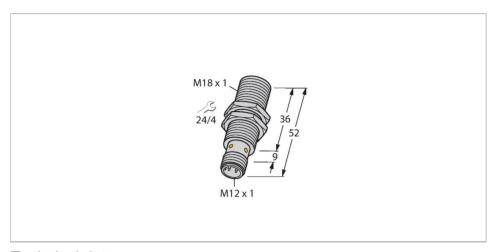


BI8U-EM18WD-IOL6X2-H1141 Inductive Sensor – IO-Link Communication and Configuration



Technical data

Type	BI8U-EM18WD-IOL6X2-H1141
ID	100006589
General data	
Rated switching distance	8 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 _B	1030 VDC
Ripple U _{ss}	≤ 10 % U _{Bmax}
DC rated operating current I _e	≤ 150 mA
No-load current	≤ 27 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 break/reverse polarity protection	yes/Complete
Communication protocol	IO-Link
Output function	4-wire, NO/NC, PNP/NPN
Output 1	Switching output or IO-Link mode
Output 2	Switching output

Features

- ■Threaded barrel, M18 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 4-wire, 10...30 VDC
- ■M12 x 1 connector
- Configuration and communication via IO-Link v1.1 or via standard I/O
- Electrical outputs independently configurable
- Switching distance can be parametrized per output and hysteresis
- Identification via 32-byte memory
- ■Temperature monitoring with adjustable limits
- ■Various timer and pulse monitoring functions

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.

