

Level instruments

Continuous level measurement - Ultrasonic transducers

Echomax XLT

Overview



Echomax® XLT transducers use ultrasonic technology to measure level in a wide range of bulk solids.

Benefits

- Sealed aluminum face
- Integral temperature sensor
- Self-cleaning and low maintenance
- Connect using only two wires
- Easy to install

Application

XLT transducers operate with Siemens SITRANS LU transceivers in measuring ranges from 0.9 to 60 m (1.8 to 200 ft) and temperatures up to +150 °C (+300 °F). A beam angle of just 5° provides accurate readings in deep, narrow tanks.

With increased signal sensitivity, the XLT transducers from Siemens can operate in difficult applications such as limestone, cement clinker and hot stone. All models have a sealed aluminum face to withstand very harsh environments.

During operation, Echomax transducers emit acoustic pulses in a narrow beam. 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. Temperature variations are automatically compensated by the integral temperature sensor.

- Key Applications: bulk solids including limestone, cement clinker, hot stone and coal bunkers

Technical specifications

Mode of operation	
Measuring principle	Ultrasonic transducer
Input	
Measuring range	
• XLT-30	0.9 to 30 m (3.0 to 100 ft)
• XLT-60	1.8 to 60 m (6.0 to 200 ft)
Output	
• Frequency	
- XLT-30	22 kHz
- XLT-60	13 kHz
• Beam angle ¹⁾	5°
Accuracy	
Temperature error	Compensated by transducers internal temperature sensor
Rated operating conditions	
Ambient conditions	
• Ambient temperature	
- XLT-30 and XLT-60	-40 to +150 °C (-40 to +300 °F)
Design	
• Weight	
- XLT-30	4.3 kg (9.5 lbs)
- XLT-60	6.6 kg (14.5 lbs)
• Material (enclosure)	Aluminium, 304 stainless steel, polyester and silicone
• Degree of protection	IP68
• Color	
- XLT-30 and XLT-60	Red
Mounting	
	1" NPT [(Taper), ANSI/ASME B1.20.1]
• Cable connection	2-core shielded/twisted, 0.5 mm ² (20 AWG), silicone sheath
• Cable (max. length)	365 m (1200 ft) with RG 62 AU coaxial cable
• Certificates and approvals	CE (EMC certificate available on request), CSA _{USC} , FM, ATEX II 2G 1D T5

¹⁾ Definition of beam width: twice the angle at which the off-axis transmission is 3 dB less than the acoustic pressure level of the transmission axis (as measured equidistant from the sensor face).

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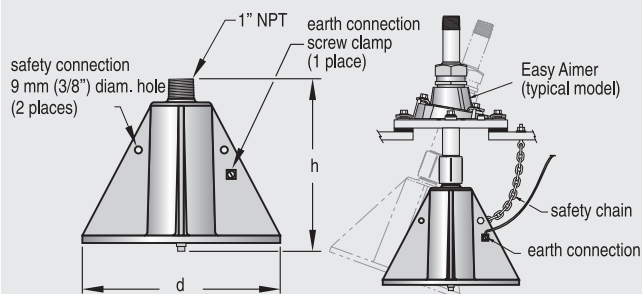
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Selection and Ordering data	Order No.
Echomax® XLT-30, XLT-60, ultrasonic transducer High-frequency ultrasonic transducer designed for a wide variety of liquid and solid applications, for use with approved controllers. Includes integral temperature sensor. Measuring range: min. 0.9 m, max. 30 m Process connection: 1" NPT [(Taper), ANSI/ASME B1.20.1]	
XLT-30	C) 7ML1141-
XLT-60	C) 7ML1145-
	E 0
Facing	
XLT-30	0
XLT-60	1
XLT-30, nylon	2
XLT-60, nylon	3
Cable length	
1 m (3.28 ft)	A
5 m (16.40 ft)	B
10 m (32.81 ft)	C
20 m (65.62 ft)	D
30 m (98.43 ft)	E
50 m (164.04 ft)	F
70 m (229.66 ft)	G
80 m (262.47 ft)	H
90 m (295.28 ft)	J
100 m (328.08 ft)	K
Approvals	
ATEX II 2G 1D, CSA Class I Div. 1, FM Class I Div. 2, CE	3
Further designs	Order code
Please add "-Z" to Order No. and specify Order code(s).	
Stainless steel tag [69 x 50 mm (2.71 x 1.97")]: Measuring-point number/identification (max. 16 characters) specify in plain text	Y15
Instruction manual	Order No.
Quick Start manual, multi-language	C) 7ML1998-5QS81
Applications Guidelines, multi-language Note: The Applications Guidelines should be ordered as a separate line item on the order.	C) 7ML1998-5HV61
This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and instruction manual library.	
Accessories	
Tag, stainless steel with hole, 12 x 45 mm (0.47 x 1.77"), one text line for fastening on sensors	7ML1930-1BJ
Easy Aimer 2, 1" NPT galvanized	7ML1830-1AP
Easy Aimer 304 with stainless steel coupling	7ML1830-1AU
Easy Aimer 2, aluminum with M20 adapter and 1" and 1½" BSPT aluminum couplings	7ML1830-1AX
Easy Aimer 304, with M20 adapter and 1" and 1½" BSPT 304 SS couplings	7ML1830-1GN

