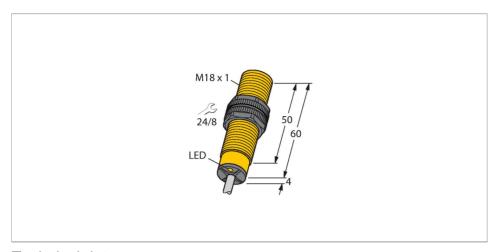


BI5-S18-AZ3X Inductive Sensor



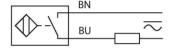
Technical data

ID	Туре	BI5-S18-AZ3X
Rated switching distance 5 mm Mounting conditions Flush Secured operating distance ≤ (0.81 × Sn) mm Correction factors \$137 = 1; Al = 0.3; stainless steel = 0.7; Ms = 0.4 Repeat accuracy ≤ 2 % of full scale Temperature drift ≤ ±10 % Hysteresis 315 % Electrical data 20250 VAC Operating voltage U ₈ 20250 VAC Operating voltage U ₈ 10300 VDC AC rated operational current ≤ 400 mA DC rated operating current I ₈ ≤ 300 mA Frequency ≥ 50≤ 60 Hz Residual current ≤ 1.7 mA Isolation test voltage 1.5 kV Surge current ≤ 8 A (≤ 10 ms max. 5 Hz) Voltage drop at I ₈ ≤ 6 V Output function 2-wire, NO contact, 2-wire Smallest operating current ≥ 3 mA	ID	43504
Mounting conditionsFlushSecured operating distance≤ $(0.81 \times Sn)$ mmCorrection factors\$137 = 1; Al = 0.3; stainless steel = 0.7; Ms = 0.4Repeat accuracy≤ 2 % of full scaleTemperature drift≤ ±10 %Hysteresis315 %Electrical data20250 VACOperating voltage Us20250 VACAC rated operational current≤ 400 mADC rated operating current Is≤ 300 mAFrequency≥ 50 ≤ 60×10^{-10} Residual current≤ 1.7×10^{-10} Isolation test voltage 1.5×10^{-10} Surge current≤ 8×10^{-10} Voltage drop at Is≤ 6×10^{-10} Output function $2-\text{wire}$, NO contact, $2-\text{wire}$ Smallest operating current≥ 3×10^{-10}	General data	
Secured operating distance $\leq (0.81 \times Sn) \text{ mm}$ Correction factors $\begin{array}{c} St37 = 1; \text{ Al} = 0.3; \text{ stainless steel} = 0.7; \text{ Ms} = 0.4 \\ \hline \text{Repeat accuracy} & \leq 2 \% \text{ of full scale} \\ \hline \text{Temperature drift} & \leq \pm 10 \% \\ \hline \text{Hysteresis} & 315 \% \\ \hline \text{Electrical data} \\ \hline \text{Operating voltage U}_{\text{B}} & 20250 \text{ VAC} \\ \hline \text{Operating voltage U}_{\text{B}} & 10300 \text{ VDC} \\ \hline \text{AC rated operational current} & \leq 400 \text{ mA} \\ \hline \text{DC rated operating current I}_{\text{e}} & \leq 300 \text{ mA} \\ \hline \text{Frequency} & \geq 50 \leq 60 \text{ Hz} \\ \hline \text{Residual current} & \leq 1.7 \text{ mA} \\ \hline \text{Isolation test voltage} & 1.5 \text{ kV} \\ \hline \text{Surge current} & \leq 8 \text{ A } (\leq 10 \text{ ms max. 5 Hz}) \\ \hline \text{Voltage drop at I}_{\text{e}} & \leq 6 \text{ V} \\ \hline \text{Output function} & 2-\text{wire, NO contact, 2-wire} \\ \hline \text{Smallest operating current} & \geq 3 \text{ mA} \\ \hline \end{array}$	Rated switching distance	5 mm
Correction factors $\begin{array}{ll} St37 = 1; AI = 0.3; stainless steel = 0.7; Ms \\ = 0.4 \\ \hline Repeat accuracy & \leq 2 \% of full scale \\ \hline Temperature drift & \leq \pm 10 \% \\ \hline Hysteresis & 315 \% \\ \hline Electrical data \\ \hline Operating voltage U_{\scriptscriptstyle B} & 20250 VAC \\ \hline Operating voltage U_{\scriptscriptstyle B} & 10300 VDC \\ \hline AC rated operational current & \leq 400 mA \\ \hline DC rated operating current I_{\scriptscriptstyle e} & \leq 300 mA \\ \hline Frequency & \geq 50 \leq 60 Hz \\ \hline Residual current & \leq 1.7 mA \\ \hline Isolation test voltage & 1.5 kV \\ \hline Surge current & \leq 8 A (\leq 10 ms max. 5 Hz) \\ \hline Voltage drop at I_{\scriptscriptstyle e} & \leq 6 V \\ \hline Output function & 2-wire, NO contact, 2-wire \\ \hline Smallest operating current & \geq 3 mA \\ \hline \end{array}$	Mounting conditions	Flush
$= 0.4$ Repeat accuracy $\leq 2 \%$ of full scale Temperature drift $\leq \pm 10 \%$ Hysteresis 315% Electrical data Operating voltage U_s 20250 VAC Operating voltage U_s 10300 VDC AC rated operational current $\leq 400 \text{ mA}$ DC rated operating current I_s $\leq 300 \text{ mA}$ Frequency $\geq 50 \leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage 1.5 kV Surge current $\leq 8 \text{ A} (\leq 10 \text{ ms max. 5 Hz})$ Voltage drop at I_s $\leq 6 \text{ V}$ Output function 2-wire , NO contact, 2-wire Smallest operating current $\geq 3 \text{ mA}$	Secured operating distance	≤ (0.81 × Sn) mm
