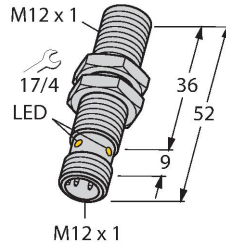


# BI4-M12-VN6X-H1141

## Inductive Sensor – With Increased Switching Distance



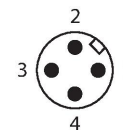
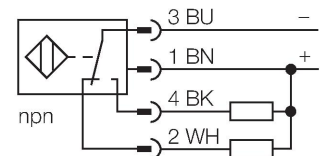
### Technical data

|                                           |                                                     |
|-------------------------------------------|-----------------------------------------------------|
| Type                                      | BI4-M12-VN6X-H1141                                  |
| ID                                        | 1643200                                             |
| <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                            |
| Temperature drift                         | $\leq \pm 10\%$                                     |
| Hysteresis                                | 3...15 %                                            |
| <b>Electrical data</b>                    |                                                     |
| Operating voltage                         | 10...30 VDC                                         |
| Residual ripple                           | $\leq 10\% U_{ss}$                                  |
| DC rated operational current              | $\leq 200$ mA                                       |
| No-load current                           | 15 mA                                               |
| Residual current                          | $\leq 0.1$ mA                                       |
| Isolation test voltage                    | $\leq 0.5$ kV                                       |
| Short-circuit protection                  | yes / Cyclic                                        |
| Voltage drop at $I_o$                     | $\leq 1.8$ V                                        |
| Wire breakage/Reverse polarity protection | yes / Complete                                      |
| Output function                           | 4-wire, Complementary contact, NPN                  |
| Switching frequency                       | 2 kHz                                               |
| <b>Mechanical data</b>                    |                                                     |
| Design                                    | Threaded barrel, M12 x 1                            |
| Dimensions                                | 52 mm                                               |
| Housing material                          | Metal, CuZn, Chrome-plated                          |

### Features

- M12 x 1 threaded barrel
- Chrome-plated brass
- Large sensing range
- DC 4-wire, 10...30 VDC
- Changeover contact, NPN 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

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

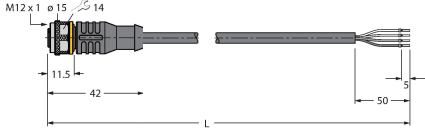
Mounting instructions

| Mounting instructions/Description                                                  |                        |
|------------------------------------------------------------------------------------|------------------------|
|  | Distance D             |
|                                                                                    | 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

|                                                                                   |         |                                                                                                                                                                                            |                                                                                    |         |                                                                                |
|-----------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------|
| 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      |
|  |         |                                                                                                                                                                                            |  |         |                                                                                |
| MW-12                                                                             | 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      |                                                                                                                         |
|-------------------------------------------------------------------------------------|---------------|---------|-------------------------------------------------------------------------------------------------------------------------|
|  | RKC4.4T-2/TEL | 6625013 | Connection cable, M12 female connector, straight, 4-pin, cable length: 2 m, jacket material: PVC, black; cULus approval |