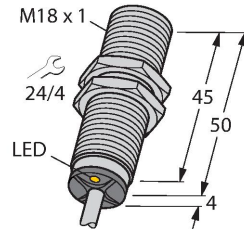


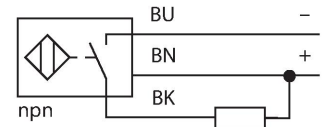
# BI5U-EM18-AN6X Inductive Sensor



## Features

- Threaded barrel, M18 x 1
- Stainless steel, 1.4301
- Factor 1 for all metals
- Protection class IP68
- Resistant to magnetic fields
- Extended temperature range
- High switching frequency
- DC 3-wire, 10...30 VDC
- NO contact, NPN output
- Cable connection

## Wiring diagram



## Functional principle

Inductive sensors are designed for wear-free and contactless detection of metal objects. uprox Factor 1 sensors have significant advantages due to their patented ferrite-coreless multi-coil system. They detect all metals at the same large switching distance and are resistant to magnetic fields.

## Technical data

|                                           |                                                                |
|-------------------------------------------|----------------------------------------------------------------|
| Type                                      | BI5U-EM18-AN6X                                                 |
| ID                                        | 1635320                                                        |
| General data                              |                                                                |
| Rated switching distance                  | 5 mm                                                           |
| Mounting conditions                       | Flush                                                          |
| Secured operating distance                | $\leq (0.81 \times S_n)$ mm                                    |
| Repeat accuracy                           | $\leq 2 \%$ of full scale                                      |
| Temperature drift                         | $\leq \pm 10 \%$                                               |
|                                           | $\leq \pm 15 \%, \leq -25 \text{ °C} \vee \geq +70 \text{ °C}$ |
| Hysteresis                                | 3...15 %                                                       |
| Electrical data                           |                                                                |
| Operating voltage                         | 10...30 VDC                                                    |
| Residual ripple                           | $\leq 10 \%$ $U_{ss}$                                          |
| DC rated operational current              | $\leq 200$ mA                                                  |
| No-load current                           | 25 mA                                                          |
| Residual current                          | $\leq 0.1$ mA                                                  |
| Isolation test voltage                    | $\leq 0.5$ kV                                                  |
| Short-circuit protection                  | yes / Cyclic                                                   |
| Voltage drop at $I_o$                     | $\leq 1.8$ V                                                   |
| Wire breakage/Reverse polarity protection | yes / Complete                                                 |
| Output function                           | 3-wire, NO contact, NPN                                        |
| DC field stability                        | 300 mT                                                         |
| AC field stability                        | 300 mT <sub>ss</sub>                                           |
| Insulation class                          | □                                                              |
| Switching frequency                       | 2.5 kHz                                                        |

Technical data

| Mechanical data                       |                                           |
|---------------------------------------|-------------------------------------------|
| Design                                | Threaded barrel, M18 x 1                  |
| Dimensions                            | 54 mm                                     |
| Housing material                      | Stainless steel, 1.4301 (AISI 304)        |
| Active area material                  | Plastic, PBT                              |
| End cap                               | Plastic, EPTR                             |
| Max. tightening torque of housing nut | 25 Nm                                     |
| Electrical connection                 | Cable                                     |
| Cable quality                         | Ø 5.2 mm, LifYY, PVC, 2 m                 |
| Core cross-section                    | 3 x 0.34 mm <sup>2</sup>                  |
| Environmental conditions              |                                           |
| Ambient temperature                   | -30...+85 °C                              |
| Vibration resistance                  | 55 Hz (1 mm)                              |
| Shock resistance                      | 30 g (11 ms)                              |
| Protection class                      | IP68                                      |
| MTTF                                  | 874 years acc. to SN 29500 (Ed. 99) 40 °C |
| Switching state                       | LED, Yellow                               |

Mounting instructions

Mounting instructions/Description

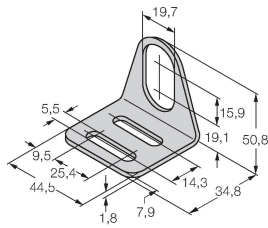
The image contains three technical diagrams illustrating different mounting configurations for a sensor. The top diagram shows a side view of a sensor with a dimension line labeled 'T' indicating the thickness of the mounting plate. The middle diagram shows two sensors mounted on a wall, with a dimension line labeled 'G' indicating the distance between the mounting plates. The bottom diagram shows a sensor mounted on a wall with two additional sensors, with dimension lines labeled 'D', 'S', and 'W' indicating the distance between the sensors, the distance from the wall to the sensor, and the width of the mounting plate, respectively.

|                        |         |
|------------------------|---------|
| 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 |

## Accessories

MW-18

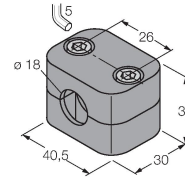
6945004



Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)

BSS-18

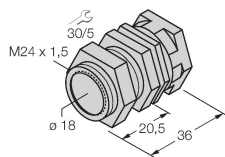
6901320



Mounting clamp for smooth and threaded barrel sensors; material: Polypropylene

QM-18

6945102



Quick-mount bracket with dead-stop; material: Chrome-plated brass. Male thread M24 × 1.5. Note: The switching distance of the proximity switches may change when using quick-mount brackets.