

SITRANS L Level instruments

Continuous measurement - Ultrasonic transducers

Echomax XRS-5

Overview



Echomax® XRS-5 ultrasonic transducer provides reliable, continuous level monitoring of liquids and slurries in narrow lift stations/wet wells, flumes, weirs and filter beds using a beam angle of just 10° and a CSM rubber face.

Benefits

- Narrow beam angle of only 10°
- Chemically resistant PVDF copolymer enclosure and CSM rubber face
- Measuring range: 8 m (26 ft) for measurement of liquids and slurries.
- Fully submersible: IP68 degree of protection
- Easy installation with 1" NPT or 1" BSP connection

Application

It is non-contacting with a measuring range from 0.3 to 8 m (1 to 26 ft). Advanced echo processing ensures reliable data even in conditions with obstructions, turbulence and foam.

The pre-molded, hermetically sealed rubber face and the PVDF copolymer enclosure are designed for maximum resistance to methane, salt water, caustics and harsh chemicals common to wastewater installations. With an IP68 degree of protection, this rugged sensor is fully submersible in the event of flood conditions. Use a submergence shield if full submergence is possible in the application. A submergence shield will maintain a high level reading output during submerged conditions.

The low-cost XRS-5 transducer is compatible with a full range of Siemens Milltronics transceivers, from a basic system for high/low alarm or dual pump control, up to advanced control systems with communications, telemetry and SCADA integration capabilities.

- Key Applications: wet wells, flumes, weirs, filter beds

Technical specifications

Mode of operation

Measuring principle Ultrasonic transducer

Input

Measuring range 0.3 to 8 m (1 to 26 ft), dependent on application

Output

Frequency 44 kHz

Beam angle 10°

Accuracy

Temperature error Compensated by integral temperature sensor

Rated operating conditions

Vessel pressure Normal atmospheric pressure

Ambient conditions

- Ambient temperature -20 to +65 °C (-5 to +149° F)

Design

Weight (Approximate shipping weight of sensor with standard cable length.) 1.2 kg (2.6 lbs)

Material (enclosure) PVDF copolymer enclosure and CSM face

Process Connection 1" NPT or 1" BSP

Degree of protection IP68

Cable connection 2-core shielded/twisted, 0.5 mm² (20 AWG), PVC sheath

- Cable (max. length)
- 365 m (1200 ft) with RG 62 A/U coaxial cable
 - 365 m (1200 ft) with 2-core twisted pair, foil shield, 0.5 mm² (20 AWG), PVC sheath, only for SITRANS LUC500, MultiRanger 100/200

Options

Flange version Factory flange with PTFE face for ANSI, DIN or JIS configuration

Flange adapter Split flange (field mounting) for ANSI, DIN or JIS configuration

Submergence shield For applications with flooding possible

Certificates and approvals

CE (EMC certificate available on request), CSA Class I Div. 2, FM Class I, CENELEC, ATEX II 2G, SAA Ex s Class I and Practice A

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Echomax XRS-5

Selection and Ordering data

Echomax XRS-5 transducer

Provides reliable, continuous level monitoring of liquids and slurries in narrow lift stations/wet wells, flumes, weirs and filter beds measuring range: min. 0.3 m, max. 8 m

Process connection

1" NPT (ANSI/ASME B1.20.1)
1" BSPT (EN 10226-1)

Cable length

5 m
10 m
30 m

Facing

Standard
PTFE (flange versions)

Approvals

FM Class I, ATEX II 2G, CSA Class I Div. 2, SAA Class I

Mounting flange (flush mount)

None
3" ANSI, 150 lbs
4" ANSI, 150 lbs
6" ANSI, 150 lbs
DN 80, PN 10/16
DN 100, PN 10/16
DN 150, PN 10/16
JIS10K 3B style
JIS10K 4B style
JIS10K 6B style

Instruction manual

Quick Start Manual, multi-language

Note: Due to ATEX regulations, one Quick Start Manual is included with every transducer.

Applications Guidelines, multi-language

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

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
Easy Aimer II, NPT with 3/4" x 1" PVC coupling
Easy Aimer II, Aluminum with M20 adapter and 1" and 1 1/2" BSP aluminum couplings
Easy Aimer 304, with stainless steel coupling
Easy Aimer 304, with M20 adapter and 1" and 1 1/2" BSP 304 SS couplings

FMS-200 Universal Box Bracket, Mounting Kit
FMS-210 Channel Bracket, Wall Mount
FMS-220 Extended Channel Bracket, Wall Mount
FMS-310 Channel Bracket, Floor Mount
FMS-320 Extended Channel Bracket, Floor Mount
FMS-350 Bridge Channel Bracket, Floor Mount
(See Mounting Brackets on page 5/114 for more information)

1" NPT locknut, plastic
1" BSP locknut, plastic

Split flanges

3", Aluminum
3", 304 Stainless Steel
Gasket Kit 3"

4", Aluminum
4", 304 Stainless Steel
Gasket Kit 4"

6", Aluminum
6", 304 Stainless Steel
Gasket Kit 6"

Instruction manual

Order No.

