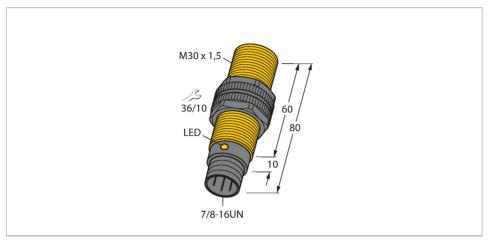


BI10-P30-RZ3X-B2131 Inductive Sensor



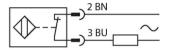
Technical data

ID	Туре	BI10-P30-RZ3X-B2131
Rated switching distance 10 mm Mounting conditions Flush Secured operating distance ≤ (0.81 × Sn) mm Correction factors St37 = 1; Al = 0.3; stainless steel = 0.7; Ms = 0.4 Repeat accuracy ≤ 2 % of full scale Temperature drift ≤ ±10 % 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, NC contact, 2-wire Smallest operating current ≥ 3 mA	ID	43751
Mounting conditions Flush Secured operating distance ≤ (0.81 × Sn) mm Correction factors St37 = 1; Al = 0.3; stainless steel = 0.7; Ms = 0.4 Repeat accuracy ≤ 2 % of full scale Temperature drift ≤ ±10 % Hysteresis 315 % Electrical data Operating voltage U _B 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, NC contact, 2-wire Smallest operating current ≥ 3 mA	General data	
Secured operating distance $\leq (0.81 \times Sn) \text{ mm}$ Correction factors $St37 = 1; Al = 0.3; \text{ stainless steel} = 0.7; Ms = 0.4$ Repeat accuracy $\leq 2 \% \text{ of full scale}$ 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_B $\leq 300 \text{ mA}$ 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_B $\leq 6 \text{ V}$ Output function $2\text{-wire, NC contact, } 2\text{-wire}$ Smallest operating current $\geq 3 \text{ mA}$	Rated switching distance	10 mm
Correction factors $ \begin{array}{c} St37 = 1; \ Al = 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 C} & \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 C} & \leq 6 \ V \\ \hline Output \ function & 2-wire, \ NC \ 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_B 20250 VAC Operating voltage U_B 10300 VDC AC rated operational current $\leq 400 \text{ mA}$ DC rated operating current I_B $\leq 300 \text{ mA}$ 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_B $\leq 6 \text{ V}$ Output function 2-wire , NC 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_B $\leq 300 \text{ mA}$ 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_B $\leq 6 \text{ V}$ Output function $2\text{-wire, NC contact, 2-wire}$ Smallest operating current $\geq 3 \text{ mA}$	Correction factors	St37 = 1; AI = 0.3; stainless steel = 0.7; Ms = 0.4
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 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 Output function 2-wire, NC 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 $\leq 400 \text{ mA}$ DC rated operating current I_B $\leq 300 \text{ mA}$ 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_B $\leq 6 \text{ V}$ Output function $2\text{-wire, NC contact, } 2\text{-wire}$ Smallest operating current $\geq 3 \text{ mA}$	Hysteresis	315 %
Operating voltage U_8 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 $2\text{-wire, NC contact, } 2\text{-wire}$ Smallest operating current $\geq 3 \text{ mA}$	Electrical data	
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 $\leq 8 \text{ A} (\leq 10 \text{ ms max. } 5 \text{ Hz})$ Voltage drop at I_e $\leq 6 \text{ V}$ Output function $2\text{-wire, NC contact, } 2\text{-wire}$ Smallest operating current $\geq 3 \text{ mA}$	Operating voltage U _B	20250 VAC
DC rated operating current I _e ≤ 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 _e ≤ 6 V Output function 2-wire, NC contact, 2-wire Smallest operating current ≥ 3 mA	Operating voltage U _B	10300 VDC
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_e ≤ 6 V Output function 2-wire, NC contact, 2-wire Smallest operating current ≥ 3 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, NC contact, 2-wire Smallest operating current ≥ 3 mA	DC rated operating current I _e	≤ 300 mA
Isolation test voltage1.5 kVSurge current $\leq 8 \text{ A } (\leq 10 \text{ ms max. 5 Hz})$ Voltage drop at I $_{\circ}$ $\leq 6 \text{ V}$ Output function2-wire, NC contact, 2-wireSmallest 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, NC contact, 2-wire Smallest operating current ≥ 3 mA	Residual current	≤ 1.7 mA
Voltage drop at I₀ ≤ 6 V Output function 2-wire, NC contact, 2-wire Smallest operating current ≥ 3 mA	Isolation test voltage	1.5 kV
Output function 2-wire, NC 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 _o	≤ 6 V
	Output function	2-wire, NC contact, 2-wire
Switching frequency 0.02 kHz	Smallest operating current	≥ 3 mA
	Switching frequency	0.02 kHz

Features

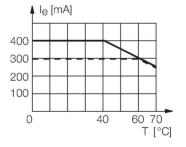
- ■Threaded barrel, M30 x 1.5
- Plastic, PA12-GF30
- ■AC 2-wire, 20...250 VAC
- ■DC 2-wire, 10...300 VDC
- ■NC contact
- ■7/8" male connector

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.



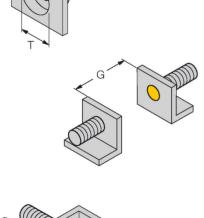


Technical data

Mechanical data		
Design	Threaded barrel, M30 x 1.5	
Dimensions	80 mm	
Housing material	Plastic, PA12-GF30	
Active area material	Plastic, PA12-GF30	
Max. tightening torque of housing nut	5 Nm	
Electrical connection	Connector, 7/8"	
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 T	3 x B
	Distance S	1.5 x B
T	Distance G	6 x Sn
G	Diameter active area B	Ø 30 mm

Distance D

Distance W

2 x B

3 x Sn

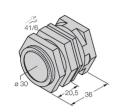


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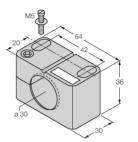
Accessories

QM-30 6945103



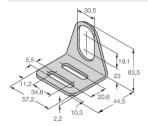
Quick-mount bracket with dead-stop; material: Chrome-plated brass. Male thread M36 × 1.5. Note: The switching distance of the proximity switches may change when using quick-mount brackets.

BST-30B

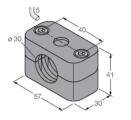


Mounting clamp for threaded barrel sensors, with dead-stop; material: PA6

MW30 6945005



Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304) BSS-30



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