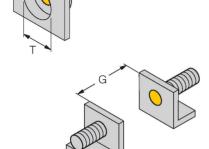


Technical data

AC field stability 300 mT _{ss} Switching frequency 1.5 kHz IO-Link V 1.1 IO-Link port type Class A Communication mode COM 2 (38.4 kBaud) Process data width 16 bit Switchpoint information 2 bit Status bit information 3 bit Frame type 2.2 Minimum cycle time 8 ms Function pin 4 IO-Link Function Pin 2 DI Maximum cable length 20 m Included in the SIDI GSDML Yes Mechanical data Ves Design Threaded barrel, M18 x 1 Dimensions 52 mm Housing material Stainless steel, 1.4404 (AISI 316L) Active area material Plastic, LCP Connector housing plastic, PP Admissible pressure on front cap \$ 15 bar Max. tightening torque of housing nut 25 Nm Electrical connection Connector, M12 x 1 Environmental conditions Ambient temperature -40+100 °C Vibr	DC field stability	300 mT
IO-Link IO-Link specification IO-Link port type Class A Communication mode COM 2 (38.4 kBaud) Process data width 16 bit Switchpoint information 2 bit Status bit information 3 bit Frame type 2.2 Minimum cycle time 8 ms Function pin 4 IO-Link Function Pin 2 DI Maximum cable length 10 bit Included in the SIDI GSDML Yes Mechanical data Design Threaded barrel, M18 x 1 Dimensions 52 mm Housing material Stainless steel, 1.4404 (AISI 316L) Active area material Plastic, LCP Connector housing plastic, PP Admissible pressure on front cap 4 15 bar Max. tightening torque of housing nut Electrical connection Connector, M12 × 1 Environmental conditions Ambient temperature 40+100 °C Vibration resistance 55 Hz (1 mm) Shock resistance 1P88 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	AC field stability	300 mT _{ss}
IO-Link specification V 1.1 IO-Link port type Class A Communication mode COM 2 (38.4 kBaud) Process data width 16 bit Switchpoint information 2 bit Status bit information 3 bit Frame type 2.2 Minimum cycle time 8 ms Function pin 4 IO-Link Function Pin 2 DI Maximum cable length 20 m Included in the SIDI GSDML Yes Mechanical data Design Threaded barrel, M18 x 1 Dimensions 52 mm Housing material Stainless steel, 1.4404 (AISI 316L) Active area material Plastic, LCP Connector housing plastic, PP Admissible pressure on front cap ≤ 15 bar Max. tightening torque of housing nut Electrical connection Connector, M12 × 1 Environmental conditions Ambient temperature -40+100 °C Vibration resistance 55 Hz (1 mm) Shock resistance IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	Switching frequency	1.5 kHz
Communication mode CoM 2 (38.4 kBaud) Process data width 16 bit Switchpoint information 2 bit Status bit information 3 bit Frame type 2.2 Minimum cycle time 8 ms Function pin 4 IO-Link Function Pin 2 DI Maximum cable length 20 m Included in the SIDI GSDML Yes Mechanical data Design Threaded barrel, M18 x 1 Dimensions 52 mm Housing material Stainless steel, 1.4404 (AISI 316L) Active area material Plastic, LCP Connector housing Admissible pressure on front cap Max. tightening torque of housing nut Electrical connection Connector, M12 × 1 Environmental conditions Ambient temperature -40+100 °C Vibration resistance 1P68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	IO-Link	
Communication mode COM 2 (38.4 kBaud) Process data width Switchpoint information 2 bit Status bit information 3 bit Frame type 2.2 Minimum cycle time 8 ms Function pin 4 IO-Link Function Pin 2 DI Maximum cable length 20 m Included in the SIDI GSDML Yes Mechanical data Design Threaded barrel, M18 x 1 Dimensions 52 mm Housing material Stainless steel, 1.4404 (AISI 316L) Active area material Plastic, LCP Connector housing Admissible pressure on front cap 4 15 bar Max. tightening torque of housing nut Electrical connection Connector, M12 × 1 Environmental conditions Ambient temperature -40+100 °C Vibration resistance 30 g (11 ms) Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	IO-Link specification	V 1.1
Process data width Switchpoint information 2 bit Status bit information 3 bit Frame type 2.2 Minimum cycle time 8 ms Function pin 4 IO-Link Function Pin 2 DI Maximum cable length Included in the SIDI GSDML Pess Mechanical data Design Threaded barrel, M18 x 1 Dimensions 52 mm Housing material Stainless steel, 1.4404 (AISI 316L) Active area material Plastic, LCP Connector housing plastic, PP Admissible pressure on front cap Admissible pressure on front cap Sign Max. tightening torque of housing nut Electrical connection Connector, M12 × 1 Environmental conditions Ambient temperature -40+100 °C Vibration resistance 55 Hz (1 mm) Shock resistance 1P68 IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	IO-Link port type	Class A
Switchpoint information 2 bit Status bit information 3 bit Frame type 2.2 Minimum cycle time 8 ms Function pin 4 IO-Link Function Pin 2 DI Maximum cable length 20 m Included in the SIDI GSDML Yes Mechanical data Design Threaded barrel, M18 x 1 Dimensions 52 mm Housing material Stainless steel, 1.4404 (AISI 316L) Active area material Plastic, LCP Connector housing plastic, PP Admissible pressure on front cap \$ 15 bar Max. tightening torque of housing nut 25 Nm Electrical connection Connector, M12 × 1 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	Communication mode	COM 2 (38.4 kBaud)