C) 7ML11106 -

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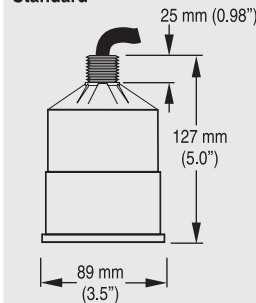
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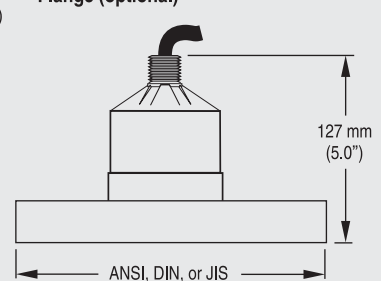
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Dimensional drawings

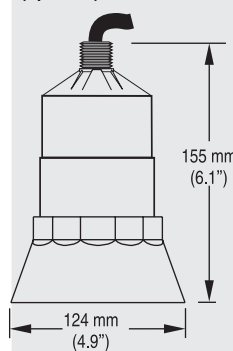
Standard



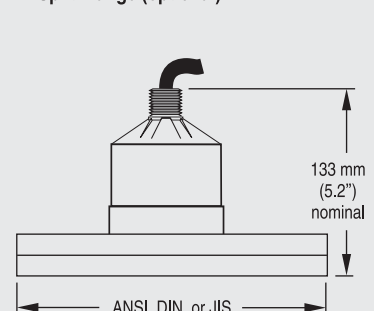
Flange (optional)



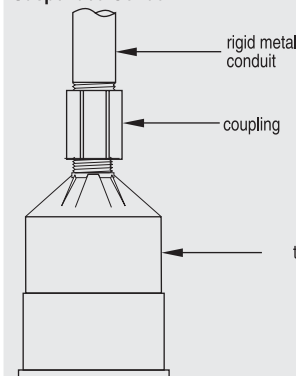
Submergence Shield (optional)



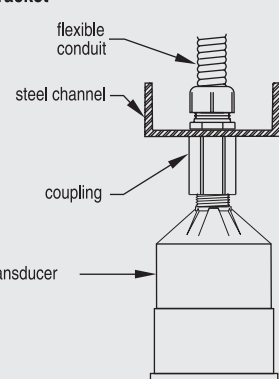
Split Flange (optional)



Mounting: Suspended Conduit

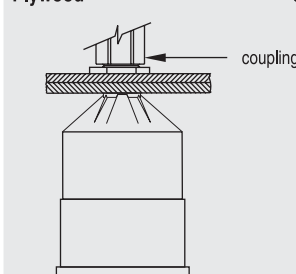


Bracket



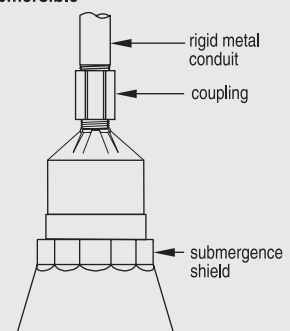
Flexible conduit transducer should not be subjected to wind, vibration or jarring.

Plywood



Plywood mounting provides excellent isolation (must be rigid).

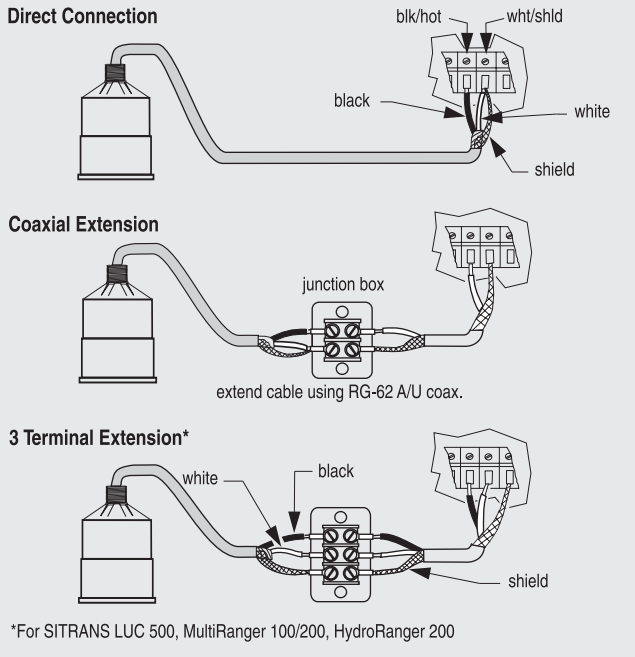
Submersible



Transducer with submergence shield, used in applications where flooding is possible.

XRS-5 ultrasonic transducer dimensions

Schematics



XRS-5 ultrasonic transducer connections