

**One-piece Ultrasonic Level Meter**

## Introduction

The two-wire loop powered ultrasonic transmitter LB520A can measure liquid level and volume in storage tanks and simple process vessels, and can also be used to measure the flow in open channels.

## Product Features

- Continuous liquid level measurement with a range of up to 12 meters
- Easy to install and start
- Configuring by using an infrared intrinsically safe handheld programmer or HART® manual manipulator
- Unique high accuracy
- Communicating by using HART or PROFIBUS PA
- Using ETFE or PVDF sensors with strong resistance to chemical corrosion
- Patented acoustic intelligent echo processing technology
- Extremely high signal to noise ratio
- Automatic false echo suppression for fixed jamming targets
- Conversion of liquid level to volume or liquid level to flow

## Application

It is the best solution for liquid level measurement in water supply and treatment industry and chemical storage tanks.

With a range of 6m or 12m, LB520 uses automatic false echo suppression technology, which is able to avoid the impact of fixed objects, and improve the signal to noise ratio to achieve an accuracy of 0.15% of the range or 6mm and offer high reliability.

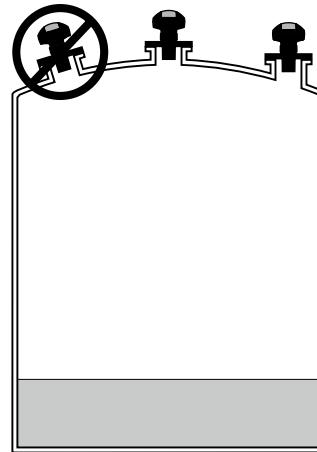
LB520 has built-in sound intelligence that has been proven through countless on-site practices of Echo processing technology®, combining new echo processing features with the latest microprocessors and communication technologies. There are two communication options: HART or PROFIBUS PA (Type 3.0, Class B)

The sensor of LB520 is made of ETFE or PVDF, which can resist chemical corrosion. In addition, for applications with changing material temperatures and process temperatures, LB520 also integrates a built-in sensor to compensate for temperature changes.

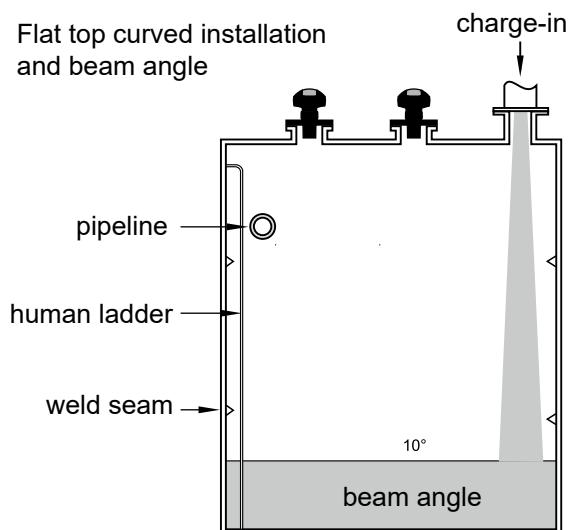
- Main applications: chemical storage tanks, filter tanks, liquid storage tanks

