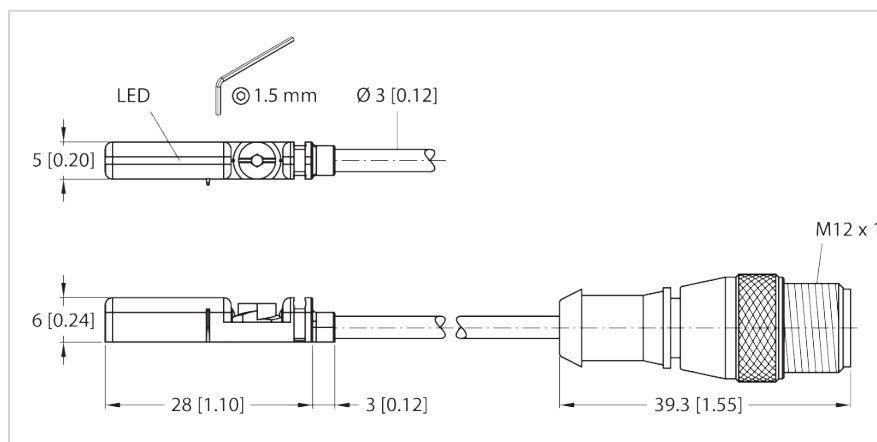


BIM-UNT-AY1X-0.3-RS4.21/S1139

Magnetic Field Sensor For Pneumatic Cylinders



Type designation	BIM-UNT-AY1X-0.3-RS4.21/S1139
Ident-No.	4685765

Technical data

General data	
Pass speed	≤ 10 m/s
Sensor shape fitting to cylindrical housing	profile cylinder (T-groove [e.g. Festo]), round cylinder
Electrical data	
Actuated current consumption	≥ 2,1 mA
Output function	2-wire, NAMUR
Current consumption non-actuated	≤ 1,2 mA
Internal capacitance (C _i)/inductance (L _i)	180 nF/350 μH
Switching frequency	1 kHz
Voltage	nom. 8,2 VDC
Accuracy/deviation	
Hysteresis	≤ 1 mm
Repeatability	≤ ±0,1 mm
Temperature drift	≤ 0,1 mm
Mechanical data	
Design	Rectangular, UNT
Construction type designation	UNT
Dimensions	28 mm x 5 mm x 6 mm

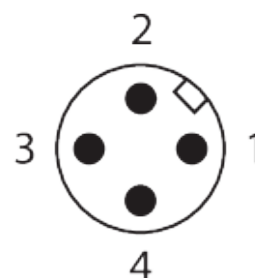
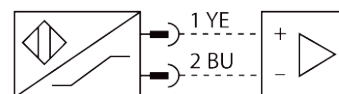
Features

- For T-groove cylinders without mounting accessories
- Optionally available accessories for mounting on other cylinder types
- One-hand mounting possible
- Stable mounting
 - Magneto-resistive sensor
 - Long overtravel
 - For large cylinders
 - DC 2-wire, nom. 8.2 VDC
 - Output acc. to EN 60947-5-6 (NAMUR)
 - Output with binary signal
 - NO contact
 - Pigtail with M12 × 1 connector
 - ATEX category II 1 G, Ex zone 0
 - ATEX category II 1 D, Ex zone 20

Technical data

Housing material	Plastic, PP
Active area material	Plastic, PP
Electrical connection	Cable with connector, M12 x 1
Mounting on the following profiles	
Number of pins	4
Tightening torque fixing screw	0,4 Nm
Cable	
Cable length	0,3 m
Cable jacket	Blue
Core cross-section	2 x 0,14 mm ²
Cable type	Lif9YYW
External Diameter of the Cable	Ø 3 mm
Cable Jacket Material	PVC
Ambient conditions	
Ambient temperature	-25...+70 °C
Pollution degree	3
Shock resistance	30 g (11 ms)
Vibration resistance	55 Hz (1 mm)
Protection class	IP68
Tests/approvals	
Approvals	ATEX II 1 G, ATEX II 2 G, ATEX II 3 G, ATEX II 1 D, ATEX II 2 D, ATEX II 3 D
Approval acc. to	KIWA 16 ATEX 0051 X
Device marking	Ex II 1 G Ex ia IIC T6 Ga/II 1 D Ex ia IIC T ₂₀₀ 95 °C Da (max. U _i = 20 V, I _i = 60 mA, P _i = 80 mW)
MTTF	2283 Years acc. to SN 29500 (Ed. 99) 40 °C
Displays/controls	
Switching state	LED, Yellow
Comments	
Included in delivery	cable clip
Special version	S1139 = Long overtravel

