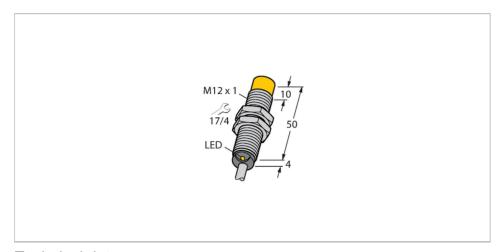


# NI8-G12-ADZ32X Inductive Sensor – With Increased Switching Distance



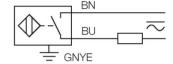
#### Technical data

ID         4205400           General data         Rated switching distance         8 mm           Mounting conditions         Non-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         Operating voltage Us           Operating voltage Us         20250 VAC           Operating voltage Us         10300 VDC           AC rated operational current         ≤ 100 mA           DC rated operating current Is         ≤ 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)           Short-circuit protection         yes/Latching           Voltage drop at Is         ≤ 6 V           Wire break/reverse polarity protection         yes/Complete           Output function         2-wire, NO contact, 2-wire           Smallest operating current         ≥ 3 mA	Туре	NI8-G12-ADZ32X
Rated switching distance       8 mm         Mounting conditions       Non-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 <sub>e</sub> 20250 VAC         Operating voltage U <sub>e</sub> 10300 VDC         AC rated operational current       ≤ 100 mA         DC rated operating current I <sub>e</sub> ≤ 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)         Short-circuit protection       yes/Latching         Voltage drop at I <sub>e</sub> ≤ 6 V         Wire break/reverse polarity protection       yes/Complete         Output function       2-wire, NO contact, 2-wire	ID	4205400
Mounting conditionsNon-flushSecured operating distance≤ $(0.81 \times Sn)$ mmCorrection factors $St37 = 1$ ; Al = 0.3; stainless steel = 0.7; Ms = 0.4Repeat accuracy≤ 2 % of full scaleHysteresis315 %Electrical data $St37 = 1$ ; Al = 0.3; stainless steel = 0.7; Ms = 0.4Operating voltage Ua20250 VACOperating voltage Ua10300 VDCAC rated operational current≤ 100 mADC rated operating current Ia≤ 100 mAFrequency≥ 50≤ 60 HzResidual current≤ 1.7 mAIsolation test voltage1.5 kVSurge current≤ 1 A (≤ 10 ms max. 5 Hz)Short-circuit protectionyes/LatchingVoltage drop at Ia≤ 6 VWire break/reverse polarity protectionyes/CompleteOutput function2-wire, NO contact, 2-wire	General data	
Secured operating distance $\leq (0.81 \times Sn) \text{ mm}$ Correction factors $\begin{array}{l} St37 = 1; \text{ Al} = 0.3; \text{ stainless steel} = 0.7; \text{ Ms} = 0.4 \\ \hline Repeat accuracy & \leq 2 \% \text{ of full scale} \\ \hline Hysteresis & 315 \% \\ \hline Electrical data \\ \hline Operating voltage U_{\scriptscriptstyle B} & 20250  \text{VAC} \\ \hline Operating voltage U_{\scriptscriptstyle B} & 10300  \text{VDC} \\ \hline AC rated operational current & \leq 100  \text{mA} \\ \hline DC rated operating current I_{\scriptscriptstyle 0} & \leq 100  \text{mA} \\ \hline Frequency & \geq 50 \leq 60  \text{Hz} \\ \hline Residual current & \leq 1.7  \text{mA} \\ \hline Isolation test voltage & 1.5  \text{kV} \\ \hline Surge current & \leq 1  \text{A}  (\leq 10  \text{ms max. 5 Hz}) \\ \hline Short-circuit protection & yes/Latching \\ \hline Voltage drop at I_{\scriptscriptstyle 0} & \leq 6  \text{V} \\ \hline Wire break/reverse polarity protection & 2-wire, NO contact, 2-wire \\ \hline \end{array}$	Rated switching distance	8 mm
Correction factors $\begin{array}{lll} St37 = 1; \ Al = 0.3; \ stainless \ steel = 0.7; \ Ms \\ = 0.4 \\ \hline \\ Repeat \ accuracy & \leq 2 \% \ of \ full \ scale \\ \hline \\ Hysteresis & 315 \% \\ \hline \\ Electrical \ data \\ \hline \\ Operating \ voltage \ U_s & 20250 \ VAC \\ \hline \\ Operating \ voltage \ U_s & 10300 \ VDC \\ \hline \\ AC \ rated \ operational \ current & \leq 100 \ mA \\ \hline \\ DC \ rated \ operating \ current \ I_s & \leq 100 \ mA \\ \hline \\ Frequency & \geq 50 \leq 60 \ Hz \\ \hline \\ Residual \ current & \leq 1.7 \ mA \\ \hline \\ Isolation \ test \ voltage & 1.5 \ kV \\ \hline \\ Surge \ current & \leq 1 \ A \ (\leq 10 \ ms \ max. \ 5 \ Hz) \\ \hline \\ Short-circuit \ protection & yes/Latching \\ \hline \\ Voltage \ drop \ at \ I_s & \leq 6 \ V \\ \hline \\ Wire \ break/reverse \ polarity \ protection & yes/Complete \\ \hline \\ Output \ function & 2-wire, \ NO \ contact, \ 2-wire \\ \hline \end{array}$	Mounting conditions	Non-flush
Electrical data	Secured operating distance	≤ (0.81 × Sn) mm
Hysteresis $315\%$ Electrical data $20250 \text{ VAC}$ Operating voltage $U_B$ $20250 \text{ VAC}$ Operating voltage $U_B$ $10300 \text{ VDC}$ 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 $1.5 \text{ kV}$ Surge current $\leq 1 \text{ A } (\leq 10 \text{ ms max. 5 Hz})$ Short-circuit protectionyes/LatchingVoltage drop at $I_e$ $\leq 6 \text{ V}$ Wire break/reverse polarity protectionyes/CompleteOutput function $2\text{-wire, NO contact, 2-wire}$	Correction factors	
Electrical dataOperating voltage $U_B$ 20250 VACOperating voltage $U_B$ 10300 VDCAC 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 voltage1.5 kVSurge current $\leq 1 \text{ A } (\leq 10 \text{ ms max. 5 Hz})$ Short-circuit protectionyes/LatchingVoltage drop at $I_B$ $\leq 6 \text{ V}$ Wire break/reverse polarity protectionyes/CompleteOutput function2-wire, NO contact, 2-wire	Repeat accuracy	≤ 2 % of full scale
Operating voltage $U_B$ 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)         Short-circuit protection       yes/Latching         Voltage drop at $I_B$ ≤ 6 V         Wire break/reverse polarity protection       yes/Complete         Output function       2-wire, NO contact, 2-wire	Hysteresis	315 %
$\begin{array}{llllllllllllllllllllllllllllllllllll$	Electrical data	
AC rated operational current ≤ 100 mA  DC rated operating current I₀ ≤ 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)  Short-circuit protection yes/Latching  Voltage drop at I₀ ≤ 6 V  Wire break/reverse polarity protection yes/Complete  Output function 2-wire, NO contact, 2-wire	Operating voltage U <sub>B</sub>	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 $1.5 \text{ kV}$ Surge current $\leq 1 \text{ A} (\leq 10 \text{ ms max. 5 Hz})$ Short-circuit protection       yes/Latching         Voltage drop at $I_e$ $\leq 6 \text{ V}$ Wire break/reverse polarity protection       yes/Complete         Output function       2-wire, NO contact, 2-wire	Operating voltage U <sub>B</sub>	10300 VDC
Frequency $\geq 50 \leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage $1.5 \text{ kV}$ Surge current $\leq 1 \text{ A} (\leq 10 \text{ ms max. 5 Hz})$ Short-circuit protection       yes/Latching         Voltage drop at I₀ $\leq 6 \text{ V}$ Wire break/reverse polarity protection       yes/Complete         Output function       2-wire, NO contact, 2-wire	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)  Short-circuit protection yes/Latching  Voltage drop at I <sub>e</sub> ≤ 6 V  Wire break/reverse polarity protection yes/Complete  Output function 2-wire, NO contact, 2-wire	DC rated operating current I <sub>e</sub>	≤ 100 mA
Isolation test voltage $1.5 \text{ kV}$ Surge current $\leq 1 \text{ A } (\leq 10 \text{ ms max. 5 Hz})$ Short-circuit protection       yes/Latching         Voltage drop at I $_{\circ}$ $\leq 6 \text{ V}$ Wire break/reverse polarity protection       yes/Complete         Output function       2-wire, NO contact, 2-wire	Frequency	≥ 50≤ 60 Hz
Surge current       ≤ 1 A (≤ 10 ms max. 5 Hz)         Short-circuit protection       yes/Latching         Voltage drop at $I_e$ ≤ 6 V         Wire break/reverse polarity protection       yes/Complete         Output function       2-wire, NO contact, 2-wire	Residual current	≤ 1.7 mA
Short-circuit protection       yes/Latching         Voltage drop at I₀       ≤ 6 V         Wire break/reverse polarity protection       yes/Complete         Output function       2-wire, NO contact, 2-wire	Isolation test voltage	1.5 kV
Voltage drop at I₀ ≤ 6 V  Wire break/reverse polarity protection yes/Complete  Output function 2-wire, NO contact, 2-wire	Surge current	≤ 1 A (≤ 10 ms max. 5 Hz)
Wire break/reverse polarity protection yes/Complete  Output function 2-wire, NO contact, 2-wire	Short-circuit protection	yes/Latching
Output function 2-wire, NO contact, 2-wire	Voltage drop at I <sub>e</sub>	≤ 6 V
· ·	Wire break/reverse polarity protection	yes/Complete
Smallest operating current ≥ 3 mA	Output function	2-wire, NO contact, 2-wire
	Smallest operating current	≥ 3 mA

