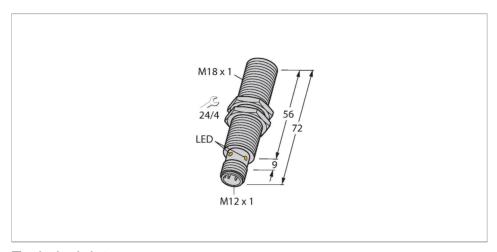


BI8-EM18E-AP6X-H1141/S1589 Inductive Sensor – With Weldguard® coating



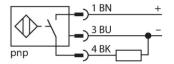
Technical data

ID	Туре	BI8-EM18E-AP6X-H1141/S1589
General data Rated switching distance 8 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 ₈ 1030 VDC Ripple U _{ss} ≤ 10 % U _{8max} 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	4615096
Rated switching distance 8 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 Operating voltage U _B 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	Special version	
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 Operating voltage U _B 1030 VDC Ripple U _{ss} ≤ 10 % U _{Brnax} 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	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_{SS} $\leq 10 \% U_{Brnax}$ 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 $yes/Cyclic$ Output function 3 -wire, NO contact, PNP	Rated switching distance	8 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_{SB} $\leq 10 \% U_{Bmax}$ 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	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 Uss ≤ 10 % Usmax DC rated operating current Ie ≤ 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 Ie ≤ 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}
	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 0.5 kHz	Output function	3-wire, NO contact, PNP
	Switching frequency	0.5 kHz

Features

- ■Threaded barrel, M18 × 1
- Stainless steel, 1.4301
- ■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.

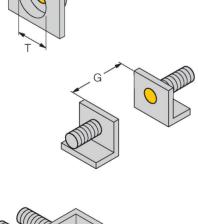


Technical data

Mechanical data	
Design	Threaded barrel, M18 x 1
Dimensions	72 mm
Housing material	Stainless steel, 1.4301 (AISI 304)
Active area material	Plastic, PA12-GF30
Max. tightening torque of housing nut	25 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



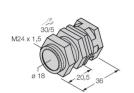
Distance D	2 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn
Diameter active area B	Ø 18 mm



6947214

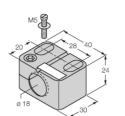
Accessories

QM-18 6945102



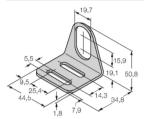
Quick-mount bracket with dead-stop; material: Chrome-plated brass. Male thread M24 × 1.5. Note: The switching distance of the proximity switches may change when using quick-mount brackets.

BST-18B



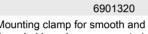
Mounting clamp for threaded barrel sensors, with dead-stop; material: PA6

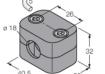
MW18 6945004



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

BSS-18





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