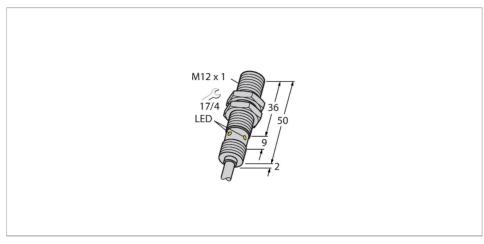


BI4U-EM12WD-AP6X/S987 Inductive Sensor – For the Food Industry



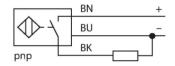
Technical data

Туре	BI4U-EM12WD-AP6X/S987
ID	1634850
General data	
Rated switching distance	4 mm
Mounting conditions	Flush
Secured operating distance	≤ (0.81 × Sn) mm
Repeat accuracy	≤ 2 % of full scale
Temperature drift	≤ ±10 %
	≤ ± 20 %, ≤ -25 °C , ≥ +70 °C
Hysteresis	315 %
Electrical data	
Operating voltage U _в	1030 VDC
Ripple U _{ss}	≤ 10 % U _{Bmax}
DC rated operating current I _e	≤ 200 mA
No-load current	≤ 25 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	300 mT
AC field stability	300 mT _{ss}
Insulation class	

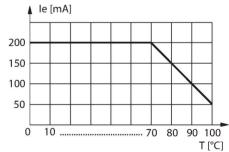
Features

- ■Threaded barrel, M12 x 1
- Stainless steel, 1.4404
- Front cap made of liquid crystal polymer
- Factor 1 for all metals
- Resistant to magnetic fields
- ■For temperatures of -40 °C...+100 °C
- High protection class IP69K for harsh environments
- ■Special double-lip seal
- Protection against all common acidic and alkaline cleaning agents
- Laser engraved label, permanently legible
- ■DC 3-wire, 10...30 VDC
- ■NO contact, PNP output
- Cable connection

Wiring diagram



Functional principle





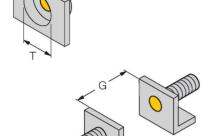
BI4U-EM12WD-AP6X/S987| 02/21/2025 13-41 | technical changes reserved

