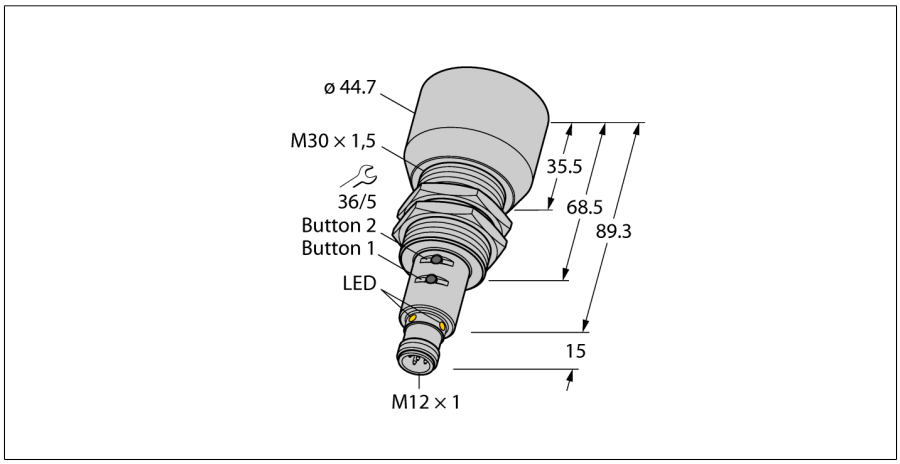
Ultrasonic sensor
diffuse mode sensor
RU600U-M30E-LIU2PN8X2T-H1151

Industrial Automation



- **Smooth sonic transducer face**
- **Cylindrical housing M30, potted**
- **Connection via M12 x 1 male**
- **Measuring range adjustable via teach button/Easy-Teach**
- **Temperature compensation**
- **Blind zone: 60 cm**
- **Range: 600 cm**
- **Resolution: 1 mm**
- **Sonic cone angle: 15°**
- **1 x switching output, PNP/NPN**
- **1 x analog output, 4…20 mA / 0…10V / additional switching output, PNP/NPN**
- **NO/NC programmable**
- **Transmission of process value and parametrization via IO-link**

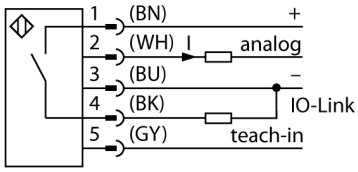
Type code	RU600U-M30E-LIU2PN8X2T-H1151
Ident no.	1610049

Operating mode	Diffuse mode ultrasonic sensor
Range	60…600cm
Resolution	1 mm
minimum measuring range	500 mm
minimum switching range	50 mm
Ultrasound frequency	75 kHz
Repeatability	0.15 % of full scale
Temperature drift	1.5% of full scale
Linearity error	≤ ± 0.5 %
Edge lengths of the nominal actuator	100 mm
Approach speed	≤ 9 m/s
Pass speed	≤ 3 m/s

Operating voltage	15… 30VDC
Residual ripple	10 % U_{ss}
DC rated operational current	≤ 150 mA
No-load current I_0	≤ 50 mA
Load resistance	≤ 1000 Ω
Response time	600 ms
Readiness delay	300 ms
Output function	NO/NC , PNP/NPN, Analog output, IO-Link
Output 1	Switching output or IO-Link mode
Output 2	Analog output
Current output	4…20mA
Voltage output	0…10VDC
Switching frequency	1.6 Hz
Hysteresis	≤ 50 mm
Voltage drop at I_e	≤ 2.5 V
Short-circuit protection	yes/ cyclic
Reverse polarity protection	yes
Wire breakage protection	yes

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
Status bit information	0 bit
Frame type	2.2
Minimum cycle time	2 ms
Function Pin 4	IO-Link
Function Pin 2	DI
Maximum cable length	20 m
Profilunterstützung	Smart Sensor Profil

