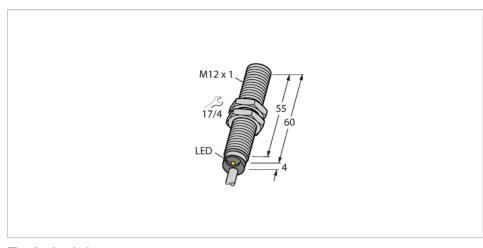


BI4U-M12E-VP44X Inductive Sensor



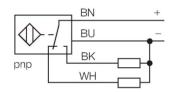
Technical data

Type BI4U-M12E-VP44X Ident. no. 1634868 Rated switching distance 4 mm Mounting conditions Flush Secured operating distance ≤ (0.81 × Sn) mm Repeat accuracy ≤ 2 % of full scale Temperature drift ≤ ± 10 % ≤ ± 15 %, ≤ -25 °C v ≥ +70 °C Hysteresis 315 % Ambient temperature -30+85 °C Operating voltage 1055 VDC Residual ripple ≤ 10 % U _s DC rated operational current ≤ 20 mA No-load current ≤ 20 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 breakage/Reverse polarity protection yes / Complete Output function 4-wire, Complementary contact, PNP Insulation class Switching frequency 2 kHz Design Threaded barrel, M12 × 1 Dimensions 64 mm		
Rated switching distance 4 mm Mounting conditions Flush Secured operating distance ≤ (0.81 × Sn) mm Repeat accuracy ≤ 2 % of full scale Temperature drift ≤±10 % ≤±15 %, ≤-25 °C v ≥ +70 °C Hysteresis 315 % Ambient temperature -30+85 °C Operating voltage 1055 VDC Residual ripple ≤10 % U,, DC rated operational current ≤ 200 mA No-load current ≤ 20 mA Residual current ≤ 0.1 mA Isolation test voltage ≤ 0.5 kV Short-circuit protection yes / Cyclic Voltage drop at I, ≤ 1.8 V Wire breakage/Reverse polarity protection yes / Complete Output function 4-wire, Complementary contact, PNP Insulation class □ Switching frequency 2 kHz Design Threaded barrel, M12 × 1	Туре	BI4U-M12E-VP44X
Mounting conditions Flush Secured operating distance ≤ (0.81 × Sn) mm Repeat accuracy ≤ 2 % of full scale Temperature drift ≤±10 % ≤±15 %, ≤ -25 °C v ≥ +70 °C Hysteresis 315 % Ambient temperature -30+85 °C Operating voltage 1055 VDC Residual ripple ≤ 10 % U₃ DC rated operational current ≤ 200 mA No-load current ≤ 20 mA Residual current ≤ 0.1 mA Isolation test voltage ≤ 0.5 kV Short-circuit protection yes / Cyclic Voltage drop at I₄ ≤ 1.8 V Wire breakage/Reverse polarity protection yes / Complete Output function 4-wire, Complementary contact, PNP Insulation class □ Switching frequency 2 kHz Design Threaded barrel, M12 × 1	Ident. no.	1634868
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Repeat accuracy ≤ 2 % of full scale Temperature drift ≤ ± 10 % ≤ ± 15 %, ≤ -25 °C v ≥ +70 °C Hysteresis 315 % Ambient temperature -30+85 °C Operating voltage 1055 VDC Residual ripple ≤ 10 % U s. DC rated operational current ≤ 200 mA No-load current ≤ 20 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 breakage/Reverse polarity protection yes / Complete Output function 4-wire, Complementary contact, PNP Insulation class □ Switching frequency 2 kHz Design Threaded barrel, M12 × 1	Mounting conditions	Flush
Temperature drift $\leq \pm 10 \%$ $\leq \pm 15 \%, \leq -25 ^{\circ}\text{C} \text{v} \geq +70 ^{\circ}\text{C}$ Hysteresis 315% Ambient temperature $-30+85 ^{\circ}\text{C}$ Operating voltage $1055 ^{\circ}\text{VDC}$ Residual ripple $\leq 10 \% ^{\circ}\text{U}_{\text{s}}$ DC rated operational current $\leq 200 \text{mA}$ No-load current $\leq 20 \text{mA}$ Residual current $\leq 0.1 \text{mA}$ Isolation test voltage $\leq 0.5 \text{kV}$ Short-circuit protection $20.5 ^{\circ}\text{C} ^{$	Secured operating distance	≤ (0.81 × Sn) mm
Hysteresis 315 % Ambient temperature -30+85 °C Operating voltage 1055 VDC Residual ripple ≤ 10 % U _s DC rated operational current ≤ 200 mA No-load current ≤ 20 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 breakage/Reverse polarity protection yes / Complete Output function 4-wire, Complementary contact, PNP Insulation class Switching frequency 2 kHz Design Threaded barrel, M12 × 1	Repeat accuracy	≤ 2 % of full scale
Hysteresis 315 % Ambient temperature -30+85 °C Operating voltage 1055 VDC Residual ripple ≤ 10 % U₂ DC rated operational current ≤ 200 mA No-load current ≤ 20 mA Residual current ≤ 0.1 mA Isolation test voltage ≤ 0.5 kV Short-circuit protection yes / Cyclic Voltage drop at I₂ ≤ 1.8 V Wire breakage/Reverse polarity protection yes / Complete Output function 4-wire, Complementary contact, PNP Insulation class □ Switching frequency 2 kHz Design Threaded barrel, M12 × 1	Temperature drift	≤ ± 10 %
Ambient temperature -30+85 °C Operating voltage 1055 VDC Residual ripple ≤ 10 % U _s DC rated operational current ≤ 200 mA No-load current ≤ 20 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 breakage/Reverse polarity protection Output function 4-wire, Complementary contact, PNP Insulation class □ Switching frequency 2 kHz Design Threaded barrel, M12 × 1		≤ ± 15 %, ≤ -25 °C v ≥ +70 °C
Operating voltage 1055 VDC Residual ripple ≤ 10 % U _{ss} DC rated operational current ≤ 200 mA No-load current ≤ 20 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 breakage/Reverse polarity protection yes / Complete Output function 4-wire, Complementary contact, PNP Insulation class □ Switching frequency 2 kHz Design Threaded barrel, M12 × 1	Hysteresis	315 %
Residual ripple ≤ 10 % U _{ss} DC rated operational current ≤ 200 mA No-load current ≤ 20 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 breakage/Reverse polarity protection yes / Complete Output function 4-wire, Complementary contact, PNP Insulation class □ Switching frequency 2 kHz Design Threaded barrel, M12 × 1	Ambient temperature	-30+85 °C
DC rated operational current Solation test voltage Short-circuit protection Voltage drop at I _e Wire breakage/Reverse polarity protection Unuput function Insulation class Switching frequency Design Solation test voltage ≤ 0.1 mA ≤ 0.1 mA ≤ 0.5 kV Short-circuit protection yes / Cyclic ✓ 1.8 V Wes / Complete 4-wire, Complete 2 kHz Threaded barrel, M12 × 1	Operating voltage	1055 VDC
No-load current ≤ 20 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 breakage/Reverse polarity protection yes / Complete Output function 4-wire, Complementary contact, PNP Insulation class □ Switching frequency 2 kHz Design Threaded barrel, M12 × 1	Residual ripple	≤ 10 % U _{ss}
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 breakage/Reverse polarity protection yes / Complete Output function 4-wire, Complementary contact, PNP Insulation class □ Switching frequency 2 kHz Design Threaded barrel, M12 × 1	DC rated operational current	≤ 200 mA
Isolation test voltage ≤ 0.5 kV Short-circuit protection yes / Cyclic Voltage drop at I _e ≤ 1.8 V Wire breakage/Reverse polarity protection yes / Complete Output function 4-wire, Complementary contact, PNP Insulation class □ Switching frequency 2 kHz Design Threaded barrel, M12 × 1	No-load current	≤ 20 mA
Short-circuit protection Voltage drop at I _e ≤ 1.8 V Wire breakage/Reverse polarity protection Output function 4-wire, Complementary contact, PNP Insulation class Switching frequency 2 kHz Design Threaded barrel, M12 × 1	Residual current	≤ 0.1 mA
Voltage drop at I _e ≤ 1.8 V Wire breakage/Reverse polarity protection yes / Complete Output function 4-wire, Complementary contact, PNP Insulation class □ Switching frequency 2 kHz Design Threaded barrel, M12 × 1	Isolation test voltage	≤ 0.5 kV
Wire breakage/Reverse polarity protection yes / Complete Output function 4-wire, Complementary contact, PNP Insulation class Switching frequency 2 kHz Design Threaded barrel, M12 × 1	Short-circuit protection	yes / Cyclic
Output function 4-wire, Complementary contact, PNP Insulation class Switching frequency 2 kHz Design Threaded barrel, M12 × 1	Voltage drop at I _e	≤ 1.8 V
Insulation class Switching frequency 2 kHz Design Threaded barrel, M12 × 1	Wire breakage/Reverse polarity protection	yes / Complete
Switching frequency 2 kHz Design Threaded barrel, M12 × 1	Output function	4-wire, Complementary contact, PNP
Design Threaded barrel, M12 × 1	Insulation class	
	Switching frequency	2 kHz
Dimensions 64 mm	Design	Threaded barrel, M12 \times 1
	Dimensions	64 mm

