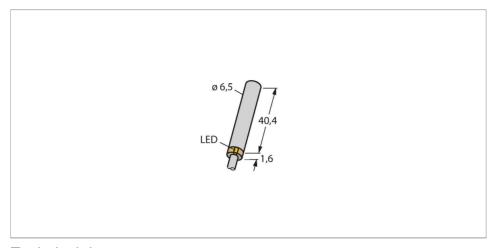


# BI2U-EH6.5-AP6X Inductive Sensor - With Extended Switching Distance



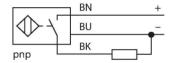
#### Technical data

ID 4281150  General data  Rated switching distance 2 mm  Mounting conditions Flush  Secured operating distance ≤ (0.81 × Sn) mm  Repeat accuracy ≤ 2 % of full scale  Temperature drift ≤ ±10 %  Hysteresis 315 %  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> ≤ 150 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 <sub>s</sub> ≤ 1.8 V  Wire break/reverse polarity protection yes/Complete  Output function 3-wire, NO contact, PNP  DC field stability 200 mT  AC field stability 200 mT  Isolation class	Туре	BI2U-EH6.5-AP6X
Rated switching distance       2 mm         Mounting conditions       Flush         Secured operating distance       ≤ (0.81 × Sn) mm         Repeat accuracy       ≤ 2 % of full scale         Temperature drift       ≤ ±10 %         Hysteresis       315 %         Electrical data       Operating voltage U <sub>s</sub> 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> ≤ 150 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 <sub>s</sub> ≤ 1.8 V         Wire break/reverse polarity protection       yes/Complete         Output function       3-wire, NO contact, PNP         DC field stability       200 mT         AC field stability       200 mT	ID	4281150
Mounting conditions       Flush         Secured operating distance       ≤ (0.81 × Sn) mm         Repeat accuracy       ≤ 2 % of full scale         Temperature drift       ≤ ±10 %         Hysteresis       315 %         Electrical data       0         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> ≤ 150 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 <sub>e</sub> ≤ 1.8 V         Wire break/reverse polarity protection       yes/Complete         Output function       3-wire, NO contact, PNP         DC field stability       200 mT         AC field stability       200 mT	General data	
Secured operating distance $\leq (0.81 \times Sn) \text{ mm}$ Repeat accuracy $\leq 2 \text{ % of full scale}$ Temperature drift $\leq \pm 10 \text{ %}$ Hysteresis $315 \text{ %}$ Electrical data  Operating voltage $U_B$ $1030 \text{ VDC}$ Ripple $U_{ss}$ $\leq 10 \text{ % } U_{Bmax}$ DC rated operating current $I_e$ $\leq 150 \text{ mA}$ No-load current $\leq 15 \text{ mA}$ Residual current $\leq 0.1 \text{ mA}$ Isolation test voltage $0.5 \text{ kV}$ Short-circuit protection $0.5 \text{ kV}$ Wire break/reverse polarity protection $0.5 \text{ kV}$ Wire break/reverse polarity protection $0.5 \text{ kV}$ Output function $0.5 \text{ kV}$ DC field stability $0.5 \text{ kV}$ DC field stability $0.5 \text{ kV}$	Rated switching distance	2 mm
Repeat accuracy $\leq 2 \%$ of full scale  Temperature drift $\leq \pm 10 \%$ Hysteresis $315 \%$ 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> $\leq 150 \text{ mA}$ No-load current $\leq 15 \text{ mA}$ Residual current $\leq 0.1 \text{ mA}$ Isolation test voltage $0.5 \text{ kV}$ Short-circuit protection $0.5 \text{ kV}$ Wire break/reverse polarity protection $0.5 \text{ kV}$ Wire break/reverse polarity protection $0.5 \text{ kV}$ DC field stability $0.5 \text{ kV}$ AC field stability $0.5 \text{ mT}$	Mounting conditions	Flush
Temperature drift $\leq \pm 10 \%$ Hysteresis $315 \%$ Electrical data  Operating voltage $U_B$ $1030 \text{ VDC}$ Ripple $U_{ss}$ $\leq 10 \% U_{Bmax}$ DC rated operating current $I_o$ $\leq 150 \text{ mA}$ No-load current $\leq 15 \text{ mA}$ Residual current $\leq 0.1 \text{ mA}$ Isolation test voltage $0.5 \text{ kV}$ Short-circuit protection $0.5 \text{ kV}$ Short-circuit protection $0.5 \text{ kV}$ Wire break/reverse polarity protection $0.5 \text{ kV}$ Wire break/reverse polarity protection $0.5 \text{ kV}$ DC field stability $0.5 \text{ kV}$ AC field stability $0.5 \text{ mT}$	Secured operating distance	≤ (0.81 × Sn) mm
Hysteresis 315 %  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>B</sub> ≤ 150 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 <sub>B</sub> ≤ 1.8 V  Wire break/reverse polarity protection yes/Complete  Output function 3-wire, NO contact, PNP  DC field stability 200 mT  AC field stability 200 mT  AC field stability 200 mT	Repeat accuracy	≤ 2 % of full scale
Electrical data  Operating voltage $U_B$ 1030 VDC  Ripple $U_{ss}$ $\leq 10 \% U_{Bmax}$ DC rated operating current $I_e$ No-load current $\leq 150 \text{ mA}$ 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  Output function  3-wire, NO contact, PNP  DC field stability  200 mT  AC field stability  200 mT	Temperature drift	≤ ±10 %
$\begin{array}{llllllllllllllllllllllllllllllllllll$	Hysteresis	315 %
Ripple Uss       ≤ 10 % Usmax         DC rated operating current Ie       ≤ 150 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         DC field stability       200 mT         AC field stability       200 mT	Electrical data	
DC rated operating current I₀       ≤ 150 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 I₀       ≤ 1.8 V         Wire break/reverse polarity protection       yes/Complete         Output function       3-wire, NO contact, PNP         DC field stability       200 mT         AC field stability       200 mTss	Operating voltage U <sub>B</sub>	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 $I_e$ ≤ 1.8 V         Wire break/reverse polarity protection       yes/Complete         Output function       3-wire, NO contact, PNP         DC field stability       200 mT         AC field stability       200 mTss	Ripple U <sub>ss</sub>	≤ 10 % U <sub>Bmax</sub>
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         DC field stability       200 mT         AC field stability       200 mTss	DC rated operating current I <sub>e</sub>	≤ 150 mA
	No-load current	≤ 15 mA
Short-circuit protection  Voltage drop at I₀  Vire break/reverse polarity protection  Output function  DC field stability  AC field stability  Short-circuit protection  yes/Cyclic	Residual current	≤ 0.1 mA
Voltage drop at $I_e$ ≤ 1.8 V         Wire break/reverse polarity protection       yes/Complete         Output function       3-wire, NO contact, PNP         DC field stability       200 mT         AC field stability       200 mTss	Isolation test voltage	0.5 kV
Wire break/reverse polarity protection yes/Complete  Output function 3-wire, NO contact, PNP  DC field stability 200 mT  AC field stability 200 mT <sub>ss</sub>	Short-circuit protection	yes/Cyclic
Output function 3-wire, NO contact, PNP  DC field stability 200 mT  AC field stability 200 mT <sub>ss</sub>	Voltage drop at I <sub>e</sub>	≤ 1.8 V
DC field stability 200 mT  AC field stability 200 mT <sub>ss</sub>	Wire break/reverse polarity protection	yes/Complete
AC field stability 200 mT <sub>ss</sub>	Output function	3-wire, NO contact, PNP
	DC field stability	200 mT
Insulation class	AC field stability	200 mT <sub>ss</sub>
	Insulation class	
Switching frequency 2 kHz	Switching frequency	2 kHz

