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 ... 60 m (1.8 ... 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 ... 30 m (3.0 ... 100 ft)
• XLT-60	1.8 ... 60 m (6.0 ... 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 ... +150 °C (-40 ... +300 °F)
Design	
Weight	
• XLT-30	4.3 kg (9.5 lb)
• XLT-60	6.6 kg (14.5 lb)
Material (enclosure)	Aluminum, 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 mm² (20 AWG), silicone sheath
Cable (max. length)	365 m (1 200 ft) with RG 62 AU coaxial cable
Certificates and approvals	CE (EMC certificate available on request), CSA$_{US/C}$, 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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Level measurement
Continuous level measurement – Ultrasonic transducers

EchoMax XLT

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				**7ML1141-**
XLT-60				**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

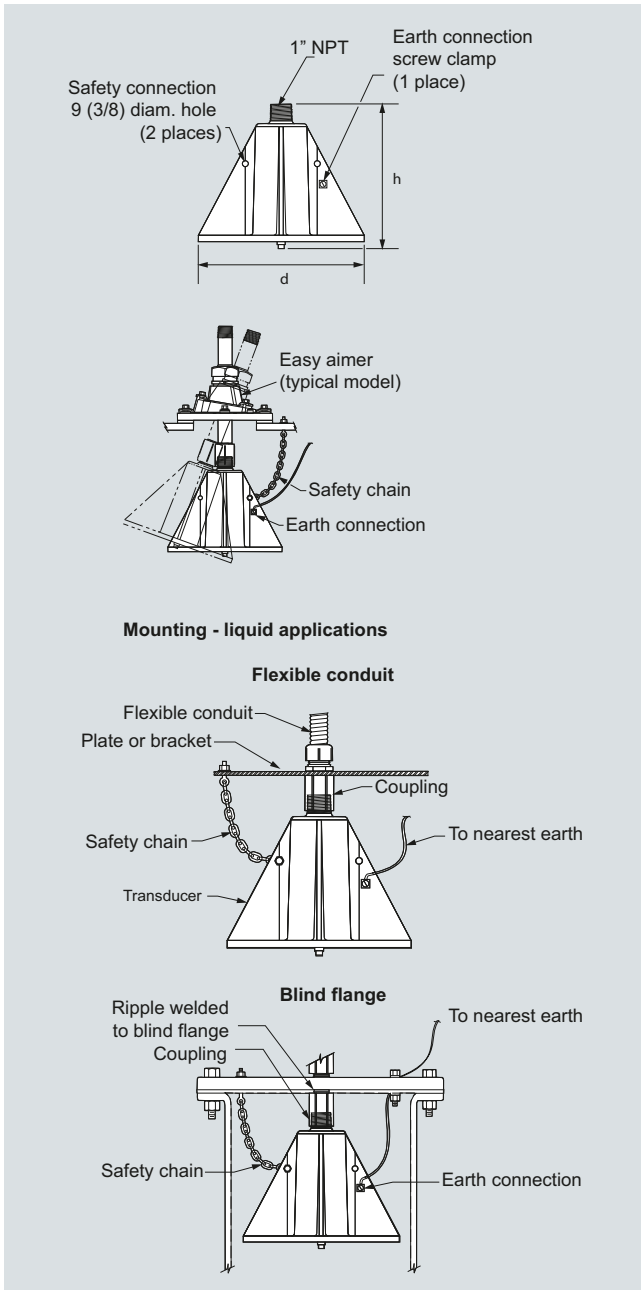| Selection and Ordering data	Order code
Further designs	
Please add "**-Z**" to Order No. and specify Order code(s).	
Acrylic coated, stainless steel tag [13 x 45 mm Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text	**Y15**
Operating Instructions	Order No.
Quick start manual, multi-language	**7ML1998-5QS81**
Applications Guidelines, multi-language Note: The Applications Guidelines should be ordered as a separate line item on the order.	**7ML1998-5HV61**
This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and Operating Instructions library.	
Accessories	
Tag, stainless steel with hole, 12 x 45 mm (0.47 x 1.77 inch), 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**

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▪ Dimensional drawings

1" NPT

Earth connection screw clamp (1 place)

Safety connection 9 (3/8) diam. hole (2 places)

h

d

Easy aimer (typical model)

Safety chain

Earth connection

Mounting - liquid applications

Flexible conduit

Flexible conduit

Plate or bracket

Coupling

Safety chain

To nearest earth

Transducer

Blind flange

Ripple welded to blind flange

Coupling

To nearest earth

Safety chain

Earth connection

XLT ultrasonic transducer, dimensions in mm (inch)

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

▪ Schematics

Direct connection

Black

White

Shield

Coaxial connection

White

Shield

3 terminal direct*

Black

Shield

White

3 terminal extension*

Black

White

Shield

* For SITRANS LUT400, SITRANS LUC500, MultiRanger 100/200, HydroRanger 200
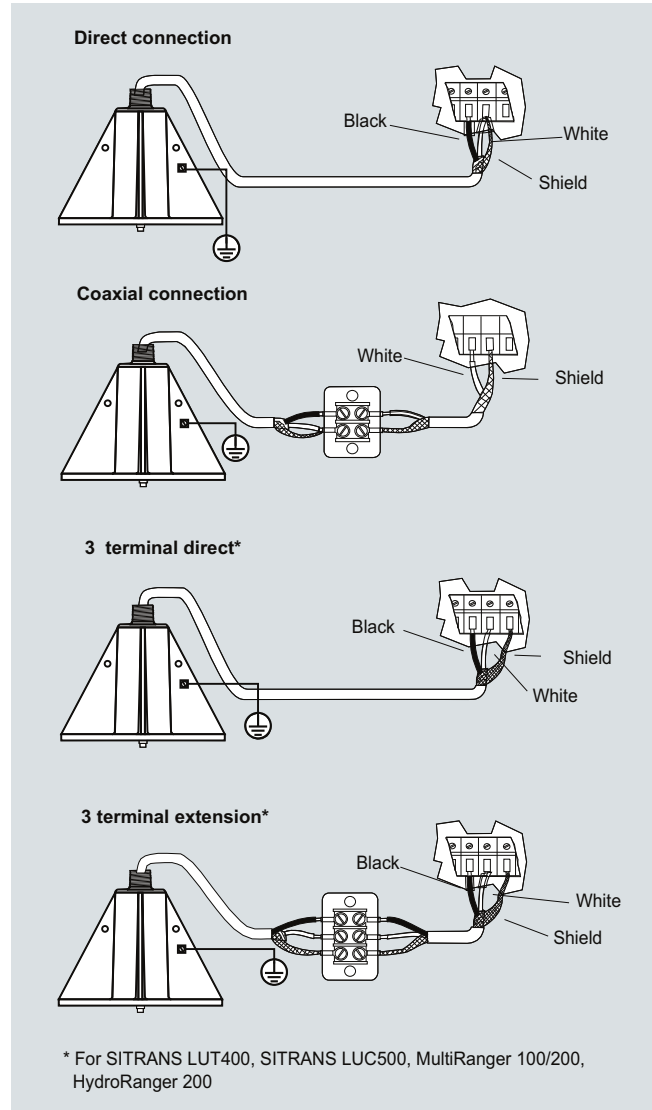
XLT ultrasonic transducer connections

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