## Installation diagram

### Curved top installation



### Flat top curved installation and beam angle

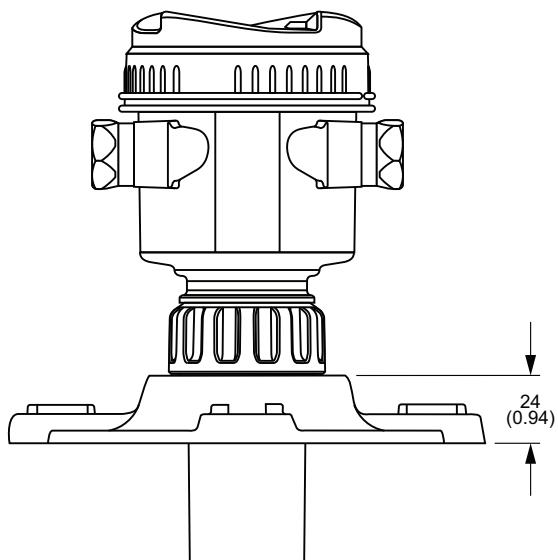


## Technical specifications

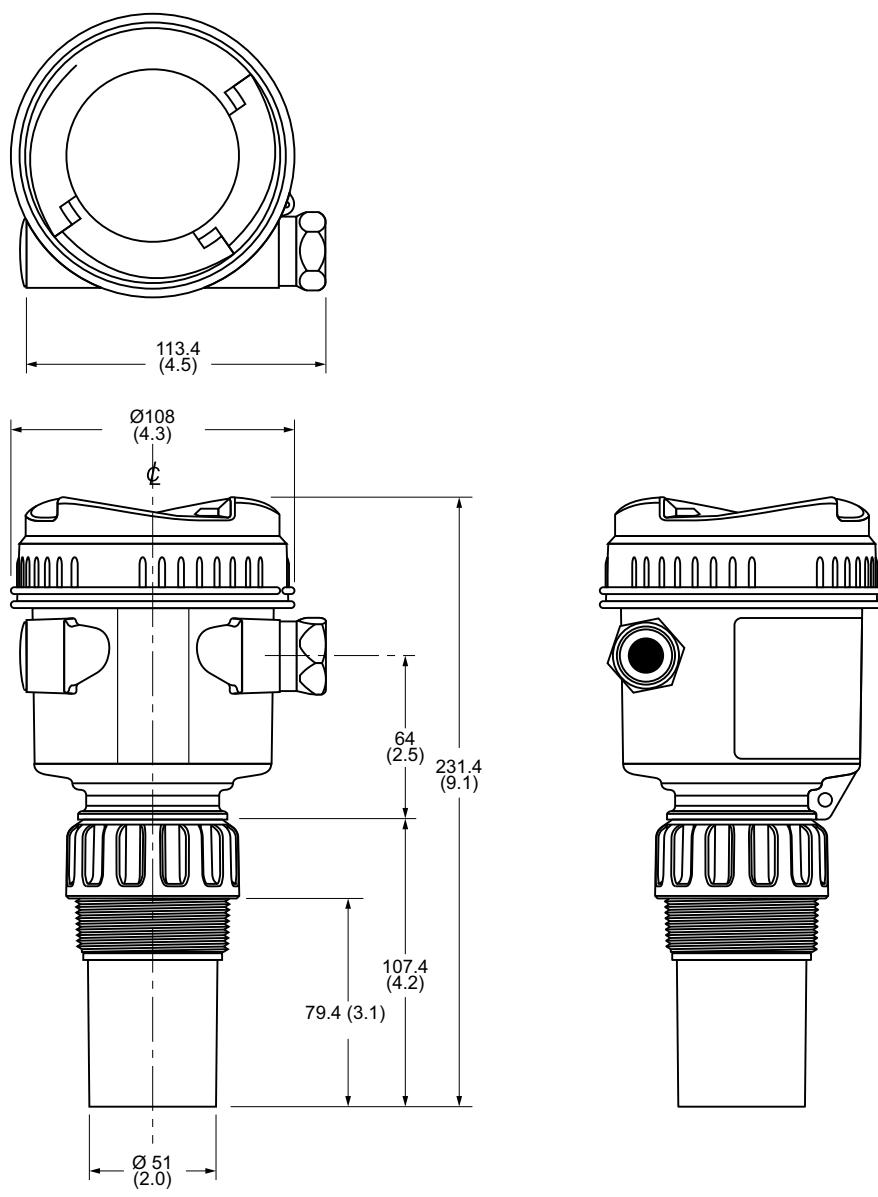
<b>Operation mode</b>		<b>Process connection</b>
Measuring principle		2" NPT, 2" BSPT, 2" G 3"
Typical applications		universal flange
<b>Input</b>		User provided installation kit
Measuring range		
• 6 m type	0.25 ~ 6m	
• 12 m type	0.25 ~ 12m	
Frequency	54 KHz	
<b>Output</b>		<b>Display and control</b>
mA/HART		Interface
• range	4 ~ 20 mA	Local: LCD with bar graph
• accuracy	± 0.02 mA	Remote: via HART or Profibus PA
PROFIBUS PA		Configuring
profile 3. class B.		a HART manual operator
<b>Performance</b>		Memory
Resolution ratio	≤ 3 mm	EEPROM can maintain information during power outages no need for backup batteries
Accuracy	± 0.15% of range or 6mm, the larger value is taken	
Repeatability	≤ 3 mm	
Dead zone	0.25 m	
Refresh time	≤ 5s	
• 4/20 mA/HART type	≤ 5s, 4mA	<b>Power supply</b>
• PROFIBUS type	≤ 4s, 15 mA current circuit	4 ~ 20 mA/HART
Temperature compensation	Built-in	Rated 24 V DC, maximum 550 Ω load; Maximum 30 V DC 4~20 mA
Beam angle	10°	PROFIBUS PA
<b>Rated operating conditions</b>		12, 13, 15, or 20 mA, depending on configuration (General purpose or intrinsically safe) Complying with standard IEC 61158-2
Environment condition		
• Location	indoors / outdoors	<b>Certification</b>
• Environment temperature	-40 ~ 80 °C	Universal type
• Relative humidity/inlet protection suitable	outdoor	CE
• Installation class	I	
• Pollution class	4	
Medium conditions		
• Temperature at flange or threads	-40 ~ 85 °C	
• Pressure (vessel)	0.5 bar	
<b>Designing</b>		
Housing material		
PBT (Polybutylene terephthalate)		
Protection class		
Type 4X/NEMA 4X, Type 6/NEMA 6/IP67/IP68 housing		
Weight		
2.1 kg		
Cable entry		
Wire connector or 2 x 1/2 NPT thread		
Sensor material		
ETFE or PVDF		

