

Level Measurement

Continuous level measurement - Ultrasonic transmitters

SITRANS LU180

Overview



SITRANS LU180 is a short-range integrated ultrasonic level transmitter. This intrinsically safe, 2 wire, 4 to 20 mA loop powered transmitter is ideal for liquids, slurries, and bulk materials in open or closed vessels to 5 m (16.4 ft).

Benefits

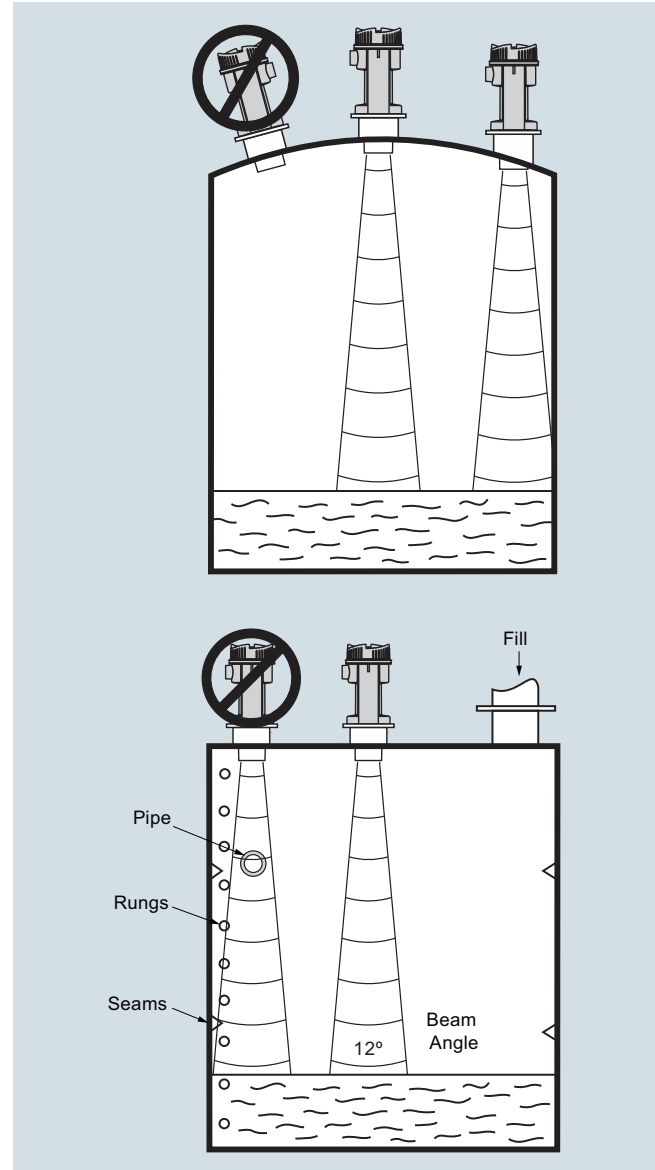
- Easy to install, program, and maintain
- Accurate and reliable
- Sanitary models available
- Patented Sonic Intelligence echo processing
- Integral temperature compensation

Application

The transducer is available in PVDF copolymer, making the device suitable for use in a wide variety of applications. SITRANS LU180 is easy to install and maintain, and can be quickly removed for cleaning as required by the food, beverage and pharmaceutical industries. The reliability of the level data is based on the Sonic Intelligence echo processing algorithms. A filter discriminates between the true echo and false echoes from acoustic or electrical noises and agitator blades in motion. The ultrasonic pulse propagation time to the material and back is temperature compensated and converted into distance for display, analog output.

- Key Applications: chemical storage vessels, filter beds, mud pits, liquid storage vessels, food applications

