

Level Measurement

Continuous level measurement – Ultrasonic transducers

Echomax XPS and XCT

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 95 °C (203 °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.

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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	Standard: -40 ... +95 °C (-40 ... +203 °F) F: -20 ... +95 °C (-4 ... +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 mm ² (20 AWG) PVC jacket				2 wire twisted pair/braided and foil shielded 0.5 mm ² (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, CTICK, CSA _{US/C}	CE ¹⁾ , CSA, FM, ATEX II 2GD

¹⁾ EMC certificate available on request.

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Echomax XPS and XCT

Selection and Ordering data	Order No.	Selection and Ordering data	Order code
Echomax XPS-10 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. 0.3 m, max. 10 m	C) 7ML1115- 0	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
Mounting thread and facing 1" NPT [(Taper), ANSI/ASME B1.20.1] 1" NPT [(Taper), ANSI/ASME B1.20.1] with foam facing ¹⁾ 1" NPT [(Taper), ANSI/ASME B1.20.1] with PTFE facing ²⁾ R 1" [(BSPT), EN 10226] R 1" [(BSPT), EN 10226] with foam facing ¹⁾ R 1" [(BSPT), EN 10226] with PTFE facing ²⁾	0 1 2 3 4 5	Operating Instructions Quick Start guide, multi-language C) 7ML1998-5QM82 Applications Guidelines, multi-language C) 7ML1998-5HV61 Note: The Applications Guidelines should be ordered as a separate line item on the order. This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and Operating Instructions library.	Order No.
Cable length 5 m (16.40 ft) 10 m (32.81 ft) 30 m (98.43 ft) 50 m (164.04 ft) 100 m (328.08 ft)	B C E F K	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 3/4" x 1" NPT PVC coupling 7ML1830-1AQ Easy Aimer 2, aluminum with M20 adapter and 1" and 1 1/2" BSPT aluminum couplings 7ML1830-1AX Easy Aimer 304, with stainless steel coupling 7ML1830-1AU Easy Aimer 304, with M20 adapter and 1" and 1 1/2" 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 5/198 for more information) 7ML1830-1BQ 1" NPT locknut, plastic 7ML1830-1DS 1" BSPT locknut, plastic 7ML1830-1DR	
Mounting flange None 3" ASME, 150 lb, flat faced 4" ASME, 150 lb, flat faced 6" ASME, 150 lb, flat faced 8" ASME, 150 lb, flat faced DN 80, PN 10/16, Type A, flat faced DN 100, PN 10/16, Type A, flat faced DN 150, PN 10/16, Type A, flat faced JIS10K3B Style JIS10K4B Style JIS10K6B Style (Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5 or EN 1092-1, or JIS B 2220 standard.)	A C D E F G J L M P R	1" NPT locknut, plastic 7ML1830-1DS 1" BSPT locknut, plastic 7ML1830-1DR C) Subject to export regulations AL: N, ECCN: EAR99.	
Approvals ATEX II 2 GD, FM Class I Div. 2, SAA Class I CSA Class I Div. 1 ³⁾	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.

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Continuous level measurement – Ultrasonic transducers

Echomax XPS and XCT


Selection and Ordering data	Order No.	Selection and Ordering data	Order code
Echomax XPS-10F 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. 0.3 m, max.10 m	C) 7ML1170-0	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
Mounting thread and facing 1" NPT [(Taper), ANSI/ASME B1.20.1]	1	Operating Instructions Quick Start guide, multi-language C) 7ML1998-1DU01 Applications Guidelines, multi-language C) 7ML1998-5HV61 Note: The Applications Guidelines should be ordered as a separate line item on the order. This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and Operating Instructions library.	Order No.
Cable length 5 m (16.40 ft) 10 m (32.81 ft) 30 m (98.43 ft) 50 m (164.04 ft) 100 m (328.08 ft)	B C D E F	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 304, with stainless steel coupling 7ML1830-1AU 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 5/198 for more information) 7ML1830-1BQ 1" NPT locknut, plastic 7ML1830-1DS	
Mounting flange, flush mount None 3" ASME, 150 lb, flat faced 4" ASME, 150 lb, flat faced 6" ASME, 150 lb, flat faced 8" ASME, 150 lb, flat faced (Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5, or EN 1092-1, or JIS B 2220 standard.)	A B C D E		
Approvals FM Class I Div. 1	1		
C) Subject to export regulations AL: N, ECCN: EAR99.			

