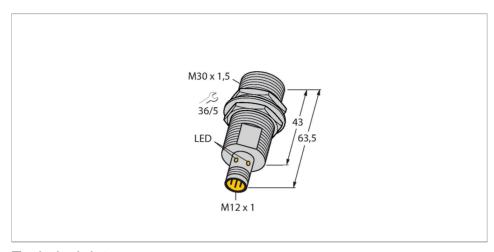


# BI10-EG30F-AG6X-H1141 Inductive Sensor – Stainless Steel Front



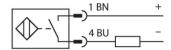
#### Technical data

ID	Туре	BI10-EG30F-AG6X-H1141
Rated switching distance       10 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       ≤ 10 % of full scale         Temperature drift       ≤ ±20 %         Hysteresis       115 %         Electrical data       Operating voltage Us         Operating voltage Us       1030 VDC         Ripple Us       ≤ 10 % Usmax         DC rated operating current Is       ≤ 100 mA         Rated operational current       at 25°C         Residual current       ≤ 0.8 mA         Isolation test voltage       0.5 kV         Short-circuit protection       yes/Cyclic         Voltage drop at Is       ≤ 3.5 V         Wire break/reverse polarity protection       Polarized         Output function       NO contact, 2-wire         Smallest operating current       ≥ 3 mA	ID	4614649
Mounting conditions  Flush  Secured operating distance  St37 = 1; Al = 0.3; stainless steel = 0.7; Ms = 0.4  Repeat accuracy  ≤ 10 % of full scale  Temperature drift  ≤ ±20 %  Hysteresis  115 %  Electrical data  Operating voltage U <sub>s</sub> 1030 VDC  Ripple U <sub>ss</sub> ≤ 10 % U <sub>Bmax</sub> DC rated operating current I <sub>s</sub> ≤ 100 mA  Rated operational current  at 25°C  Residual current  ≤ 0.8 mA  Isolation test voltage  0.5 kV  Short-circuit protection  yes/Cyclic  Voltage drop at I <sub>s</sub> ≤ 3.5 V  Wire break/reverse polarity protection  NO contact, 2-wire  Smallest operating current  ≥ 3 mA	General data	
Secured operating distance $\leq (0.81 \times Sn) \text{ mm}$ Correction factors $\begin{array}{l} St37 = 1; \text{ Al} = 0.3; \text{ stainless steel} = 0.7; \text{ Ms} = 0.4 \\ \hline \text{Repeat accuracy} & \leq 10 \% \text{ of full scale} \\ \hline \text{Temperature drift} & \leq \pm 20 \% \\ \hline \text{Hysteresis} & 115 \% \\ \hline \text{Electrical data} \\ \hline \text{Operating voltage U}_{\text{B}} & 1030 \text{ VDC} \\ \hline \text{Ripple U}_{\text{ss}} & \leq 10 \% \text{ U}_{\text{Bmax}} \\ \hline \text{DC rated operating current I}_{\text{e}} & \leq 100 \text{ mA} \\ \hline \text{Rated operational current} & \text{at } 25^{\circ}\text{C} \\ \hline \text{Residual current} & \leq 0.8 \text{ mA} \\ \hline \text{Isolation test voltage} & 0.5 \text{ kV} \\ \hline \text{Short-circuit protection} & \text{yes/Cyclic} \\ \hline \text{Voltage drop at I}_{\text{e}} & \leq 3.5 \text{ V} \\ \hline \text{Wire break/reverse polarity protection} & \text{Polarized} \\ \hline \text{Output function} & \text{NO contact, 2-wire} \\ \hline \text{Smallest operating current} & \geq 3 \text{ mA} \\ \hline \end{array}$	Rated switching distance	10 mm
Correction factors $\begin{array}{ll} St37 = 1; \ Al = 0.3; \ stainless \ steel = 0.7; \ Ms \\ = 0.4 \\ \hline \\ Repeat \ accuracy \\ \leq 10 \ \% \ of \ full \ scale \\ \hline \\ Temperature \ drift \\ \\ Hysteresis \\ \hline \\ 115 \ \% \\ \hline \\ Electrical \ data \\ \hline \\ Operating \ voltage \ U_s \\ \hline \\ Operating \ voltage \ U_s \\ \hline \\ Electrical \ data \\ \hline \\ Operating \ voltage \ U_s \\ \hline \\ Operating \ voltage \ U_s \\ \hline \\ Standard \ voltage \ U_s \\ \hline \\ DC \ rated \ operating \ current \ I_s \\ \hline \\ Electrical \ data \\ \hline \\ Operating \ voltage \ U_s \\ \hline \\ Standard \ voltage \ U_s \\ \hline \\ Standard \ voltage \\ \hline \\ Output \ function \\ \hline \\ Smallest \ operating \ current \\ \hline \\ Standard \ voltage \\ \hline \\ Output \ function \\ \hline \\ Smallest \ operating \ current \\ \hline \\ Standard \ voltage \\ \hline \\ Smallest \ operating \ current \\ \hline \\ Standard \ voltage \\ \hline \\ Smallest \ operating \ current \\ \hline \\ Standard \ voltage \\ \hline \\ Standard \ voltage \\ \hline \\ Smallest \ operating \ current \\ \hline \\ Standard \ voltage \\ \hline \\ Standard \ voltage \\ \hline \\ Smallest \ operating \ current \\ \hline \\ Standard \ voltage \\ \hline \\ Smallest \ operating \ current \\ \hline \\ Standard \ voltage \\ \hline \\ Standard \ voltage \\ \hline \\ Standard \ voltage \\ \hline \\ Smallest \ operating \ current \\ \hline \\ Standard \ voltage \\ \hline \\ Standard \ voltage \\ \hline \\ Standard \ voltage \\ \hline \\ Smallest \ operating \ current \\ \hline \\ Standard \ voltage \\ \hline \\ \ voltage \\ \hline \\ \ $	Mounting conditions	Flush
Equation   First content	Secured operating distance	≤ (0.81 × Sn) mm
