

ATEX/IECEx Approved Ultrasonic Sensors for Hazardous Applications

Expanding its sensors for use in hazardous locations, Turck released a new line of ATEX/IECEx-approved ultrasonic sensors that carry ATEX/IECEx, II 3 G approvals. The sensors are also approved to operate in gases and vapors IIC group, zone 2 and IIIC group, zone 22 for dust. The sensors feature steel housings in 18mm and 30mm barrels, with sensing ranges from 40cm to 6 meters.

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

Part Number	ID Number	Stan- dard	High End	Teach By Wire	Teach by Button	Teach via IO-Link	Sensing Range	Housing	Output
RU40U-EM18E-LI- U2PN8X2T-H1151/3GD	M1610071		Х	х	Х	Х	40cm	18mm Barrel	PNP/NPN, Analog, IO- Link
RU130U-EM18E-LI- U2PN8X2T-H1151/3GD	M1610072		Х	х	Х	Х	130cm	18mm Barrel	PNP/NPN, Analog, IO- Link
RU130U-EM30E-LI- U2PN8X2T-H1151/3GD	M1610073		Х	х	Х	х	130cm	30mm Barrel	PNP/NPN, Analog, IO- Link
RU300U-EM30E-LI- U2PN8X2T-H1151/3GD	M1610074		Х	х	Х	х	300cm	30mm Barrel	PNP/NPN, Analog, IO- Link
RU600U-EM30E-LI- U2PN8XT-H1151/3GD	M1610075		Х	х	Х	Х	600cm	30mm Barrel	PNP/NPN, Analog, IO- Link

PRESS CONTACT

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CONTACT

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Ultrasonic sensor diffuse mode sensor RU40U-EM18E-LIU2PN8X2T-H1151/3GD

M18 × 1 24/4 Button 2 Button 1 LED M12	54 75 15 2×1
Type code	RU40U-EM18E-LIU2PN8X2T-H1151/3GD
ident-NO.	1610071
Pass shood	< 1.5 m/s
Reneatability	< 0.15 % of full scale
Edge lengths of the nominal actuator	20 mm
Hysteresis	≤ 5 mm
Ambient temperature	-25+70 °C
Storage temperature	-40+80°C
Operating voltage	15 30VDC
Residual ripple	≤ 10 % Uss < 150 mA
	≥ 100 mA < 50 mA
Short-circuit protection	≥ 50 mA
Voltage drop at I.	≤ 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	010VDC
Current output	420mA
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	
Frame type Minimum cycle time	2.2 2 ms
Function Pin 4	IO-Link
Function Pin 2	DI
Maximum cable length	20 m
Profilunterstützung	Smart Sensor Profil
On material and	Three and here 1 M40
Construction	I hreaded barrel, M18
Dimensions	Stoplass stool 1 4404 (AISL 246L)
Flectrical connection	Statilless Steel 1.4404 (AIST STOL) Flance connector M12 x 1
Protection class	
MTTF	202 years acc. to SN 29500 (Ed. 99) 40 °C
Switching state	LED yellow

- ATEX II 3 G approval
- Gases and vapors IIC group, zone 2
- IIIC group, zone 22, dusts
- When used in hazardous areas, the special conditions of the approval must be observed
- Smooth sonic transducer face
- Cylindrical housing M18, potted
- Connection via M12 x 1 male
- Teach range adjustable via pushbutton or adapter
- Temperature compensation
- Blind zone: 2.5 cm
- Range: 40 cm
- Resolution: 0.5 mm
- Sonic cone angle: 9°
- 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

Wiring Diagram



Functional principle

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



Ultrasonic sensor diffuse mode sensor RU40U-EM18E-LIU2PN8X2T-H1151/3GD

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 endpoints 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
- \bullet 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

- •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

Ultrasonic sensor diffuse mode sensor RU130U-EM18E-LIU2PN8X2T-H1151/3GD

M18 × 1 24/4 Button 2 Button 1 LED M12	54 54 75 15 15 15 1
Type code	
Igpe code Ident-No	1610072
	1010072
Pass speed	≤ 1.5 m/s
Repeatability	≤ 0.15 % of full scale
Edge lengths of the nominal actuator	100 mm
Hysteresis	≤ 10 mm
Ambient temperature	-25+70 °C
Storage temperature	-40+80°C
Operating voltage	15 30VDC
Residual ripple	\leq 10 % U _{ss}
DC rated operational current	≤ 150 mA v
No-load current I _o	≤ 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/NPN, Analog output, IO-Link
Output 1	Switching output or IO-Link mode
Voltage output	010VDC
Current output	420mA
Readiness delay	≤ 300 ms
IQ-Link	F
IO-Link Specification	V 1.1
IO-Link port type	class A je
Communication Mode	IC COM 2 (38.4 kBaud)
Process data width	16 bit
Measured value information	15 bit m
Switchpoint information	1 bit m
Status bit information	0 bit ha
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
Construction	Threaded hered M49
Dimonsions	
Unicipalities	Stainless steel 1 1101 (AISI 316L)
Electrical connection	Flance connector $M12 \times 1$
Protection class	
MTTE	202 years acc. to SN 29500 (Ed. 99) 40 °C
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- ATEX II 3 G approval
- Gases and vapors IIC group, zone 2
- IIIC group, zone 22, dusts
- When used in hazardous areas, the special conditions of the approval must be observed
- Smooth sonic transducer face
- Cylindrical housing M18, potted
- Connection via M12 x 1 male
- Teach range adjustable via pushbutton or adapter
- Temperature compensation
- Blind zone: 15 cm
- Range: 130 cm
- Resolution: 1 mm
- Sonic cone angle: 16°
- 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