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Selection and Ordering data

Echomax XPS-15 ultrasonic transducer C) **7ML1118-**


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. 15 m

Mounting thread and facing

1" NPT [(Taper), ANSI/ASME B1.20.1]

1" NPT [(Taper), ANSI/ASME B1.20.1] with foam facing¹⁾

1" NPT [(Taper), ANSI/ASME B1.20.1] with PTFE facing²⁾

R 1" [(BSPT), EN 10226]

R 1" [(BSPT), EN 10226] with foam facing¹⁾

R 1" [(BSPT), EN 10226] with PTFE facing²⁾

Cable length

5 m (16.40 ft)

10 m (32.81 ft)

30 m (98.43 ft)

50 m (164.04 ft)

100 m (328.08 ft)

Mounting flange

None

6" ASME, 150 lb, flat faced

8" ASME, 150 lb, flat faced

DN 150, PN 10/16, Type A, flat faced

DN 200, PN 10/16, Type A, flat faced

JIS10K 6B

JIS10K 8B

(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 2GD, FM Class I Div. 2, SAA Class I

CSA Class I Div. 1³⁾

¹⁾ Not available with flanged versions

²⁾ Available with flanged versions only

³⁾ Available with mounting options 0 to 2 only

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

Order No.

7ML1118-


0

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B

C

E

F

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A

D

E

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P

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4

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

C) **7ML1998-5HV61**

Note: The Applications Guidelines should be ordered as a separate line item on the order.

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

7ML1830-1BJ

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 5/198 for more information)

7ML1830-1BQ

1" NPT locknut, plastic

7ML1830-1DS

1" BSPT locknut, plastic

7ML1830-1DR

Easy Aimer 2, with 3/4" x 1" NPT PVC coupling

7ML1830-1AQ

Easy Aimer 2, aluminum with M20 adapter and 1" and 1 1/2" BSPT aluminum couplings

7ML1830-1AX

Easy Aimer 304 with stainless steel coupling

7ML1830-1AU

Easy Aimer 304, with M20 adapter and 1" and 1 1/2" BSPT 304 SS couplings

7ML1830-1GN

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

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Selection and Ordering data	Order No.
Echomax XPS-15F 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. 0.3 m, max. 15 m	C) 7ML1171- 0
Mounting thread and facing 1" NPT [(Taper), ANSI/ASME B1.20.1]	1
Cable length 5 m (16.40 ft) 10 m (32.81 ft) 30 m (98.43 ft) 50 m (164.04 ft) 100 m (328.08 ft)	B C D E F
Mounting flange, flush mount None 6" ASME, 150 lb, flat faced 8" ASME, 150 lb, flat faced (Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5, or EN 1092-1, or JIS B 2220 standard.)	A B C
Approvals FM Class I Div. 1	1
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 Quick Start guide, multi-language Applications Guidelines, multi-language Note: The Applications Guidelines should be ordered as a separate line item on the order. This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and Operating Instructions library.	Order No. C) 7ML1998-1DU01 C) 7ML1998-5HV61
Accessories Tag, stainless steel with hole, 12 x 45 mm (0.47 x 1.77"), one text line for fastening on sensors Submergence shield kit Universal box bracket, mounting kit Channel bracket, wall mount Extended channel bracket, wall mount Channel bracket, floor mount Extended channel bracket, floor mount Bridge channel bracket, floor mount (see Mounting Brackets on page 5/198 for more information) 1" NPT locknut, plastic Easy Aimer 2, with ¾" x 1" NPT PVC coupling Easy Aimer 304 with stainless steel coupling	7ML1930-1BJ 7ML1830-1BJ 7ML1830-1BK 7ML1830-1BL 7ML1830-1BM 7ML1830-1BN 7ML1830-1BP 7ML1830-1BQ 7ML1830-1DS 7ML1830-1AQ 7ML1830-1AU
C) Subject to export regulations AL: N, ECCN: EAR99.	

