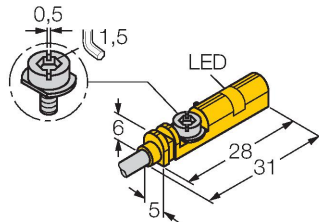


# BIM-UNT-AP6X/S97/S1165

## Magnetic Field Sensor – with extended temperature range



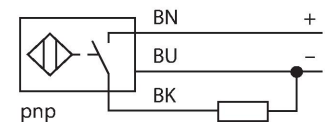
### Features

- For T-groove cylinders without mounting accessories
- Optional accessories for mounting on other cylinder designs
- One-hand mounting possible
- Stable mounting
- Magneto-resistive sensor
- For temperatures up to -40 °C
- Long overtravel range
- DC 3-wire, 10...30 VDC
- NO contact, PNP output
- Cable connection

### Technical data

|                                        |                                                                                                      |
|----------------------------------------|------------------------------------------------------------------------------------------------------|
| Type                                   | BIM-UNT-AP6X/S97/S1165                                                                               |
| ID                                     | 4685735                                                                                              |
| Special version                        | S97-S1165 Corresponds to: Minimum ambient temperature = -40 °C<br>Long overtravel<br>Cable Lif12Y33Y |
| <b>General data</b>                    |                                                                                                      |
| Pass speed                             | ≤ 10 m/s                                                                                             |
| Repeatability                          | ≤ ± 0.1 mm                                                                                           |
| Temperature drift                      | ≤ 0.1 mm                                                                                             |
|                                        | ≤ ± 20 %, ≤ -25 °C                                                                                   |
| Hysteresis                             | ≤ 1 mm                                                                                               |
| <b>Electrical data</b>                 |                                                                                                      |
| Operating voltage $U_B$                | 10...30 VDC                                                                                          |
| Ripple $U_{ss}$                        | ≤ 10 % $U_{Bmax}$                                                                                    |
| DC rated operating current $I_o$       | ≤ 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 $I_o$                  | ≤ 1.8 V                                                                                              |
| Wire break/reverse polarity protection | yes/Complete                                                                                         |
| Output function                        | 3-wire, NO contact, PNP                                                                              |
| Switching frequency                    | 1 kHz                                                                                                |
| <b>Mechanical data</b>                 |                                                                                                      |
| Design                                 | Rectangular, UNT                                                                                     |
| Dimensions                             | 28 x 5 x 6 mm                                                                                        |
| Housing material                       | Plastic, PP                                                                                          |

### Wiring diagram



### Functional principle

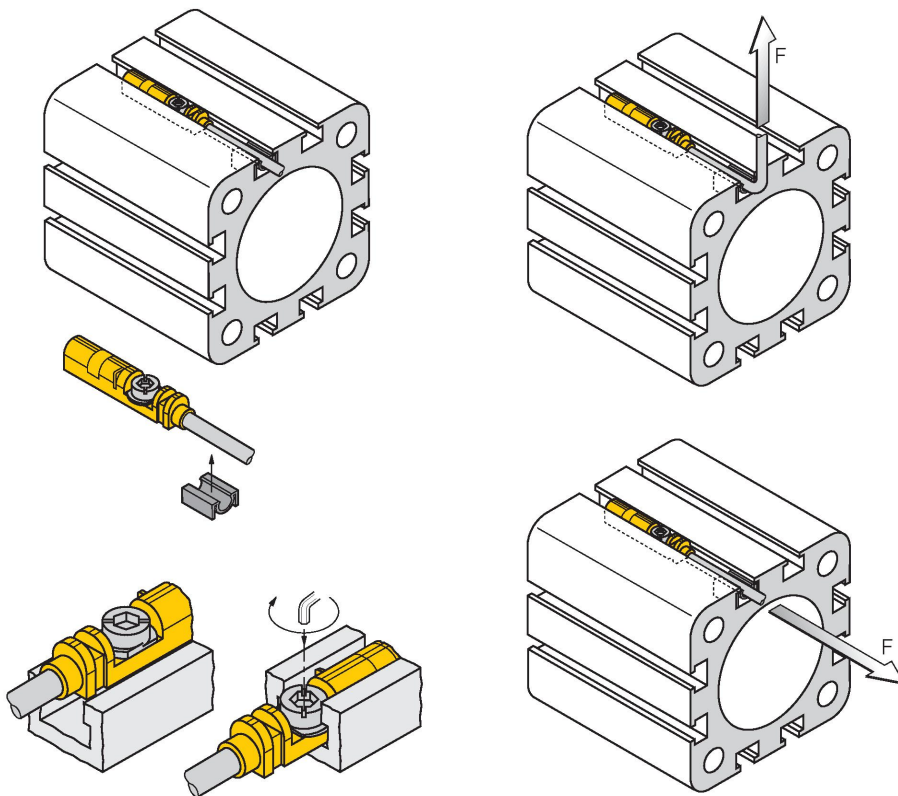
Magnetic field sensors are activated by magnetic fields and are especially suited for piston position detection in pneumatic cylinders. Based on the fact that magnetic fields can permeate non-magnetizable metals, it is possible to detect a permanent magnet attached to the piston through the aluminium wall of the cylinder.

