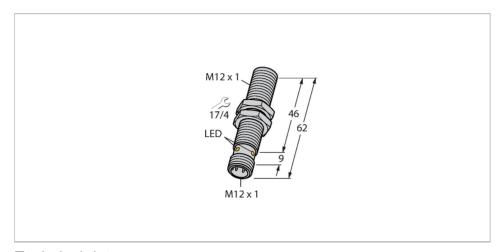


BI4-MT12E-AP6X-H1141/S1589 Inductive Sensor – With Weldguard® coating



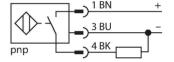
Technical data

ID	Туре	BI4-MT12E-AP6X-H1141/S1589
Coating General data Rated switching distance 4 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 Operating voltage U _B 1030 VDC Ripple U _{ss} ≤ 10 % U _{Bmax} DC rated operating current I _s ≤ 200 mA No-load current ≤ 15 mA Residual current ≤ 0.1 mA Isolation test voltage 0.5 kV Short-circuit protection yes/Cyclic Voltage drop at I _s ≤ 1.8 V Wire break/reverse polarity protection Output function 3-wire, NO contact, PNP	ID	4608094
Rated switching distance 4 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 Operating voltage Us Operating voltage Us 1030 VDC Ripple Uss ≤ 10 % Usmax DC rated operating current Is ≤ 200 mA No-load current ≤ 15 mA Residual current ≤ 0.1 mA Isolation test voltage 0.5 kV Short-circuit protection yes/Cyclic Voltage drop at Issuer ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 3-wire, NO contact, PNP	Special version	
Mounting conditions Flush Secured operating distance ≤ $(0.81 \times Sn)$ 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 1030 VDC Ripple Uss ≤ 10 % Usmax DC rated operating current Is ≤ 200 mA No-load current ≤ 15 mA Residual current ≤ 0.1 mA Isolation test voltage 0.5 kV Short-circuit protection yes/Cyclic Voltage drop at Is ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 3-wire, NO contact, PNP	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 $\leq 2 \%$ of full scale Hysteresis 315% Electrical data Operating voltage U_B 1030 VDC Ripple U_{BS} $\leq 10 \% U_{Bmax}$ DC rated operating current I_B $\leq 200 \text{ mA}$ No-load current $\leq 15 \text{ mA}$ Residual current $\leq 0.1 \text{ mA}$ Isolation test voltage 0.5 kV Short-circuit protection $yes/Cyclic$ Voltage drop at I_B $\leq 1.8 \text{ V}$ Wire break/reverse polarity protection $yes/Complete$ Output function 3 -wire, NO contact, PNP	Rated switching distance	4 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 & 315 \ \% \\ \hline \\ Electrical \ data \\ \hline \\ Operating \ voltage \ U_{\scriptscriptstyle B} & 1030 \ VDC \\ \hline \\ Ripple \ U_{\scriptscriptstyle Ss} & \leq 10 \ \% \ U_{\scriptscriptstyle Bmax} \\ \hline \\ DC \ rated \ operating \ current \ I_{\scriptscriptstyle 0} & \leq 200 \ mA \\ \hline \\ No-load \ current & \leq 15 \ mA \\ \hline \\ Residual \ current & \leq 0.1 \ mA \\ \hline \\ Isolation \ test \ voltage & 0.5 \ kV \\ \hline \\ Short-circuit \ protection & yes/Cyclic \\ \hline \\ Voltage \ drop \ at \ I_{\scriptscriptstyle 0} & \leq 1.8 \ V \\ \hline \\ Wire \ break/reverse \ polarity \ protection & yes/Complete \\ \hline \\ Output \ function & 3-wire, \ NO \ contact, \ PNP \\ \hline \end{array} $	Mounting conditions	Flush
$= 0.4$ Repeat accuracy $\leq 2 \%$ of full scale Hysteresis 315% Electrical data Operating voltage U_B 1030 VDC Ripple U_{as} $\leq 10 \% U_{Bmax}$ DC rated operating current I_c $\leq 200 \text{ mA}$ No-load current $\leq 15 \text{ mA}$ Residual current $\leq 0.1 \text{ mA}$ Isolation test voltage 0.5 kV Short-circuit protection $yes/Cyclic$ Voltage drop at I_c $\leq 1.8 \text{ V}$ Wire break/reverse polarity protection $yes/Complete$ Output function $3-wire$, NO contact, PNP	Secured operating distance	≤ (0.81 × Sn) mm
Hysteresis 315 % Electrical data 1030 VDC Ripple U_{ss} ≤ 10 % U_{Bmax} DC rated operating current I_{e} ≤ 200 mA No-load current ≤ 15 mA Residual current ≤ 0.1 mA Isolation test voltage 0.5 kV Short-circuit protection yes/Cyclic Voltage drop at I_e ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 3-wire, NO contact, PNP	Correction factors	
Electrical dataOperating voltage U_B 1030 VDC Ripple U_{ss} $\leq 10 \% U_{Bmax}$ DC rated operating current I_e $\leq 200 \text{ mA}$ No-load current $\leq 15 \text{ mA}$ Residual current $\leq 0.1 \text{ mA}$ Isolation test voltage 0.5 kV Short-circuit protection $yes/Cyclic$ Voltage drop at I_e $\leq 1.8 \text{ V}$ Wire break/reverse polarity protection $yes/Complete$ Output function $3-wire$, NO contact, PNP	Repeat accuracy	≤ 2 % of full scale
$\begin{array}{llllllllllllllllllllllllllllllllllll$	Hysteresis	315 %
Ripple U_{ss} ≤ 10 % U_{Bmax} DC rated operating current I_e ≤ 200 mA No-load current ≤ 15 mA Residual current ≤ 0.1 mA Isolation test voltage 0.5 kV Short-circuit protection yes/Cyclic Voltage drop at I_e ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 3-wire, NO contact, PNP	Electrical data	
DC rated operating current I_e $\leq 200 \text{ mA}$ No-load current $\leq 15 \text{ mA}$ Residual current $\leq 0.1 \text{ mA}$ Isolation test voltage 0.5 kV Short-circuit protection yes/Cyclic Voltage drop at I_e $\leq 1.8 \text{ V}$ Wire break/reverse polarity protection yes/Complete Output function 3-wire, NO contact, PNP	Operating voltage U _B	1030 VDC
No-load current ≤ 15 mA Residual current ≤ 0.1 mA Isolation test voltage 0.5 kV Short-circuit protection yes/Cyclic Voltage drop at I₀ ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 3-wire, NO contact, PNP	Ripple U _{ss}	≤ 10 % U _{Bmax}
Residual current ≤ 0.1 mA Isolation test voltage 0.5 kV Short-circuit protection yes/Cyclic Voltage drop at I₀ ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 3-wire, NO contact, PNP	DC rated operating current I _e	≤ 200 mA
	No-load current	≤ 15 mA
Short-circuit protection yes/Cyclic Voltage drop at I₀ ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 3-wire, NO contact, PNP	Residual current	≤ 0.1 mA
Voltage drop at I₀ ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 3-wire, NO contact, PNP	Isolation test voltage	0.5 kV
Wire break/reverse polarity protection yes/Complete Output function 3-wire, NO contact, PNP	Short-circuit protection	yes/Cyclic
Output function 3-wire, NO contact, PNP	Voltage drop at I _e	≤ 1.8 V
	Wire break/reverse polarity protection	yes/Complete
Switching frequency 2 kHz	Output function	3-wire, NO contact, PNP
	Switching frequency	2 kHz