Selection and Ordering data	Order No.
Echomax XPS-30 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. 1½" universal thread compatible with 1½" NPT and R 1½" [(BSPT), EN 10226] Measuring range: min. 0.6 m (1.97 ft), max. 30 m (98.43 ft)	C) 7ML1123 - 0
Mounting thread and facing 1½" universal thread 1½" universal thread, foam facing ¹⁾ 1½" universal thread, PTFE facing ²⁾	0 1 2
Cable length 5 m (16.40 ft) 10 m (32.81 ft) 30 m (98.43 ft) 50 m (164.04 ft) 100 m (328.08 ft)	B C E F K
Mounting flange None 6" ASME, 150 lb, flat faced 8" ASME, 150 lb, flat faced DN 150, PN 10/16, Type A, flat faced DN 200, PN 10/16, Type A, flat faced JIS10K 6B JIS10K 8B (Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5 or EN 1092-1, or JIS B 2220 standard.)	A D E J K N P
Approvals ATEX II 2G 1D, FM Class I Div 2, SAA	5

- 1) Not available with flanged versions
 2) Available with flanged versions only
 C) Subject to export regulations AL: N, ECCN: EAR99.

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Echomax XPS and XCT

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 Quick Start guide, multi-language Applications Guidelines, multi-language Note: The Applications Guidelines should be ordered as a separate line item on the order. This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and Operating Instructions library.	Order No. C) 7ML1998-5QM82 C) 7ML1998-5HV61
Accessories Tag, stainless steel with hole, 12 x 45 mm (0.47 x 1.77"), one text line for fastening on sensors 1½" BSPT locknut, plastic Easy Aimer 2, 1½" NPT galvanized coupling Easy Aimer 2, 1½" NPT with stainless steel coupling Easy Aimer 2, aluminum with M20 adapter and 1" and 1½" BSPT aluminum couplings Easy Aimer 304, with M20 adapter and 1" and 1½" BSPT 304 SS couplings C) Subject to export regulations AL: N, ECCN: EAR99.	7ML1930-1BJ 7ML1830-1DP 7ML1830-1AN 7ML1830-1AT 7ML1830-1AX 7ML1830-1GN

Selection and Ordering data	Order No.
Echomax XPS-40 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. 1½" universal thread compatible with 1½" NPT and R 1½" [(BSPT), EN 10226] Measuring range: min. 0.9 m (2.95 ft), max. 40 m (131.23 ft)	C) 7ML1127-0
Mounting thread and facing 1½" universal thread 1½" universal thread, foam facing	0 1 B C E F K A
Cable length 5 m (16.40 ft) 10 m (32.81 ft) 30 m (98.43 ft) 50 m (164.04 ft) 100 m (328.08 ft)	
Mounting flange None	5
Approvals ATEX II 2G 1D, FM Class I Div 2, SAA 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 Quick Start guide, multi-language Applications Guidelines, multi-language Note: The Applications Guidelines should be ordered as a separate line item on the order. This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and Operating Instructions library.	Order No. C) 7ML1998-5QM82 C) 7ML1998-5HV61
Accessories Tag, stainless steel with hole, 12 x 45 mm (0.47 x 1.77"), one text line for fastening on sensors 1½" BSPT locknut, plastic Easy Aimer 2, 1½" NPT galvanized coupling Easy Aimer 2, 1½" NPT with stainless steel coupling Easy Aimer 2, aluminum with M20 adapter and 1" and 1½" BSPT aluminum couplings Easy Aimer 304, with M20 adapter and 1" and 1½" BSPT 304 SS couplings C) Subject to export regulations AL: N, ECCN: EAR99. J) Subject to export regulations AL: 91999, ECCN: EAR99.	7ML1930-1BJ 7ML1830-1DP 7ML1830-1AN 7ML1830-1AT 7ML1830-1AX 7ML1830-1GN

