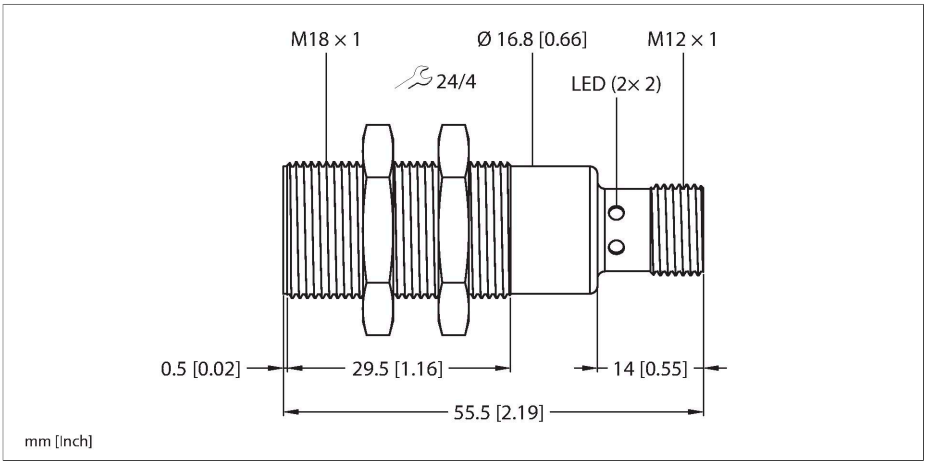
RU80D-M18M-LIU8X2-H1141
Ultrasonic Sensor – Diffuse Mode Sensor



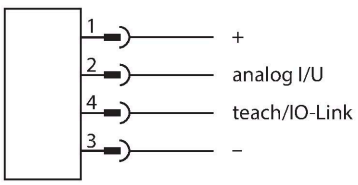
Technical data

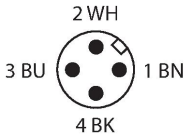
Type	RU80D-M18M-LIU8X2-H1141
ID	100039009
Ultrasonic data	
Function	Proximity
Range	80…800 mm
Resolution	1 mm
Minimum measuring range	250 mm
Minimum switching range	25 mm
Ultrasound frequency	400 kHz
Repeat accuracy	≤ 0.15 % of full scale
Temperature drift	± 1.5 % of full scale
Linearity error	≤ ± 0.5 %
Edge lengths of the nominal actuator	200 mm
Electrical data	
Operating voltage U_B	18…30 VDC
Residual ripple	10 % U_{ss}
DC rated operating current I_e	≤ 150 mA
No-load current	≤ 40 mA
Load resistance	≤ 1000 Ω
Residual current	≤ 0.1 mA
Readiness delay	≤ 300 ms
Communication protocol	IO-Link
Output function	NO/NC, PNP/NPN, analog output

Features

- Smooth sonic transducer face
- M18 cylindrical design, potted
- Connection via M12 × 1 male connector
- Measuring range adjustable via teach-in
- Temperature compensation
- Blind zone: 8 cm
- Range: 80 cm
- Resolution: 1 mm
- Adjustable switching hysteresis
- Narrow sonic cone
- 1 × switching output, PNP/NPN, IO-Link, teach-in, synchronization
- 1 × analog output, 4…20 mA/0…20 mA/0…10 V
- NO/NC programmable
- Transmission of process value and parametrization via IO-link
- Adjustable operation as a retroreflective sensor

Wiring diagram





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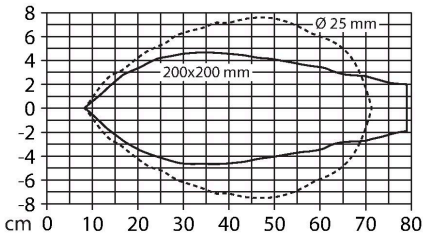
Technical data

