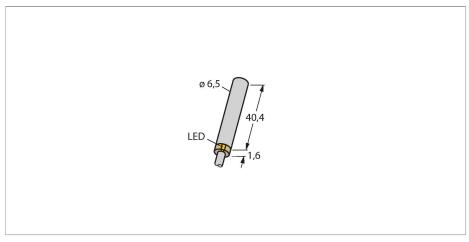
# TURCK

# BI2U-EH6.5-AN6X Inductive Sensor – With Extended Switching Distance



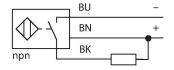
### Technical data

ID 4281170  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>B</sub> 1030 VDC  Ripple U <sub>sc</sub> ≤ 10 % U <sub>Broaze</sub> DC rated operating current I <sub>c</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>c</sub> ≤ 1.8 V  Wire break/reverse polarity protection yes/Complete  Output function 3-wire, NO contact, NPN  DC field stability 200 mT  AC field stability 200 mT  AC field stability 200 mT  Switching frequency 2 kHz  Mechanical data  Design Smooth barrel, 6,5 mm  Dimensions 41.6 mm	Туре	BI2U-EH6.5-AN6X
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 Us         Operating voltage Us       1030 VDC         Ripple Uss       ≤ 10 % Usmax         DC rated operating current Is       ≤ 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 Is       ≤ 1.8 V         Wire break/reverse polarity protection       yes/Complete         Output function       3-wire, NO contact, NPN         DC field stability       200 mT         AC field stability       200 mT         AC field stability       200 mT         Insulation class       Image: Switching frequency       2 kHz         Mechanical data       Smooth barrel, 6,5 mm	ID	4281170
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 Ua       1030 VDC         Ripple Uas       ≤ 10 % Ubmas         DC rated operating current Ia       ≤ 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 Ia       ≤ 1.8 V         Wire break/reverse polarity protection       yes/Complete         Output function       3-wire, NO contact, NPN         DC field stability       200 mT         AC field stability       200 mT         AC field stability       200 mTss         Insulation class       Image: Switching frequency       2 kHz         Mechanical data       Smooth barrel, 6,5 mm	General data	
Secured operating distance       ≤ (0.81 × Sn) mm         Repeat accuracy       ≤ 2 % of full scale         Temperature drift       ≤ ±10 %         Hysteresis       315 %         Electrical data       0perating voltage U <sub>B</sub> Operating voltage U <sub>B</sub> 1030 VDC         Ripple U <sub>ss</sub> ≤ 10 % U <sub>Broax</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, NPN         DC field stability       200 mT         AC field stability       200 mTss         Insulation class       □         Switching frequency       2 kHz         Mechanical data       Smooth barrel, 6,5 mm	Rated switching distance	2 mm
Repeat accuracy       ≤ 2 % of full scale         Temperature drift       ≤ ±10 %         Hysteresis       315 %         Electrical data       0 Perating voltage $U_B$ 1030 VDC         Ripple $U_{ss}$ ≤ 10 % $U_{bmax}$ DC rated operating current $I_c$ ≤ 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 $I_c$ ≤ 1.8 V         Wire break/reverse polarity protection       yes/Complete         Output function       3-wire, NO contact, NPN         DC field stability       200 mT         AC field stability       200 mT         AC field stability       200 mT         Switching frequency       2 kHz         Mechanical data       Design         Smooth barrel, 6,5 mm	Mounting conditions	Flush
Temperature drift ≤ ±10 %  Hysteresis 315 %  Electrical data  Operating voltage U <sub>a</sub> 1030 VDC  Ripple U <sub>ss</sub> ≤ 10 % U <sub>Breax</sub> DC rated operating current I <sub>a</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>a</sub> ≤ 1.8 V  Wire break/reverse polarity protection yes/Complete  Output function 3-wire, NO contact, NPN  DC field stability 200 mT  AC field stability 200 mT  AC field stability 200 mT  Switching frequency 2 kHz  Mechanical data  Design Smooth barrel, 6,5 mm	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, NPN  DC field stability 200 mT  AC field stability 200 mT  AC field stability 200 mT  Switching frequency 2 kHz  Mechanical data  Design Smooth barrel, 6,5 mm	Repeat accuracy	≤ 2 % of full scale
Electrical data  Operating voltage U <sub>B</sub> Ripple U <sub>ss</sub> S 10 % U <sub>Bmax</sub> DC rated operating current I <sub>B</sub> No-load current  Electrical data  No-load current  S 15 mA  Residual current  Short-circuit protection  Voltage drop at I <sub>B</sub> Wire break/reverse polarity protection  Output function  DC field stability  AC field stability  Switching frequency  Smooth barrel, 6,5 mm  2 1030 VDC  10	Temperature drift	≤ ±10 %