Level Measurement

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Echomax XPS and XCT

Selection and Ordering data	Order No.	Selection and Ordering data	Order code
Echomax XCT-8 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. Ambient temperatures up to 145 °C (293 °F) Measuring range: min. 0.6 m (2 ft), max. 8 m (26 ft)	C) 7ML1132-0	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
Mounting thread and facing 1" NPT [(Taper), ANSI/ASME B1.20.1] 1" NPT [(Taper), ANSI/ASME B1.20.1], PTFE facing ¹⁾ R 1" [(BSPT), EN 10226] R 1" [(BSPT), EN 10226], PTFE facing ¹⁾	0 1 2 3	Operating Instructions Quick start manual, multi-language XCT-8 with Sanitary Flange, multi-language Note: This manual should be ordered as a separate line item with Mounting Option V.	Order No. C) 7ML1998-5QM82 C) 7ML1998-5HX62
Cable length 1 m (3.28 ft) 5 m (16.40 ft) 10 m (32.81 ft) 30 m (98.43 ft) 50 m (164.04 ft) 100 m (328.08 ft)	A B C E F K	Applications Guidelines, multi-language Note: The Applications Guidelines should be ordered as a separate line item on the order. This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and Operating Instructions library.	C) 7ML1998-5HV61
Mounting flange None 3" ASME, 150 lb, flat faced 4" ASME, 150 lb, flat faced 6" ASME, 150 lb, flat faced DN 80, PN 10/16, Type A, flat faced DN 100, PN 10/16, Type A, flat faced DN 150, PN 10/16, Type A, flat faced JIS10K 3B JIS10K 4B JIS10K 6B (Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5 or EN 1092-1 or JIS B 2220 standard.) 3" universal ²⁾ 4" universal ³⁾ 6" universal ⁴⁾ 4" sanitary flange ⁵⁾	A C D E G J L M P R S T U V	Accessories Tag, stainless steel with hole, 12 x 45 mm (0.47 x 1.77"), one text line for fastening on sensors Submersible hood Universal box bracket, mounting kit Channel bracket, wall mount Extended channel bracket, wall mount Channel bracket, floor mount Extended channel bracket, floor mount Bridge channel bracket, floor mount (see Mounting Brackets on page 5/198 for more information) 1" NPT locknut, plastic 1" BSPT locknut, plastic Easy Aimer 304 with stainless steel coupling Easy Aimer, aluminum, with M20 adapter and ¾ ... 1" and 1½" BSPT couplings Easy Aimer 304, with M20 adapter and 1" and 1½" BSPT 304 SS couplings Sanitary, 4" mounting clamp Sanitary, isolating gasket	7ML1930-1BJ 7ML1830-1BH 7ML1830-1BK 7ML1830-1BL 7ML1830-1BM 7ML1830-1BN 7ML1830-1BP 7ML1830-1BQ 7ML1830-1DS 7ML1830-1DR 7ML1830-1AU 7ML1830-1AX 7ML1830-1GN 7ML1830-1BR J) 7ML1830-1KC
Approvals ATEX II 2GD, FM Class I, Div. 2, SAA CSA Class I Div. 1, available with mounting thread and facing option 0 CE, C-TICK, CSA _{US/C}	4 5 7	C) Subject to export regulations AL: N, ECCN: EAR99. J) Subject to export regulations AL: 91999, ECCN: EAR99.	

