

Echotouch™, EchoSpan® & EchoSwitch® Ultrasonic Liquid Level Sensors



The Echotouch, EchoSpan and EchoSwitch are innovative ultrasonic liquid level sensor families that replace float, conductance and pressure sensors that fail due to contact with dirty, sticky and scaling media in small, medium and large capacity tanks. Applied in chemical, water and wastewater applications, these general purpose non-contact sensors are available with single and multi-function capabilities including continuous level measurement, switching and control.

For input to a PLC or other controller, measurement outputs include current, voltage and frequency. Models with three relays can be configured for level alarms and/or stand-alone level control such as automatic fill or empty functions using the embedded level controller. **Units are easily configured using built-in pushbuttons.**

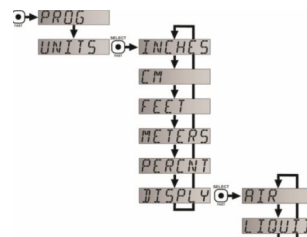
Made in the USA

Echotouch, EchoSpan & EchoSwitch Ultrasonic Liquid Level Sensors General Specifications								
Model	LU20-5001-IS	LU80-5101	LU81-5101	LU83-5101	LU84-5101	LU77-5004	LU74-5004	LU78-5004
Price	<--->	<--->	<--->	<--->	<--->	<--->	<--->	<--->
Type	Echotouch	EchoSpan			EchoSwitch			
Class	Intrinsically safe	General Purpose (non-hazardous)						
Range	6 in to 18 ft (15 cm to 5.5m)	4 in to 9.8 ft (10 cm to 3m)	8 in to 18 ft (20 cm to 5.5m)	8 in to 26.2 ft (20 cm to 8m)	12 in to 32.8 ft (30 cm to 10m)	4 in to 9.8 ft (10 cm to 3m)	8 in to 18 ft (20 cm to 5.5m)	8 in to 26.2 ft (20 cm to 8m)
Output Types	4-20 mA, two-wire					(1) SPDT relay, (2) SPST relays 4-20 mA, two-wire		
Install	Vertical, top of tank							
Mounting	2 in MNPT	1 in MNPT	2 in MNPT			1 in MNPT	2 in MNPT	
Relays	No relay					(1) SPDT relay, (2) SPST relays		
Configuration	Pushbutton / LCD							
Ambient Temperature	-4° to 140°F (-20° to 60°C)			-40° to 160°F (-40° to 71°C)				
Process Temperature	-40° to 140°F (-40° to 60°C)			-4° to 140°F (-20° to 60°C)				
Pressure	30 PSI (2 bar) @ 25°C, derated @ 1.667 psi (0.113 bar) per °C above 25°C (77°F)			30 PSI (2 bar) MAX				

Pushbutton Configuration

With no software or PC required, the Echotouch, EchoSpan, and EchoSwitch ultrasonic level sensors are easily configured using integral pushbuttons and LCD digital display. Configuration parameters are organized in a simple menu structure so that parameter values are easily accessed and set or changed as needed. Parameters are stored in non-volatile memory so the setting values are not lost when the sensor is powered down, allowing configuration before installation in the field.

Example - EchoSpan Display and Menu





EchoSpan[®] LU Series Ultrasonic Level Transmitters

Overview

The EchoSpan LU series ultrasonic level transmitters provide continuous level measurement up to 32.8 ft (10m) with a 4-20 mA signal output, and is configured via its integral pushbutton display module. This non-contact liquid level sensor is ideally suited for corrosive, ultrapure, sticky or dirty liquids, and is broadly selected for bulk storage, day tank, lift station and process tank level applications.



Part No. LU80-5101

Part No. LU81-/83/84-5101

Features

- Offered in 4 measurement ranges from 9.8 ft (3m) to 32.8 ft (10m)
- Configuration is simple via integral pushbutton display module
- LCD display indicates level in inches, centimeters and percentages
- Narrow 2 inch or 3 inch beam width for applications with limited measurement space
- Fail-safe intelligence and diagnostic feedback for simple troubleshooting
- PVDF transducer and NEMA 4X / IP65 polycarbonate enclosure for corrosive liquids
- Automatic temperature compensation for accurate measurement
- Made in the USA