Optional parts

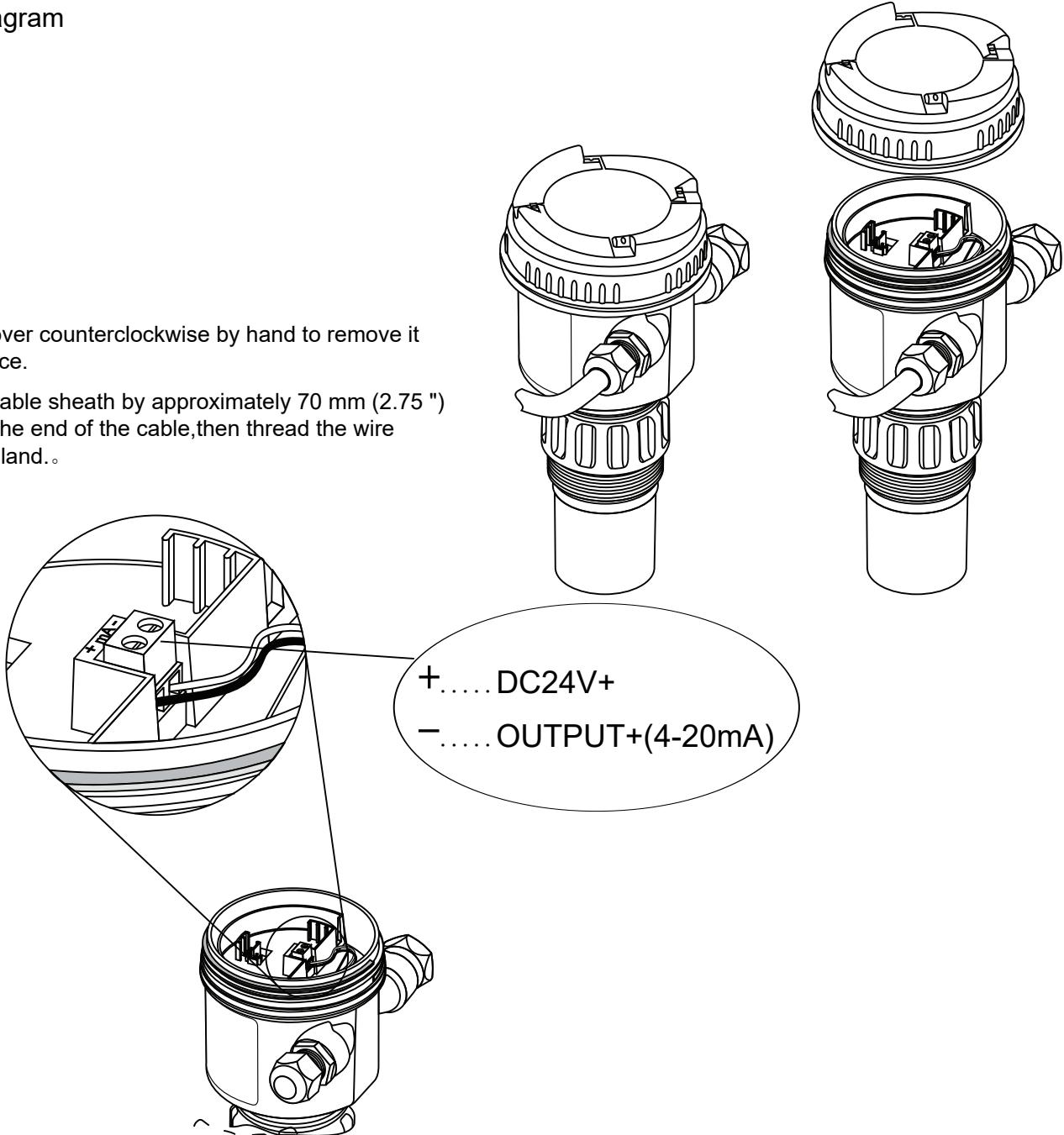
Optional flange adapter



Dimensional drawing.mm



## Wiring diagram



1. Rotate the cover counterclockwise by hand to remove it from the device.
2. Peel off the cable sheath by approximately 70 mm (2.75 ") starting from the end of the cable, then thread the wire through the gland..

3. Connect the wire to the terminal, as shown in the figure: the polarity of the terminal is marked on the junction box.
4. Tighten the gland to ensure good sealing.
5. Insert the female end of the optional display cable into the 4-pin plug. View the demonstration to install a new display screen.
6. Set the optional display into the chassis. The buttons on the display screen should be located at the terminals. Rotate the display screen clockwise by a quarter turn to ensure it is in the cabinet.
7. Replace the device cover. Spiral to the cabinet and rotate clockwise. Tighten manually until mechanical stop is reached.