Operating voltage U <sub>s</sub> 1030 VDC         Ripple U <sub>ss</sub> ≤ 10 % U <sub>smax</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, NPN         DC field stability       200 mT         AC field stability       200 mT         Insulation class       □         Switching frequency       2 kHz         Mechanical data       Design         Smooth barrel, 6,5 mm	Hysteresis	315 %
Ripple U <sub>ss</sub> $≤ 10 \% U_{\text{Bmax}}$ DC rated operating current I <sub>e</sub> $≤ 150 \text{ mA}$ No-load current $≤ 15 \text{ mA}$ Residual current $≤ 0.1 \text{ mA}$ Isolation test voltage $0.5 \text{ kV}$ Short-circuit protection $yes/Cyclic$ Voltage drop at I <sub>e</sub> $≤ 1.8 \text{ V}$ Wire break/reverse polarity protection $yes/Complete$ Output function $3$ -wire, NO contact, NPN  DC field stability $200 \text{ mT}$ AC field stability $200 \text{ mT}$ AC field stability $200 \text{ mT}$ Switching frequency $2 \text{ kHz}$ Mechanical data  Design $Smooth barrel, 6,5 \text{ mm}$	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, NPN   DC field stability 200 mT   AC field stability 200 mTss   Insulation class □   Switching frequency 2 kHz   Mechanical data Design   Smooth barrel, 6,5 mm	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 I₀ ≤ 1.8 V   Wire break/reverse polarity protection yes/Complete   Output function 3-wire, NO contact, NPN   DC field stability 200 mT   AC field stability 200 mTss   Insulation class □   Switching frequency 2 kHz   Mechanical data Smooth barrel, 6,5 mm	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 I₀ ≤ 1.8 V   Wire break/reverse polarity protection yes/Complete   Output function 3-wire, NO contact, NPN   DC field stability 200 mT   AC field stability 200 mTss   Insulation class □   Switching frequency 2 kHz   Mechanical data Smooth barrel, 6,5 mm	DC rated operating current I <sub>o</sub>	≤ 150 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, NPN         DC field stability       200 mT         AC field stability       200 mTss         Insulation class       □         Switching frequency       2 kHz         Mechanical data       Design         Smooth barrel, 6,5 mm	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, NPN         DC field stability       200 mT         AC field stability       200 mTss         Insulation class       □         Switching frequency       2 kHz         Mechanical data       Design         Smooth barrel, 6,5 mm	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, NPN         DC field stability       200 mT         AC field stability       200 mTss         Insulation class       □         Switching frequency       2 kHz         Mechanical data       Smooth barrel, 6,5 mm	Isolation test voltage	0.5 kV
Wire break/reverse polarity protection yes/Complete  Output function 3-wire, NO contact, NPN  DC field stability 200 mT  AC field stability 200 mTss  Insulation class □  Switching frequency 2 kHz  Mechanical data  Design Smooth barrel, 6,5 mm	Short-circuit protection	yes/Cyclic
Output function 3-wire, NO contact, NPN  DC field stability 200 mT  AC field stability 200 mT <sub>ss</sub> Insulation class □  Switching frequency 2 kHz  Mechanical data  Design Smooth barrel, 6,5 mm	Voltage drop at I <sub>e</sub>	≤ 1.8 V
DC field stability  AC field stability  200 mT  200 mTss  Insulation class  Switching frequency  2 kHz  Mechanical data  Design  Smooth barrel, 6,5 mm	Wire break/reverse polarity protection	yes/Complete
AC field stability  200 mTss  Insulation class  Switching frequency  2 kHz  Mechanical data  Design  Smooth barrel, 6,5 mm	Output function	3-wire, NO contact, NPN
Insulation class  Switching frequency  2 kHz  Mechanical data  Design  Smooth barrel, 6,5 mm	DC field stability	200 mT
Switching frequency 2 kHz  Mechanical data  Design Smooth barrel, 6,5 mm	AC field stability	200 mT <sub>ss</sub>
Mechanical data  Design Smooth barrel, 6,5 mm	Insulation class	
Design Smooth barrel, 6,5 mm	Switching frequency	2 kHz
	Mechanical data	
Dimensions 41.6 mm	Design	Smooth barrel, 6,5 mm
	Dimensions	41.6 mm

## **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, NPN 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

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

