

Overview

ST-H transducers use ultrasonic technology to measure level in chemical storage and liquid tanks.

Benefits

- Can be mounted on a narrow standpipe
- Immune to corrosive and harsh environments
- Integral temperature sensor

Application

The narrow design of the ST-H allows the transducer to be mounted on a narrow standpipe. When mounted correctly, it is completely protected from the process and can even be used in harsh, corrosive environments.

During operation, the ultrasonic transducer emits acoustic pulses in a narrow beam perpendicular to the transducer face. The level transceiver measures the propagation time between pulse emission and reception of the echo to calculate the distance from the transducer to the material. Variations in sound velocity due to changes in temperature within the permissible range are automatically compensated by the integral temperature sensor.

- Key Applications: chemical storage, liquid tanks

Level Measurement

Continuous level measurement

Ultrasonic / Ultrasonic transducers / ST-H

Selection and ordering data

ST-H Ultrasonic level transducer Continuous, non-contact, 0.3 m (1 ft) range, for liquids.	Article No. 7ML1100-					●	●	A	●	0
Click on the Article No. for the online configuration in the PIA Life Cycle Portal.										
Process connection										
ETFE, 2" NPT [(Taper), ASME B1.20.1]						0				
ETFE, R 2" [(BSPT), EN 10226]						1				
ETFE, G 2" [(BSPP), EN ISO 228-1]						2				
PVDF copolymer, 2" NPT [(Taper), ASME B1.20.1]						3				
PVDF copolymer, R 2" [(BSPT), EN 10226]						4				
PVDF copolymer, G 2" [(BSPP), EN ISO 228-1]						5				
Cable length										
5 m (16.40 ft)								A		
10 m (32.81 ft)								B		
30 m (98.43 ft)								C		
50 m (164.04 ft)								D		
100 m (328.08 ft)								E		
Approvals										
FM Class I, II, Div. 1, Groups C, D, E, F, G T4A ³⁾										2
CSA Class I, II, III, Div. 1, Groups A, B, C, D, E, F, G T3; ATEX II 2G Ex mb IIC T5 Gb, Ta = -20°C to +60°C; UKEX II 2G Ex mb IIC T5 Gb, Ta = -20°C to +60°C; INMETRO Ex mb IIC T5 Gb, -20 °C ≤Ta ≤+60 °C; RCM, CE, UKCA, EAC Ex, KC ¹⁾										3
ATEX II 2G Ex mb IIC T5 Gb, Ta = -20°C to +60°C; UKEX II 2G Ex mb IIC T5 Gb, Ta = -20°C to +60°C; INMETRO Ex mb IIC T5 Gb, -20 °C ≤Ta ≤+60 °C; CE, UKCA, EAC Ex, RCM, KC ²⁾										4

¹⁾ Available with Process connection options 0 ... 2 only.

²⁾ Available with Process connection options 3 ... 5 only.

³⁾ Not suitable for Ketone, Hexane, Ester or Ethyl Acetate atmospheres.

Selection and Ordering data	Order code
Further designs	
Please add "-Z" to Article No. and specify Order code(s).	
Acrylic coated, stainless steel tag [13 x 45 mm (0.5 x 1.75 inch)]: Measuring-point number/identification (max. 16 characters) specify in plain text	Y17

Accessories	Article No.
Operating Instructions	
All literature is available to download for free, in a range of languages, at http://www.siemens.com/processinstrumentation/documentation	
Accessories	
Sunshield	A5E32964662
Universal box bracket, mounting kit	7ML1830-1BK

Accessories	Article No.
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
Easy Aimer 2, aluminum, NPT with ¾" x 1" PVC coupling	7ML1830-1AQ
Easy Aimer 2, aluminum with M20 adapter and 1" and 1½" BSPT aluminum couplings	7ML1830-1AX
Easy Aimer 304, NPT with 1" stainless steel coupling	7ML1830-1AU
Easy Aimer 304, with M20 adapter and 1" and 1½" BSPT 304 stainless steel couplings	7ML1830-1GN
Plastic adapter 1" NPT	7ML1930-1FX
Plastic adapter 1" NPT/M20	7ML1830-1EF

Technical specifications

ST-H	
Mode of operation	
Measuring principle	Ultrasonic transducer
Input	
Measuring range	0.3 ... 10 m (1 ... 33 ft)
Output	
Frequency	44 kHz
Beam angle	12°
Accuracy	
Temperature compensation	Compensated by integral temperature sensor
Rated operating conditions	
Pressure	Normal atmospheric pressure
Ambient conditions	
Ambient temperature	-20 ... +60 °C (-5 ... +140 °F) (ATEX and UKEX approved model) -40 ... +73 °C (-40 ... +163 °F) (CSA/FM approved model)
Storage temperature	-20 ... +60 °C (-5 ... +140 °F)
Design	
Weight ¹⁾	1.4 kg (3 lb)
Material (enclosure)	Base and lid made of ETFE or PVDF (epoxy fitted joint) ²⁾
Process connection	2" NPT [(Taper), ASME B1.20.1], R 2" [(BSPT), EN 10226] or G 2" [(BSPP), EN ISO 228-1]
Degree of protection	IP68
Cable connection	2-core shielded/twisted, 0.519 mm² (20 AWG), PVC sheath
Cable (max. length)	365 m (1 200 ft) with RG 62 A/U coaxial cable
Options	
Flange adapter	3" Universal (fits DN 65, PN 10 and 3" ASME)
Certificates and approvals	
CE, UKCA, RCM, KC, CSA Class I, II, III, Div. 1, Groups A, B, C, D, E, F, G T3 (ETFE only); FM Class I, II, Div. 1, Groups C, D, E, F, G T4A; ATEX II 2G Ex mb IIC T5 Gb; UKEX II 2G Ex mb IIC T5 Gb; INMETRO Ex mb IIC T5 Gb VLAREM II RoHS, China RoHS, WEEE, REACH, NSF/ANSI/CAN 61- 2022 FDA (wetted sensor) Environmental Product Declaration (EPD) Kazakhstan Metrology	
Production and development certification	
• ISO 9001 • ISO 14001 • ISO 18001 • ISO 45001 • IEC 62443-4-1 • EN ISO/IEC 80079-34 • PED 2014/68/EU	

