

M30 Ultrasonic Barrel Sensors with 6 Meter Sensing Range

An all-metal rugged housing makes these ideal for harsh applications, and the 6-meter sensing range enables detection over long distances. These sensors are available with a switch-point or switch-point/analog output. Both can be programmed via teach-by-wire or teach-by-button configurations.

Please see the following pages for the data sheets for the product included in this extension.



Part Number	ID Number	Standard	High End	Teach By Wire	Teach by Button	Teach via IO-Link	Sensing Range	Housing	Output
RU600U-M30M-2UP8X2-H1151	M1610037	X		X			600cm	30mm barrel	PNP
RU600U-M30E-2UP8X2-T-H1151	M1610041	X		X	X		600cm	30mm barrel	PNP
RU600U-M30E-LIU2PN8X2T-H1151	M1610049		X	X	X	X	600cm	30mm barrel	PNP/NPN, Analog, IO-Link

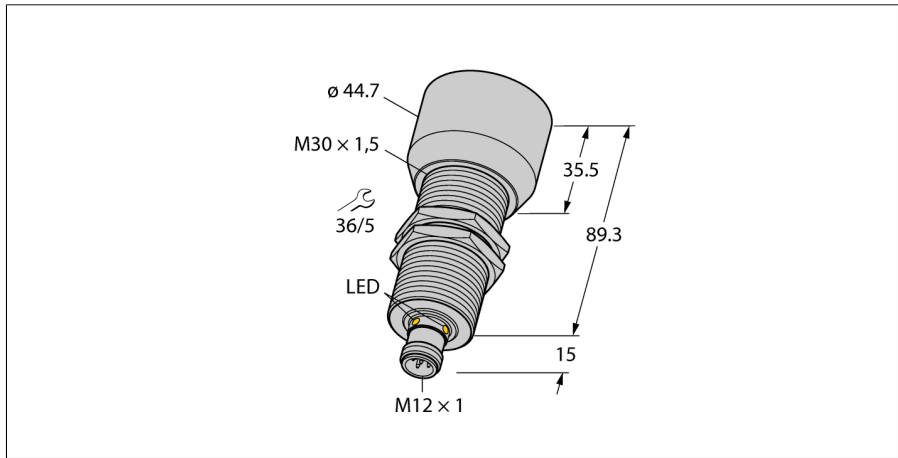
PRESS CONTACT

Paul Gilbertson
 Web & Technical Content Administrator
 Phone: 763-553-7300
 Mail: paul.gilbertson@turck.com

CONTACT

Turck Inc.
 3000 Campus Drive
 Minneapolis, MN 55441
 Mail: info@turck.com
 Web: www.turck.us

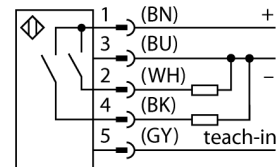
Ultrasonic sensor
diffuse mode sensor
RU600U-M30M-2UP8X2-H1151



- Smooth sonic transducer face
- Cylindrical housing M30, potted
- Connection via M12 x 1 male
- Measuring range adjustable via Easy-Teach
- Temperature compensation
- Blind zone: 60 cm
- Range: 600 cm
- Resolution: 1 mm
- Sonic cone angle: 15°
- 2 x switching outputs, PNP
- NO/NC programmable

Type code	RU600U-M30M-2UP8X2-H1151
Ident-No.	1610037
Pass speed	≤ 3 m/s
Repeatability	≤ 0.15 % of full scale
Edge lengths of the nominal actuator	100 mm
Hysteresis	≤ 50 mm
Ambient temperature	-25...+50 °C
Storage temperature	-40...+80°C
Operating voltage	15... 30VDC
Residual ripple	≤ 10 % U _{in}
DC rated operational current	≤ 150 mA
No-load current I₀	≤ 50 mA
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 2.5 V
Wire breakage / Reverse polarity protection	yes/ yes
Output function	5-wire, NO/NC , PNP
Output 1	Switching output
Readiness delay	≤ 300 ms
Construction	Threaded barrel, M30
Dimensions	104.3 mm
Housing material	Metal, CuZn, nickel-plated
Electrical connection	Flange connector, M12 x 1
Protection class	IP67
MTTF	193 years acc. to SN 29500 (Ed. 99) 40 °C
Switching state	LED yellow

