

# BI4U-M12E-VP6X

## Inductive Sensor – With Extended Switching Distance



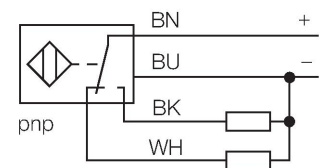
### Technical data

|                                        |                                                                                    |
|----------------------------------------|------------------------------------------------------------------------------------|
| Type                                   | BI4U-M12E-VP6X                                                                     |
| ID                                     | 100000619                                                                          |
| 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                        | $\leq 15$ 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                        | 4-wire, Complementary 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
- Long version
- Chrome-plated brass
- Factor 1 for all metals
- Protection class IP68
- Resistant to magnetic fields
- Large switching distance
- Recessed mountable
- DC 4-wire, 10...30 VDC
- Changeover contact, PNP output
- Cable connection

### 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                            | 64 mm                                     |
| Housing material                      | Metal, CuZn, Chrome-plated                |
| Active area material                  | Plastic, LCP                              |
| End cap                               | Plastic, EPTR                             |
| Max. tightening torque of housing nut | 10 Nm                                     |
| Electrical connection                 | Cable                                     |
| Cable quality                         | Ø 5.2 mm, Gray, LifYY, PVC, 2 m           |
| Core cross-section                    | 4 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                               |

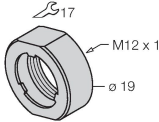
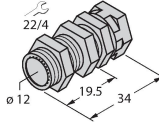
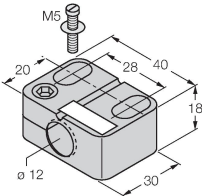
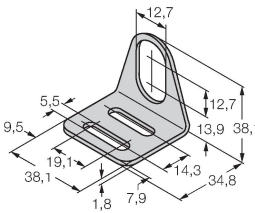
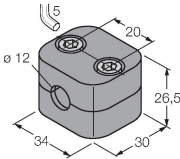
Mounting instructions

Mounting instructions/Description

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

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                          |                                                                                    |         |                                                                                                                                                                                            |
|  |         |                                                                                                         |                                                                                    |         |                                                                                                                                                                                            |