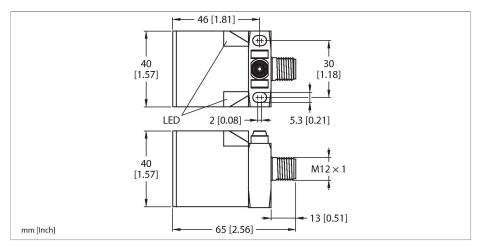


BI20U-CK40-VP4X2-H1141 Inductive Sensor – With Extended Switching Distance





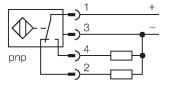
ID 1627216 General data Rated switching distance 20 mm Mounting conditions Flush Secured operating distance ≤ (0.81 × Sn) mm Repeat accuracy ≤ 2 % of full scale Temperature drift ≤ ±10 % Hysteresis 315 % Electrical data Operating voltage U _B 1065 VDC Ripple U _B ≤ 10 % U _{Bmas} DC rated operating current I _B ≤ 200 mA No-load current ≤ 15 mA Residual current ≤ 15 mA Residual current ≤ 0.1 mA Isolation test voltage 0.5 kV Short-circuit protection yes/Cyclic Voltage drop at I _B ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, PNP DC field stability 300 mT AC field stability 300 mT AC field stability 300 mT Switching frequency 0.25 kHz	Туре	BI20U-CK40-VP4X2-H1141
Rated switching distance 20 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 U₀ Operating voltage U₀ 1065 VDC Ripple U₀ ≤ 10 % U₀ DC rated operating current I₀ ≤ 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 I₀ ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, PNP DC field stability 300 mT AC field stability 300 mT AC field stability 300 mT Switching frequency 0.25 kHz	ID	1627216
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 ₈ Operating voltage U ₈ 1065 VDC Ripple U ₁₀ ≤ 10 % U _{Breax} DC rated operating current I ₈ ≤ 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 ₈ ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, PNP DC field stability 300 mT AC field stability 300 mT AC field stability 300 mT Insulation class □ Switching frequency 0.25 kHz	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_B 1065 VDC Ripple U_{ss} ≤ 10 % U_{Bmax} DC rated operating current I_B ≤ 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_B ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, PNP DC field stability 300 mT AC field stability 300 mTss Insulation class \Box Switching frequency 0.25 kHz	Rated switching distance	20 mm
Repeat accuracy ≤ 2 % of full scale Temperature drift ≤ ±10 % Hysteresis 315 % Electrical data 0 perating voltage Us 1065 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 4-wire, Complementary contact, PNP DC field stability 300 mT AC field stability 300 mTss Insulation class Image: Switching frequency	Mounting conditions	Flush
Temperature drift $≤ \pm 10 \%$ Hysteresis 315% Electrical data Operating voltage U_s 1065 VDC Ripple U_{ss} $≤ 10 \% U_{tmax}$ DC rated operating current I_s $≤ 200 \text{ mA}$ No-load current $≤ 15 \text{ mA}$ Residual current $≤ 0.1 \text{ mA}$ Isolation test voltage 0.5 kV Short-circuit protection $yes/Cyclic$ Voltage drop at I_s $≤ 1.8 \text{ V}$ Wire break/reverse polarity protection $yes/Complete$ Output function 4 -wire, Complementary contact, PNP DC field stability 300 mT AC field stability 300 mT Switching frequency 0.25 kHz	Secured operating distance	≤ (0.81 × Sn) mm
Hysteresis 315% Electrical data Operating voltage U_B 1065 VDC Ripple U_{ss} $\leq 10\% U_{Bmax}$ 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 4-wire, Complementary contact, PNP DC field stability 300 mT AC field stability 300 mT AC field stability 300 mT Insulation class \square Switching frequency 0.25 kHz	Repeat accuracy	≤ 2 % of full scale
Electrical data Operating voltage U _B 1065 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 Voltage drop at I _e ≤ 1.8 V Wire break/reverse polarity protection DC field stability 300 mT AC field stability Insulation class Switching frequency 1065 VDC 1065 VD	Temperature drift	≤ ±10 %
Operating voltage U_B 1065 VDC Ripple U_{ss} ≤ 10 % U_{Bmax} DC rated operating current I_B ≤ 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_B ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, PNP DC field stability 300 mT AC field stability 300 mTss Insulation class Image: Insulation class Switching frequency 0.25 kHz	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 4-wire, Complementary contact, PNP DC field stability 300 mT AC field stability 300 mT _{ss} Insulation class □ Switching frequency 0.25 kHz	Electrical data	
DC rated operating current I₀ ≤ 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 I₀ ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, PNP DC field stability 300 mT AC field stability 300 mTss Insulation class □ Switching frequency 0.25 kHz	Operating voltage U _B	1065 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 4-wire, Complementary contact, PNP DC field stability 300 mT AC field stability 300 mTss Insulation class □ Switching frequency 0.25 kHz	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 I_e ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, PNP DC field stability 300 mT AC field stability 300 mTss Insulation class Insulation class Switching frequency 0.25 kHz	DC rated operating current I _o	≤ 200 mA
	No-load current	≤ 15 mA
Short-circuit protection Voltage drop at I₀ Voltage drop at I₀ Wire break/reverse polarity protection Output function DC field stability AC field stability Insulation class Switching frequency yes/Cyclic	Residual current	≤ 0.1 mA
Voltage drop at I $_{\circ}$ ≤ 1.8 V Wire break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, PNP DC field stability 300 mT AC field stability 300 mTss Insulation class □ Switching frequency 0.25 kHz	Isolation test voltage	0.5 kV
Wire break/reverse polarity protection yes/Complete Output function 4-wire, Complementary contact, PNP DC field stability 300 mT AC field stability 300 mTss Insulation class Switching frequency 0.25 kHz	Short-circuit protection	yes/Cyclic
Output function 4-wire, Complementary contact, PNP DC field stability 300 mT AC field stability 300 mT _{ss} Insulation class □ Switching frequency 0.25 kHz	Voltage drop at I _e	≤ 1.8 V
DC field stability 300 mT AC field stability 300 mT _{ss} Insulation class Switching frequency 0.25 kHz	Wire break/reverse polarity protection	yes/Complete
AC field stability 300 mT _{ss} Insulation class Switching frequency 0.25 kHz	Output function	4-wire, Complementary contact, PNP
Insulation class Switching frequency 0.25 kHz	DC field stability	300 mT
Switching frequency 0.25 kHz	AC field stability	300 mT _{ss}
	Insulation class	
Mechanical data	Switching frequency	0.25 kHz
	Mechanical data	
Design Rectangular, CK40	Design	Rectangular, CK40
Dimensions 65 x 40 x 40 mm	Dimensions	65 x 40 x 40 mm