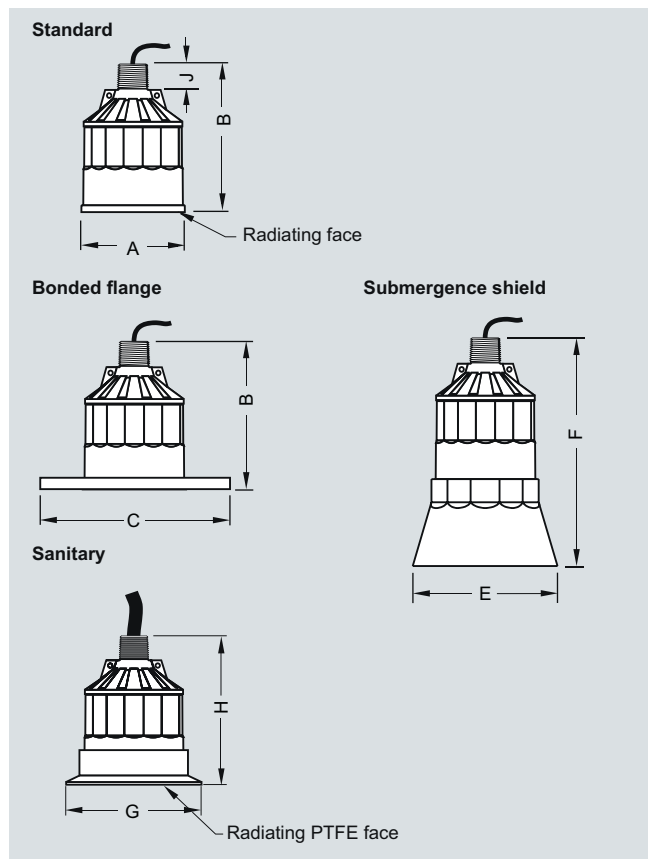
- 1) Available with flange versions S to V only
 2) Universal fits 3" ASME, DN 80, JIS 10K3B style
 3) Universal fits 4" ASME, DN 100, JIS 10K4B style
 4) Universal fits 6" ASME, DN 150, JIS 10K6B style
 5) Available with Mounting thread and facing options 1 and 3, and approval option 7 only
 C) Subject to export regulations AL: N, ECCN: EAR99.

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Echomax XPS and XCT

Dimensional drawings

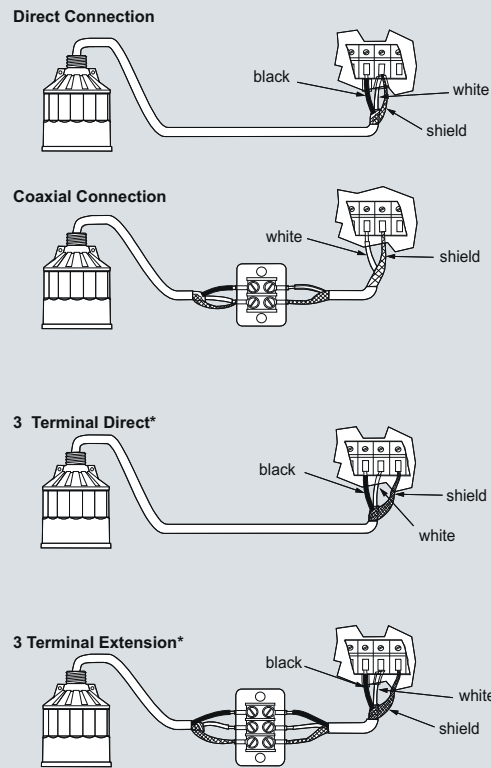


XPS and XCT ultrasonic transducer, dimensions, in mm (inch)

Version				
Dimension	XPS-10	XPS-15	XPS-30	XPS-40
A	88 mm (3.464")	121 mm (4.764")	175 mm (6.890")	206 mm (8.110")
B	122 mm (4.803")	132 mm (5.197")	198 mm (7.795")	229 mm (9.016")
C	According to ASME, DIN and JIS			n/a
E	124 mm (4.882")	158 mm (6.220")	n/a	n/a
F	152 mm (5.984")	198 mm (7.795")	n/a	n/a
J	28 mm (1.1")	28 mm (1.1")	28 mm (1.1")	28 mm (1.1")

