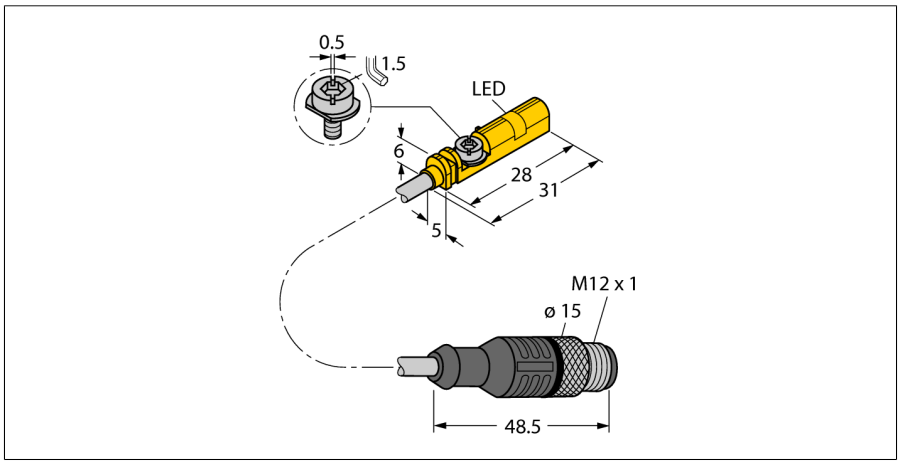
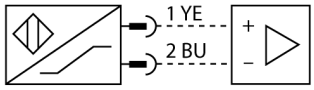
Magnetic Field Sensor
for pneumatic cylinders
BIM-UNT-AY1X-0.3-RS4.21/S1139

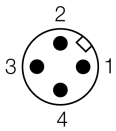


Type designation	BIM-UNT-AY1X-0.3-RS4.21/S1139
Ident no.	4685765
Pass speed	≤ 10 m/s
Repeatability	≤ ± 0.1 mm
Temperature drift	≤ 0.1 mm
Hysteresis	≤ 1 mm
Ambient temperature	-25…+70 °C
Output function	2-wire, NAMUR
Switching frequency	1 kHz
Voltage	Nom. 8.2 VDC
Current consumption non-actuated	≤ 1.2 mA
Actuated current consumption	≥ 2.1 mA
Approval acc. to	KIWA 16 ATEX 0051 X
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	3 mm, Blue, Lif9YYW, PVC, 0.3m
Cable cross section	2 x 0.14 mm²
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
Packaging unit	1
Mounting on the following profiles	.
Cylindrical design	◯ ⬚ ⬚ ◯
Switching state	LED,Yellow
Included in delivery	cable clip

- **ATEX category II 1 G, Ex Zone 0**
- **ATEX category II 1 D, Ex Zone 20**
- **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 2-wire, nom. 8.2 VDC**
- **Output acc. to DIN EN 60947-5-6 (NAMUR)**
- **Output with binary signal**
- **NO contact**
- **Pigtail with M12 × 1 connector**

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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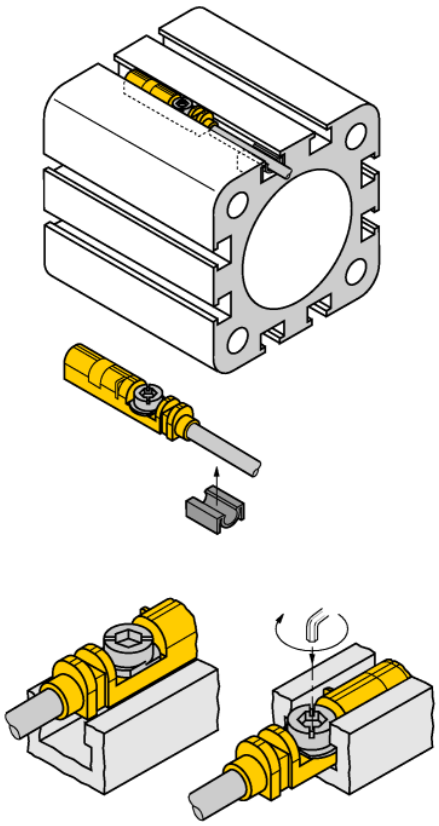
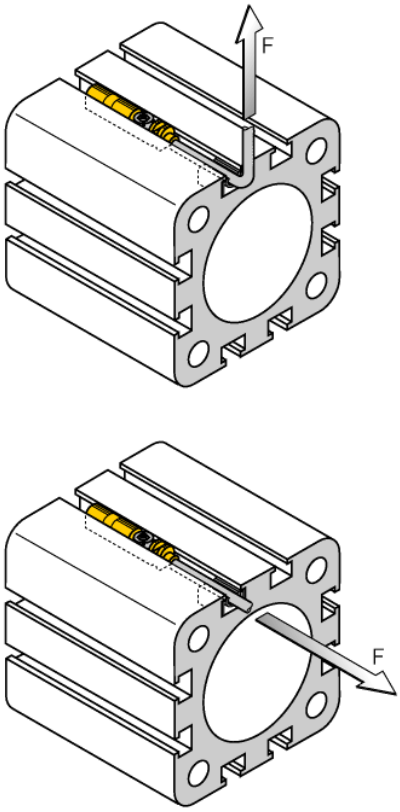
Mounting instructions/Description Mounting instructions