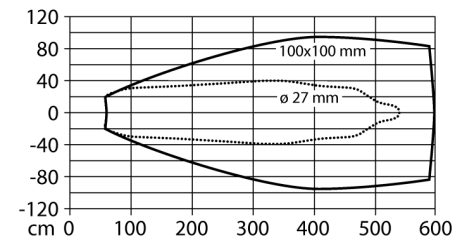
Wiring Diagram



Functional principle

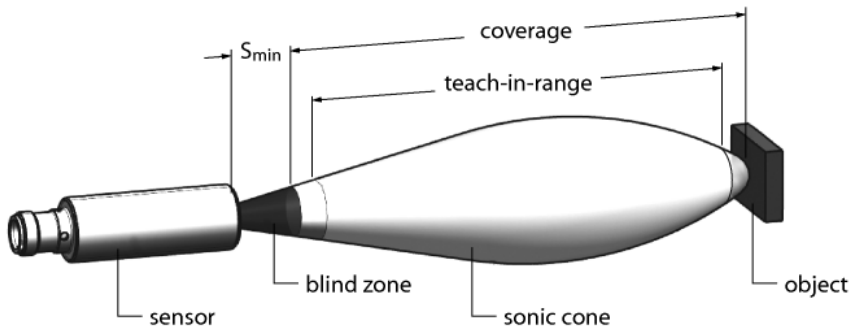
Ultrasonic sensors capture a multitude of objects contactless and wear-free with ultrasonic waves. It does not matter whether the object is transparent or opaque, metallic or non-metallic, firm, liquid or powdery. Even environmental conditions such as spray, dust or rain hardly affect their function.

Sonic Cone



**Ultrasonic sensor
diffuse mode sensor
RU600U-M30M-2UP8X2-H1151**

Mounting instructions / Description



Settings

The ultrasonic sensor features two switching outputs with adjustable switching range. The adjustments can either be made via Easy-Teach adapter or via buttons (please note, only the RU...U-M...E-2UP8X2T-H1151 types have buttons!). Object presence is signalled by the green and yellow LED.

Two switchpoints are taught. They mark the limits of the switching range and may be selected freely within the 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 Gnd
- For the second limit value, place object accordingly
- Press and hold button for at least 2 to 7 s against Ub

Teach button (please note, only the RU...U-M...E-2UP8X2T-H1151 types have buttons!)

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

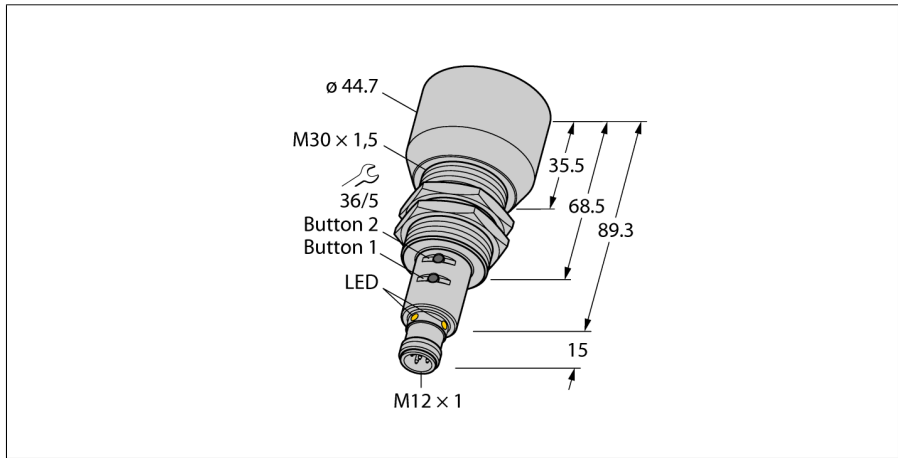
After successful teach-in the sensor automatically runs in standard operating mode. Unsuccessful teach-in is signalled by the LED flashing slowly at a frequency of 5 Hz.