Temperature drift $\leq \pm 10 \%$ Hysteresis 315% Electrical data Operating voltage U _B 20250 VAC Operating voltage U _B 10300 VDC AC rated operational current $\leq 400 \text{ mA}$ DC rated operating current I _e $\leq 300 \text{ mA}$ Frequency $\geq 50 \leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage 1.5 kV Surge current $\leq 8 \text{ A} (\leq 10 \text{ ms max. 5 Hz})$ Voltage drop at I _e $\leq 6 \text{ V}$ Output function 2-wire , NO contact, 2-wire Smallest operating current $\geq 3 \text{ mA}$	Correction factors	
Hysteresis 315 % Electrical data Operating voltage U _B 20250 VAC Operating voltage U _B 10300 VDC AC rated operational current ≤ 400 mA DC rated operating current I _B ≤ 300 mA Frequency ≥ 50≤ 60 Hz Residual current ≤ 1.7 mA Isolation test voltage 1.5 kV Surge current ≤ 8 A (≤ 10 ms max. 5 Hz) Voltage drop at I _B ≤ 6 V Output function 2-wire, NO contact, 2-wire Smallest operating current ≥ 3 mA	Repeat accuracy	≤ 2 % of full scale
Electrical data Operating voltage U_B Operating voltage U_B 10300 VDC AC rated operational current $\leq 400 \text{ mA}$ DC rated operating current I_B Frequency $\geq 50 \leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage 1.5 kV Surge current $\leq 8 \text{ A} (\leq 10 \text{ ms max. 5 Hz})$ Voltage drop at I_B Output function $\leq 3 \text{ mA}$	Temperature drift	≤ ±10 %
Operating voltage U_B 20250 VAC Operating voltage U_B 10300 VDC AC rated operational current ≤ 400 mA DC rated operating current I_B ≤ 300 mA Frequency ≥ 50≤ 60 Hz Residual current ≤ 1.7 mA Isolation test voltage 1.5 kV Surge current ≤ 8 A (≤ 10 ms max. 5 Hz) Voltage drop at I_B ≤ 6 V Output function 2-wire, NO contact, 2-wire Smallest operating current ≥ 3 mA	Hysteresis	315 %
Operating voltage U_B 10300 VDC AC rated operational current ≤ 400 mA DC rated operating current I_B ≤ 300 mA Frequency ≥ 50≤ 60 Hz Residual current ≤ 1.7 mA Isolation test voltage 1.5 kV Surge current ≤ 8 A (≤ 10 ms max. 5 Hz) Voltage drop at I_B ≤ 6 V Output function 2-wire, NO contact, 2-wire Smallest operating current ≥ 3 mA	Electrical data	
AC rated operational current $\leq 400 \text{ mA}$ DC rated operating current I $_{\circ}$ $\leq 300 \text{ mA}$ Frequency $\geq 50 \leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage 1.5 kV Surge current $\leq 8 \text{ A} (\leq 10 \text{ ms max. 5 Hz})$ Voltage drop at I $_{\circ}$ $\leq 6 \text{ V}$ Output function $2\text{-wire, NO contact, 2-wire}$ Smallest operating current $\geq 3 \text{ mA}$	Operating voltage U _B	20250 VAC
DC rated operating current I₀ ≤ 300 mA Frequency ≥ 50≤ 60 Hz Residual current ≤ 1.7 mA Isolation test voltage 1.5 kV Surge current ≤ 8 A (≤ 10 ms max. 5 Hz) Voltage drop at I₀ ≤ 6 V Output function 2-wire, NO contact, 2-wire Smallest operating current ≥ 3 mA	Operating voltage U _B	10300 VDC
Frequency $\geq 50 \leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage 1.5 kV Surge current $\leq 8 \text{ A} (\leq 10 \text{ ms max. 5 Hz})$ Voltage drop at I _e $\leq 6 \text{ V}$ Output function 2-wire , NO contact, 2-wire Smallest operating current $\geq 3 \text{ mA}$	AC rated operational current	≤ 400 mA
Residual current ≤ 1.7 mA Isolation test voltage 1.5 kV Surge current ≤ 8 A (≤ 10 ms max. 5 Hz) Voltage drop at I _e ≤ 6 V Output function 2-wire, NO contact, 2-wire Smallest operating current ≥ 3 mA	DC rated operating current I _e	≤ 300 mA
Isolation test voltage 1.5 kV Surge current $\leq 8 \text{ A} (\leq 10 \text{ ms max. 5 Hz})$ Voltage drop at I_e $\leq 6 \text{ V}$ Output function $2\text{-wire, NO contact, 2-wire}$ Smallest operating current $\geq 3 \text{ mA}$	Frequency	≥ 50≤ 60 Hz
Surge current ≤ 8 A (≤ 10 ms max. 5 Hz) Voltage drop at I_e ≤ 6 V Output function 2-wire, NO contact, 2-wire Smallest operating current ≥ 3 mA	Residual current	≤ 1.7 mA
Voltage drop at I₀ ≤ 6 V Output function 2-wire, NO contact, 2-wire Smallest operating current ≥ 3 mA	Isolation test voltage	1.5 kV
Output function 2-wire, NO contact, 2-wire Smallest operating current ≥ 3 mA	Surge current	≤ 8 A (≤ 10 ms max. 5 Hz)
Smallest operating current ≥ 3 mA	Voltage drop at I _e	≤ 6 V
·	Output function	2-wire, NO contact, 2-wire
Switching frequency 0.02 kHz	Smallest operating current	≥ 3 mA
	Switching frequency	0.02 kHz

