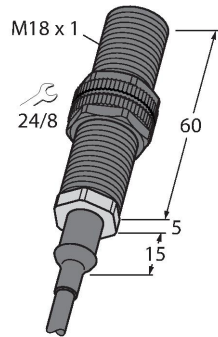


# BI8U-P18-AP6/S139-S1261 7M

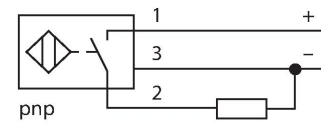
## Inductive Sensor – For Underwater Applications



### Features

- Threaded barrel, M18 x 1
- Plastic, POM
- For underwater and off-shore applications
- Oil and seawater resistant
- Protection class IP68, 500 m water column
- Factor 1 for all metals
- Resistant to magnetic fields
- DC 3-wire, 10...30 VDC
- NO contact, PNP output
- Cable connection

### Wiring diagram



### Technical data

|                                        |                                                                                            |
|----------------------------------------|--------------------------------------------------------------------------------------------|
| Type                                   | BI8U-P18-AP6/S139-S1261 7M                                                                 |
| ID                                     | 1650229                                                                                    |
| <b>General data</b>                    |                                                                                            |
| Rated switching distance               | 8 mm                                                                                       |
| Mounting conditions                    | Flush/Non-flush                                                                            |
| Secured operating distance             | $\leq (0.81 \times S_n)$ mm                                                                |
| Repeat accuracy                        | $\leq 2 \%$ of full scale                                                                  |
| Static pressure                        | $\leq 50$ bar                                                                              |
| Temperature drift                      | $\leq \pm 10 \%$                                                                           |
|                                        | $\leq \pm 15 \%, \leq -25 \text{ }^{\circ}\text{C} \vee \geq +70 \text{ }^{\circ}\text{C}$ |
| Hysteresis                             | 3...15 %                                                                                   |
| <b>Electrical data</b>                 |                                                                                            |
| Operating voltage $U_B$                | 10...30 VDC                                                                                |
| Ripple $U_{ss}$                        | $\leq 10 \%$ $U_{Bmax}$                                                                    |
| DC rated operating current $I_o$       | $\leq 200$ mA                                                                              |
| No-load current                        | $\leq 15$ mA                                                                               |
| Residual current                       | $\leq 0.1$ mA                                                                              |
| Isolation test voltage                 | 0.5 kV                                                                                     |
| Short-circuit protection               | yes/Cyclic                                                                                 |
| Voltage drop at $I_o$                  | $\leq 1.8$ V                                                                               |
| Wire break/reverse polarity protection | yes/Complete                                                                               |
| Output function                        | 3-wire, NO contact, PNP                                                                    |
| DC field stability                     | 300 mT                                                                                     |
| AC field stability                     | 300 mT <sub>ss</sub>                                                                       |

### Functional principle

Inductive sensors detect metal objects contactless and wear-free. Due to the patented ferrite-coreless 3-coil system, uprox factor 1 sensors have distinct advantages compared to conventional sensors. They detect all metals at the same switching distance, are magnetic field immune and feature large switching distances.

## Technical data

|                                       |                                           |
|---------------------------------------|-------------------------------------------|
| Switching frequency                   | 2 kHz                                     |
| <b>Mechanical data</b>                |                                           |
| Design                                | Threaded barrel, M18 x 1                  |
| Dimensions                            | 80 mm                                     |
| Housing material                      | Plastic, POM, Black                       |
| Active area material                  | Plastic, POM, black                       |
| End cap                               | Metal, 1.4401 (AISI 316L)                 |
| Max. tightening torque of housing nut | 2 Nm                                      |
| Electrical connection                 | Cable                                     |
| Cable quality                         | Ø 5.2 mm, Ölflex rugged 210, TPE, 7 m     |
| Core cross-section                    | 3 x 0.5 mm <sup>2</sup>                   |
| <b>Environmental conditions</b>       |                                           |
| 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 |

## Mounting instructions

### Mounting instructions/Description

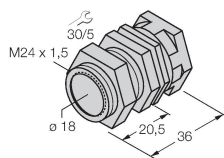


|                        |         |
|------------------------|---------|
| Distance D             | 2 x B   |
| Distance W             | 3 x Sn  |
| Distance T             | 3 x B   |
| Distance S             | 1.5 x B |
| Distance G             | 6 x Sn  |
| Diameter active area B | Ø 18 mm |

## Accessories

QM-18

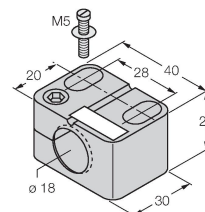
6945102



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.

BST-18B

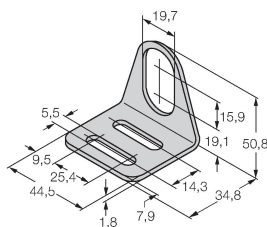
6947214



Mounting clamp for threaded barrel sensors, with dead-stop; material: PA6

MW18

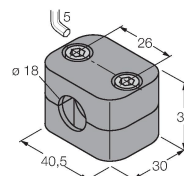
6945004



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