Wiring Diagram



Functional principle

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

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-20 -															
-30 -															
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Switching state

LED yellow

Ultrasonic sensor diffuse mode sensor RU130U-EM18E-LIU2PN8X2T-H1151/3GD

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 endpoints 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
- \bullet 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

- •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

Ultrasonic sensor diffuse mode sensor RU130U-EM30E-LIU2PN8X2T-H1151/3GD

M30 × 1.5 36/5 Button 2 Button 1 LED	54 54 75 15 2×1
Type code	RU130U-EM30E-LIU2PN8X2T-H1151/3GD
Ident-No.	1610073
Pass speed	≤ 1.5 m/s
	\leq 0.15 % of full scale
Eage lerigtins of the nominal actuator	100 mm
ا باعاتاتات Amhiant temperatura	≤ IUIIIII -25 +70 °C
Storage temperature	-40 +80°C
Operating voltage	15 30VDC
Residual ripple	\leq 10 % U _{ss}
DC rated operational current	≤ 150 mA
No-load current I	≤ 50 mA
Short-circuit protection	yes/ cyclic
Voltage drop at I.	≤ 2.5 V
wire preakage / Reverse polarity protection	yes/ yes
	5-wire, NO/NC, PNP/NPN, Analog output, IO-Link
Voltage output	
Current output	420mA
Readiness delay	≤ 300 ms
IO-Link	
IO-Link Specification	V 1.1
IU-LINK port type	
Communication Widde	UUM ∠ (38.4 KBAUQ) 16 hit
Fiouess uala willin Measured value information	15 hit
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
Construction	Threaded barrel M20
Construction	I nreaded barrel, M30
Dimensions Housing material	oy MM Stainless steel 1 4404 (AISL316L)
Electrical connection	Flange connector M12 x 1
Protection class	IP67
MTTF	202 years acc. to SN 29500 (Ed. 99) 40 °C
Switching state	LED vellow

- ATEX II 3 G approval
- Gases and vapors IIC group, zone 2
- IIIC group, zone 22, dusts
- When used in hazardous areas, the special conditions of the approval must be observed
- 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: 15 cm
- Range: 130 cm
- Resolution: 1 mm
- Sonic cone angle: 16°
- 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

Wiring Diagram



Functional principle

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



Ultrasonic sensor diffuse mode sensor RU130U-EM30E-LIU2PN8X2T-H1151/3GD

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 endpoints 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
- \bullet 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

- •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

Ultrasonic sensor diffuse mode sensor RU300U-EM30E-LIU2PN8X2T-H1151/3GD

M30 × 1.5 36/5 Button 2 Button 1 LED	54 54 75 15 12×1
Type code	RU300U-EM30E-LIU2PN8X2T-H1151/3GD
Ident-No.	1610074
Pass speed	< 1.5 m/s
Repeatability	≤ 0.15 % of full scale
Edge lengths of the nominal actuator	100 mm
Hysteresis	< 25 mm
Ambient temperature	-25+70 °C
Storage temperature	-40+80°C
Operating voltage	15 30VDC
Residual ripple	\leq 10 % U _{ss}
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/NPN, Analog output, IO-Link
Output 1	Switching output or IO-Link mode
Voltage output	010VDC
Current output	420mA
Readiness delay	≤ 300 ms
IO-Link	
IO-Link Specification	V 1.1
IU-Link port type	
Communication Mode	COM 2 (38.4 kBaud)
Process data width	
witchpoint information	
Switchpolini Information Status bit information	n bit
Frame type	2.2
Minimum cycle time	2.c 2 ms
Function Pin 4	IO-l ink
Function Pin 2	DI
Maximum cable length	20 m
Profilunterstützung	Smart Sensor Profil
Construction	Threaded barrel M30
Dimensions	89 mm
Housing material	Stainless steel 1 4404 (AISI 316L)
Electrical connection	Flange connector M12 x 1
Protection class	IP67
MTTF	191 years acc. to SN 29500 (Ed. 99) 40 °C
Switching state	LED vellow