### **Features**

- ■Threaded barrel, M12 x 1
- Chrome-plated brass
- ■Large sensing range
- ■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.

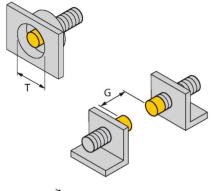


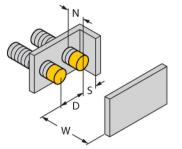
# Technical data

Switching frequency	0.02 kHz
Mechanical data	
Design	Threaded barrel, M12 x 1
Dimensions	54 mm
Housing material	Metal, CuZn, Chrome-plated
Active area material	Plastic, PA12-GF30
End cap	Plastic, EPTR
Max. tightening torque of housing nut	10 Nm
Electrical connection	Cable
Cable quality	Ø 5.2 mm, LifYY, PVC, 2 m
Core cross-section	3 x 0.5 mm <sup>2</sup>
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	3 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn
Distance N	2 x Sn
Diameter active area B	Ø 12 mm

### Accessories

QM-12 6945101

Quick-mount bracket with dead-stop; material: Chrome-plated brass. Male thread M16 × 1. Note: The switching distance of the proximity switches may change when using quick-mount brackets.



BST-12B

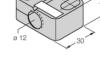
6947212

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



MW12 6945003

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



BSS-12 6901321

20, 26,5

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