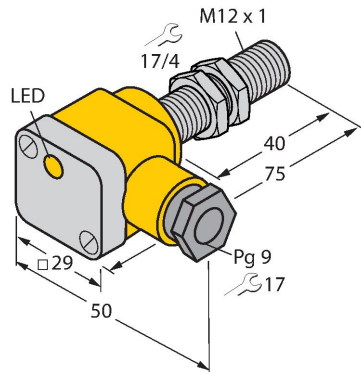


# BI2-G12SK-AP6X Inductive Sensor



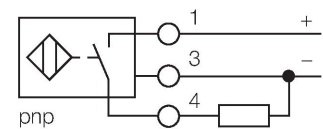
## Technical data

|                                           |                                                     |
|-------------------------------------------|-----------------------------------------------------|
| Type                                      | BI2-G12SK-AP6X                                      |
| ID                                        | 46360                                               |
| General data                              |                                                     |
| Rated switching distance                  | 2 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 %                                            |
| Electrical data                           |                                                     |
| 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                           | 3-wire, NO contact, PNP                             |
| Switching frequency                       | 2 kHz                                               |
| Mechanical data                           |                                                     |
| Design                                    | Threaded barrel, M12 x 1                            |
| Dimensions                                | 75 mm                                               |
| Housing material                          | Metal, CuZn, Chrome-plated                          |

## Features

- Threaded barrel, M12 x 1
- Chrome-plated brass
- DC 3-wire, 10...30 VDC
- NO contact, PNP output
- Terminal chamber

## Wiring diagram



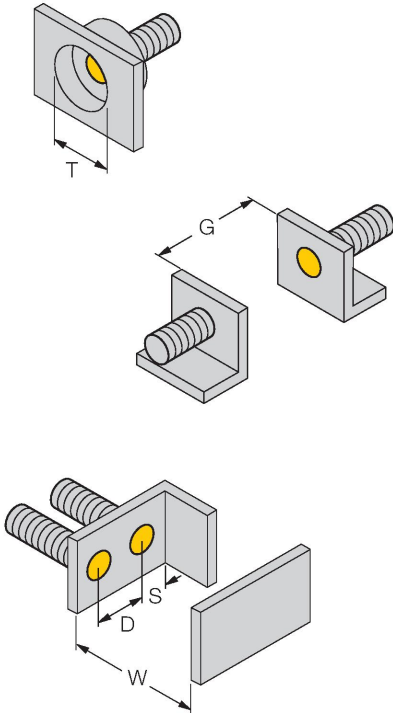
## Functional principle

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.

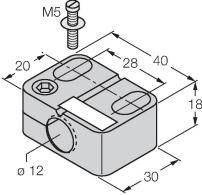
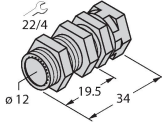
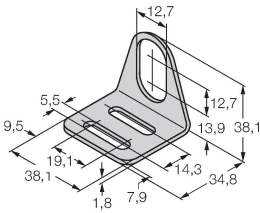
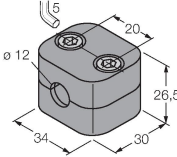
Technical data

|                                       |                                            |
|---------------------------------------|--------------------------------------------|
| Terminal chamber cover material       | plastic, Ultem                             |
| Terminal chamber housing material     | plastic, PA12-GF30                         |
| Active area material                  | Plastic, PA12-GF30                         |
| Max. tightening torque of housing nut | 10 Nm                                      |
| Electrical connection                 | Terminal chamber                           |
| Clamping ability                      | ≤ 2.5 mm²                                  |
| Cable external diameter               | 4.5...8 mm                                 |
| 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                                |
| Included in delivery                  | cable gland; 2x plastic seals              |

Mounting instructions

| Mounting instructions/Description                                                   |                        |
|-------------------------------------------------------------------------------------|------------------------|
|  | 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 active area B |
|                                                                                     | Ø 12 mm                |

Accessories

|                                                                                   |         |                                                                                              |                                                                                    |         |                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BST-12B                                                                           | 6947212 | Mounting clamp for threaded barrel sensors, with dead-stop; material: PA6                    | 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. |
|  |         |                                                                                              |  |         |                                                                                                                                                                                            |
| 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                                                                                                             |
|  |         |                                                                                              |  |         |                                                                                                                                                                                            |