#### **Features**

- ■Smooth barrel, Ø 6.5 mm
- Stainless steel, 1.4427 SO
- Factor 1 for all metals
- Protection class IP68
- Resistant to magnetic fields
- ■Large switching distance
- High switching frequency
- Recessed mountable
- ■DC 3-wire, 10...30 VDC
- ■NO contact, PNP output
- Cable connection

# Wiring diagram



## Functional principle

Inductive sensors are designed for wear-free and contactless detection of metal objects. uprox+ sensors have significant advantages due to their patented multi-coil system. They excel thanks to their optimum switching distances, maximum flexibility and operational reliability as well as efficient standardization.

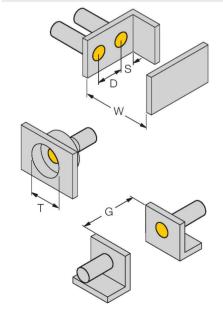


## Technical data

Mechanical data	
Design	Smooth barrel, 6,5 mm
Dimensions	41.6 mm
Housing material	Stainless steel, 1.4427 SO
Active area material	Plastic, PA12-GF20
End cap	Plastic, PP
Electrical connection	Cable
Cable quality	Ø 4 mm, LifYY-11Y, PUR, 2 m
Core cross-section	3 x 0.25 mm²
Environmental conditions	
Ambient temperature	-30+85 °C
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP68
MTTF	874 years acc. to SN 29500 (Ed. 99) 40 °C
Switching state	LED, Yellow

# Mounting instructions

#### Mounting instructions/Description





Distance D	13 mm
Distance W	6 mm
Distance T	20 mm
Distance S	10 mm
Distance G	12 mm
Diameter active area B	Ø 6.5 mm

All flush mountable uprox+ threaded barrel types are also recessed mountable. Safe operation is ensured if the sensor is screwed in 0.5 mm.

BI2U-EH6.5-AP6X | 02/21/2025 13-24 | technical changes reserved