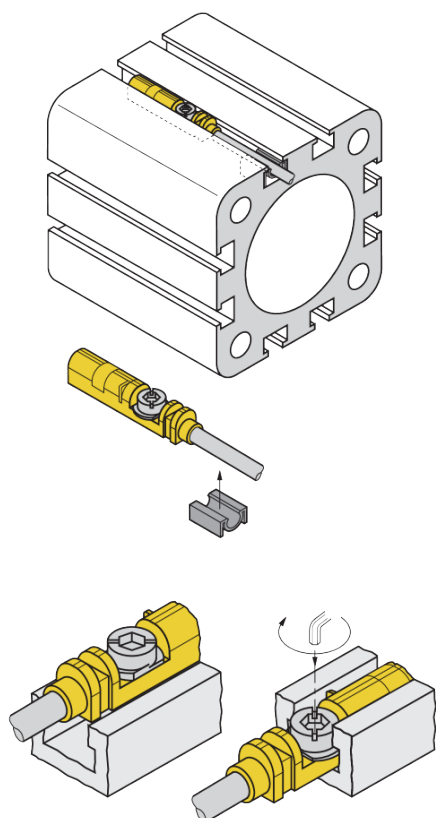
Wiring Diagram



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, the sensors can detect a permanent magnet attached to the piston through the aluminum cylinder wall.

Assembly instructions



Installation information:

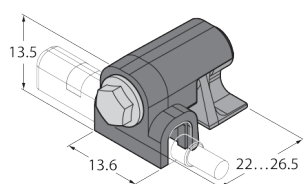
Insert the sensor in the groove from above. Mount the sensors as follows using the patented wing screw: The wing screw features a left-hand female thread. Two small plastic lips keep the screw in position, ready-to-install. Turn the screw clockwise. The screw moves out of the thread and hits the upper grooves with the wings. The sensor is thus pressed down and locked. 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. The permissible tightening torque of 0.4 Nm is sufficient for safe mounting without damaging the cylinder. The sensor now withstands axial and radial tensile load of $F=100\text{N}$ applied on the cable. Cable clips are included in the scope of delivery. They enable smooth cable routing in the groove. The correspondent accessories for mounting on other cylindrical housings has to be ordered separately.

Mounting accessories

KLZCD2-UNT

6970418

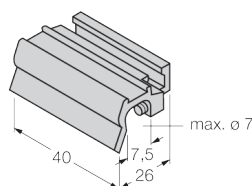
Mounting bracket for mounting magnetic field sensors for T-grooves on a CleanDesign cylinder with mounting rail



KLZ1-INT

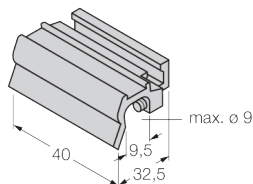
6970410

Accessories for mounting BIM-INT and BIM-UNT sensors on □ tie-rod cylinders; cylinder diameter: 32...40 mm; material: Aluminum; further mounting accessories for other cylinder diameters on request



