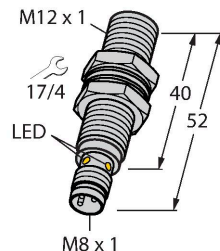


# BI4U-M12-AP6X-V1131

## Inductive Sensor – With Extended Switching Distance



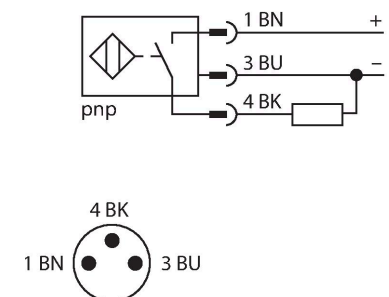
### Technical data

|                                        |                                                                                    |
|----------------------------------------|------------------------------------------------------------------------------------|
| Type                                   | BI4U-M12-AP6X-V1131                                                                |
| ID                                     | 1634780                                                                            |
| General data                           |                                                                                    |
| Rated switching distance               | 4 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>$\leq \pm 15 \%, \leq -25 \text{ °C} \vee \geq +70 \text{ °C}$ |
| 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

- M12 x 1 threaded barrel
- Chrome-plated brass
- Factor 1 for all metals
- Protection class IP68
- Resistant to magnetic fields
- Large switching distance
- Recessed mountable
- DC 3-wire, 10...30 VDC
- NO contact, PNP output
- M8 x 1 male connector

### Wiring diagram



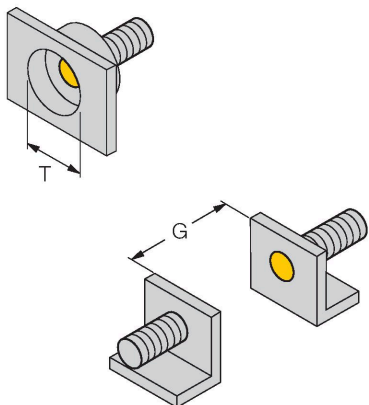
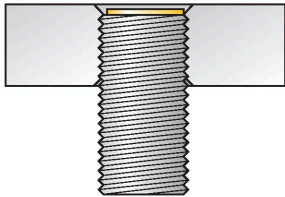
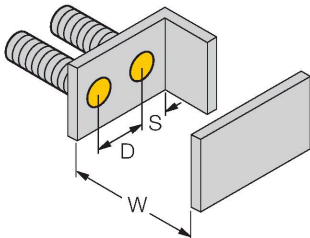
### Functional principle

Inductive sensors are designed for wear-free and contactless detection of metal objects. uprox+ sensors have significant advantages due to their patented multi-coil system. They excel thanks to their optimum switching distances, maximum flexibility and operational reliability as well as efficient standardization.

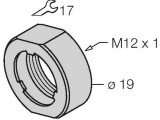
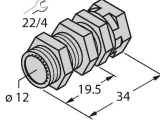
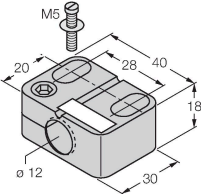
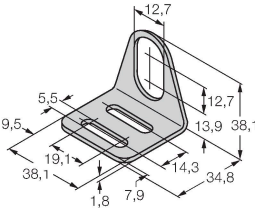
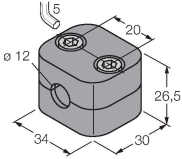
Technical data

|                                       |                                           |
|---------------------------------------|-------------------------------------------|
| Dimensions                            | 52 mm                                     |
| Housing material                      | Metal, CuZn, Chrome-plated                |
| Active area material                  | Plastic, LCP                              |
| Max. tightening torque of housing nut | 10 Nm                                     |
| Electrical connection                 | Connector, M8 × 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                               |

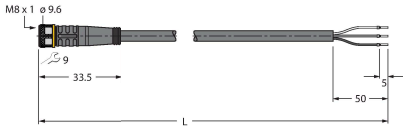
Mounting instructions

| Mounting instructions/Description                                                                                                                   |                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
|                                                                  | Distance D 24 mm               |
|                                                                                                                                                     | Distance W 12 mm               |
|                                                                  | Distance T 36 mm               |
|                                                                                                                                                     | Distance S 18 mm               |
|                                                                  | Distance G 24 mm               |
|                                                                                                                                                     | Diameter active area B Ø 12 mm |
| All flush mountable uprox+ threaded barrel types are also recessed mountable. Safe operation is ensured if the sensor is screwed in by half a turn. |                                |

Accessories

|                                                                                     |         |                                                                                                         |                                                                                    |         |                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PN-M12                                                                              | 6905309 | Impact protection nut for M12x1 threaded barrel devices; material: Stainless steel A2 1.4305 (AISI 303) | QM-12                                                                              | 6945101 | Quick-mount bracket with dead-stop; material: Chrome-plated brass. Male thread M16 × 1. Note: The switching distance of the proximity switches may change when using quick-mount brackets. |
|    |         |                                                                                                         |  |         |                                                                                                                                                                                            |
| BST-12B                                                                             | 6947212 | Mounting clamp for threaded barrel sensors, with dead-stop; material: PA6                               | MW12                                                                               | 6945003 | Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)                                                                                               |
|    |         |                                                                                                         |  |         |                                                                                                                                                                                            |
| BSS-12                                                                              | 6901321 | Mounting clamp for smooth and threaded barrel sensors; material: Polypropylene                          |                                                                                    |         |                                                                                                                                                                                            |
|  |         |                                                                                                         |                                                                                    |         |                                                                                                                                                                                            |

Accessories

| Dimension drawing                                                                   | Type        | ID      |                                                                                                                        |
|-------------------------------------------------------------------------------------|-------------|---------|------------------------------------------------------------------------------------------------------------------------|
|  | PKG3M-2/TEL | 6625058 | Connection cable, M8 female connector, straight, 3-pin, cable length: 2 m, jacket material: PVC, black; cULus approval |