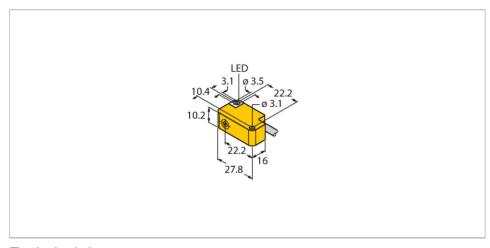


BI2-Q10S-RZ31X Inductive Sensor



Technical data

ID 1314300 General data 2 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 Hysteresis 315 % Electrical data 20250 VAC Operating voltage U ₈ 20250 VAC Operating voltage U ₈ 10300 VDC AC rated operational current ≤ 100 mA DC rated operating current I ₈ ≤ 100 mA Frequency ≥ 50≤ 60 Hz Residual current ≤ 1.7 mA Isolation test voltage 1.5 kV Surge current ≤ 1 A (≤ 10 ms max. 5 Hz) Voltage drop at I ₈ ≤ 6 V Output function 2-wire, NC contact, 2-wire Smallest operating current ≥ 3 mA Switching frequency 0.02 kHz	Туре	BI2-Q10S-RZ31X
Rated switching distance 2 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 Hysteresis 315 % Electrical data 20250 VAC Operating voltage U _B 10300 VDC AC rated operational current ≤ 100 mA DC rated operating current I _B ≤ 100 mA Frequency ≥ 50≤ 60 Hz Residual current ≤ 1.7 mA Isolation test voltage 1.5 kV Surge current ≤ 1 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	1314300
Mounting conditionsFlushSecured operating distance≤ $(0.81 \times Sn)$ mmCorrection factorsSt37 = 1; Al = 0.3; stainless steel = 0.7; Ms = 0.4Repeat accuracy≤ 2 % of full scaleHysteresis315 %Electrical data20250 VACOperating voltage Us20250 VACAC rated operational current≤ 100 mADC rated operating current Is≤ 100 mAFrequency≥ 50≤ 60 HzResidual current≤ 1.7 mAIsolation test voltage1.5 kVSurge current≤ 1 A (≤ 10 ms max. 5 Hz)Voltage drop at Is≤ 6 VOutput function2-wire, NC contact, 2-wireSmallest operating current≥ 3 mA	General data	
Secured operating distance $\leq (0.81 \times Sn) \text{ mm}$ Correction factors $St37 = 1$; Al = 0.3; stainless steel = 0.7; Ms = 0.4 Repeat accuracy $\leq 2 \% \text{ of full scale}$ Hysteresis 315% Electrical data Operating voltage U_B 20250 VAC Operating voltage U_B 10300 VDC AC rated operational current $\leq 100 \text{ mA}$ DC rated operating current I_C $\leq 100 \text{ mA}$ Frequency $\geq 50\leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage 1.5 kV Surge current $\leq 1 \text{ A} (\leq 10 \text{ ms max. } 5 \text{ Hz})$ Voltage drop at I_C $\leq 6 \text{ V}$ Output function $2\text{-wire, NC contact, } 2\text{-wire}$ Smallest operating current $\geq 3 \text{ mA}$	Rated switching distance	2 mm
Correction factors $ \begin{array}{ll} St37 = 1; Al = 0.3; stainless steel = 0.7; Ms \\ = 0.4 \\ \hline \\ Repeat accuracy \\ & \leq 2 \% of full scale \\ \hline \\ Hysteresis \\ \hline \\ 315 \% \\ \hline \\ Electrical data \\ \hline \\ Operating voltage U_{\scriptscriptstyle B} \\ \hline \\ Operating voltage U_{\scriptscriptstyle B} \\ \hline \\ AC rated operational current \\ \hline \\ AC rated operational current \\ \hline \\ DC rated operating current I_{\scriptscriptstyle B} \\ \hline \\ Frequency \\ \hline \\ Residual current \\ \hline \\ Surge current \\ \hline \\ Surge current \\ \hline \\ Voltage drop at I_{\scriptscriptstyle B} \\ \hline \\ Output function \\ \hline \\ Smallest operating current \\ \hline \\ ≥ 3 mA \\ \hline \\ \hline \\ \hline \\ Smallest operating current \\ \hline \\ \hline \\ Smallest operating current \\ \hline \\ $	Mounting conditions	Flush
$= 0.4$ Repeat accuracy $\leq 2 \%$ of full scale Hysteresis 315% Electrical data Operating voltage U _B 20250 VAC Operating voltage U _B 10300 VDC AC rated operational current $\leq 100 \text{ mA}$ DC rated operating current I _B $\leq 100 \text{ mA}$ Frequency $\geq 50\leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage 1.5 kV Surge current $\leq 1 \text{ A} (\leq 10 \text{ ms max. 5 Hz})$ 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