Status bit information 3 bit Frame type 2.2 Minimum cycle time 8 ms Function pin 4 IO-Link Function Pin 2 DI Maximum cable length 20 m Included in the SIDI GSDML Yes Mechanical data Design Threaded barrel, M18 x 1 Dimensions 52 mm Housing material Stainless steel, 1.4404 (AISI 316L) Active area material Plastic, LCP Connector housing plastic, PP Admissible pressure on front cap ≤ 15 bar Max. tightening torque of housing nut Electrical connection Connector, M12 × 1 Environmental conditions Ambient temperature -40+100 °C Vibration resistance 30 g (11 ms) Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	Process data width	16 bit
Frame type 2.2 Minimum cycle time 8 ms Function pin 4 IO-Link Function Pin 2 DI Maximum cable length 20 m Included in the SIDI GSDML Yes Mechanical data Design Threaded barrel, M18 x 1 Dimensions 52 mm Housing material Stainless steel, 1.4404 (AISI 316L) Active area material Plastic, LCP Connector housing plastic, PP Admissible pressure on front cap 4 15 bar Max. tightening torque of housing nut Electrical connection Connector, M12 × 1 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	Switchpoint information	2 bit
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Function Pin 2 Maximum cable length 1 cluded in the SIDI GSDML Mechanical data Design Threaded barrel, M18 x 1 Dimensions 52 mm Housing material Stainless steel, 1.4404 (AISI 316L) Active area material Plastic, LCP Connector housing plastic, PP Admissible pressure on front cap Ax. tightening torque of housing nut Electrical connection Connector, M12 × 1 Environmental conditions Ambient temperature -40+100 °C Vibration resistance 55 Hz (1 mm) Shock resistance 70 g (11 ms) Protection class IP68 IP69K MTTF 874 years acc. to SN 29500 (Ed. 99) 40 °C	Minimum cycle time	8 ms
Maximum cable length20 mIncluded in the SIDI GSDMLYesMechanical dataThreaded barrel, M18 x 1DesignThreaded barrel, M18 x 1Dimensions52 mmHousing materialStainless steel, 1.4404 (AISI 316L)Active area materialPlastic, LCPConnector housingplastic, PPAdmissible pressure on front cap≤ 15 barMax. tightening torque of housing nut25 NmElectrical connectionConnector, M12 x 1Environmental conditionsConnector, M12 x 1Ambient 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	Function pin 4	IO-Link
Included in the SIDI GSDML Mechanical data Design Threaded barrel, M18 x 1 Dimensions 52 mm Housing material Stainless steel, 1.4404 (AISI 316L) Active area material Plastic, LCP Connector housing plastic, PP Admissible pressure on front cap Admissible pressure on front cap Max. tightening torque of housing nut Electrical connection Connector, M12 × 1 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	Function Pin 2	DI
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Dimensions52 mmHousing materialStainless steel, 1.4404 (AISI 316L)Active area materialPlastic, LCPConnector housingplastic, PPAdmissible pressure on front cap≤ 15 barMax. tightening torque of housing nut25 NmElectrical connectionConnector, M12 × 1Environmental conditionsEnvironmental 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	Mechanical data	
Housing material Active area material Plastic, LCP Connector housing plastic, PP Admissible pressure on front cap Max. tightening torque of housing nut Electrical connection Connector, M12 × 1 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, M18 x 1
Active area material Plastic, LCP Connector housing plastic, PP Admissible pressure on front cap ≤ 15 bar Max. tightening torque of housing nut 25 Nm Electrical connection Connector, M12 × 1 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
Connector housingplastic, PPAdmissible pressure on front cap≤ 15 barMax. tightening torque of housing nut25 NmElectrical connectionConnector, M12 × 1Environmental conditions-40+100 °CVibration resistance55 Hz (1 mm)Shock resistance30 g (11 ms)Protection classIP68 IP69KMTTF874 years acc. to SN 29500 (Ed. 99) 40 °C	Housing material	Stainless steel, 1.4404 (AISI 316L)
Admissible pressure on front cap ≤ 15 bar Max. tightening torque of housing nut 25 Nm Electrical connection Connector, M12 × 1 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	Active area material	Plastic, LCP
Max. tightening torque of housing nut Electrical connection Connector, M12 × 1 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	plastic, PP
Electrical connection Connector, M12 × 1 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	≤ 15 bar
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	25 Nm
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	Connector, M12 × 1
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)
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

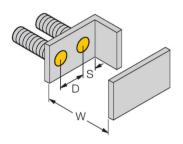
Mounting instructions/Description





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 18 mm

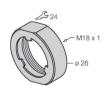
All flush mountable uprox+ threaded barrel types are also recessed mountable. Safe operation is ensured if the sensor is screwed in by half a turn.



Accessories

PN-M18 6905310

Protective nut for M18 x 1 threaded barrels; material: Stainless steel A2 1.4305 (AISI 303)





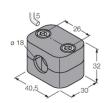
Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)

6945004

6945102

BSS-18 6901320

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





QM-18

Quick-mount bracket with dead-stop; material: Chrome-plated brass. Male thread M24 × 1.5. Note: The switching distance of the proximity switches may change when using quick-mount brackets.



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