Temperature drift $\leq \pm 20 \%$ Hysteresis $115 \%$ Electrical data  Operating voltage U <sub>B</sub> $1030 \text{ VDC}$ Ripple U <sub>ss</sub> $\leq 10 \% \text{ U}_{\text{Bmax}}$ DC rated operating current I <sub>e</sub> $\leq 100 \text{ mA}$ Rated operational current at 25°C  Residual current $\leq 0.8 \text{ mA}$ Isolation test voltage $0.5 \text{ kV}$ Short-circuit protection yes/Cyclic  Voltage drop at I <sub>e</sub> $\leq 3.5 \text{ V}$ Wire break/reverse polarity protection Polarized  Output function NO contact, 2-wire  Smallest operating current $\geq 3 \text{ mA}$	Correction factors	St37 = 1; AI = 0.3; stainless steel = 0.7; Ms = 0.4
Hysteresis  115 %  Electrical data  Operating voltage U <sub>B</sub> 1030 VDC  Ripple U <sub>ss</sub> ≤ 10 % U <sub>Bmax</sub> DC rated operating current I <sub>e</sub> Rated operational current  at 25°C  Residual current  ≤ 0.8 mA  Isolation test voltage  0.5 kV  Short-circuit protection  yes/Cyclic  Voltage drop at I <sub>e</sub> ≤ 3.5 V  Wire break/reverse polarity protection  NO contact, 2-wire  Smallest operating current  ≥ 3 mA	Repeat accuracy	≤ 10 % of full scale
Electrical data  Operating voltage U <sub>B</sub> 1030 VDC  Ripple U <sub>ss</sub> ≤ 10 % U <sub>Bmax</sub> DC rated operating current I <sub>e</sub> ≤ 100 mA  Rated operational current  at 25°C  Residual current  ≤ 0.8 mA  Isolation test voltage  0.5 kV  Short-circuit protection  yes/Cyclic  Voltage drop at I <sub>e</sub> ≤ 3.5 V  Wire break/reverse polarity protection  Polarized  Output function  NO contact, 2-wire  Smallest operating current  ≥ 3 mA	Temperature drift	≤ ±20 %
Operating voltage $U_B$ 1030 VDC         Ripple $U_{ss}$ ≤ 10 % $U_{Bmax}$ DC rated operating current $I_e$ ≤ 100 mA         Rated operational current       at 25°C         Residual current       ≤ 0.8 mA         Isolation test voltage       0.5 kV         Short-circuit protection       yes/Cyclic         Voltage drop at $I_e$ ≤ 3.5 V         Wire break/reverse polarity protection       Polarized         Output function       NO contact, 2-wire         Smallest operating current       ≥ 3 mA	Hysteresis	115 %
Ripple U <sub>ss</sub> ≤ 10 % U <sub>Bmax</sub> DC rated operating current I <sub>e</sub> ≤ 100 mA  Rated operational current at 25°C  Residual current ≤ 0.8 mA  Isolation test voltage 0.5 kV  Short-circuit protection yes/Cyclic  Voltage drop at I <sub>e</sub> ≤ 3.5 V  Wire break/reverse polarity protection Polarized  Output function NO contact, 2-wire  Smallest operating current ≥ 3 mA	Electrical data	
DC rated operating current I <sub>e</sub> ≤ 100 mA  Rated operational current at 25°C  Residual current ≤ 0.8 mA  Isolation test voltage 0.5 kV  Short-circuit protection yes/Cyclic  Voltage drop at I <sub>e</sub> ≤ 3.5 V  Wire break/reverse polarity protection Polarized  Output function NO contact, 2-wire  Smallest operating current ≥ 3 mA	Operating voltage U <sub>B</sub>	1030 VDC
Rated operational current at 25°C  Residual current ≤ 0.8 mA  Isolation test voltage 0.5 kV  Short-circuit protection yes/Cyclic  Voltage drop at I₀ ≤ 3.5 V  Wire break/reverse polarity protection Polarized  Output function NO contact, 2-wire  Smallest operating current ≥ 3 mA	Ripple U <sub>ss</sub>	≤ 10 % U <sub>Bmax</sub>
Residual current ≤ 0.8 mA  Isolation test voltage 0.5 kV  Short-circuit protection yes/Cyclic  Voltage drop at I₀ ≤ 3.5 V  Wire break/reverse polarity protection Polarized  Output function NO contact, 2-wire  Smallest operating current ≥ 3 mA	DC rated operating current I <sub>e</sub>	≤ 100 mA
Isolation test voltage       0.5 kV         Short-circuit protection       yes/Cyclic         Voltage drop at I₀       ≤ 3.5 V         Wire break/reverse polarity protection       Polarized         Output function       NO contact, 2-wire         Smallest operating current       ≥ 3 mA	Rated operational current	at 25°C
Short-circuit protection  Voltage drop at I₀ ≤ 3.5 V  Wire break/reverse polarity protection  Output function  NO contact, 2-wire  Smallest operating current  ≥ 3 mA	Residual current	≤ 0.8 mA
Voltage drop at I₀ ≤ 3.5 V  Wire break/reverse polarity protection Polarized  Output function NO contact, 2-wire  Smallest operating current ≥ 3 mA	Isolation test voltage	0.5 kV
Wire break/reverse polarity protection       Polarized         Output function       NO contact, 2-wire         Smallest operating current       ≥ 3 mA	Short-circuit protection	yes/Cyclic
Output function       NO contact, 2-wire         Smallest operating current       ≥ 3 mA	Voltage drop at I <sub>e</sub>	≤ 3.5 V
Smallest operating current ≥ 3 mA	Wire break/reverse polarity protection	Polarized
	Output function	NO contact, 2-wire
Switching frequency 0.05 kHz	Smallest operating current	≥ 3 mA
	Switching frequency	0.05 kHz