Configuration

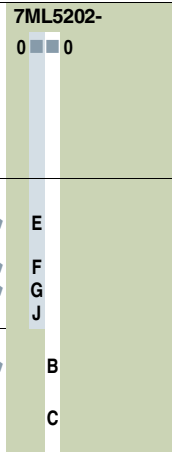









SITRANS LU180 mounting

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Technical specifications		Selection and Ordering data	
Mode of operation		SITRANS LU180	
Measuring principle	Ultrasonic level measurement	Short-range integrated ultrasonic level transmitter, intrinsically safe, 2 wire, 4 to 20 mA loop powered ideal for liquids, slurries, and bulk materials in open or closed vessels to 5 m (16.4 ft).	
Input			
Measuring range	0.25 ... 5 m (0.8 ... 16.4 ft)	Click on the Article No. for the online configuration in the PIA Life Cycle Portal.	
Frequency	54 kHz	Transducer/Process connection	
Output		PVDF copolymer, 2" NPT [(Taper), ANSI/ASME B1.20.1]  E PVDF copolymer, R 2" [(BSPT), EN 10226]  F PVDF copolymer, G 2" [(BSPP), EN ISO 228-1]  G PVDF copolymer, 4" Sanitary mounting  J	
mA	4 ... 20 mA	Cable inlet	
• Span	Proportional/ inversely proportional	M20 x 1.5 [General Purpose cable gland -20 ... +60 °C (-4 ... +140 °F) included]  B 1/2" NPT stainless steel entry (no cable gland included) C	
• Max. load	600 Ω in the loop at 24 V DC		
Power supply		Selection and Ordering data	
Supply voltage	12 ... 30 V DC, 0.1 A surge	Order code	
Max. power consumption	0.75 W (25 mA at 24 V DC)	Further designs	
Certificates and approvals		Please add "-Z" to Article No. and specify Order code(s).	
CSA: IS/ Class I, II, III, Div. 1, Groups: A, B, C, D, E, F, G T4 FM: IS/ Class I, II, III, Div. 1, Groups: A, B, C, D, E, F, G T4 ATEX: II 1G Ex ia IIC T4 Ga IECEx Ex ia IIC T4 Ga NEPSI Ex ia IIC T4 Ga		Stainless steel tag [13 x 45 mm (0.5 x 1.75 inch)]: Measuring-point number/ identification (max. 20 characters) specify in plain text Y15 Test certificate: Manufacturer's test certificate M to DIN 55350, Part 18 and to ISO 9000 C11	
Accuracy		Operating Instructions	
Error in measurement	0.25 % of measuring range (in air)	Article No. A5E37100674 A5E37100685	
Resolution	3 mm (0.125 inch)	English German	
Temperature compensation	Built in	Note: Operating instructions should be ordered as a separate line on the order All literature is available to download for free, in a range of languages, at www.siemens.com/processinstrumentation/documentation	
Echo processing	Sonic Intelligence	Accessories	
Rated operation conditions		Tag, stainless steel, 12 x 45 mm (0.47 x 1.77 inch), one text line 7ML1930-1AC Universal box bracket mounting kit 7ML1830-1BK Sanitary 4" mounting clamp 7ML1830-1BR 3" ASME, DN 65 PN 10, JIS 10K 3B ETFE Flange adapter for 2" NPT 7ML1830-1BT 3" ASME, DN 65 PN 10, JIS 10K 3B ETFE Flange adapter for 2" BSPT 7ML1830-1BU 2" NPT locknut, plastic 7ML1830-1DT 2" BSPT locknut, plastic 7ML1830-1DQ Cable Gland, General Purpose -20 ... +60 °C (-4 ... +140 °F) A5E34457564	
Beam angle	12°		
Ambient temperature			
• Standard	-40 ... +60 °C (-40 ... +140 °F)		
• Metallic mounting	-20 ... +60 °C (-4 ... +140 °F)		
Max. static operating pressure	Normal atmospheric pressure		
Design			
Weight	1.3 kg (2.9 lb)		
Material			
• Electronics enclosure	PBT		
• Transducer	PVDF copolymer		
Degree of protection	IP68 / NEMA 6 / TYPE 6		
Process connection	<ul style="list-style-type: none"> • 2" NPT [(Taper), ANSI/ASME B1.20.1] • R 2" [(BSPT), EN 10226] • G 2" [(BSPP), EN ISO 228-1] • 4" sanitary 		
Flange adapter	3" Universal (fits DN 65, PN 10 and 3" ASME)		
Cable inlet	1 inlet for M20, optional 1/2" NPT		

 We can offer shorter delivery times for configurations designated with the Quick Ship Symbol . For details see page 10/11 in the appendix.