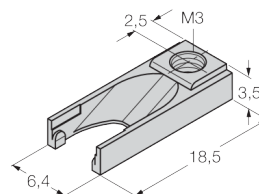
Mounting accessories

KLZ2-INT

6970411


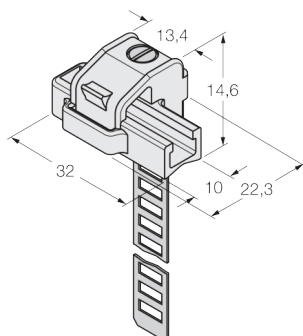
Accessories for mounting BIM-INT and BIM-UNT sensors on □ tie-rod cylinders; cylinder diameter: 50...63 mm; material: Aluminum; further mounting accessories for other cylinder diameters on request

UNT-STOPPER

4685751


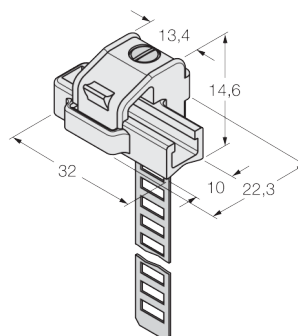
Accessories to secure the switching point on □ T-groove cylinders; snap-lock mounting in the BIM-UNT sensor fixture; material: Plastic

KLRC-UNT1

6970626


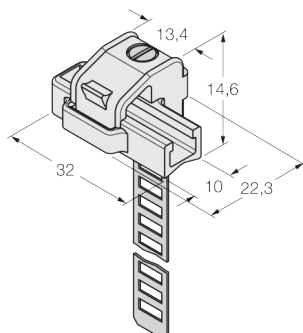
Mounting bracket for mounting magnetic field sensors on □ round cylinders; cylinder diameter: 8...25 mm; material: PA 6I/6T / nickel silver; fire-hazard classification acc. to UL94 - V2

KLRC-UNT2

6970627


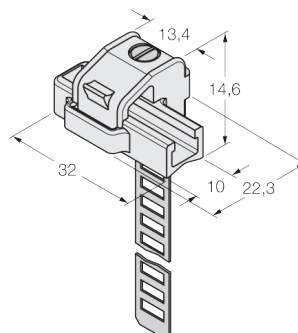
Mounting bracket for mounting magnetic field sensors on □ round cylinders; cylinder diameter: 25...63 mm; material: PA 6I/6T / nickel silver; fire-hazard classification acc. to UL94 - V2

KLRC-UNT3

6970628


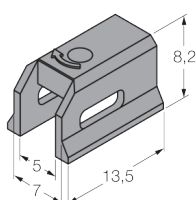
Mounting bracket for mounting magnetic field sensors on □ round cylinders; cylinder diameter: 63...130 mm; material: PA 6I/6T / nickel silver; fire-hazard classification acc. to UL94 - V2

KLRC-UNT4

6970629


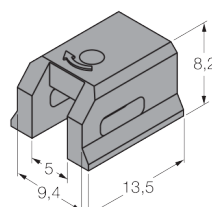
Mounting bracket for mounting magnetic field sensors on □ round cylinders; cylinder diameter: 130...250 mm; material: PA 6I/6T / nickel silver; fire-hazard classification acc. to UL94 - V2

KLDT-UNT2

6913351


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

KLDT-UNT3

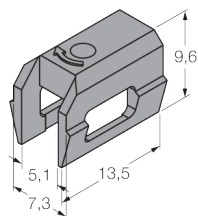
6913352


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

Mounting accessories

KLDT-UNT6

6913355

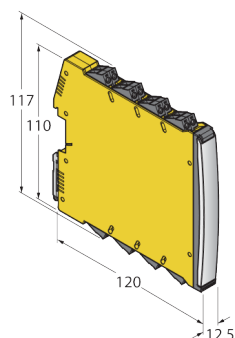


Mounting bracket for mounting magnetic field sensors on □ dovetail groove cylinders; groove width: 7.35 mm; material: PPS

Functional accessories

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

Operating instructions

Intended use	This device complies with Directive 2014/34/EU and is suited for use in explosion-hazardous areas according to EN60079-0:2018, -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 und Ex ia IIC T6 Ga und Ex II 1 D Ex ia IIIC T 200 95 °C Da nach EN60079-0
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.
BA intrinsically safe text 1 GBS	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.
BA intrinsically safe text 2 GBS	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.