### **Features**

- ■Threaded barrel, M30 x 1.5
- Stainless steel, 1.4305
- ■DC 2-wire, 10...30 VDC
- ■Polarized version
- ■NO contact
- ■M12 x 1 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.

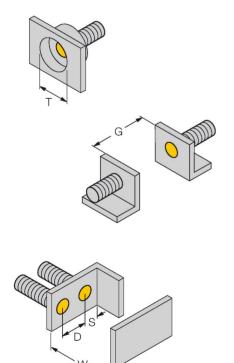


### Technical data

Mechanical data	
Design	Threaded barrel, M30 x 1.5
Dimensions	63.5 mm
Housing material	Stainless steel, 1.4305 (AISI 303)
Active area material	Stainless steel, 1.4305 (AISI 303)
Max. tightening torque of housing nut	10 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
Switching state	2-color LED, Red/green

## Mounting instructions

#### Mounting instructions/Description



Dietanas D	
Distance D	100 mm
Distance W	40 mm
Distance T	30 mm (Fe metal); 120 mm (Fe non- metal)
Distance S	50 mm (Fe metal); 60 mm (non Fe- metal)
Distance G	110 mm
Diameter active area B	Ø 30 mm
ace has to protrude 2 The values depend on	n the mounting nuts used. Lend the use of the nuts

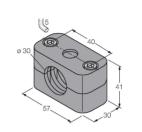


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### Accessories

MW30 6945005

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



BSS-30

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