## Technical data

|                                           |                                            |
|-------------------------------------------|--------------------------------------------|
| Active area material                      | Plastic, PP                                |
| Tightening torque fixing screw            | 0.4 Nm                                     |
| Electrical connection                     | Cable                                      |
| Cable quality                             | Ø 3 mm, Gray, Lif12Y33Y, TPE, 2 m          |
|                                           | halogen-free                               |
| Core cross-section                        | 3 x 0.14 mm <sup>2</sup>                   |
| <b>Environmental conditions</b>           |                                            |
| Ambient temperature                       | -40...+70 °C                               |
| 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 |
| <b>Mounting on the following profiles</b> |                                            |
| Cylindrical design                        | ○ □ □ ○                                    |
| Switching state                           | LED, Yellow                                |
| Included in delivery                      | cable clip                                 |

## 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  $F=100\text{N}$  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: Aluminum; further mounting accessories for other cylinder diameters on request



### KLZ2-INT

6970411

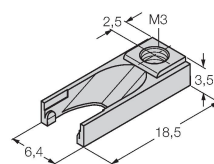
Accessories for mounting the sensors BIM-INT and BIM-UNT on tie-rod cylinders; Cylinder diameter: 50...63 mm; material: Aluminium; Further mounting accessories for other cylinder diameters on request



### UNT-STOPPER

4685751

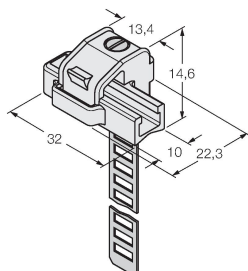
Accessories for finetuning the switchpoint on T-groove cylinders; snap-locked in the BIM-UNT fixture; suited for multiple use; material: plastic



### KLRC-UNT1

6970626

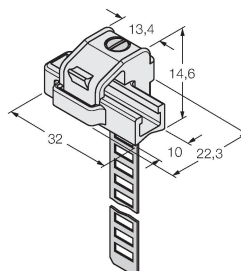
Mounting bracket for mounting magnetic field sensors on round cylinders; cylinder diameter: 8...25 mm; material: PA 6I/6T / nickel silver; fire-hazard classification acc. to UL94 - V2



### KLRC-UNT2

6970627

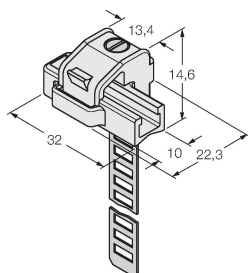
Mounting bracket for mounting magnetic field sensors on round cylinders; cylinder diameter: 25...63 mm; material: PA 6I/6T / nickel silver; fire-hazard classification acc. to UL94 - V2



### KLRC-UNT3

6970628

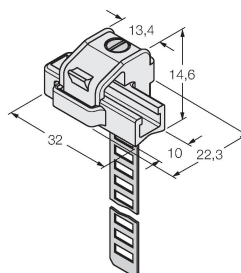
Mounting bracket for mounting magnetic field sensors on round cylinders; cylinder diameter: 63...130 mm; material: PA 6I/6T / nickel silver; fire-hazard classification acc. to UL94 - V2



### 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