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.

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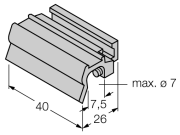
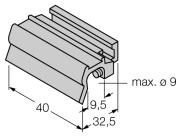
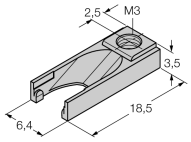
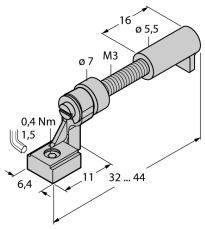
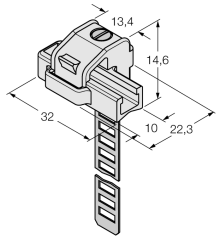
Accessories

Type code	Ident no.	Description	
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	
UNT-JUSTAGE	4685750	Accessories for finetuning the switchpoint on ⊡ T-groove cylinders; snap-locked in the BIM-UNT fixture; suited for multiple use; material: metal/plastic	
KLRC-UNT1	6970626	Accessories for mounting on ◯ cylinders; diameter: 8…25 mm; material: PA 6I/6T / nickel silver; Fire-hazard classification acc. to UL94 - V2	

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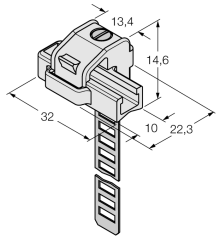
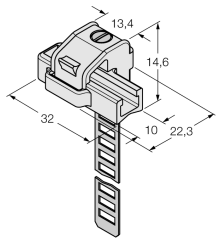
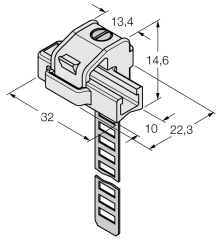
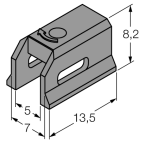
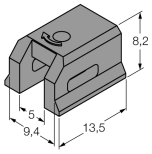
Accessories

Type code	Ident no.	Description	
KLRC-UNT2	6970627	Accessories for mounting on ◯ cylinders; diameter: 25…63 mm; material: PA 6I/6T / nickel silver; Fire-hazard classification acc. to UL94 - V2	
KLRC-UNT3	6970628	Accessories for mounting the BIM-UNT sensor on ◯ round cylinders; diameter: 63…130 mm; material: PA 6I/6T / nickel silver; Fire-hazard classification acc. to UL94 - V2	
KLRC-UNT4	6970629	Accessories for mounting the BIM-UNT sensor on ◯ round cylinders; diameter: 130…250 mm; material: PA 6I/6T / nickel silver; Fire-hazard classification acc. to UL94 - V2	
KLDT-UNT2	6913351	Accessories for mounting the BIM-UNT sensor on dovetail cylinders; groove width: 7 mm; material: PPS	
KLDT-UNT3	6913352	Accessories for mounting the BIM-UNT sensor on ⬚ dovetail groove cylinders; groove width: 9.4 mm; material: PPS	

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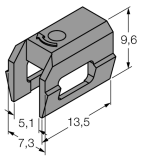
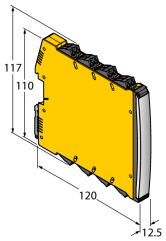
Accessories

Type code	Ident no.	Description	
KLDT-UNT6	6913355	Accessories for mounting on ⊏⊐ dovetail groove cylinders; groove width: 7.35 mm; material: PPS	
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	

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Industrial Automation

Operating manual

Intended use

This device fulfills the directive 2014/34/EC and is suited for use in potentially explosive areas according to EN60079-0:2012, +A11:2013, -11:2012.
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)

Ex II 1 G and Ex ia IIC T6 Ga and Ex II 1 D Ex ia IIIC T95 °C Da acc. To EN60079-0, +A11 and -11

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.

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).

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.

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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