Features

- ■Threaded barrel, M12 x 1
- ■Brass, PTFE-coated
- ■DC 3-wire, 10...30 VDC
- ■NO contact, PNP output
- ■M12 x 1 male connector

Wiring diagram





Functional principle

Inductive sensors detect metal objects contactless and wear-free. For this purpose they use a high-frequency electromagnetic AC field that interacts with the target. The sensors hosting a ferrite core coil generate the AC field through an LC resonant circuit.

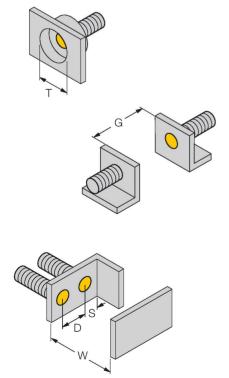


Technical data

Mechanical data	
Design	Threaded barrel, M12 x 1
Dimensions	62 mm
Housing material	Metal, CuZn, PTFE-coated
Active area material	Plastic, PA12-GF30, PTFE-coated
End cap	Plastic, EPTR
Max. tightening torque of housing nut	7 Nm
Electrical connection	Connector, M12 × 1
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, Yellow

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 12 mm



Accessories

BST-12B 6947212

M5 28 40 18 18 18 18

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

QMT-12

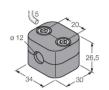
6945106

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



BSS-12 6901321

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



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