- ATEX II 3 G approval
- Gases and vapors IIC group, zone 2
- IIIC group, zone 22, dusts
- When used in hazardous areas, the special conditions of the approval must be observed
- 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: 30 cm
- Range: 300 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

Wiring Diagram



Functional principle

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



Ultrasonic sensor diffuse mode sensor RU300U-EM30E-LIU2PN8X2T-H1151/3GD

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 endpoints 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
- \bullet 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

- •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

Ultrasonic sensor diffuse mode sensor RU600U-EM30E-LIU2PN8X2T-H1151/3GD

Edge lengths of the nominal actuator 100 mm Hysteresis 50 mm Ambient temperature -25+50 °C Storage temperature -40+80 °C Operating voltage 1530VDC Residual ripple 510 % U_ DC rated operational current ≤ 150 mA No-load current I, ≤ 50 mA Short-circuit protection yes/ cyclic Voltage drop at I, ≤ 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 drop at I, ≤ 2.5 V Voltage drop at I, ≤ 300 mS IO-Link 010VDC Current output 420mA Readiess delay ≤ 300 ms IO-Link Communication Mode COMMUNICATION V 1.1 Ob-Link Io Process data width 16 bit Measured value information 15 bit Switchpoint information 0 bit Frame type 2.2 Minimum cycle time 2	Electrical connectionFlange connector, M12 x 1Protection classIP67MTTF193 years acc. to SN 29500 (Ed. 99) 40 °	°C
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., DC rated operational current ≤ 150 mA No-load current I, ≤ 50 mA Short-circuit protection yes/ cyclic Voltage drop at I, ≤ 2.5 V Wire breakage / Reverse polarity protection yes/ yes Output function 5-wire, NO/NC , PNP/NPN, Analog output, IO-Link Voltage drop at I, ≤ 2.5 V Wire breakage / Reverse polarity protection yes/ yes Output 1 Switching output or IO-Link mode Voltage output 010VDC Current output 420mA Readiness delay ≤ 300 ms ID-Link Process data width 16 bit Measured value information 15 bit Switchpoint information 15 bit Switchpoint information 10 bit Status bit information 16 bit Frame type 2.2 Minimum cycle time 2 ms Fruction Pin 4 20 m Profilunterstützung Smart Sensor Profil <	Electrical connection Flange connector, M12 x 1 Protection class IP67 MTTE 102 years are to SN 20500 (Ed. 00) (0.5)	°C
Edge lengths of the nominal actuator 100 mm Hysteresis 50 mm Ambient temperature -25+50 °C Storage temperature -40+80°C Operating voltage 1530VDC Residual ripple 50 mA DC rated operational current ≤ 150 mA No-load current I. ≤ 50 mA Short-circuit protection yes/ cyclic Voltage drop at I. ≤ 2.5 V Wire breakage / Reverse polarity protection yes/ yes Output function 5-wire, NO/NC , PNP/NPN, Analog output, IO-Link Output function 5-wire, NO/NC , PNP/NPN, Analog output, IO-Link Output function 5-wire, NO/NC , OPN/NPN, Analog output, IO-Link Output function 010VDC Current output 420mA Readiness delay ≤ 300 ms 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 Fr	Electrical connection Flange connector, M12 x 1	
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 50 mA DC rated operational current ≤ 150 mA No-load current I, ≤ 50 mA Short-circuit protection yes/ cyclic Voltage drop at I, ≤ 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 420mA Readiness delay ≤ 300 ms 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 <td< th=""><th></th><th></th></td<>		
Edge lengths of the nominal actuator100 mmHysteresis< 50 mmAmbient temperature<25+50 °CStorage temperature-40+80°COperating voltage15 30VDCResidual ripple< 10 % U,DC rated operational current< 150 mANo-load current I,< 50 mAShort-circuit protectionyes/ cyclicVoltage drop at I,< 2.5 VWire breakage / Reverse polarity protectionyes/ yesOutput function5-wire, NO/NC , PNP/NPN, Analog output, IO-LinkOutput 1Switching output or IO-Link modeVoltage output010VDCCurrent output420mAReadiness delay< 300 msIO-LinkIO-LinkCOM 2 (38.4 kBaud)Process data width16 bitMeasured value information15 bitSwitchpoint information0 bitFrame type2.2Minimum cycle time2 msFunction Pin 410-LinkFunction Pin 2DIMaximum cable length20 mProfilunterstitzungSmart Sensor ProfilConstructionThreaded barrel, M30Dimensions104.3 mm	Housing material Stainless steel 1.4404 (AISI 316L)	