LU80 Series Technical Specifications				
Model	LU80-5101	LU81-5101	LU83-5101	LU84-5101
Price	<-->	<-->	<-->	<-->
Range	4 in to 9.8 ft (10 cm to 3m)	8 in to 18 ft (20 cm to 5.5m)	8 in to 26.2 ft (20 cm to 8m)	12 in to 32.8 ft (30 cm to 10m)
Accuracy	± 0.2% of range			
Resolution	0.019 in (0.5 mm)	0.039 in (1 mm)		0.078 in (2 mm)
Sensing Dead Band*	4 in (10 cm)	8 in (20 cm)		12 in (30 cm)
Beam Width	2 in (5.1 cm)	3 in (7.6 cm)		
Configuration	Pushbutton / LCD			
Memory	Non-volatile			
Display Type	LCD, 6-digit			
Display Units	Inch, cm and percent			
Supply Voltage	12 - 28 VDC**			
Loop Resistance	500Ω @ 24 VDC			
Signal Output	4-20 mA, two-wire			
Signal Invert	4-20 mA or 20-4 mA			
Signal Fail-Safe	4 mA, 20 mA, 21 mA, 22 mA or hold last			
Terminal Block	26-12 AWG (tighten torque, 0.5 Nm)			
Process Temperature	-4° to 140°F (-20° to 60°C)			
Temp. Compensation	Automatic			
Ambient Temperature	-40° to 160°F (-40° to 71°C)			
Pressure	30 PSI (2 bar) MAX			
Enclosure Rating	NEMA Type 4X (IP65)			
Enclosure Material	Polycarbonate			
Enclosure Hardware	Brass & stainless steel			
Enclosure Vent	Water tight membrane			
Conduit Entrance	Dual, 1/2 in FNPT			
Transducer Material	Polyvinylidene Fluoride			
Process Mount	1 in MNPT (See accessories for installation fittings)	2 in MNPT (See accessories for installation fittings)		
Mount Gasket	Viton (included, replacement part number 200128)	Viton (included, replacement part number 200129)		
Weight (lbs)	1.5	1.9		
Classification	General purpose			
Compliance	CE, RoHS			

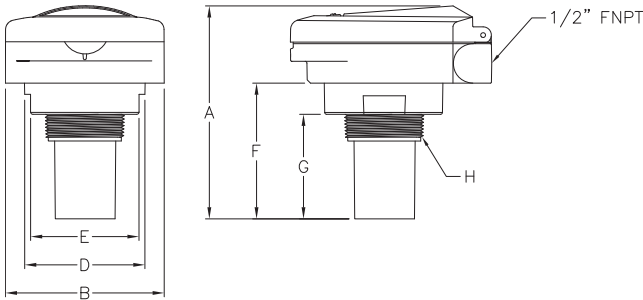
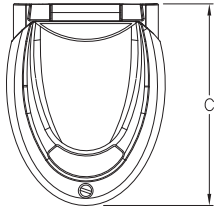
* Dead band is the minimum distance the sensor must be mounted above the max liquid level.

** If supply exceeds 28 VDC damage to the transmitter may occur.

EchoSpan[®] LU Series Ultrasonic Level Transmitters

Dimensions inches [mm]

LU80 Series



Dimensions	A	B	C	D	E	F	G	H
LU80	3.90 [99.1]	4.10 [104.1]	5.20 [132.1]	3.10 [78.8]	2.80 [71.1]	1.90 [48.3]	1.25 [31.8]	1 in MNPT
LU81, 83 & 84	5.50 [139.6]	4.10 [104.1]	5.20 [132.1]	3.10 [78.8]	2.80 [71.1]	3.40 [86.4]	2.70 [68.6]	2 in MNPT

When installing the 1 inch NPT level sensors care should be used to mechanically isolate the sensor housing from the tank. This can easily be done by using any of the Flowline mounting accessories which are designed to provide the isolation needed.

Configuration

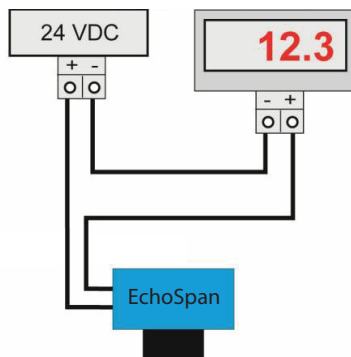
The transmitter is configured using the three buttons (UP, DOWN and SELECT) and the transmitter's LCD on the transmitters face.

