw	0.4 Nm
Electrical connection	Cable with connector, M12 × 1
Cable quality	Ø 3 mm, Gray, Lif9Y-11Y, PUR, 0.3 m
	Suited for E-ChainSystems® acc. to manufacturers declaration H1063M
Core cross-section	3 x 0.14 mm^2
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
MTTF	2283 years acc. to SN 29500 (Ed. 99) 40 °C
Mounting on the following profiles	
Cylindrical design	
Switching state	LED, Yellow
Included in delivery	cable clip, SC-M12/3GD

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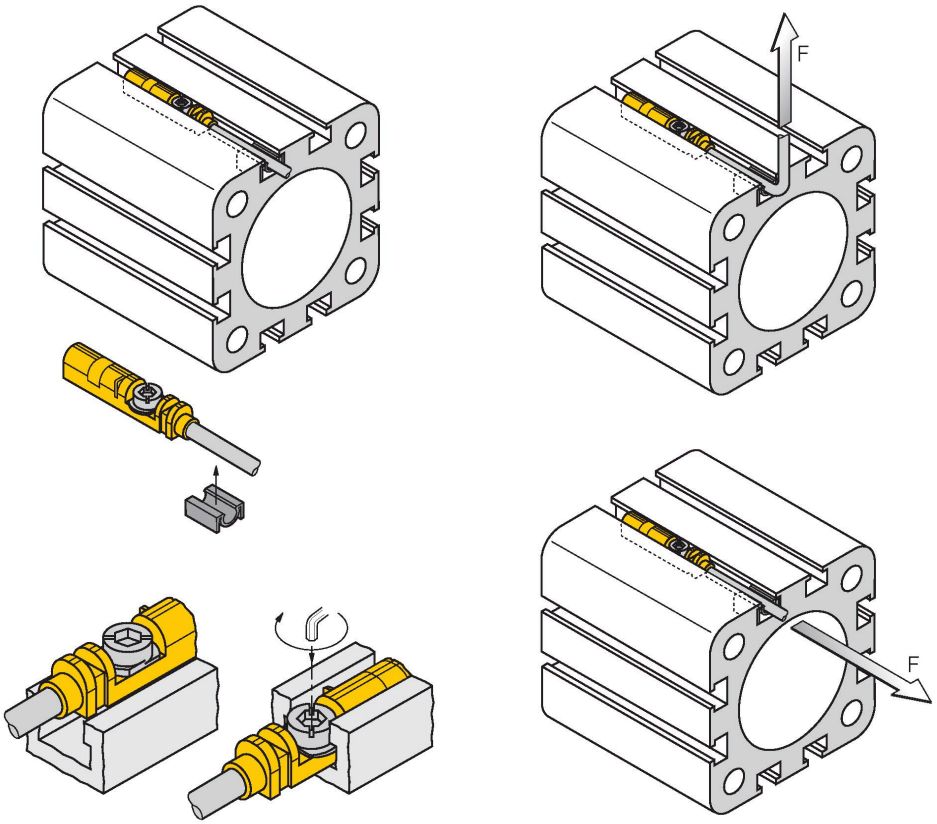
Mounting instructions

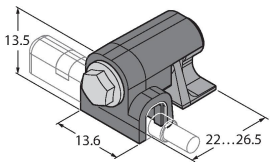
Mounting instructions/Description



Thanks to the mounting lip, the sensor can be inserted into the groove from above with one hand. Mount the sensors as follows using the patented wing screw: The wing screw and the female thread feature a left-hand thread. Two small plastic lips keep the screw in position, ready-to-install. Turn the screw clockwise. The screw moves out of the thread and hits the upper grooves with the wings. The sensor is thus pressed down and locked in position. A few degrees up to approximately 1.5 turns of the screw with a slotted screwdriver (blade width 0.5 mm) or a 1.5 mm Allen key are sufficient to ensure vibration-proof fastening, depending on the shape of the slot. A tightening torque of 0.4 Nm is sufficient for safe mounting without damaging the cylinder. The sensor can now withstand an axial and radial tensile load of F=100N applied on the cable. A cable clip is included in the scope of delivery. It enables smooth cable routing in the groove and ensures that the cable is fastened as securely as possible. The corresponding accessories for mounting on other cylindrical housings must be ordered separately.

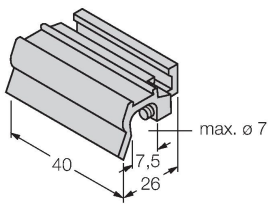
Accessories

KLZCD2-UNT	6970418



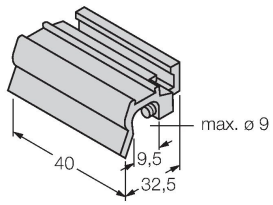
Mounting bracket for mounting magnetic field sensors for T-grooves on a CleanDesign cylinder with mounting rail.

