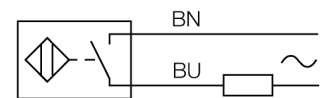


**Inductive sensor  
with extended temperature range  
BI2-S12-AZ31X/S100**

- Threaded barrel, M12 x 1
- Plastic, PA12-GF30
- For temperatures up to +100 °C
- AC 2-wire, 20...250 VAC
- DC 2-wire, 10...300 VDC
- NO contact
- Cable connection

**Wiring diagram**

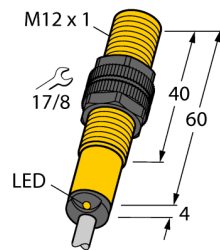
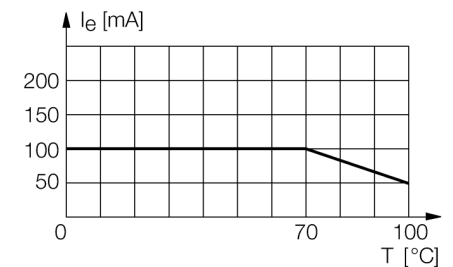


**Functional principle**

Inductive sensors detect metal objects contactless and wear-free. For this purpose they use a high-frequency electromagnetic AC field that interacts with the target. The sensors hosting a ferrite core coil generate the AC field through an LC resonant circuit.

Special versions are available for ambient temperatures between -60°C and +250°C.

**derating curve**

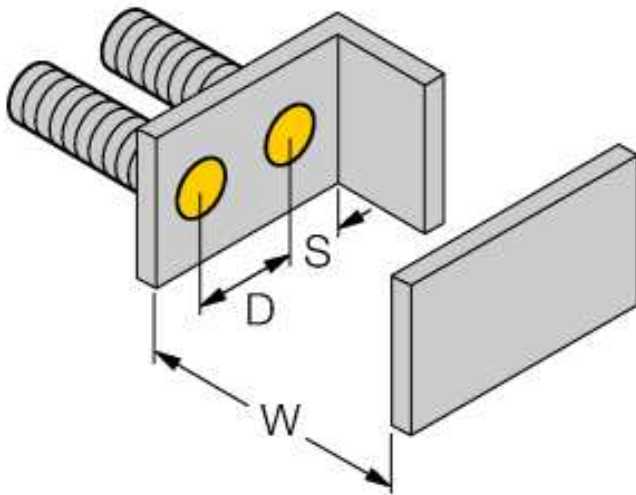
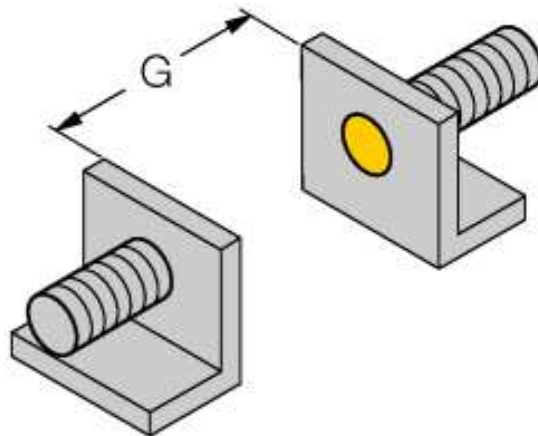
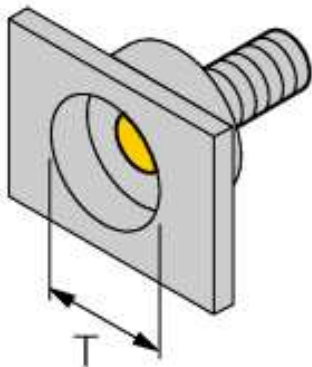


|   |   |
|---|---|
| <b>Type code</b>                          | BI2-S12-AZ31X/S100                                  |
| Ident no.                                 | 1302001   |
| <b>Rated operating distance Sn</b>        | 2 mm  |
| Mounting condition                        | flush   |
| Assured sensing range                     | ≤ (0,81 x Sn) mm                                    |
| Correction factors                        | St37 = 1; Al = 0.3; stainless steel = 0.7; Ms = 0.4 |
| Repeatability                             | ≤ 2 % of full scale                                 |
| Temperaturdrift                           | 10 %  |
|   | ≤ ± 20 %, ≥ +70 °C                                  |
| Hysteresis                                | 3...15 %  |
| Ambient temperature                       | -25...+100 °C                                       |
| <b>Operating voltage</b>                  | 20...250 VAC  |
| Operating voltage                         | 10...300VDC   |
| AC rated operational current              | ≤ 100 mA  |
| DC rated operational current              | ≤ 100 mA  |
| Rated operational current                 | see derating curve                                  |
| Frequency                                 | ≥ 50...≤ 60 Hz                                      |
| Residual current                          | ≤ 1.7 mA  |
| Rated insulation voltage                  | ≤ 1.5 kV  |
| Surge current                             | ≤ 1 A (≤ 10 ms max. 5 Hz)                           |
| Voltage drop at I <sub>e</sub>            | ≤ 6 V   |
| Output function                           | 2-wire, NO contact                                  |
| Smallest operating current I <sub>o</sub> | ≤ 3 mA  |
| Switching frequency                       | 0.02 kHz  |
| <b>Design</b>                             | threaded barrel, M12 x 1                            |
| Dimensions                                | 60 mm   |
| Housing material                          | Plastic, PA   |
| Material active face                      | Plastic, PA   |
| End cap                                   | Plastic, EPTR                                       |
| Max. tightening torque housing nut        | 1 Nm  |
| Connection                                | cable   |
| Cable quality                             | 5.2 mm, LifYY-T105, PVC, 2 m                        |
| Cable cross section                       | 2 x 0.5 mm <sup>2</sup>                             |
| 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          |
| <b>Switching state</b>                    | • red   |

**Inductive sensor  
with extended temperature range  
BI2-S12-AZ31X/S100**

|            |         |
|------------|---------|
| Distance D | 2 x B   |
| Distance W | 3 x Sn  |
| Distance T | 3 x B   |
| Distance S | 1.5 x B |
| Distance G | 6 x Sn  |

Diameter of the active area B                       $\varnothing$  12 mm



**Inductive sensor  
with extended temperature range  
BI2-S12-AZ31X/S100**

**Accessories**

| Type code | Ident no. | Description  | Dimension drawing |
|-----------|-----------|--|-------------------|
| 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   |                   |