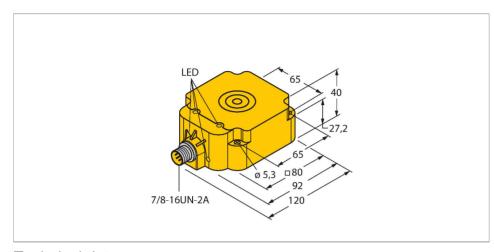


BI50-Q80-ADZ30X2-B1131 Inductive Sensor – With Increased Switching Distance



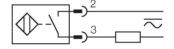
Technical data

ID	Туре	BI50-Q80-ADZ30X2-B1131
Rated switching distance 50 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 _s 20250 VAC Operating voltage U _s 10300 VDC AC rated operational current ≤ 400 mA DC rated operating current I _s ≤ 300 mA Frequency ≥ 50≤ 60 Hz Residual current ≤ 1.7 mA Isolation test voltage 1.5 kV Surge current ≤ 3 A (≤ 20 ms max. 5 Hz) Short-circuit protection yes/Latching Voltage drop at I _s ≤ 6 V Wire break/reverse polarity protection yes/Complete	• •	4200310
Mounting conditions Flush Secured operating distance ≤ (0.81 × Sn) mm Correction factors \$t37 = 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 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 ≤ 3 A (≤ 20 ms max. 5 Hz) Short-circuit protection yes/Latching Voltage drop at I _B ≤ 6 V Wire break/reverse polarity protection yes/Complete	General data	
Secured operating distance $\leq (0.81 \times Sn) \text{ mm}$ Correction factors $\begin{array}{l} St37 = 1; \text{ Al} = 0.3; \text{ stainless steel} = 0.7; \text{ Ms} = 0.4 \\ \hline \text{Repeat accuracy} & \leq 2 \% \text{ of full scale} \\ \hline \text{Temperature drift} & \leq \pm 10 \% \\ \hline \text{Hysteresis} & 315 \% \\ \hline \text{Electrical data} \\ \hline \text{Operating voltage U}_8 & 20250 \text{ VAC} \\ \hline \text{Operating voltage U}_8 & 10300 \text{ VDC} \\ \hline \text{AC rated operational current} & \leq 400 \text{ mA} \\ \hline \text{DC rated operating current I}_e & \leq 300 \text{ mA} \\ \hline \text{Frequency} & \geq 50 \leq 60 \text{ Hz} \\ \hline \text{Residual current} & \leq 1.7 \text{ mA} \\ \hline \text{Isolation test voltage} & 1.5 \text{ kV} \\ \hline \text{Surge current} & \leq 3 \text{ A } (\leq 20 \text{ ms max. 5 Hz}) \\ \hline \text{Short-circuit protection} & \text{yes/Latching} \\ \hline \text{Voltage drop at I}_e & \leq 6 \text{ V} \\ \hline \text{Wire break/reverse polarity protection} & \text{yes/Complete} \\ \hline \end{array}$	Rated switching distance	50 mm
Correction factors $\begin{array}{ll} St37 = 1; \ Al = 0.3; \ stainless \ steel = 0.7; \ Ms \\ = 0.4 \\ \hline Repeat \ accuracy & \leq 2 \% \ of \ full \ scale \\ \hline Temperature \ drift & \leq \pm 10 \% \\ \hline Hysteresis & 315 \% \\ \hline Electrical \ data \\ \hline Operating \ voltage \ U_{\scriptscriptstyle B} & 20250 \ VAC \\ \hline Operating \ voltage \ U_{\scriptscriptstyle B} & 10300 \ VDC \\ \hline AC \ rated \ operational \ current & \leq 400 \ mA \\ \hline DC \ rated \ operating \ current \ I_{\scriptscriptstyle 0} & \leq 300 \ mA \\ \hline Frequency & \geq 50 \leq 60 \ Hz \\ \hline Residual \ current & \leq 1.7 \ mA \\ \hline Isolation \ test \ voltage & 1.5 \ kV \\ \hline Surge \ current & \leq 3 \ A \ (\leq 20 \ ms \ max. \ 5 \ Hz) \\ \hline Short-circuit \ protection & yes/Latching \\ \hline Voltage \ drop \ at \ I_{\scriptscriptstyle 0} & \leq 6 \ V \\ \hline Wire \ break/reverse \ polarity \ protection & yes/Complete \\ \hline \end{array}$	Mounting conditions	Flush
$= 0.4$ Repeat accuracy $\leq 2 \% \text{ of full scale}$ Temperature drift $\leq \pm 10 \%$ Hysteresis 315% Electrical data $Operating \text{ voltage } U_{\text{B}} \qquad 20250 \text{ VAC}$ Operating voltage $U_{\text{B}} \qquad 10300 \text{ VDC}$ AC rated operational current $\leq 400 \text{ mA}$ DC rated operating current $I_{\text{e}} \qquad \leq 300 \text{ mA}$ Frequency $\geq 50 \leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage 1.5 kV Surge current $\leq 3 \text{ A } (\leq 20 \text{ ms max. 5 Hz})$ Short-circuit protection $\text{Voltage drop at } I_{\text{e}} \qquad \leq 6 \text{ V}$ Wire break/reverse polarity protection yes/Complete	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_C $\leq 300 \text{ mA}$ Frequency $\geq 50 \leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage 1.5 kV Surge current $\leq 3 \text{ A} (\leq 20 \text{ ms max. 5 Hz})$ Short-circuit protection (5.0 kg) Voltage drop at I_C $\leq 6 \text{ V}$ Wire break/reverse polarity protection (5.0 kg)	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 ≤ 3 A (≤ 20 ms max. 5 Hz) Short-circuit protection yes/Latching Voltage drop at I _B ≤ 6 V Wire break/reverse polarity protection yes/Complete	Repeat accuracy	≤ 2 % of full scale