¹⁾ Approximate shipping weight of transducer with standard cable length

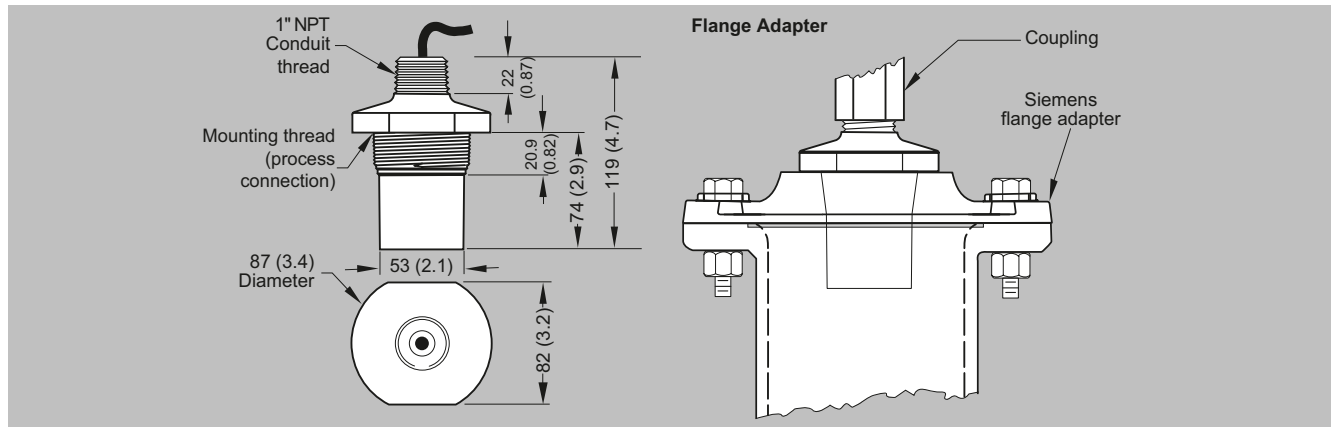
²⁾ When measuring chemicals, check compatibility of ETFE or PVDF and epoxy, or mount joint external to process.

Level Measurement

Continuous level measurement

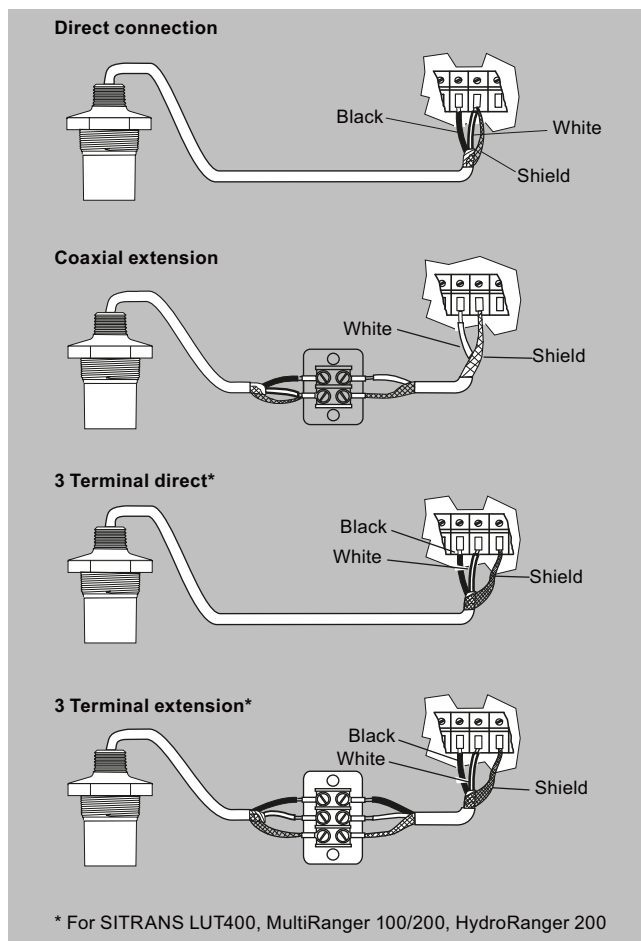
Ultrasonic / Ultrasonic transducers / ST-H

Dimensional drawings



ST-H ultrasonic transducer, dimensions in mm (inch)

Circuit diagrams



ST-H ultrasonic transducer connections