EchoTouch® US06 & US12

Reflective Ultrasonic Liquid Level Transmitter

FLOWLINE™ LEVEL BEST

Application

The intrinsically safe reflective ultrasonic level transmitter provides continuous level measurement up to 39.3’ (12m) with a 4-20 mA analog and HART digital signal output, and is configured via its integral push button display module or WebCal software. The non-contact liquid level sensor features our proprietary Reflective Technology™ that delivers reliable level measurement in condensing environments. Select this sensor for bulk tanks with non-foaming or mildly vaporous media such as chemicals, water, wastewater and oil. Typical applications include bulk storage, neutralization tank, clarifier and waste sumps.

US06 Shown

US12 Shown

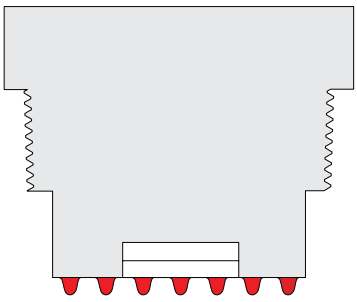
Features

- Offered in 6m (19.6’) and 12m (39.3’) measurement ranges
- Reflective Technology™ measures reliably with condensation
- Corrosion resistant PVDF transducer with aluminum enclosure
- Narrow 3” (7.6cm) beam width for applications with limited space
- LCD display indicates level in inches, meters or percent of span
- HART communication in point to point and multi-drop modes
- Fail-safe diagnostics with selectable fail-safe signal outputs
- Configuration via push button display or WebCal software
- Automatic temperature compensation from -40° to 80° C.

Reflective Technology™

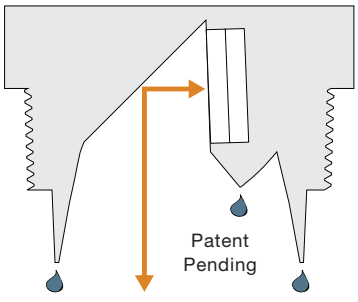
Condensation is the most common variable in liquid level applications. Condensation attenuates the acoustic signal of ultrasonic sensors with horizontal transducers, weakening their signal strength and signal to noise ratio by up to 50%, and substantially reducing their measurement reliability. At the core of Reflective Technology™ is a simple fact. Unlike flat horizontal surfaces, significant water droplets cannot adhere to smooth vertical surfaces. By orienting the transducer vertically, condensation runs off the transducer and does not affect sensor performance. The unimpeded transmit and receive signals are redirected to and from the liquid off a 45° reflector, delivering reliable level measurement. Thanks gravity.

Horizontal Transducer



Signal Attenuation

Reflective Transducer



Reliable Measurement

EchoTouch® US06 & US12

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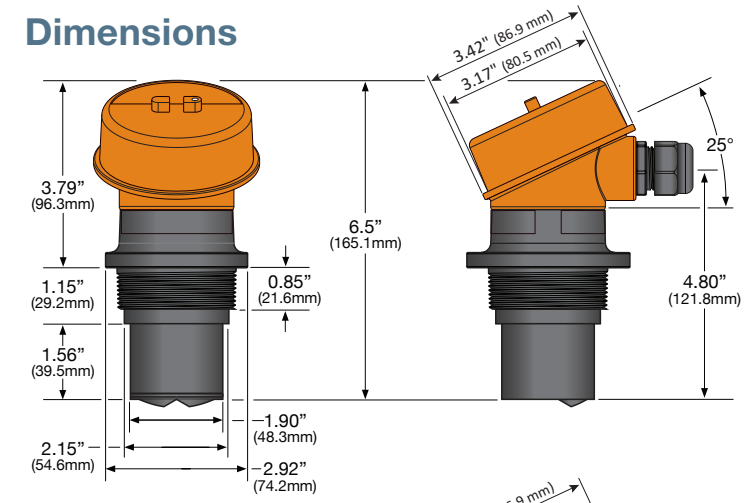
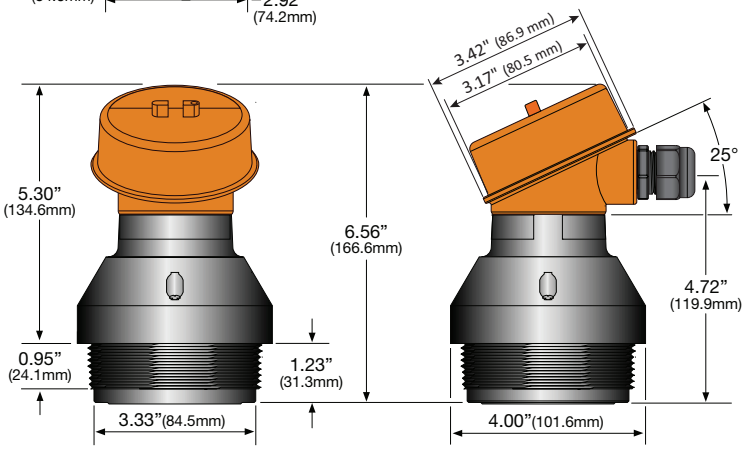
Specifications