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 switching range
- yellow: Object is in the switching range
- off: Object is outside the detection range

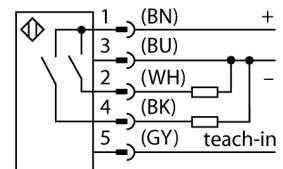
Ultrasonic sensor
diffuse mode sensor
RU600U-M30E-2UP8X2T-H1151



- 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°
- 2 x switching outputs, PNP
- NO/NC programmable

Type code	RU600U-M30E-2UP8X2T-H1151
Ident-No.	1610041
Pass speed	≤ 3 m/s
Repeatability	≤ 0.15 % of full scale
Edge lengths of the nominal actuator	100 mm
Hysteresis	≤ 50 mm
Ambient temperature	-25...+50 °C
Storage temperature	-40...+80°C
Operating voltage	15... 30VDC
Residual ripple	≤ 10 % U _{in}
DC rated operational current	≤ 150 mA
No-load current I₀	≤ 50 mA
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 2.5 V
Wire breakage / Reverse polarity protection	yes/ yes
Output function	5-wire, NO/NC , PNP
Output 1	Switching output
Readiness delay	≤ 300 ms
Construction	Threaded barrel, M30
Dimensions	104.3 mm
Housing material	Metal, CuZn, nickel-plated
Electrical connection	Flange connector, M12 x 1
Protection class	IP67
MTTF	193 years acc. to SN 29500 (Ed. 99) 40 °C
Switching state	LED yellow

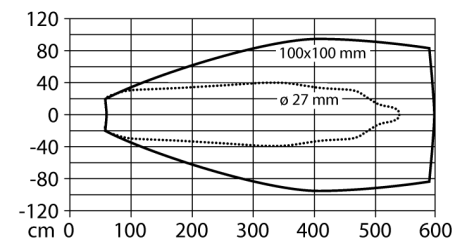
Wiring Diagram



Functional principle

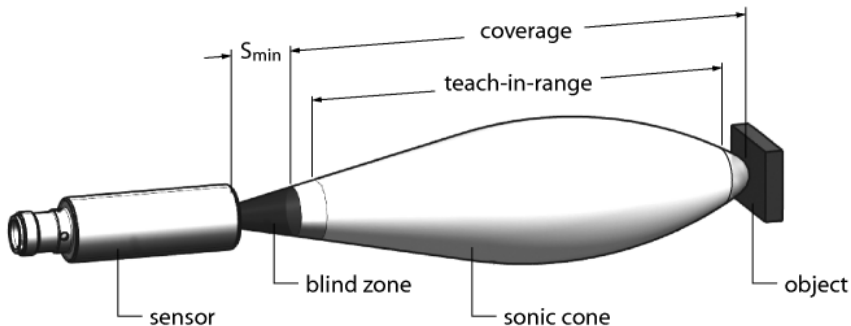
Ultrasonic sensors capture a multitude of objects contactless and wear-free with ultrasonic waves. It does not matter whether the object is transparent or opaque, metallic or non-metallic, firm, liquid or powdery. Even environmental conditions such as spray, dust or rain hardly affect their function.

Sonic Cone



**Ultrasonic sensor
diffuse mode sensor
RU600U-M30E-2UP8X2T-H1151**

Mounting instructions / Description



Settings

The ultrasonic sensor features two switching outputs with adjustable switching range. The adjustments can either be made via Easy-Teach adapter or via buttons (please note, only the RU...U-M...E-2UP8X2T-H1151 types have buttons!). Object presence is signalled by the green and yellow LED.

Two switchpoints are taught. They mark the limits of the switching range and may be selected freely within the 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 Gnd
- For the second limit value, place object accordingly
- Press and hold button for at least 2 to 7 s against Ub

Teach button (please note, only the RU...U-M...E-2UP8X2T-H1151 types have buttons!)