Features

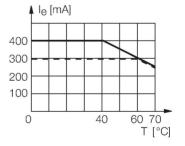
- ■Threaded barrel, M18 x 1
- Plastic, PA12-GF30
- AC 2-wire, 20...250 VAC
- ■DC 2-wire, 10...300 VDC
- ■NO contact
- Cable connection

Wiring diagram



Functional principle

Inductive sensors detect metal objects contactless and wear-free. For this, 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.



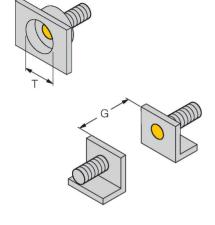


Technical data

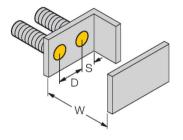
Mechanical data	
Design	Threaded barrel, M18 x 1
Dimensions	64 mm
Housing material	Plastic, PA12-GF30
Active area material	Plastic, PA12-GF30
End cap	Plastic, EPTR
Max. tightening torque of housing nut	2 Nm
Electrical connection	Cable
Cable quality	Ø 5.2 mm, LifYY, PVC, 2 m
Core cross-section	2 x 0.34 mm²
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, Red

Mounting instructions

Mounting instructions/Description

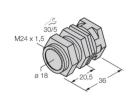


Distance D	2 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn
Diameter active area B	Ø 18 mm



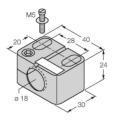
Accessories

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



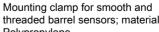
6947214 Mounting clamp for threaded barrel sensors, with dead-stop; material: PA6

MW18 6945004

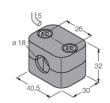


Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)

BSS-18



6901320



threaded barrel sensors; material: Polypropylene