Electrical data Operating voltage $U_{\scriptscriptstyle B}$ Operating voltage $U_{\scriptscriptstyle B}$ 10300 VDC AC rated operational current $\leq 400 \text{ mA}$ DC rated operating current $I_{\scriptscriptstyle 0}$ Frequency $\geq 50 \leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage 1.5 kV Surge current $\leq 3 \text{ A} (\leq 20 \text{ ms max. 5 Hz})$ Short-circuit protection yes/Latching Voltage drop at $I_{\scriptscriptstyle 0}$ Wire break/reverse polarity protection yes/Complete	Temperature drift	≤ ±10 %
$\begin{array}{llllllllllllllllllllllllllllllllllll$	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 ≤ 3 A (≤ 20 ms max. 5 Hz) Short-circuit protection yes/Latching Voltage drop at I_B ≤ 6 V Wire break/reverse polarity protection yes/Complete	Electrical data	
AC rated operational current $\leq 400 \text{ mA}$ DC rated operating current I _o $\leq 300 \text{ mA}$ Frequency $\geq 50 \leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage $\leq 1.5 \text{ kV}$ Surge current $\leq 3 \text{ A} (\leq 20 \text{ ms max. 5 Hz})$ Short-circuit protection $\leq 60 \text{ V}$ Wire break/reverse polarity protection $\leq 60 \text{ V}$	Operating voltage U _B	20250 VAC
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 $\leq 3 \text{ A} (\leq 20 \text{ ms max. 5 Hz})$ Short-circuit protectionyes/LatchingVoltage drop at I_e $\leq 6 \text{ V}$ Wire break/reverse polarity protectionyes/Complete	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 $\leq 3 \text{ A} (\leq 20 \text{ ms max. 5 Hz})$ Short-circuit protection yes/Latching Voltage drop at I _e $\leq 6 \text{ V}$ Wire break/reverse polarity protection yes/Complete	AC rated operational current	≤ 400 mA
Residual current ≤ 1.7 mA Isolation test voltage 1.5 kV Surge current ≤ 3 A (≤ 20 ms max. 5 Hz) Short-circuit protection yes/Latching Voltage drop at I₀ ≤ 6 V Wire break/reverse polarity protection yes/Complete	DC rated operating current I _e	≤ 300 mA
	Frequency	≥ 50≤ 60 Hz
Surge current ≤ 3 A (≤ 20 ms max. 5 Hz) Short-circuit protection yes/Latching Voltage drop at I_e ≤ 6 V Wire break/reverse polarity protection yes/Complete	Residual current	≤ 1.7 mA
Short-circuit protection yes/Latching Voltage drop at I₂ ≤ 6 V Wire break/reverse polarity protection yes/Complete	Isolation test voltage	1.5 kV
Voltage drop at I _e ≤ 6 V Wire break/reverse polarity protection yes/Complete	Surge current	≤ 3 A (≤ 20 ms max. 5 Hz)
Wire break/reverse polarity protection yes/Complete	Short-circuit protection	yes/Latching
	Voltage drop at I _e	≤ 6 V
Output function 2-wire, NO contact, 2-wire	Wire break/reverse polarity protection	yes/Complete
	Output function	2-wire, NO contact, 2-wire

Features

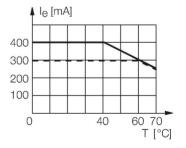
- Rectangular, height 40 mm
- Active face on top
- Plastic, PBT-GF30-V0
- ■Large sensing range
- Earge sensing range
- AC 2-wire, 20...250 VAC DC 2-wire, 10...300 VDC
- ■NO contact
- ■7/8" male connector

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.



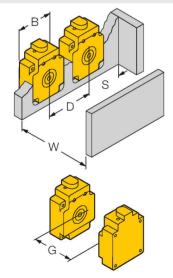


Technical data

Smallest operating current	≥ 3 mA
Switching frequency	0.02 kHz
Mechanical data	
Design	Rectangular, Q80
Dimensions	92 x 80 x 40 mm
Housing material	Plastic, PBT-GF30-V0
Active area material	PBT-GF30-V0, black
Tightening torque fixing screw	4 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
Power-on indication	LED, Green
Switching state	LED, Red

Mounting instructions

Mounting instructions/Description



Distance D	3 x B
Distance W	3 x Sn
Distance S	1.5 x B
Distance G	6 x Sn
Width active area B	80 mm