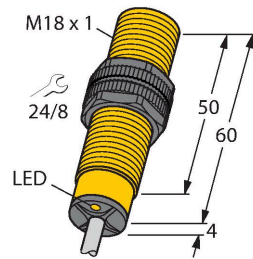


# BI5-S18-RZ3X/S100

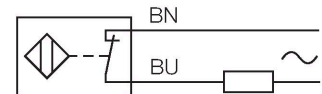
## Inductive Sensor – With Increased Temperature Range



### Features

- Threaded barrel, M18 x 1
- Plastic, PA12-GF30
- Temperatures up to +100 °C
- AC 2-wire, 20...250 VAC
- DC 2-wire, 10...300 VDC
- NC contact
- Cable connection

### Wiring diagram

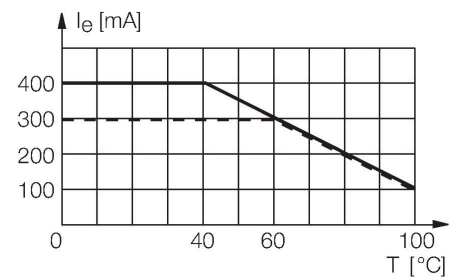


### Technical data

|                                  |                                                           |
|----------------------------------|-----------------------------------------------------------|
| Type                             | BI5-S18-RZ3X/S100                                         |
| ID                               | 13760                                                     |
| Special version                  | S100 Corresponds to: Maximum ambient temperature = 100 °C |
| <b>General data</b>              |                                                           |
| Rated switching distance         | 5 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                | $\leq \pm 10$ %                                           |
|                                  | $\leq \pm 20$ %, $\geq +70$ °C                            |
| Hysteresis                       | 3...15 %                                                  |
| <b>Electrical data</b>           |                                                           |
| Operating voltage $U_B$          | 20...250 VAC                                              |
| Operating voltage $U_B$          | 10...300 VDC                                              |
| AC rated operational current     | $\leq 400$ mA                                             |
| DC rated operating current $I_o$ | $\leq 300$ mA                                             |
| Rated operational current        | See derating curve                                        |
| Frequency                        | $\geq 50$ ... $\leq 60$ Hz                                |
| Residual current                 | $\leq 1.7$ mA                                             |
| Isolation test voltage           | 1.5 kV                                                    |
| Surge current                    | $\leq 8$ A ( $\leq 10$ ms max. 5 Hz)                      |
| Voltage drop at $I_o$            | $\leq 6$ V                                                |

### Functional principle

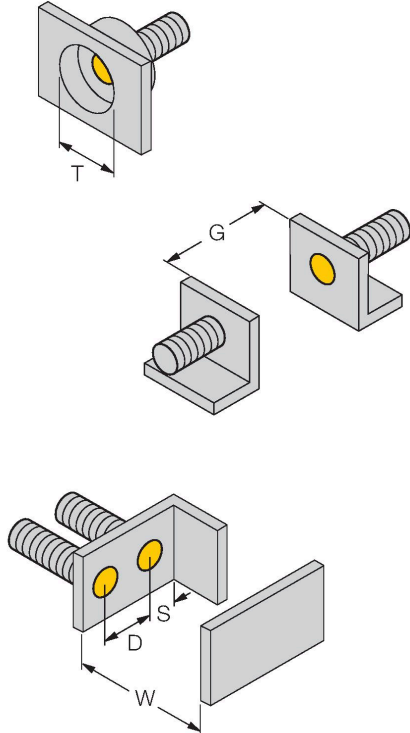
Inductive sensors detect metal objects contactless and wear-free. For this purpose they use a high-frequency electromagnetic AC field that interacts with the target. The sensors hosting a ferrite core coil generate the AC field through an LC resonant circuit. Special versions are available for ambient temperatures between -60°C and +250°C.



## Technical data

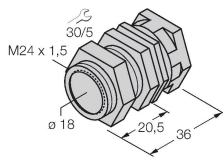
|                                       |                                            |
|---------------------------------------|--------------------------------------------|
| Output function                       | 2-wire, NC contact, 2-wire                 |
| Smallest operating current            | ≥ 3 mA                                     |
| Switching frequency                   | 0.02 kHz                                   |
| <b>Mechanical data</b>                |                                            |
| Design                                | Threaded barrel, M18 x 1                   |
| Dimensions                            | 64 mm                                      |
| Housing material                      | Plastic, PA12-GF30                         |
| Active area material                  | Plastic, PA12-GF30                         |
| End cap                               | Plastic, EPTR                              |
| Max. tightening torque of housing nut | 2 Nm                                       |
| Electrical connection                 | Cable                                      |
| Cable quality                         | Ø 5.2 mm, LifYY-T105, PVC, 2 m             |
| Core cross-section                    | 3 x 0.5 mm <sup>2</sup>                    |
| <b>Environmental conditions</b>       |                                            |
| Ambient temperature                   | -25...+100 °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, Red                                   |

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 18 mm                |

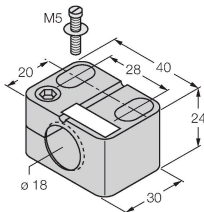
Accessories

QM-18 6945102



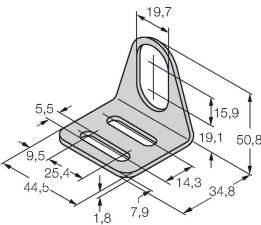
Quick-mount bracket with dead-stop; material: Chrome-plated brass. Male thread M24 × 1.5. Note: The switching distance of the proximity switches may change when using quick-mount brackets.

BST-18B 6947214



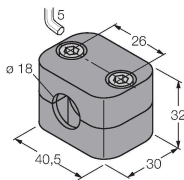
Mounting clamp for threaded barrel sensors, with dead-stop; material: PA6

MW18 6945004



Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)

BSS-18 6901320



Mounting clamp for smooth and threaded barrel sensors; material: Polypropylene

BI5-S18-RZ3X/S100 | 02/21/2025 14-32 | technical changes reserved