Overview

Echomax® XPS/XCT transducers use ultrasonic technology to measure level in a wide range of liquids and solids.

Benefits

- Integral temperature compensation
- Low ringing effect reduces blanking distance
- Optional foam facing for dusty applications
- Self-cleaning and low-maintenance
- Chemically resistant
- Hermetically sealed

Application

The transducers can be fully immersed, are resistant to steam and corrosive chemicals, and can be installed without flanges.

The XPS series offers versions for various measuring ranges up to 40 m (130 ft) and up to a max. temperature of +95 °C (+203 °F).

The XCT series can be used in applications at higher temperatures to measure level up to a distance of 12 m (40 ft) and at a max. temperature of +145 °C (+293 °F).

During operation, the Echomax transducers emit acoustic pulses in a narrow beam. The level monitor measures the propagation time between pulse emission and its reflection (echo) to calculate the distance.

Echomax XPS and XCT

■ Technical specifications

Input	XPS-10 (standard and F models)	XPS-15 (standard and F models)	XPS-30	XPS-40	XCT-8 (standard and sanitary models)	XCT-12
Measuring range	0.3 ... 10 m (1 ... 33 ft)	Standard: 0.3 ... 15 m (1 ... 50 ft) / Flanged: 0.45 ... 15 m (1.5 ... 50 ft)	0.6 ... 30 m (2 ... 100 ft)	0.9 ... 40 m (3 ... 130 ft)	0.6 ... 8 m (2 ... 26 ft)	0.6 ... 12 m (2 ... 40 ft)
Output						
Frequency	44 kHz	44 kHz	30 kHz	22 kHz	44 kHz	44 kHz
Beam angle	12°	6°	6°	6°	12°	6°
Environmental						
Location	Indoors/outdoors					
Ambient temperature	-40 ... +95 °C (-40 ... +203 °F)				Standard: -40 ... +145 °C (-40 ... +293 °F) / Sanitary: -40 ... +125 °C (-40 ... +260 °F)	-40 ... +145 °C (-40 ... +293 °F)
Pollution degree	4					
Pressure	8 bar g (120 psi g) / Flanged: 0.5 bar g (7.25 psi g)	8 bar g (120 psi g) / Flanged: 0.5 bar g (7.25 psi g)	0.5 bar g (7.25 psi g) / Flanged: 0.5 bar g (7.25 psi g)	0.5 bar g (7.25 psi g)	Standard: 4 bar g (60 psi g): -40 ... +138 °C (-40 ... +280 °F) / Standard: 8 bar g (120 psi g): -40 ... +95 °C (-40 ... +203 °F) / Flanged: 0.5 bar g (7.25 psi g) / Sanitary: XCT-8: 0.5 bar g (7.25 psi g)	
Design						
Weight	0.8 kg (1.8 lbs)	1.3 kg (2.8 lbs) / Flanged: 2 kg (4.4 lbs)	4.3 kg (9.5 lbs)	8 kg (18 lbs)	0.8 kg (1.7 lbs)	1.3 kg (2.8 lbs)
Power supply	Operation of transducer only with approved Siemens Milltronics controllers					
Material	Standard: PVDF / Flanged: PVDF with CPVC flange / Option: PTFE face with CPVC flange	Standard: PVDF / Flanged: PVDF with CPVC flange / Option: PTFE face with CPVC flange	Standard: PVDF / Flanged: PVDF with CPVC flange / Option: PTFE face with CPVC flange	PVDF	Standard: PVDF / Options: DERAKANE® flange; PTFE face with universal PVDF flange	
Color	Standard: blue / F: gray	Standard: blue / F: gray	blue	blue	white	
Process connection	Standard: 1" NPT or 1" BSPT / F: 1" NPT	Standard: 1" NPT or 1" BSPT / F: 1" NPT	1.5" universal thread (NPT or BSPT)		1" NPT or R 1" (BSPT), EN 10226	
Degree of protection	IP66/68	IP66/68	IP66/68	IP66/68	IP66/68	IP66/68
Cable	2 wire twisted pair/braided and foil shielded 0.5 mm² (20 AWG) PVC jacket				2 wire twisted pair/braided and foil shielded 0.5 mm² (20 AWG) silicone jacket	
Separation	Max. 365 m (1200 ft)					
Certificates and approvals	Standard: CE[1], CSA, FM, ATEX II 2GD / F: FM Class I, Div 1, Groups A, B, C and D, Class II Div 1, Groups E, F and G, Class III	Standard: CE[1], CSA, FM, ATEX II 2GD / F: FM Class I, Div 1, Groups A, B, C and D, Class II Div 1, Groups E, F and G, Class III	CE[1], CSA, FM, ATEX II 2G 1D	CE[1], CSA, FM, ATEX II 2G 1D	Standard: CE[1], CSA, FM, ATEX II 2GD / Sanitary: CE, C-TICK, CSA US/C	CE[1], CSA, FM, ATEX II 2GD