More information about configuring the LU series sensors can be found at www.AutomationDirect.com

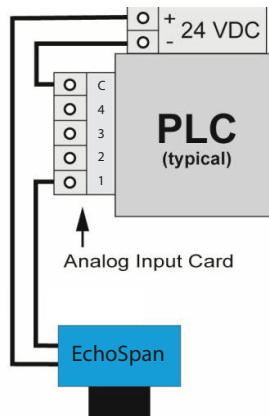


Wiring

Typical Loop Powered Display



Typical Generic PLC



Ultrasonic Liquid Level Sensor Accessories

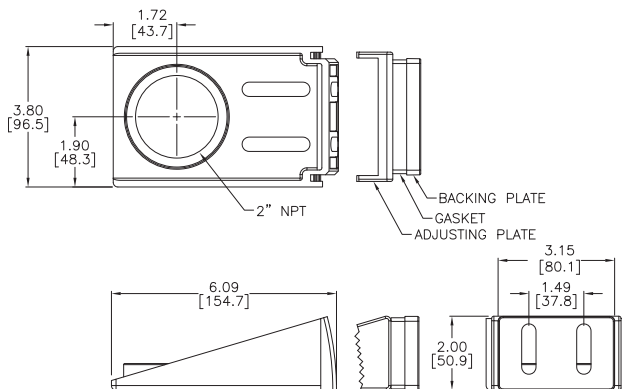
Ultrasonic Liquid Level Sensor Accessories					
Part No.	Item Photo	Description	Quantity	Weight	Price
LI40-1001		Flowline PodView general purpose digital indicator, displays tank level or volume and sensor relay status, 6-digit LCD display with four relay status indicators, 3-button user interface, polycarbonate panel mount enclosure with NEMA 4 (IP65) faceplate, 6-foot (1.8-meter) 22AWG 4-conductor cable, compatible with any Flowline EchoPod series ultrasonic level sensor with firmware V50 or later	1	0.6	<--->
LM50-1001		Flowline side mount bracket, 2 inch NPT female threads, polypropylene (PP), for use with Flowline DL34, LU20, LU23, LU28, LU29, LU74, LU78, LU81, LU83, and LU84 series ultrasonic level sensors	1	0.4	<--->
LM50-1001-1		Flowline side mount bracket, 2 inch NPT female threads, polypropylene (PP), and 2 inch NPT male x 1 inch NPT female reducer bushing (PVC), for use with Flowline DL14, DL24, DS14, DL10, DX10, LU27, LU77, and LU80 series ultrasonic level sensors	1	0.6	<--->
LM52-1400		Flowline reducer bushing, 2 inch NPT male x 1 inch NPT female threads, PVC, for use with Flowline DL14, DL24, DS14, DL10, DX10, LU27, LU77, and LU80 series ultrasonic level sensors	1	0.2	<--->
LM52-2400		Flowline reducer bushing, 3 inch NPT male x 2 inch NPT female threads, PVC, for use with Flowline DL34, LU20, LU23, LU28, LU29, LU74, LU78, LU81, LU83, and LU84 series ultrasonic level sensors	1	0.6	<--->
LM52-1890		Flowline low-profile bulkhead fitting, 1 inch NPT female x slip socket, with mounting nut, PVC, for use with Flowline DL14, DL24, DS14, DL10, DX10, LU27, LU77 and LU80 series ultrasonic level sensors	1	0.5	<--->
LM52-2890		Flowline low-profile bulkhead fitting, 2 inch NPT female x slip socket, with mounting nut, PVC, for use with Flowline DL34, LU20, LU23, LU28, LU29, LU74, LU78, LU81, LU83, and LU84 series ultrasonic level sensors	1	1.2	<--->
LM52-1850		Flowline mounting flange, 1 inch NPT female threads, PVC, for use with Flowline DL14, DL24, DS14, DL10, DX10, LU27, LU77, and LU80 series ultrasonic level sensors	1	0.5	<--->
LM52-2850		Flowline mounting flange, 2 inch NPT female threads, PVC, for use with Flowline DL34, LU20, LU23, LU28, LU29, LU74, LU78, LU81, LU83, and LU84 series ultrasonic level sensors	1	1.0	<--->
204038		Replacement mounting gasket, for use with Flowline DL14, DL10, DX10, and DS14 series ultrasonic level sensors	1	0.1	<--->
200128		Replacement mounting gasket, for use with Flowline DL24, LU27, LU77, and LU80 series ultrasonic level sensors	1	0.1	<--->
200129		Replacement mounting gasket, for use with Flowline DL34, LU23, LU28, LU29, LU74, LU78, LU81, LU83, and LU84 series ultrasonic level sensors	1	0.1	<--->

When installing the 1" NPT level sensors care should be used to mechanically isolate the sensor housing from the tank. This can easily be done by using any of the Flowline mounting accessories which are designed to provide the isolation needed.