Range:	US06: 8” to 19.6’ (20cm to 6m) US12: 18” to 39.3’ (45.7cm to 12m)
Accuracy:	± 0.2% of range
Resolution:	US06: 0.079” (2mm) US12: 0.196” (5mm)
Dead band:	US06: 8” (20.3cm) US12: 18” (45.7cm)
Beam width:	US06: 3” (7.6cm) US12: 6” (15.2cm)
Configuration:	Push button; WebCal® PC Windows® USB® 2.0; HART 7 (pending)
Memory:	Non-volatile
Display type:	LCD, 6-digit
Display units:	Inch, cm or percent
Supply voltage:	14-28 VDC
Loop resistance:	500 ohms @ 24 VDC
Signal output:	4-20mA, two-wire, HART 7 (pending)
Signal invert:	4-20mA or 20-4mA
Signal fail-safe:	4mA, 20mA, 21mA, 22mA, hold last
Process temp.:	F: -40° to 176° / C: -40° to 80°
Temp. comp.:	Automatic
Ambient temp.:	F: -40° to 176° / C: -40° to 80°
Pressure:	30 psi (2 bar)
Enclosure rating:	Type 6P (IP68)
Encl. material:	Aluminum
Enclosure vent:	Water tight membrane
Conduit entrance:	1/2” NPT
Transducer type:	Reflective
Transducer mat.:	Polyvinylidene fluoride
Process mount:	06-0003: 2” NPT 06-0013: 2” G 12-0003: 3” NPT 12-0013: 3” G
Mount gasket:	-0003: N/a -0013: Viton®
Classification:	Intrinsically safe
Approvals (for USA):	Class I, Div 1, Groups A, B, C & D T4; Class II, Div 1 Groups E, F & G T4; Class III T135C; Class I, Zone 0, IIC AEx ia T4 Ga; Class II, Zone 20, IIIC AEx ia, T135C, Da
(for Canada):	Class I, Div 1, Groups A, B, C & D T4; Class II, Div 1 Groups E, F & G T4; Class III T135C
(for IECEx):	Ex ia IIC T4 Ga; Ex ia IIIC, T135C Da; Tamb: -40 to 80C
Entity parameters:	See control drawing #600820
Compliance:	CE, RoHS

Dimensions



US06 Shown



US12 Shown

Configuration

In addition to the push button display module, the sensor may be configured via our WebCal software and one Fob USB adapter. WebCal is a PC utility program that allows users to easily configure their sensors, update firmware, save configurations and print wiring schematics prior to installation. WebCal is a free download from our website.

Ordering

US ☐☐-00☐☐-0☐

SENSOR RANGE (1)

- **06** 6m (19.6’)
- **12** 12m (39.3’)

PROCESS MOUNT (2)

- **0** 2” NPT (US06) / 3” NPT (US12)
- **1** 2” G (US06) / 3” G (US12)

OUTPUT

- **1** 4-20mA Only
- **3** 4-20mA / HART

FOB USB ADAPTER (3)

- **0** Without Fob
- **1** With Fob

LI99-2001

NOTES

1) If you want help in selecting a sensor for your application, please go to our website and submit a Level Questionnaire. An engineer will review your requirements and suggest a product solution via email.
2) Install the sensor using Flowline installation fittings or equivalents.
3) Sensors are offered with or without a LI99-2001 Fob USB adapter. If you want to configure the sensor using our free WebCal software, you need one Fob, which can then be used with any WebCal compatible ultrasonic or guided wave sensor. WebCal is a free download from our website.

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