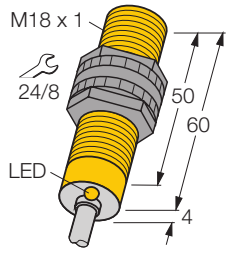
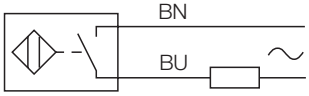
Inductive sensor
with extended temperature range
Bi5-S18-AZ3X/S97

TURCK
Industrial Automation



- **Threaded barrel, M18 x 1**
- **plastic, PA12-GF30**
- **for temperatures up to -40°C**
- **AC 2-wire, 20…250 VAC**
- **2-wire DC, 10…300 VDC**
- **normally open**
- **cable connection**

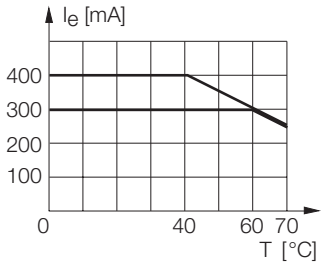
Wiring diagram



Type	Bi5-S18-AZ3X/S97
Ident-No.	1373410
Rated operating distance Sn	5 mm
Mounting condition	flush
Assured sensing range	(0,81 x Sn) mm
Correction factors	St37 = 1, V2A ~ 0.7, Ms ~ 0.4, Al ~ 0.3
Repeatability	2 %
Temperature drift	± 10 %
	± 20 %, -25 °C
Hysteresis	3… 15 %
Ambient temperature	-40…+ 70 °C
Operating voltage	20… 250VAC
Operating voltage	10… 300VDC
AC rated operational current	400 mA
DC rated operational current	300 mA
Frequency	50… 60 Hz
Residual current	1.7 mA
Rated insulation voltage	1.5 kV
Surge current	8 A (10 ms max. 5 Hz)
Voltage drop at I_e	6V
Output function	2-wire, normally open
Smallest operating current I_m	≥ 3 mA
Switching frequency	0.02 kHz
Housing	threaded barrel, M18 x 1
Dimensions	64 mm
Housing material	plastic, PA12-GF30
Material active face	plastic, PA12-GF30
End cap	plastic, EPTR
Tightening torque of housing nut	2 Nm
Connection	cable
Cable quality	Ø 5.2, SiHSi, silicone, 2 m
Cable cross section:	2 x 0.5mm^2
Vibration resistance	55 Hz (1 mm)
Shock resistance	30g (11 ms)
Degree of protection	IP67
Display switch state	LED yellow

Functional principle

Inductive sensors are designed for wear-free and non-contact detection of metal objects. For this purpose they use a high-frequency electro-magnetic AC field that interacts with the target. With inductive sensors, this field is generated by an LC resonant circuit with a ferrite core coil. Special inductive sensors versions can be used at temperatures of -60°C up to +250°C.



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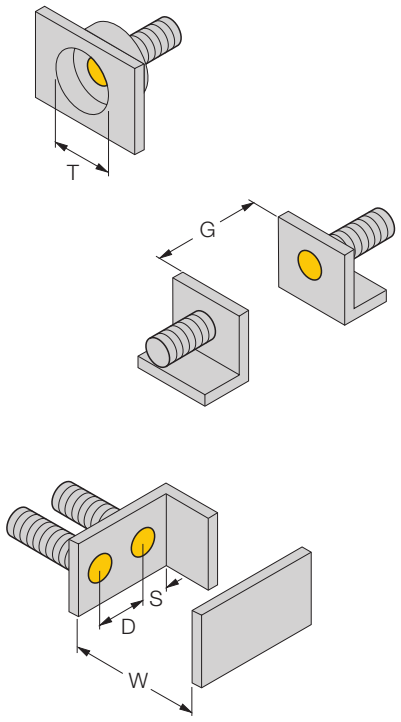
Mounting instructions	minimum distances
Distance D	2 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1,5 x B
Distance G	6 x Sn

Diameter of the active area B	Ø 18 mm



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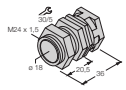
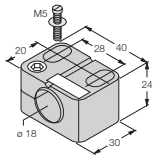
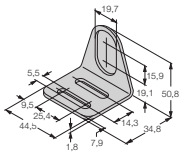
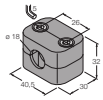
Accessories

Type code	Ident-No.	Short text	Dimension drawing
QM-18	6945102	quick-mount fixing clamp with dead-stop; material: chrome-plated brass male thread M24 x 1.5. Note: The switching distance of proximity switches can be reduced by the use of quick mounting brackets.	
BST-18B	6947214	fixing clamp with dead-stop; material: PA6	
MW-18	6945004	mounting bracket; material: stainless steel A2 1.4301 (AISI 304)	
BSS-18	6901320	fixing clamp; material: polypropylene	

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