[1] EMC certificate available on request.
® DERAKANE is a registered trademark of Ashland Inc.

Selection and Ordering data	Order No.
Echomax® XPS-10 ultrasonic transducer ^{C)}	**7ML1115-**
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. 0.3 m, max.10 m	▮▮▮▮0
Mounting thread and facing	
1" NPT [(Taper), ANSI/ASME B1.20.1]	0
1" NPT [(Taper), ANSI/ASME B1.20.1] with foam facing[1]	1
1" NPT [(Taper), ANSI/ASME B1.20.1] with PTFE facing[2]	2
R 1" [(BSPT), EN 10226]	3
R 1" [(BSPT), EN 10226] with foam facing[1]	4
R 1" [(BSPT), EN 10226] with PTFE facing[2]	5
Cable length	
5 m (16.40 ft)	B
10 m (32.81 ft)	C
30 m (98.43 ft)	E
50 m (164.04 ft)	F
100 m (328.08 ft)	K
Mounting flange	
None	A
3" ASME, 150 lb, flat faced	C
4" ASME, 150 lb, flat faced	D
6" ASME, 150 lb, flat faced	E
8" ASME, 150 lb, flat faced	F
DN 80, PN 10/16, Type A, flat faced	G
DN 100, PN 10/16, Type A, flat faced	J
DN 150, PN 10/16, Type A, flat faced	L
JIS10K3B Style	M
JIS10K4B Style	P
JIS10K6B Style	R
(Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5 or EN 1092-1, or JIS B 2220 standard.)	
Approvals	
ATEX II 2 G, FM Class I Div. 2, SAA Class I	3
CSA Class I Div. 1[3]	4

[1] Not available with flanged versions
[2] Available with flanged versions only
[3] Valid with mounting thread and facing options 0 to 2 only

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

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")]: Measuring-point number/identification (max. 16 characters) specify in plain text	**Y15**
Operating Instructions	Order No.
Quick Start guide, multi-language ^{C)}	**7ML1998-5QM82**
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 Operating Instructions 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**
Submergence shield kit	**7ML1830-1BH**
Easy Aimer 2, with ¾" x 1" NPT PVC coupling	**7ML1830-1AQ**
Easy Aimer 2, aluminum with M20 adapter and 1" and 1½" BSPT aluminum couplings	**7ML1830-1AX**
Easy Aimer 304, with stainless steel coupling	**7ML1830-1AU**
Easy Aimer 304, with M20 adapter and 1" and 1½" BSPT 304 SS couplings	**7ML1830-1GN**
Universal box bracket, mounting kit	**7ML1830-1BK**
Channel bracket, wall mount	**7ML1830-1BL**
Extended channel bracket, wall mount	**7ML1830-1BM**
Channel bracket, floor mount	**7ML1830-1BN**
Extended channel bracket, floor mount	**7ML1830-1BP**
Bridge channel bracket, floor mount (see Mounting Brackets on page 5/190 for more information)	**7ML1830-1BQ**
1" NPT locknut, plastic	**7ML1830-1DS**
1" BSPT locknut, plastic	**7ML1830-1DR**

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