



EchoSpan® & EchoSwitch® Ultrasonic Liquid Level Sensors



Overview

The 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.

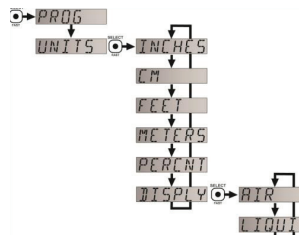


EchoSpan & EchoSwitch Ultrasonic Liquid Level Sensors General Specifications							
Model	<u>LU80-5101</u>	<u>LU81-5101</u>	<u>LU83-5101</u>	<u>LU84-5101</u>	<u>LU77-5004</u>	<u>LU74-5004</u>	<u>LU78-5004</u>
Price	\$800.00	\$950.00	\$975.00	\$1,145.00	\$1,035.00	\$1,100.00	\$1,165.00
Type	EchoSpan				EchoSwitch		
Class	General Purpose (non-hazardous)						
Range	4in to 9.8 ft (10cm to 3m)	8in to 18ft (20cm to 5.5 m)	8in to 26.2 ft (20cm to 8m)	12in to 32.8 ft (30cm to 10m)	4in to 9.8 ft (10cm to 3m)	8in to 18 ft (20cm to 5.5 m)	8in to 26.2 ft (20cm 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	1in MNPT	2in MNPT			1in MNPT	2in MNPT	
Relays	No relay				(1) SPDT relay, (2) SPST relays		
Configuration	Pushbutton / LCD						
Ambient Temperature	-40° to 160°F (-40° to 71°C)						
Process Temperature	-4° to 140°F (-20° to 60°C)						
Pressure	30 PSI (2 bar) MAX						

Pushbutton Configuration

With no software or PC required 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



Click on the thumbnail or go to <https://www.automationdirect.com/VID-LE-0002> for a short video introduction to Flowline EchoSpan, EchoSwitch and PodView product lines.



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

- 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
- 2-year warranty



LU80 Series Technical Specifications

Model	<u>LU80-5101</u>	<u>LU81-5101</u>	<u>LU83-5101</u>	<u>LU84-5101</u>
Price	\$800.00	\$950.00	\$975.00	\$1,145.00
Range	4in to 9.8 ft (10cm to 3m)	8in to 18ft (20cm to 5.5 m)	8in to 26.2 ft (20cm to 8m)	12in to 32.8 ft (30cm to 10m)
Accuracy	± 0.2% of range			
Resolution	0.019 in (0.5 mm)	0.039 in (1mm)		0.078 in (2mm)
Sensing Dead Band*	4in (10cm)	8in (20cm)		12in (30cm)
Beam Width	2in (5.1 cm)	3in (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	4mA, 20mA, 21mA, 22mA 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	1in MNPT (See accessories for installation fittings)	2in 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.

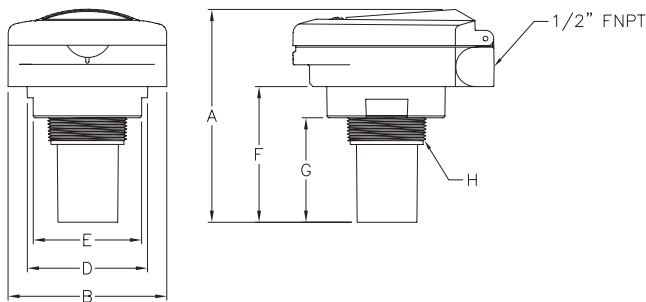
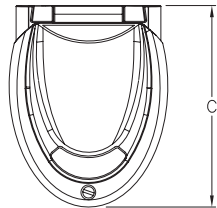


EchoSpan® LU Series Ultrasonic Level Transmitters

Dimensions

inches [mm]

LU80 Series



See our website www.AutomationDirect.com for complete Engineering drawings.

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

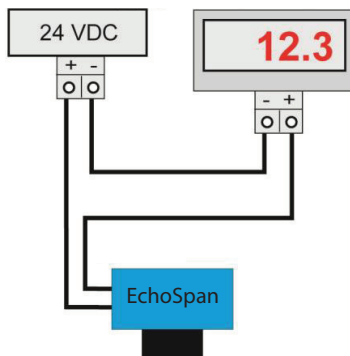
The transmitter is configured using the three buttons (UP, DOWN and SELECT) and the transmitter's LCD on the transmitters face.

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



Wiring

Typical Loop Powered Display



Typical Generic PLC