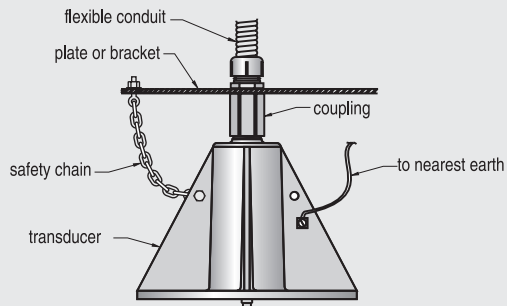
C) Subject to export regulations AL: N, ECCN: EAR99

Dimensional drawings

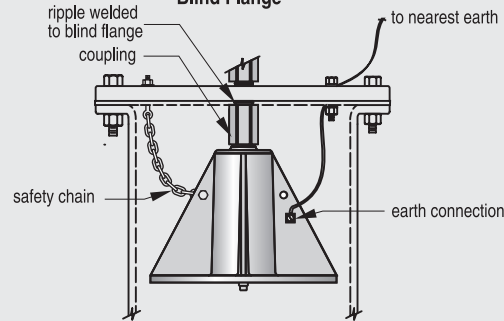


Mounting - Liquid Applications

Flexible Conduit



Blind Flange



XLT ultrasonic transducer dimensions

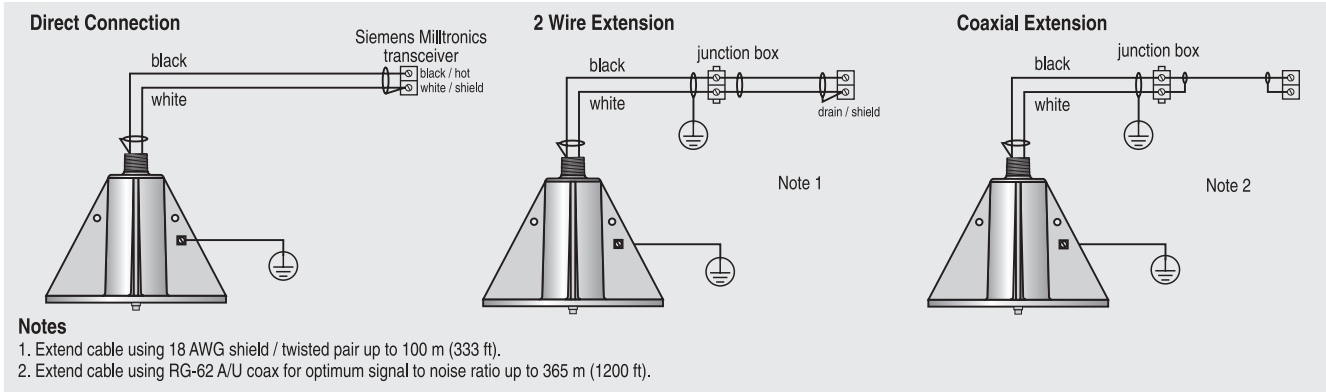
	XLT-30	XLT-60
d	264 mm (10.4")	335 mm (13.2")
h	249 mm (9.8")	324 mm (12.75")

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Schematics



XLT ultrasonic transducer connections