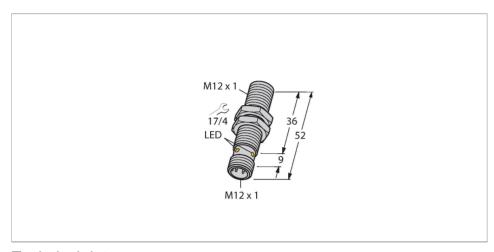


BI4U-EM12WD-IOL6X2-H1141 Inductive Sensor – IO-Link Communication



Technical data

| Type | BI4U-EM12WD-IOL6X2-H1141 |
|---|----------------------------------|
| ID | 100015372 |
| 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 _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 _e | ≤ 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, 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 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.

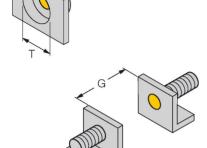


Technical data

| AC field stability 300 mT _{ss} Switching frequency 0.5 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, M12 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 \$ 20 bar Max. tightening torque of housing nut 10 Nm Electrical connection Connector, M12 x 1 Environmental conditions Ambient temperature -40+100 °C <t< th=""><th>DC field stability</th><th>300 mT</th></t<> | DC field stability | 300 mT |
|---|---------------------------------------|-------------------------------------|
| IO-Link 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 Yes Design Threaded barrel, M12 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 ≤ 20 bar Max. tightening torque of housing nut 10 Nm Electrical connection Connector, M12 × 1 Environmental conditions Ambient temperature -40+100 °C Vibration resistance 55 Hz (1 mm) Shock resistance 30 g (1 | AC field stability | 300 mT _{ss} |
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| 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, M12 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 x 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 | |
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| 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, M12 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 ≤ 20 bar Max. tightening torque of housing nut 10 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 | 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, M12 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 ≤ 20 bar Max. tightening torque of housing nut 10 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) |
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| Included in the SIDI GSDML Mechanical data Design Threaded barrel, M12 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 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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| Connector housingplastic, PPAdmissible pressure on front cap≤ 20 barMax. tightening torque of housing nut10 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) |
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| 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 | ≤ 20 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 | 10 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 |
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| 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

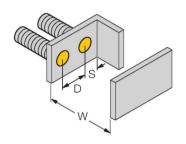
Mounting instructions/Description





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

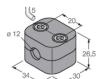


Accessories

MW12

6945003

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



BSS-12

6901321

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



6905309

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





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