

# BI4-M12K-RP6X-H1141

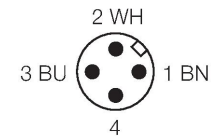
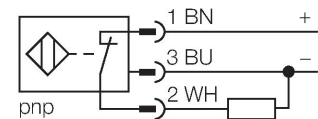
## Inductive Sensor – With Increased Switching Distance



### Features

- Threaded barrel, M12 x 1
- Chrome-plated brass
- Large sensing range
- DC 3-wire, 10...30 VDC
- NC contact, PNP output
- M12 x 1 male connector

### Wiring diagram



### Functional principle

Inductive sensors detect metal objects contactless and wear-free. For this, they use a high-frequency electromagnetic AC field that interacts with the target. Inductive sensors generate this field via an RLC circuit with a ferrite coil.

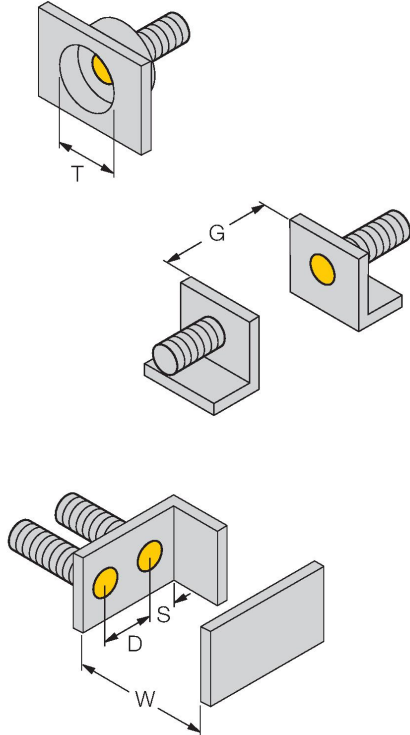
### Technical data

|                                        |                                                     |
|----------------------------------------|-----------------------------------------------------|
| Type                                   | BI4-M12K-RP6X-H1141                                 |
| ID                                     | 46070931                                            |
| <b>General data</b>                    |                                                     |
| Rated switching distance               | 4 mm                                                |
| Mounting conditions                    | Flush                                               |
| Secured operating distance             | $\leq (0.81 \times S_n)$ mm                         |
| Correction factors                     | St37 = 1; Al = 0.3; stainless steel = 0.7; Ms = 0.4 |
| Repeat accuracy                        | $\leq 2$ % of full scale                            |
| 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, NC contact, PNP                             |
| Switching frequency                    | 2 kHz                                               |
| <b>Mechanical data</b>                 |                                                     |
| Design                                 | Threaded barrel, M12 x 1                            |

Technical data

|                                       |                                            |
|---------------------------------------|--------------------------------------------|
| Dimensions                            | 42 mm                                      |
| Housing material                      | Metal, CuZn, Chrome-plated                 |
| Active area material                  | Plastic, PA12-GF30                         |
| Max. tightening torque of housing nut | 10 Nm                                      |
| Electrical connection                 | Connector, M12 × 1                         |
| Environmental conditions              |                                            |
| Ambient temperature                   | -25...+70 °C                               |
| Vibration resistance                  | 55 Hz (1 mm)                               |
| Shock resistance                      | 30 g (11 ms)                               |
| Protection class                      | IP67                                       |
| MTTF                                  | 2283 years acc. to SN 29500 (Ed. 99) 40 °C |
| Switching state                       | LED, Yellow                                |

Mounting instructions

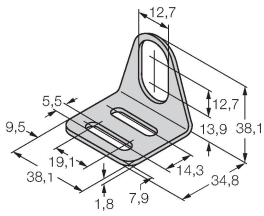
| Mounting instructions/Description                                                   |                        |
|-------------------------------------------------------------------------------------|------------------------|
|  | Distance D             |
|                                                                                     | 3 × 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 12 mm                |

BI4-M12K-RP6X-H1141 | 02/21/2025 13-54 | technical changes reserved

## Accessories

MW12

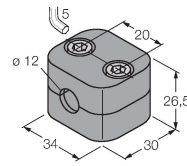
6945003



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