KLZ1-INT	6970410



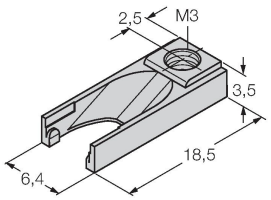
Accessories for mounting the sensors BIM-INT and BIM-UNT on tie-rod cylinders; Cylinder diameter: 32… 40 mm; material: Aluminium; Further mounting accessories for other cylinder diameters on request

KLZ2-INT	6970411



Accessories for mounting the sensors BIM-INT and BIM-UNT on tie-rod cylinders; Cylinder diameter: 50… 63 mm; material: Aluminium; Further mounting accessories for other cylinder diameters on request

UNT-STOPPER	4685751



Accessories for finetuning the switchpoint on T-groove cylinders; snap-locked in the BIM-UNT fixture; suited for multiple use; material: plastic

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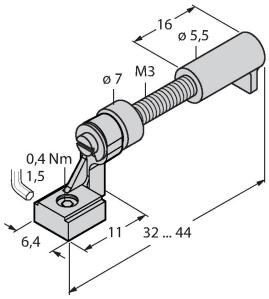
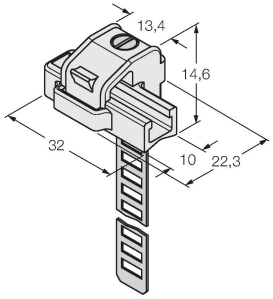
UNT-JUSTAGE 4685750



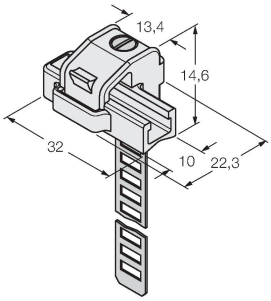
Accessories for fine-tuning of the switching point on T-groove cylinders; snap-lock mounting in the BIM-UNT sensor fixture; suited for multiple use; material: Metal/plastic

KLRC-UNT1 6970626



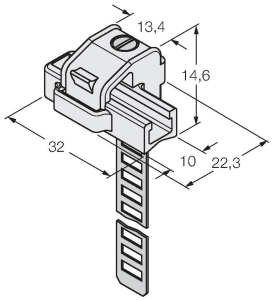
Mounting bracket for mounting magnetic field sensors on round cylinders; cylinder diameter: 8…25 mm; material: PA 6I/6T / nickel silver; fire-hazard classification acc. to UL94 - V2

KLRC-UNT2 6970627



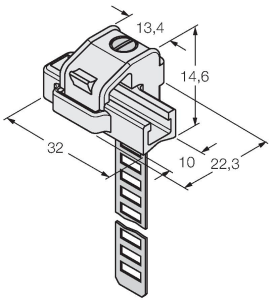
Mounting bracket for mounting magnetic field sensors on round cylinders; cylinder diameter: 25…63 mm; material: PA 6I/6T / nickel silver; fire-hazard classification acc. to UL94 - V2

KLRC-UNT3 6970628



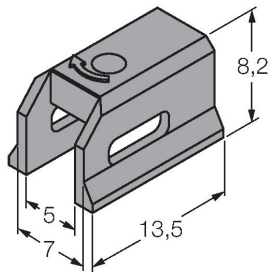
Mounting bracket for mounting magnetic field sensors on round cylinders; cylinder diameter: 63…130 mm; material: PA 6I/6T / nickel silver; fire-hazard classification acc. to UL94 - V2

KLRC-UNT4 6970629



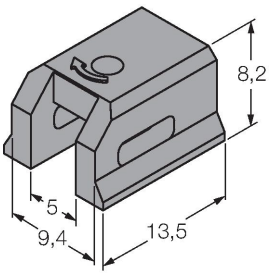
Mounting bracket for mounting magnetic field sensors on round cylinders; cylinder diameter: 130… 250 mm; material: PA 6I/6T / nickel silver; fire-hazard classification acc. to UL94 - V2

KLDT-UNT2 6913351



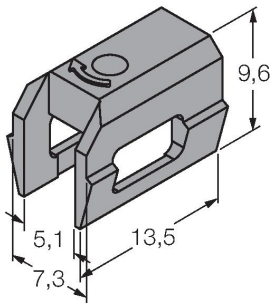
Mounting bracket for mounting magnetic field sensors on dovetail groove cylinders; groove width: 7 mm; material: PPS

KLDT-UNT3 6913352



Mounting bracket for mounting magnetic field sensors on dovetail groove cylinders; groove width: 9.4 mm; material: PPS

KLDT-UNT6 6913355



Mounting bracket for mounting magnetic field sensors on dovetail groove cylinders; groove width: 7.35 mm; material: PPS

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Operating Instructions

Intended use

This device fulfills the directive 2014/34/EC and is suited for use in explosion hazardous areas according to EN60079-0:2012/A11:2013, EN60079-15:2010 and EN60079-31:2014.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)

Ex II 3 G Ex nA IIC T4 Gc/II 3 D Ex tc IIIC T110 °C Dc

Local admissible ambient temperature

-25…+55 °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.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

For devices with M12 connectors please use the supplied safety clip SC-M12/3GD.Do not disconnect the plug-in connection or cable under voltage.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. This is achieved through mounting in a standard T groove of a pneumatic cylinder.Load voltage and operating voltage of this equipment must be supplied from power supplies with safe isolation (IEC 30 364/UL508), to ensure that the rated voltage of the equipment (24 VDC +20% = 28.8 VDC) is never 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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