Features

- Rectangular, height 40 mm
- Variable orientation of active face in 5 directions
- Plastic, PBT-GF30-V0
- High luminance corner LEDs
- Optimum view on supply voltage and switching state from any position
- Factor 1 for all metals
- Protection class IP68
- Resistant to magnetic fields
- ■Large coverage
- High switching frequency
- ■DC 4-wire, 10...65 VDC
- Changeover contact, PNP output
- M12 x 1 male connector

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.

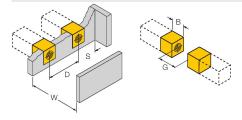
BI20U-CK40-VP4X2-H1141| 21-02-2025 14-50 | Technical modifications reserved

Technical data

	variable orientation of active face in 5 directions
Housing material	Plastic, PBT-GF20-V0, Black
Active area material	Plastic, PA12-GF30, yellow
Electrical connection	Connector, M12 × 1
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
Power-on indication	2 × LEDs, Green
Switching state	2 × LEDs, Yellow
Included in delivery	BS1-CK40

Mounting instructions

Mounting instructions/Description

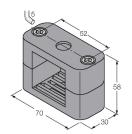


Distance D	80 mm
Distance W	60 mm
Distance S	40 mm
Distance G	120 mm
Width active area B	40 mm

Accessories

BSS-CP40

6901318



Mounting clamp for rectangular housings 40 x 40 mm; material: Polypropylene



Accessories

Dimension drawing Type ID

RKC4.4T-2/TEL 6625013 Connection cable, M12 female



Connection cable, M12 female connector, straight, 4-pin, cable length: 2 m, jacket material: PVC, black; cULus approval