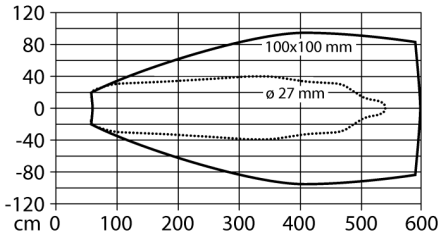
Wiring Diagram



Functional principle

Ultrasonic sensors capture a multitude of objects contactless 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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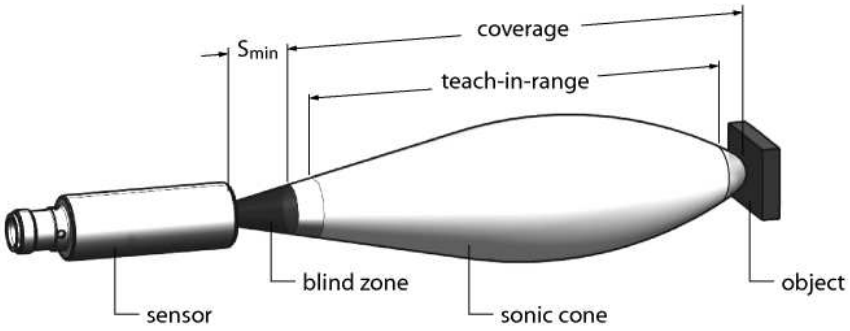
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Construction	Threaded barrel, M30
Radiation direction	straight
Dimensions	104.3 x Ø44.7 mm
Housing material	Metal, CuZn, nickel-plated
max. tightening torque right	75 Nm
Transducer material	Plastic, Epoxyd resin and PU foam
Connection	Flange connector, M12 x 1, 5-wire
Protection class	IP67
Ambient temperature	-25…+50 °C
Storage temperature	-40…+80 °C
Declaration of conformity EN ISO/IEC	EN 60947-5-2
Vibration resistance	IEC 60068-2
MTTF	195 years
MTTF note	acc. to SN 29500 (Ed. 99) 40 °C

Switching state	LED yellow
Object detected	LED, green

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Mounting instructions / Description



Settings

The ultrasonic sensor can be parametrized in such a way that you can either set a measuring range via an analog and a switching output, or a switching range via two switching outputs. These settings are done with the Easy-Teach adapter or with the buttons at the sensor. Object presence is signalled by the green and yellow LED.

Two limiting values are taught. They mark the end-points of a measuring window and may be selected freely within the overall detection range.

Via Easy-Teach adapter

- Connect the teach adapter TX1-Q20L60 between sensor and connection cable
- For the first limit value, place object accordingly
- Press and hold button for at least 2 to 7 s against Ub
- For the second limit value, place object accordingly
- Press and hold button for at least 2 to 7 s against Gnd

Via buttons

- For the first limit value, place object accordingly
- Press and hold button 1 for at least 2 to 7 s
- For the second limit value, place object accordingly
- Press and hold button 2 for at least 2 to 7 s

After successful teach-in the sensor starts running automatically in standard operating mode Unsuccessful teach-in is signalled by the LED flashing slowly at a frequency of 5 Hz.

LED response

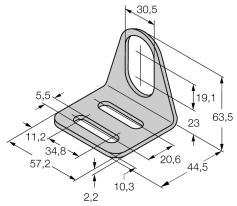
In standard operating mode both LEDs signal the switching states of the sensor.

- green: Object is in the detection range but not in the measuring range
- yellow: Object is in the measuring range
- off: Object is outside the detection range

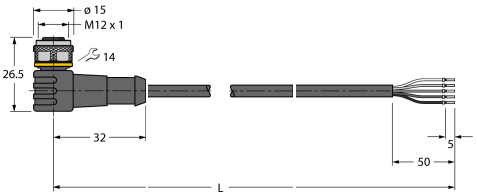
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diffuse mode sensor
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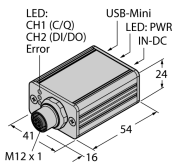
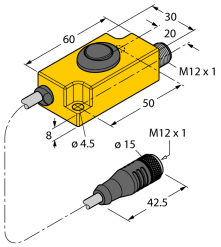
Accessories

Type code	Ident no.	Description	
MW-30	6945005	Mounting bracket for threaded barrel devices; material: Stainless steel A2 1.4301 (AISI 304)	

Wiring accessories

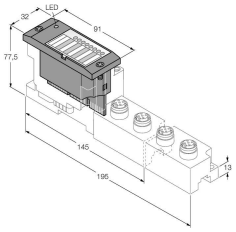
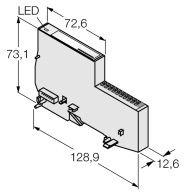
Type code	Ident no.	Description	
RKC4.5T-2/TEL	6625016	Connection cable, female M12, straight, 5-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com	
WKC4.5T-2/TEL	6625028	Connection cable, female M12, angled, 5-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com	

Function accessories

Type code	Ident no.	Description	
USB-2-IOL-0002	6825482	IO-Link Master with integrated USB port	
TX1-Q20L60	6967114	Teach adapter for inductive encoders, linear position, angle, ultrasonic and capacitive sensors	

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Function accessories

Type code	Ident no.	Description	
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	

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