Hysteresis 315% Electrical data Operating voltage U _B 20250 VAC Operating voltage U _B 10300 VDC AC rated operational current $\leq 100 \text{ mA}$ DC rated operating current I _e $\leq 100 \text{ mA}$ Frequency $\geq 50 \leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage 1.5 kV Surge current $\leq 1 \text{ A } (\leq 10 \text{ ms max. 5 Hz})$ Voltage drop at I _e $\leq 6 \text{ V}$ Output function $2\text{-wire, NC contact, 2-wire}$ Smallest operating current $\geq 3 \text{ mA}$	Correction factors	
Electrical data Operating voltage U_B 20250 VAC Operating voltage U_B 10300 VDC AC rated operational current $\leq 100 \text{ mA}$ 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 $\leq 1 \text{ A } (\leq 10 \text{ ms max. 5 Hz})$ Voltage drop at I_B Output function 2-wire, NC contact, 2-wire Smallest operating current $\geq 3 \text{ mA}$	Repeat accuracy	≤ 2 % of full scale
Operating voltage U_B 20250 VAC Operating voltage U_B 10300 VDC AC rated operational current $\leq 100 \text{ mA}$ DC rated operating current I_B $\leq 100 \text{ mA}$ Frequency $\geq 50 \leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage 1.5 kV Surge current $\leq 1 \text{ A } (\leq 10 \text{ ms max. 5 Hz})$ Voltage drop at I_B $\leq 6 \text{ V}$ Output function $2\text{-wire, NC contact, 2-wire}$ Smallest operating current $\geq 3 \text{ mA}$	Hysteresis	315 %
Operating voltage U $_{B}$ 10300 VDC AC rated operational current ≤ 100 mA DC rated operating current I $_{B}$ ≤ 100 mA Frequency ≥ 50≤ 60 Hz Residual current ≤ 1.7 mA Isolation test voltage 1.5 kV Surge current ≤ 1 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	Electrical data	
AC rated operational current ≤ 100 mA DC rated operating current I _e ≤ 100 mA Frequency ≥ 50≤ 60 Hz Residual current ≤ 1.7 mA Isolation test voltage 1.5 kV Surge current ≤ 1 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	20250 VAC
DC rated operating current I_e $\leq 100 \text{ mA}$ Frequency $\geq 50 \leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage 1.5 kV Surge current $\leq 1 \text{ A } (\leq 10 \text{ ms max. 5 Hz})$ Voltage drop at I_e $\leq 6 \text{ V}$ Output function $2\text{-wire, NC contact, 2-wire}$ Smallest operating current $\geq 3 \text{ mA}$	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 $\leq 1 \text{ A} (\leq 10 \text{ ms max. 5 Hz})$ Voltage drop at I _e $\leq 6 \text{ V}$ Output function 2-wire , NC contact, 2-wire Smallest operating current $\geq 3 \text{ mA}$	AC rated operational current	≤ 100 mA
Residual current ≤ 1.7 mA Isolation test voltage 1.5 kV Surge current ≤ 1 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	≤ 100 mA
Isolation test voltage 1.5 kV Surge current $\leq 1 \text{ A } (\leq 10 \text{ ms max. 5 Hz})$ Voltage drop at I $_{\circ}$ $\leq 6 \text{ V}$ Output function $2\text{-wire, NC contact, 2-wire}$ Smallest operating current $\geq 3 \text{ mA}$	Frequency	≥ 50≤ 60 Hz
Surge current ≤ 1 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	≤ 1 A (≤ 10 ms max. 5 Hz)
Smallest operating current ≥ 3 mA	Voltage drop at I _e	≤ 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

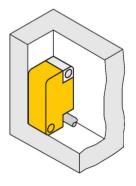
- Rectangular, height 10.2 mm
- Active face, lateral
- Cable outlet to all sides
- Plastic, PP-GF20
- ■AC 2-wire, 35...250 VDC
- ■DC 2-wire, 10...300 VDC
- ■NC contact
- Cable connection

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.



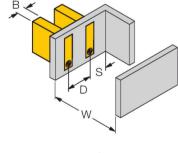


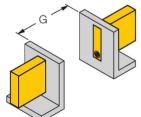
Technical data

Mechanical data	
Design	Rectangular, Q10S
Dimensions	27.8 x 16 x 10.2 mm
Housing material	Plastic, PP-GF20
Active area material	PP-GF20
Electrical connection	Cable
Cable quality	Ø 3 mm, Gray, Lif9Y-11Y, PUR, 2 m
Core cross-section	2 x 0.14 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 S	1 x B
Distance G	6 x Sn
Width active area B	10.2 mm