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_a DC rated operational current < 150 mA No-load current I _a < 50 mA Short-circuit protection yes/ cyclic Voltage drop at I, < 2.5 V Wire breakage / Reverse polarity protection yes/ yes Output function 5 wire, NO/NC , PNP/NPN, Analog output, IO-Link Voltage output 010VDC Current output 420mA Readiness delay < 300 ms IO-Link IO-Link Specification V 1.1 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	Dimensions 104.3 mm	
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 _m DC rated operational current < 150 mA No-load current I _n < 50 mA Short-circuit protection yes/ cyclic Voltage drop at I, < 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 010VDC Current output 420mA Readiness delay < 300 ms IO-Link To 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 Functio	Construction Threaded barrel, M30	
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 _m DC rated operational current ≤ 150 mA No-load current I _n ≤ 50 mA Short-circuit protection yes/ cyclic Voltage drop at I, ≤ 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 drop at I, ≤ 2.5 V Voltage output 0 10VDC Current output 4 20mA Readiness delay ≤ 300 ms IO-Link IO-Link Voltage information 15 bit Measured value information 15 bit Status bit information 1 bit Status bit information 0 bit Frame type 2.2 Minimum cycle time 2 ms Function Pin 4 10-Link		
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 _m DC rated operational current ≤ 150 mA No-load current I _n ≤ 50 mA Short-circuit protection yes/ cyclic Voltage drop at I, ≤ 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 420mA Readiness delay ≤ 300 ms Voltak portification V 1.1 IO-Link Communication Mode COM2 (38.4 kBaud) Process data width 16 bit Measured value information 15 bit Switchpoint information 15 bit Switchpoint information 16 bit 2.2 Minimum cycle time 2 ms Function Pin 4 IO-Link	Profilunterstützung Smart Sensor Profil	
Edge lengths of the nominal actuator100 mmHysteresis \leq 50 mmAmbient temperature $25+50$ °CStorage temperature $40+80$ °COperating voltage15 30VDCResidual ripple \leq 10 % U _m DC rated operational current \leq 150 mANo-load current I ₆ \leq 50 mAShort-circuit protectionyes/ cyclicVoltage drop at I, \leq 2.5 VWire breakage / Reverse polarity protectionyes/ yesOutput function5-wire, NO/NC , PNP/NPN, Analog output, IO-LinkOutput 1Switching output or IO-Link modeVoltage output010VDCCurrent output420mAReadiness delay \leq 300 msTotal informationV1.1IO-Link ModeIO-Link port typeclass ACommunication ModeCOM 2 (38.4 kBaud)Process data width16 bitMeasured value information1 bitStatus bit information1 bitStatus bit information0 bitFrame type2.2Minimum cycle time2 msFunction Pin 4IO-Link	r unduon Finiz DI Maximum cable length 20 m	
Edge lengths of the nominal actuator100 mmHysteresis \leq 50 mmAmbient temperature $25+50$ °CStorage temperature $40+80$ °COperating voltage 1530 VDCResidual ripple \leq 10 % U _m DC rated operational current \leq 150 mANo-load current I _n \leq 50 mAShort-circuit protectionyes/ cyclicVoltage drop at I, \leq 2.5 VWire breakage / Reverse polarity protectionyes/ yesOutput function 5 -wire, NO/NC , PNP/NPN, Analog output, IO-LinkOutput 1Switching output or IO-Link modeVoltage output $010VDC$ Current output $420mA$ Readiness delay \leq 300 msID-LinkIO-Link port typeIO-Link port typeclass ACommunication ModeCOM 2 (38.4 kBaud)Process data width16 bitMeasured value information15 bitStatus bit information0 bitFrame type2.2Minimum cycle time2 ms	Function Pin 2 D	
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Edge lengths of the nominal actuator 100 mm Hysteresis ≤ 50 mm	Ambient temperature -25+50 °C	
Edge lengths of the nominal actuator 100 mm	Lysteresis ≤ 50 mm	
	Edge lengths of the nominal actuator 100 mm	
Repeatability \leq 0.15 % of full scale	Repeatability ≤ 0.15 % of full scale	
Pass speed ≤ 3 m/s	Pass speed ≤ 3 m/s	
uent-no. 1610075	Ident-No. 1610075	
	Type code RU600U-EM30E-LIU2PN8X2T-H1151/30	GD
	Type code RU600U-EM30E-LIU2PN8X2T-H1151/30	GD
rype code RU6000-EM30E-LIUZPN8X21-H1151/3GD		00

- ATEX II 3 G approval
- Gases and vapors IIC group, zone 2
- IIIC group, zone 22, dusts
- When used in hazardous areas, the special conditions of the approval must be observed
- 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

Wiring Diagram



Functional principle

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



Ultrasonic sensor diffuse mode sensor RU600U-EM30E-LIU2PN8X2T-H1151/3GD

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 endpoints 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
- \bullet 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

- •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