Output 1	Switching output or IO-Link mode
Output 2	Analog output
Current output	4…20 mA
Load resistance current output	≤ 0.4 kΩ
Voltage output	0…10 V
Load resistance voltage output	≥ 10 kΩ
Switching frequency	≤ 5 Hz
Hysteresis	≤ 2 mm
Voltage drop at I_e	≤ 2.5 V
Short-circuit protection	yes/Cyclic
Reverse polarity protection	yes
Wire breakage protection	yes
Setting option	Remote Teach IO-Link
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
Measured value information	15 bit
Switchpoint information	1 bit
Frame type	2.2
Minimum cycle time	2 ms
Function pin 4	IO-Link
Function Pin 2	Analog
Maximum cable length	20 m
Profile support	Smart Sensor Profile
Mechanical data	
Design	Threaded barrel, M18
Radiation direction	straight
Dimensions	Ø 18 x 55.5 mm
Housing material	Metal, CuZn, Nickel Plated
Max. tightening torque of housing nut	20 Nm
Transducer material	Plastic, Epoxyd resin and PU foam
Electrical connection	Connector, M12 × 1, 4-wire
Ambient temperature	-25…+70 °C
Storage temperature	-40…+80 °C
Pressure resistance	0.5…5 bar

Functional principle

Ultrasonic sensors detect a multitude of objects contactlessly and wear free with ultrasonic waves. It does not matter whether the object is transparent or opaque, metallic or non-metallic, firm, liquid or powdery. Even environmental conditions such as spray, dust or rain hardly affect their function.

Sonic Cone



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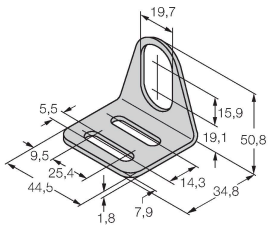
Technical data

Protection class	IP67
Power-on indication	LED, Green
Switching state	LED, Yellow
Object detected	LED, Yellow
Tests/approvals	
MTTF	643 years acc. to SN 29500 (Ed. 99) 40 °C
Declaration of conformity EN ISO/IEC	EN 60947-5-7
Approvals	CE cULus

Accessories

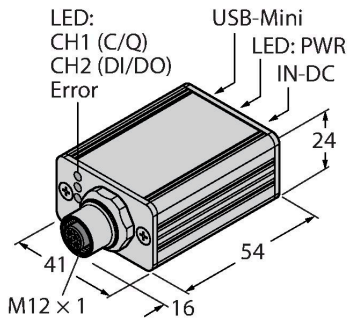
MW18	6945004



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

Accessories

Dimension drawing	Type	ID	
	USB-2-IOL-0002	6825482	IO-Link Master with integrated USB port



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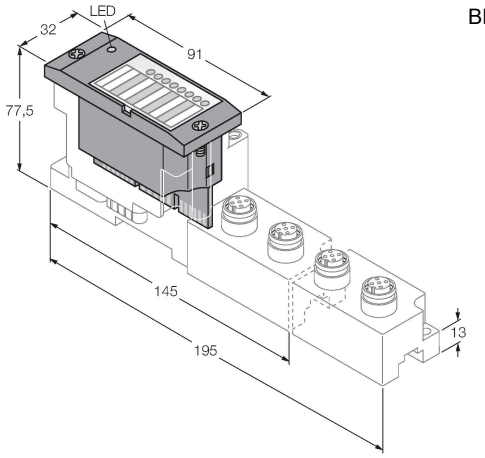
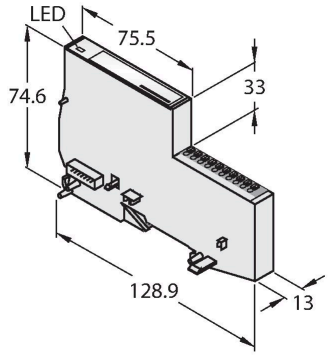
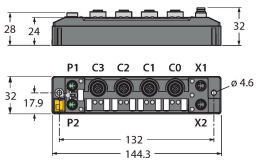
Dimension drawing	Type	ID	
	BL67-4IOL	6827386	4-channel IO-Link Master module for the modular BL67 I/O-system
	BL20-E-4IOL	6827385	IO-Link master module for the modular BL20 I/O system, 4-channel
	TBEN-S2-4IOL	6814024	Compact multiprotocol I/O module, 4 IO-Link Master 1.1 Class A, 4 universal PNP digital channels 0.5 A