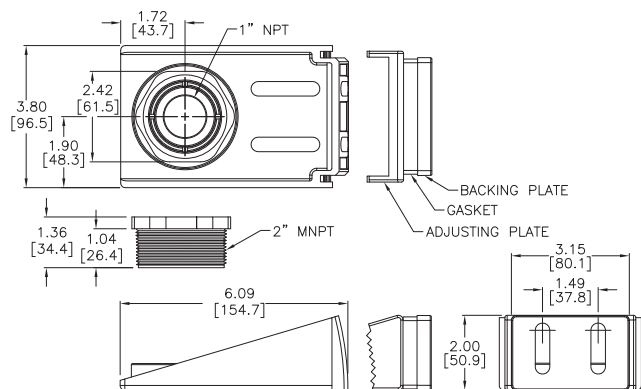
Dimensions

inches [mm]

LM50-1001



LM50-1001-1

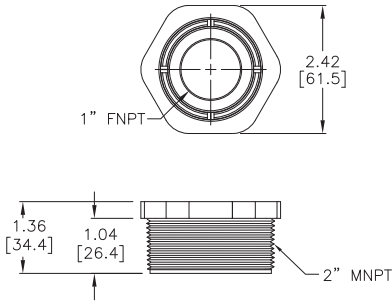


Ultrasonic Liquid Level Sensor Accessories

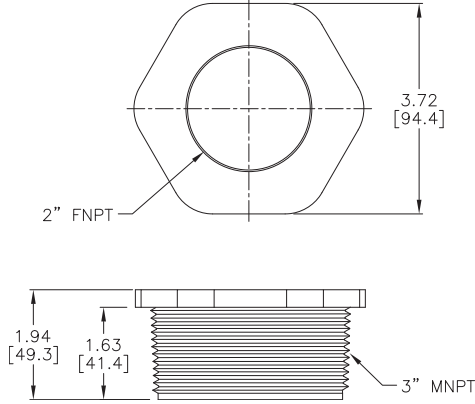
- Company Information
- Systems Overview
- Programmable Controllers
- Field I/O
- Software
- C-more & other HMI
- Drives
- Soft Starters
- Motors & Gearbox
- Steppers/ Servos
- Motor Controls
- Proximity Sensors
- Photo Sensors
- Limit Switches
- Encoders
- Current Sensors
- Pressure Sensors
- Temperature Sensors
- Level Sensors**
- Pushbuttons/ Lights
- Process
- Relays/ Timers
- Comm.
- Terminal Blocks & Wiring
- Power
- Circuit Protection
- Enclosures
- Tools
- Pneumatics
- Safety
- Appendix
- Product Index
- Part # Index

Dimensions inches [mm]

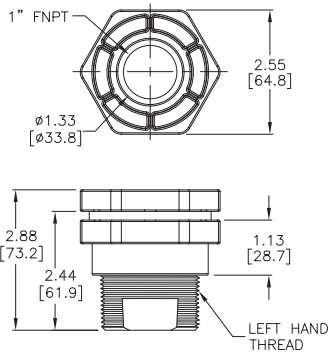
LM52-1400



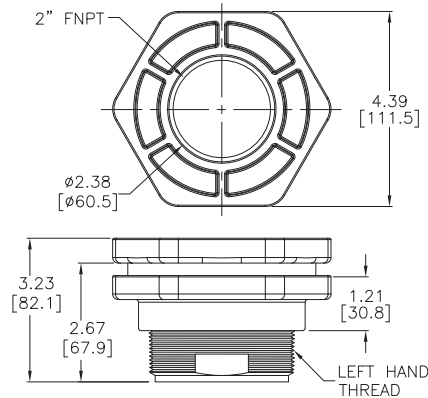
LM52-2400



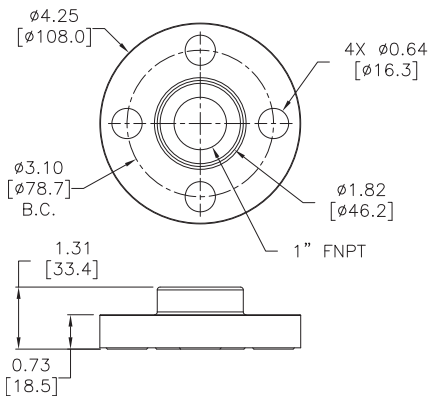
LM52-1890



LM52-2890



LM52-1850



LM52-2850