Technical data

Mechanical data Design Threaded barrel, M12 x 1 Dimensions 52 mm Housing material Stainless steel, 1.4404 (AISI 316L) Active area material Plastic, LCP End cap Plastic, PP, transparent Connector housing PP Admissible pressure on front cap ≤ 20 bar Max. tightening torque of housing nut 10 Nm Electrical connection Cable Cable quality Ø 5.2 mm, Gray, LiFY33Y-OB, TPE, 2 m Food safe Tore cross-section Core cross-section 3 x 0.34 mm² Environmental conditions Ambient temperature -40+100 °C Vibration resistance 55 Hz (1 mm) Shock resistance 30 g (11 ms) Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C Switching state LED, Yellow	Switching frequency	3 kHz
Dimensions 52 mm Housing material Active area material Plastic, LCP End cap Plastic, PP, transparent Connector housing PP Admissible pressure on front cap Admissible pressure of housing nut Electrical connection Cable Cable quality Ø 5.2 mm, Gray, LiFY33Y-OB, TPE, 2 m Food safe Core cross-section 3 x 0.34 mm² Environmental conditions Ambient temperature -40+100 °C Vibration resistance 55 Hz (1 mm) Shock resistance 30 g (11 ms) Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	Mechanical data	
Housing material Active area material Plastic, LCP End cap Plastic, PP, transparent Connector housing PP Admissible pressure on front cap Max. tightening torque of housing nut Electrical connection Cable Cable quality Ø 5.2 mm, Gray, LiFY33Y-OB, TPE, 2 m Food safe Core cross-section 3 x 0.34 mm² Environmental conditions Ambient temperature -40+100 °C Vibration resistance 55 Hz (1 mm) Shock resistance 30 g (11 ms) Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	Design	Threaded barrel, M12 x 1
Active area material Plastic, LCP End cap Plastic, PP, transparent Connector housing PP Admissible pressure on front cap ≤ 20 bar Max. tightening torque of housing nut 10 Nm Electrical connection Cable Cable quality Ø 5.2 mm, Gray, LiFY33Y-OB, TPE, 2 m Food safe Core cross-section 3 x 0.34 mm² Environmental conditions Ambient temperature -40+100 °C Vibration resistance 55 Hz (1 mm) Shock resistance 30 g (11 ms) Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	Dimensions	52 mm
End cap Plastic, PP, transparent Connector housing PP Admissible pressure on front cap ≤ 20 bar Max. tightening torque of housing nut 10 Nm Electrical connection Cable Cable quality Ø 5.2 mm, Gray, LiFY33Y-OB, TPE, 2 m Food safe Core cross-section 3 x 0.34 mm² Environmental conditions Ambient temperature -40+100 °C Vibration resistance 55 Hz (1 mm) Shock resistance 30 g (11 ms) Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	Housing material	Stainless steel, 1.4404 (AISI 316L)
Connector housingPPAdmissible pressure on front cap≤ 20 barMax. tightening torque of housing nut10 NmElectrical connectionCableCable qualityØ 5.2 mm, Gray, LiFY33Y-OB, TPE, 2 mFood safeCore cross-section3 x 0.34 mm²Environmental conditionsAmbient temperature-40+100 °CVibration resistance55 Hz (1 mm)Shock resistance30 g (11 ms)Protection classIP68 IP69KMTTF874 years acc. to SN 29500 (Ed. 99) 40 °C	Active area material	Plastic, LCP
Admissible pressure on front cap Max. tightening torque of housing nut Electrical connection Cable Cable quality Ø 5.2 mm, Gray, LiFY33Y-OB, TPE, 2 m Food safe Core cross-section 3 x 0.34 mm² Environmental conditions Ambient temperature -40+100 °C Vibration resistance 55 Hz (1 mm) Shock resistance 30 g (11 ms) Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	End cap	Plastic, PP, transparent
Max. tightening torque of housing nut Electrical connection Cable Cable Cable quality Ø 5.2 mm, Gray, LiFY33Y-OB, TPE, 2 m Food safe Core cross-section 3 x 0.34 mm² Environmental conditions Ambient temperature -40+100 °C Vibration resistance 55 Hz (1 mm) Shock resistance 30 g (11 ms) Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	Connector housing	PP
Electrical connection Cable Cable quality Ø 5.2 mm, Gray, LiFY33Y-OB, TPE, 2 m Food safe Core cross-section 3 x 0.34 mm² Environmental conditions Ambient temperature -40+100 °C Vibration resistance 55 Hz (1 mm) Shock resistance 30 g (11 ms) Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	Admissible pressure on front cap	≤ 20 bar
Cable quality Ø 5.2 mm, Gray, LiFY33Y-OB, TPE, 2 m Food safe Core cross-section 3 x 0.34 mm² Environmental conditions Ambient temperature -40+100 °C Vibration resistance 55 Hz (1 mm) Shock resistance 30 g (11 ms) Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	Max. tightening torque of housing nut	10 Nm
Food safe Core cross-section 3 x 0.34 mm² Environmental conditions Ambient temperature -40+100 °C Vibration resistance 55 Hz (1 mm) Shock resistance 30 g (11 ms) Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	Electrical connection	Cable
Core cross-section 3 x 0.34 mm² Environmental conditions Ambient temperature -40+100 °C Vibration resistance 55 Hz (1 mm) Shock resistance 30 g (11 ms) Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	Cable quality	Ø 5.2 mm, Gray, LiFY33Y-OB, TPE, 2 m
Environmental conditions Ambient temperature -40+100 °C Vibration resistance 55 Hz (1 mm) Shock resistance 30 g (11 ms) Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C		Food safe
Ambient temperature -40+100 °C Vibration resistance 55 Hz (1 mm) Shock resistance 30 g (11 ms) Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	Core cross-section	3 x 0.34 mm ²
Vibration resistance 55 Hz (1 mm) Shock resistance 30 g (11 ms) Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	Environmental conditions	
Shock resistance 30 g (11 ms) Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	Ambient temperature	-40+100 °C
Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	Vibration resistance	55 Hz (1 mm)
IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	Shock resistance	30 g (11 ms)
°C (Protection class	
Switching state LED, Yellow	MTTF	
	Switching state	LED, Yellow

Mounting instructions

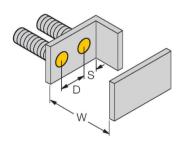
Mounting instructions/Description





Distance D	2 x B
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+ threaded barrel types are also recessed mountable. Safe operation is ensured if the sensor is screwed in by half a turn.

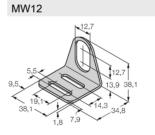


Accessories

PN-M12 6905309

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





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

6945003

BSS-12 6901321

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

