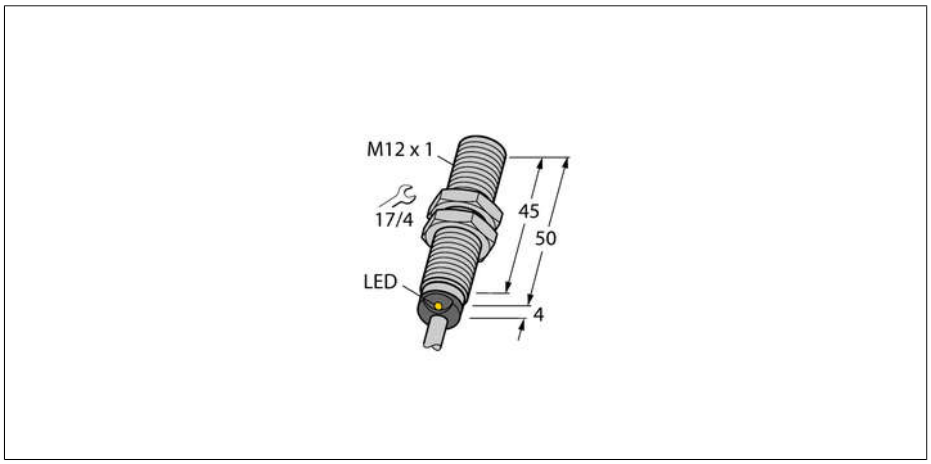
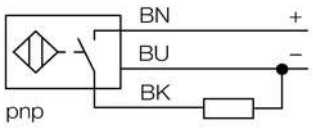
# Inductive sensor
# BI4U-M12-AP6X




- **Threaded barrel, M12 x 1**
- **Chrome-plated brass**
- **Factor 1 for all metals**
- **Protection class IP68**
- **Magnetic field immune**
- **High switching distance**
- **Recessed mounting possible**
- **DC 3-wire, 10…30 VDC**
- **NO contact, PNP output**
- **Cable connection**

### Wiring diagram




### Functional principle

Inductive sensors detect metal objects contactless and wear-free. Due to the patented multi-coil system, *Uprox*®+ sensors have distinct advantages compared to conventional sensors. They excel in highest switching distances, maximum flexibility and operational reliability as well as efficient standardization.

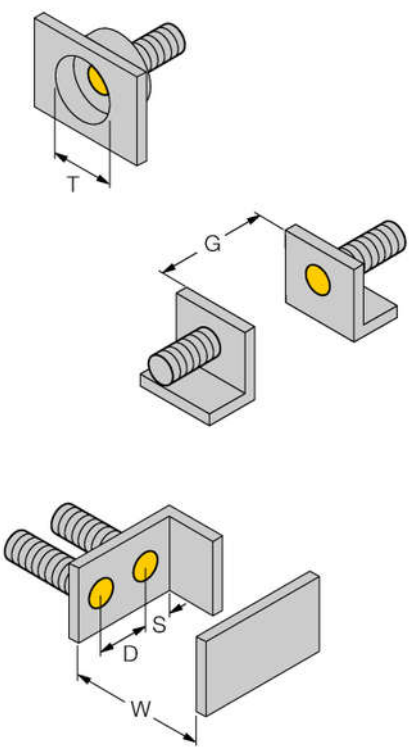
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|---|---|
| **Type** | BI4U-M12-AP6X |
| Ident-No. | 1634803 |
| **Rated operating distance Sn** | 4 mm |
| Mounting condition | flush |
| Assured sensing range | ≤ (0,81 x Sn) mm |
| Repeatability | ≤ 2 % |
| Temperaturdrift | 10 % |
| | ≤ ± 15 %, ≤ -25 °C v ≥ +70 °C |
| Hysteresis | 3…15 % |
| Ambient temperature | -30…+85 °C |
| **Operating voltage** | 10…30VDC |
| Residual ripple | ≤ 10 % $U_{ss}$ |
| DC rated operational current | ≤ 200 mA |
| No-load current $I_0$ | ≤ 15 mA |
| Residual current | ≤ 0.1 mA |
| Rated insulation voltage | ≤ 0.5 kV |
| Short-circuit protection | yes/ cyclic |
| Voltage drop at $I_e$ | ≤ 1.8 V |
| Wire breakage / Reverse polarity protection | yes/ complete |
| Output function | 3-wire, NO contact, PNP |
| Protection class | ⧈ |
| Switching frequency | 2 kHz |
| **Design** | threaded barrel, M12 x 1 |
| Dimensions | 54 mm |
| Housing material | Metal, CuZn, chrome-plated |
| Material active face | Plastic, LCP-GF30 |
| End cap | Plastic, EPTR |
| Max. tightening torque housing nut | 10 Nm |
| Connection | cable |
| Cable quality | 5.2 mm, LifYY, PVC, 2 m |
| Cable cross section | 3 x 0.34 $mm^2$ |
| Vibration resistance | 55 Hz (1 mm) |
| Shock resistance | 30 g (11 ms) |
| Protection class | IP68 |
| MTTF | 874years acc. to SN 29500 (Ed. 99) 40 °C |
| **Switching state** | LED yellow |

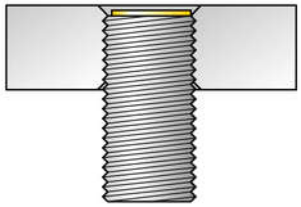
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| | |
|---|---|
| **Mounting instructions** | minimum distances |
| Distance D | 24 mm |
| Distance W | 12 mm |
| Distance T | 36 mm |
| Distance S | 18 mm |
| Distance G | 24 mm |

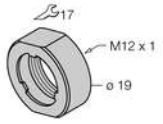
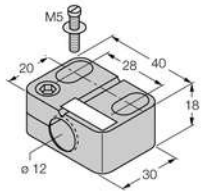
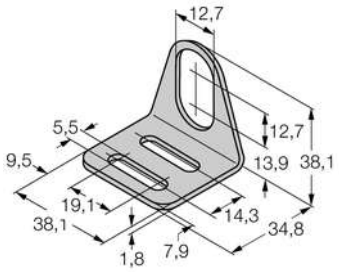
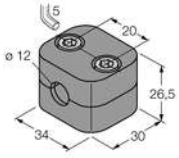
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|---|---|
| **Diameter of the active area B** | Ø 12 mm |



Flush and recessed mounting of all *uprox*®+ threaded barrel sensors. Safe operation is ensured if the sensor is screwed in by half a turn.

## Accessories

| Type code | Ident-No. | Short text | Dimension drawing |
|---|---|---|---|
| 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 x 1. Note: The switching distance of proximity switches can be reduced by the use of quick-mount brackets. |  |
| BST-12B | 6947212 | Fixing clamp for threaded barrel devices, with dead-stop; material: PA6 |  |
| MW-12 | 6945003 | Mounting bracket for threaded barrel devices; material: Stainless steel A2 1.4301 (AISI 304) |  |
| BSS-12 | 6901321 | Mounting bracket for smooth and threaded barrel devices; material: Polypropylene |  |

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