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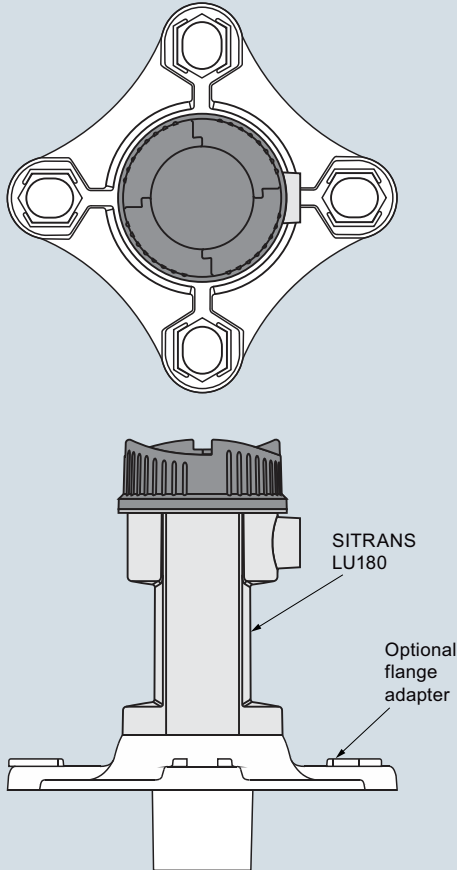
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Options

SITRANS LU180, Flange Adapter

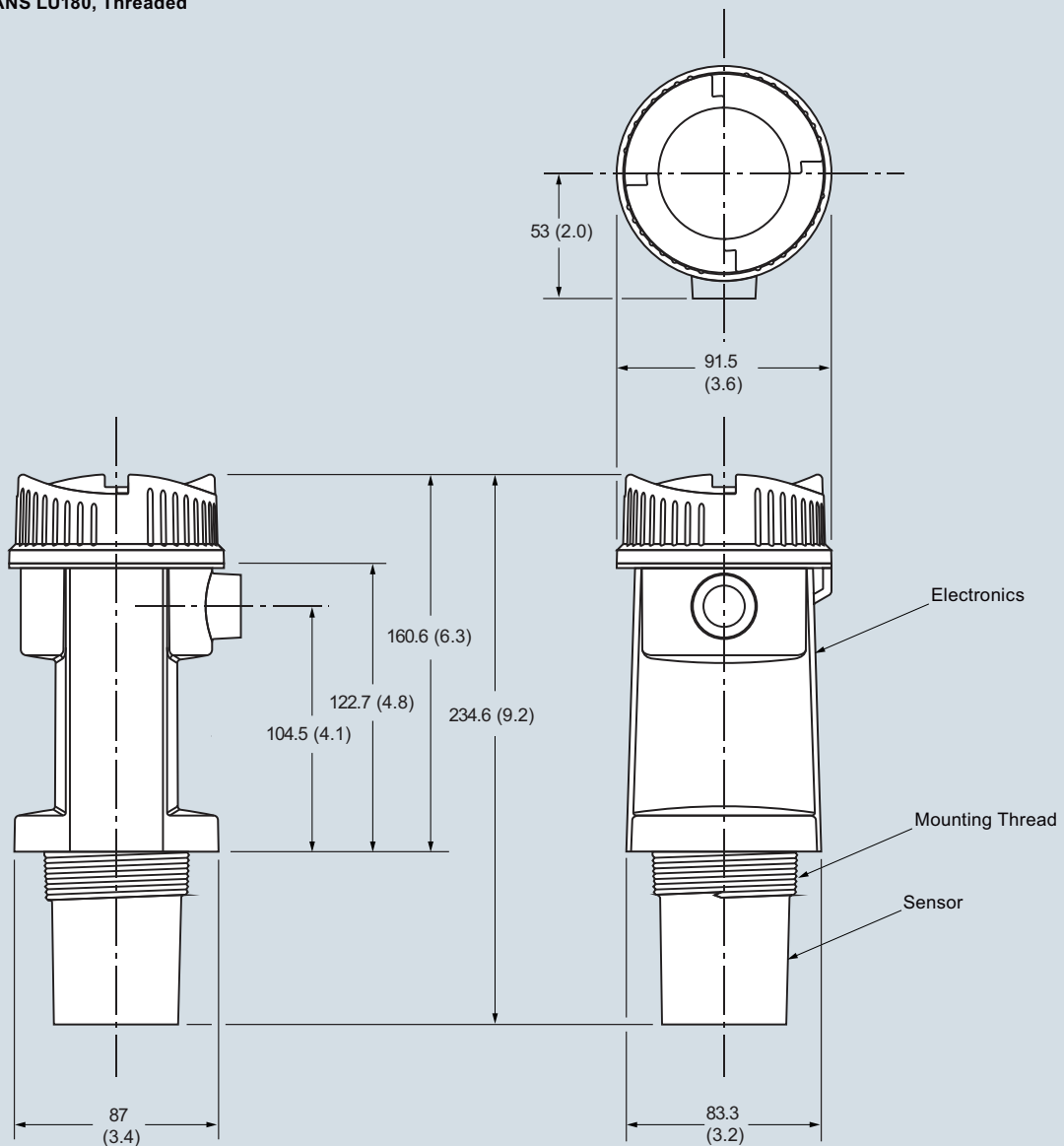
The SITRANS LU180 can be fitted with the optional 75 (3) flange adapter for mating to 3" ANSI, DIN 65 PN10 and JIS 10K3B flanges.