Version		
Dimension	XCT-8	XCT-12
A	88 mm (3.464")	121 mm (4.764")
B	122 mm (4.803")	132 mm (5.197")
C	According to ASME, DIN and JIS	
E	n/a	n/a
F	n/a	n/a
G	Sanitary version: 119 mm (4.68")	n/a
H	Sanitary version: 122 mm (4.8")	n/a
J	28 mm (1.1")	28 mm (1.1")

Schematics



* For SITRANS LUC500, MultiRanger 100/200, HydroRanger 200

Mounting

Make particularly sure that the radiating face of the transducer is protected from damage. Mount the transducer so that it is above the maximum material level by at least the blanking value. On liquid applications, the transducer must be mounted so that the axis of transmission is perpendicular to the liquid surface. On solids applications, a Milltronics Easy Aimer should be used to facilitate aiming the transducer. Consider the optional temperature sensor when mounting the transducer.

Interconnection

Do not route cable openly or near high voltage or current runs, contactors and SCR control drives. For optimum isolation against electrical noise, run cable separately in a grounded metal conduit. Seal all thread connections to prevent ingress of moisture.

XPS and XCT ultrasonic transducer connections

5

Level Measurement

Continuous level measurement – Ultrasonic transducers

Echomax XPS and XCT

Selection and Ordering data	Order No.	Selection and Ordering data	Order code
Echomax XCT-12 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. Ambient temperatures up to 145 °C (293 °F) Measuring range: min. 0.6 m (2 ft), max. 12 m (40 ft)	C) 7ML1136-0	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
Mounting thread and facing 1" NPT [(Taper), ANSI/ASME B1.20.1] 1" NPT [(Taper), ANSI/ASME B1.20.1], PTFE facing, available for flange options U only ¹⁾ R 1" [(BSPT), EN 10226] R 1" [(BSPT), EN 10226], PTFE facing, available for flange options U only ¹⁾	0 1 2 3	Operating Instructions Quick start manual, multi-language Applications Guidelines, multi-language Note: The Applications Guidelines should be ordered as a separate line item on the order.	Order No. C) 7ML1998-5QM82 C) 7ML1998-5HV61
Cable length 1 m (3.28 ft) 5 m (16.40 ft) 10 m (32.81 ft) 30 m (98.43 ft) 50 m (164.04 ft) 100 m (328.08 ft)	A B C E F K	Accessories Tag, stainless steel with hole, 12 x 45 mm (0.47 x 1.77"), one text line for fastening on sensors Submergence shield kit Universal box bracket, mounting kit Channel bracket, wall mount Extended channel bracket, wall mount Channel bracket, floor mount Extended channel bracket, floor mount Bridge channel bracket, floor mount (see Mounting Brackets on page 5/198 for more information) 1" NPT locknut, plastic 1" BSPT locknut, plastic Easy Aimer 304 with stainless steel coupling Easy Aimer 2, aluminum with M20 adapter and 1" and 1½" BSPT aluminum couplings Easy Aimer 304, with M20 adapter and 1" and 1½" BSPT 304 SS couplings	7ML1930-1BJ 7ML1830-1BJ 7ML1830-1BK 7ML1830-1BL 7ML1830-1BM 7ML1830-1BN 7ML1830-1BP 7ML1830-1BQ 7ML1830-1DS 7ML1830-1DR 7ML1830-1AU 7ML1830-1AX 7ML1830-1GN
Mounting flange None 6" ASME, 150 lb, flat faced 8" ASME, 150 lb, flat faced DN 150, PN 10/16, Type A, flat faced DN 200, PN 10/16, Type A, flat faced JIS10K 6B JIS10K 8B (Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5 or EN 1092-1 or JIS B 2220 standard.) 6" universal for 6" ASME, DN 150 or JIS 10K6B style	A D E J K N P U		
Approvals ATEX II 2GD, FM Class I, Div. 2, SAA CSA Class I, Div. 1, available with mounting thread and facing option 0 only	3 4		
¹⁾ Available with universal flanges only C) Subject to export regulations AL: N, ECCN: EAR99.		C) Subject to export regulations AL: N, ECCN: EAR99.	