Features

- M12 × 1 threaded barrel
- Long version
- Chrome-plated brass
- Factor 1 for all metals
- Protection class IP68
- Resistant to magnetic fields
- Large switching distance
- Recessed mountable
- DC 4-wire, 10...55 VDC
- Changeover contact, PNP output
- Cable connection

Wiring diagram



Functional principle

Inductive sensors detect metal objects contactless and wear-free. Due to the patented multi-coil system, *uprox*°+ sensors have distinct advantages over conventional sensors. They excel in largest switching distances, maximum flexibility and operational reliability as well as efficient standardization.



Technical data

Housing material	Metal, CuZn, Chrome-plated
Active area material	Plastic, LCP
End cap	Plastic, EPTR
Max. tightening torque housing nut	10 Nm
Electrical connection	Cable
Cable quality	Ø 5.2 mm, Gray, LifYY, PVC, 2 m
Core cross-section	4 x 0.34 mm ²
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

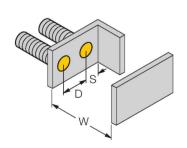
Mounting instructions

Mounting instructions/Description



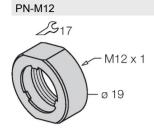
Distance D	24 mm
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn
Diameter active area B	Ø 12 mm

All flush mountable $uprox^{\circ}+$ threaded barrel types are also recessed mountable. Safe operation is ensured if the sensor is screwed in by half a turn.





Accessories



Impact protection nut for M12x1 threaded barrel devices; material: Stainless steel A2 1.4305 (AISI 303)

QM-12 22/4 Ø 12 19.5 34

Quick-mount bracket with dead-stop; material: Chrome-plated brass. Male

6945101

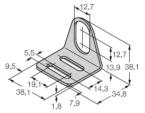
thread M16 × 1. Note: The switching distance of the proximity switches may change when using quick-mount brackets.



6947212

6905309

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



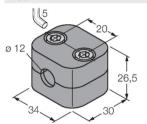
MW12 6945003

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



ø 12

6901321



.30

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