SITRANS LU180 optional flange adapter, dimensions in mm (inch)

Dimensional drawings

SITRANS LU180, Threaded



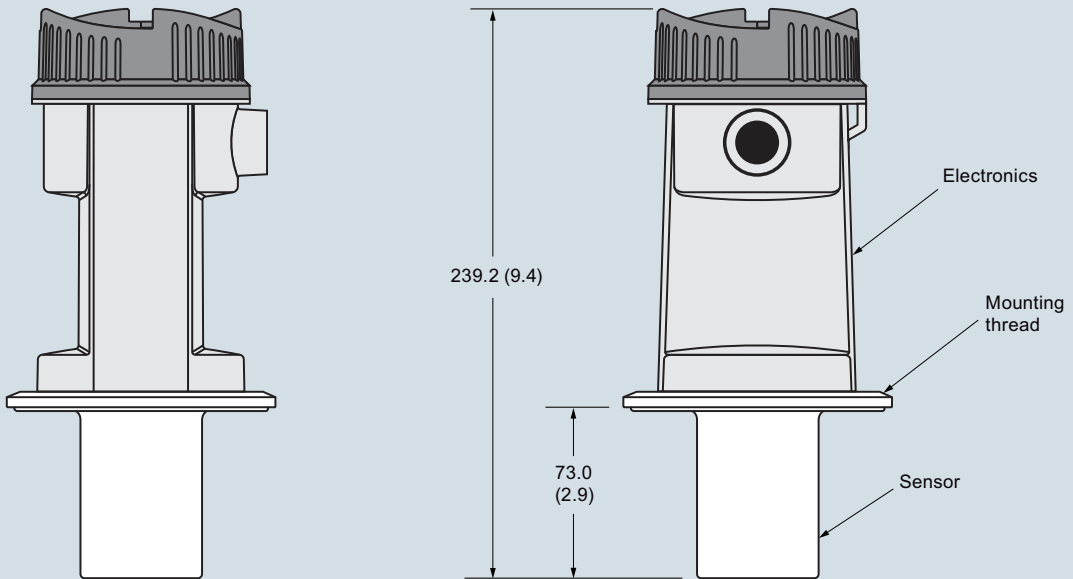
SITRANS LU180, dimensions in mm (inch)

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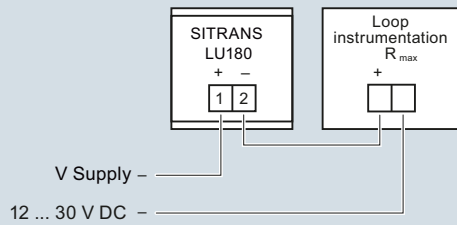
SITRANS LU180, Sanitary



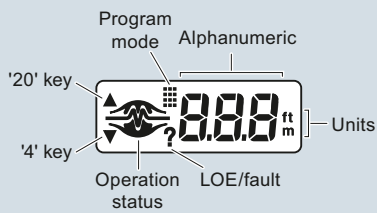
SITRANS LU180, dimensions in mm (inch)

Schematics

SITRANS LU180, Threaded and sanitary models



Display



SITRANS LU180 connections