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

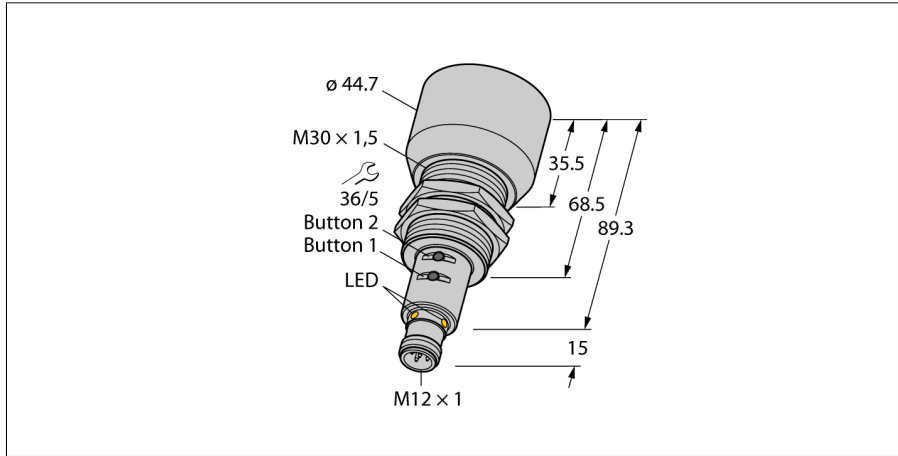
After successful teach-in the sensor automatically runs in standard operating mode. Unsuccessful teach-in is signalled by the LED flashing slowly at a frequency of 5 Hz.

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 switching range
- yellow: Object is in the switching range
- off: Object is outside the detection range

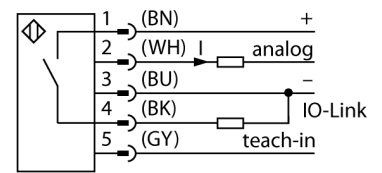
Ultrasonic sensor
diffuse mode sensor
RU600U-M30E-LIU2PN8X2T-H1151



- 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
Pass speed	≤ 3 m/s
Repeatability	≤ 0.15 % of full scale
Edge lengths of the nominal actuator	100 mm
Hysteresis	≤ 50 mm
Ambient temperature	-25...+50 °C
Storage temperature	-40...+80 °C
Operating voltage	15... 30VDC
Residual ripple	≤ 10 % U _{in}
DC rated operational current	≤ 150 mA
No-load current I₀	≤ 50 mA
Short-circuit protection	yes/ cyclic
Voltage drop at I₀	≤ 2.5 V
Wire breakage / Reverse polarity protection	yes/ yes
Output function	5-wire, NO/NC , PNP/NPN, Analog output, IO-Link
Output 1	Switching output or IO-Link mode
Voltage output	0...10VDC
Current output	4...20mA
Readiness delay	≤ 300 ms
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
Profibusunterstützung	Smart Sensor Profil
Construction	Threaded barrel, M30
Dimensions	104.3 mm
Housing material	Metal, CuZn, nickel-plated
Electrical connection	Flange connector, M12 x 1
Protection class	IP67
MTTF	193 years acc. to SN 29500 (Ed. 99) 40 °C
Switching state	LED yellow

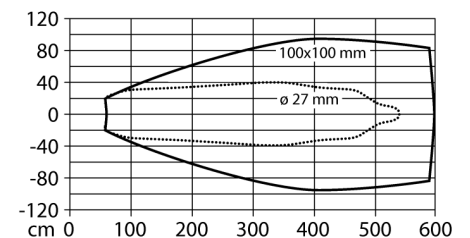
Wiring Diagram



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

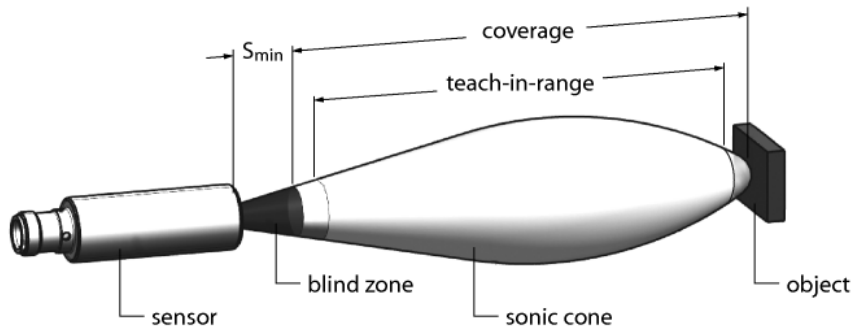


Ultrasonic sensor

diffuse mode sensor

RU600U-M30E-LIU2PN8X2T-H1151

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