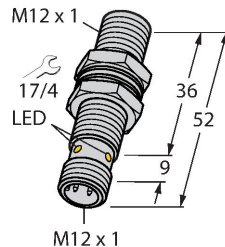


# BI3U-MT12-AP6X-H1141

## Inductive Sensor



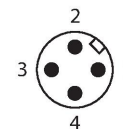
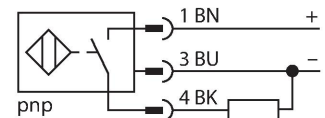
### Technical data

|                                        |                                                                                          |
|----------------------------------------|------------------------------------------------------------------------------------------|
| Type                                   | BI3U-MT12-AP6X-H1141                                                                     |
| ID                                     | 1634240                                                                                  |
| General data                           |                                                                                          |
| Rated switching distance               | 3 mm                                                                                     |
| Mounting conditions                    | Flush                                                                                    |
| Secured operating distance             | $\leq (0.81 \times S_n)$ mm                                                              |
| Repeat accuracy                        | $\leq 2 \%$ of full scale                                                                |
| Temperature drift                      | $\leq \pm 10 \%$<br>$\leq \pm 15 \%, \leq -25^\circ\text{C} \vee \geq +70^\circ\text{C}$ |
| Hysteresis                             | 3...15 %                                                                                 |
| Electrical data                        |                                                                                          |
| 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                        | $\leq 25$ 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>                                                                     |
| Insulation class                       | □                                                                                        |
| Switching frequency                    | 3 kHz                                                                                    |
| Mechanical data                        |                                                                                          |
| Design                                 | Threaded barrel, M12 x 1                                                                 |

### Features

- Threaded barrel, M12 x 1
- Brass, PTFE-coated
- 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, PNP output
- M12 x 1 male connector

### Wiring diagram



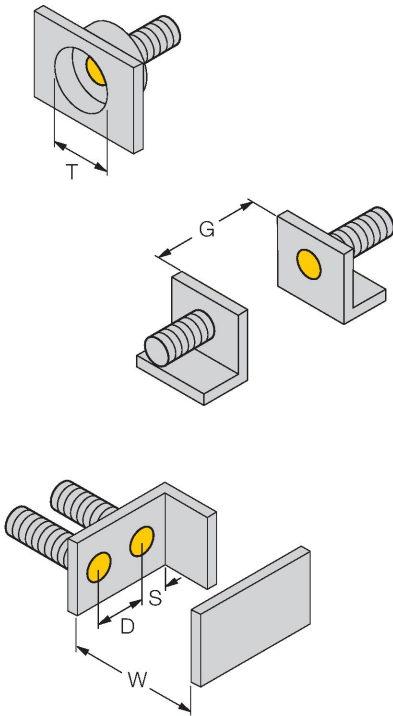
### Functional principle

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.

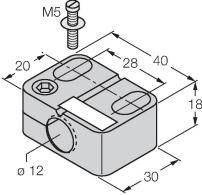
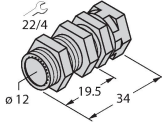
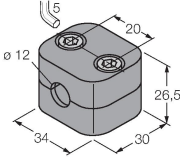
Technical data

|                                       |                                           |
|---------------------------------------|-------------------------------------------|
| Dimensions                            | 52 mm                                     |
| Housing material                      | Metal, CuZn, PTFE-coated                  |
| Active area material                  | Plastic, LCP, PTFE-coated                 |
| Max. tightening torque of housing nut | 7 Nm                                      |
| Electrical connection                 | Connector, M12 × 1                        |
| 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                               |

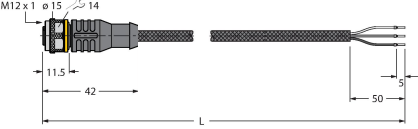
Mounting instructions

| Mounting instructions/Description                                                   |                        |
|-------------------------------------------------------------------------------------|------------------------|
|  | Distance D             |
|                                                                                     | 24 mm                  |
|                                                                                     | 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 12 mm                |

Accessories

|                                                                                   |         |                                                                                |                                                                                    |         |                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BST-12B                                                                           | 6947212 | Mounting clamp for threaded barrel sensors, with dead-stop; material: PA6      | QMT-12                                                                             | 6945106 | Quick-mount bracket with dead-stop; material: brass, PTFE-coated; Male thread M16 × 1. Note: The switching distance of the proximity switches may change when using quick-mount brackets. |
|  |         |                                                                                |  |         |                                                                                                                                                                                           |
| BSS-12                                                                            | 6901321 | Mounting clamp for smooth and threaded barrel sensors; material: Polypropylene |                                                                                    |         |                                                                                                                                                                                           |
|  |         |                                                                                |                                                                                    |         |                                                                                                                                                                                           |

Accessories

| Dimension drawing                                                                   | Type            | ID      |                                                                                                                                                         |
|-------------------------------------------------------------------------------------|-----------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | RKC4T-2/TXL1001 | 6630249 | Connection cable, M12 female connector, straight, 3-pin, cable length: 2 m, protective jacket material: aramid fibers, yellow; temperature peak: 200 °C |