

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.

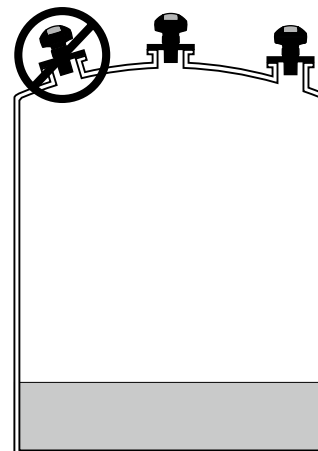
LB520 has built-in sound intelligence that has been proven through countless on-site practices of Echo processing technology®, combining new echo processing features with the latest microprocessors and communication technologies. There are two communication options: HART or PROFIBUS PA (Type 3.0, Class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

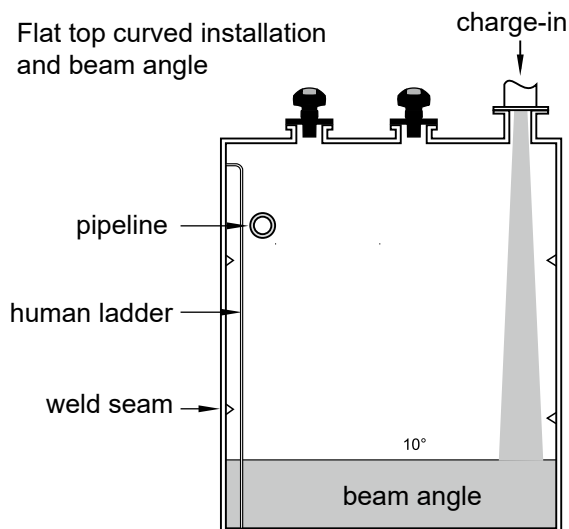
- Main applications: chemical storage tanks, filter tanks, liquid storage tanks

Installation diagram

Curved top installation



Flat top curved installation and beam angle



Technical specifications

Operation mode

Measuring principle Ultrasonic liquid level measurement

Typical applications Measuring liquid level of storage tanks and simple process vessels

Input

Measuring range

• 6 m type	0.25 ~ 6m
• 12 m type	0.25 ~ 12m
Frequency	54 KHz

Output

mA/HART

• range	4 ~ 20 mA
• accuracy	± 0.02 mA

PROFIBUS PA profile 3. class B.

Performance

Resolution ratio	≤ 3 mm
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
• PROFIBUS type	≤ 4s, 15 mA current circuit
Temperature compensation	Built-in
Beam angle	10°

Rated operating conditions

Environment condition

• Location	indoors / outdoors
• Environment temperature	-40 ~ 80 °C
• Relative humidity/inlet protection suitable	outdoor
• Installation class	I
• Pollution class	4

Medium conditions

• Temperature at flange or threads	-40 ~ 85 °C
• Pressure (vessel)	0.5 bar

Designing

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 ½ NPT thread
Sensor material	ETFE or PVDF

Process connection

Thread connection	2" NPT, 2" BSPT, 2" G 3"
Flange connection	universal flange
Other connections	User provided installation kit

Display and control

Interface	Local: LCD with bar graph Remote: via HART or Profibus PA
Configuring	a HART manual operator
Memory	EEPROM can maintain information during power outages no need for backup batteries

Power supply

4 ~ 20 mA/HART	Rated 24 V DC, maximum 550 Ω load; Maximum 30 V DC 4~20 mA
PROFIBUS PA	12, 13, 15, or 20 mA, depending on configuration (General purpose or intrinsically safe) Complying with standard IEC 61158-2

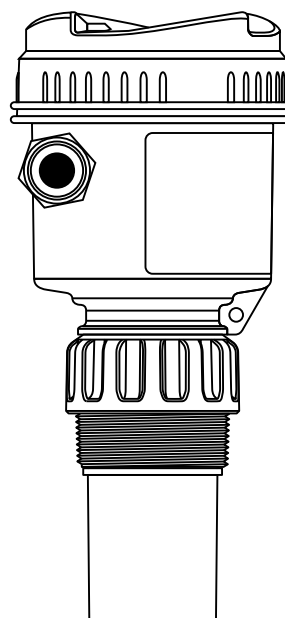
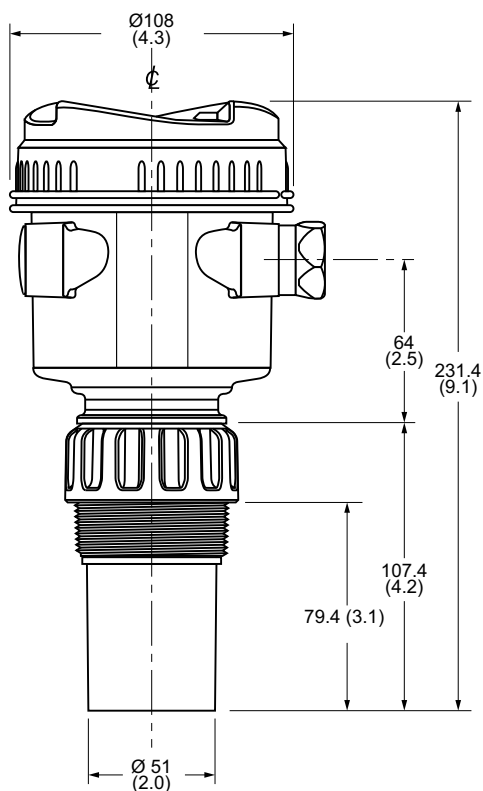
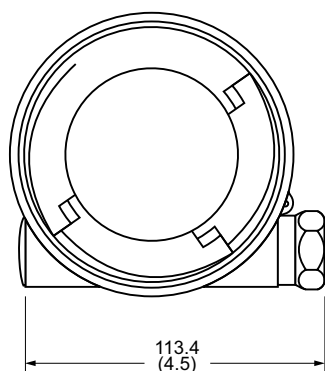
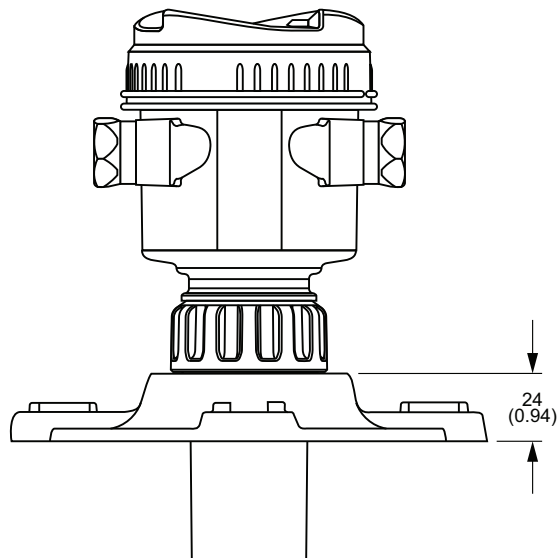
Certification

Universal type	CE
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Optional parts

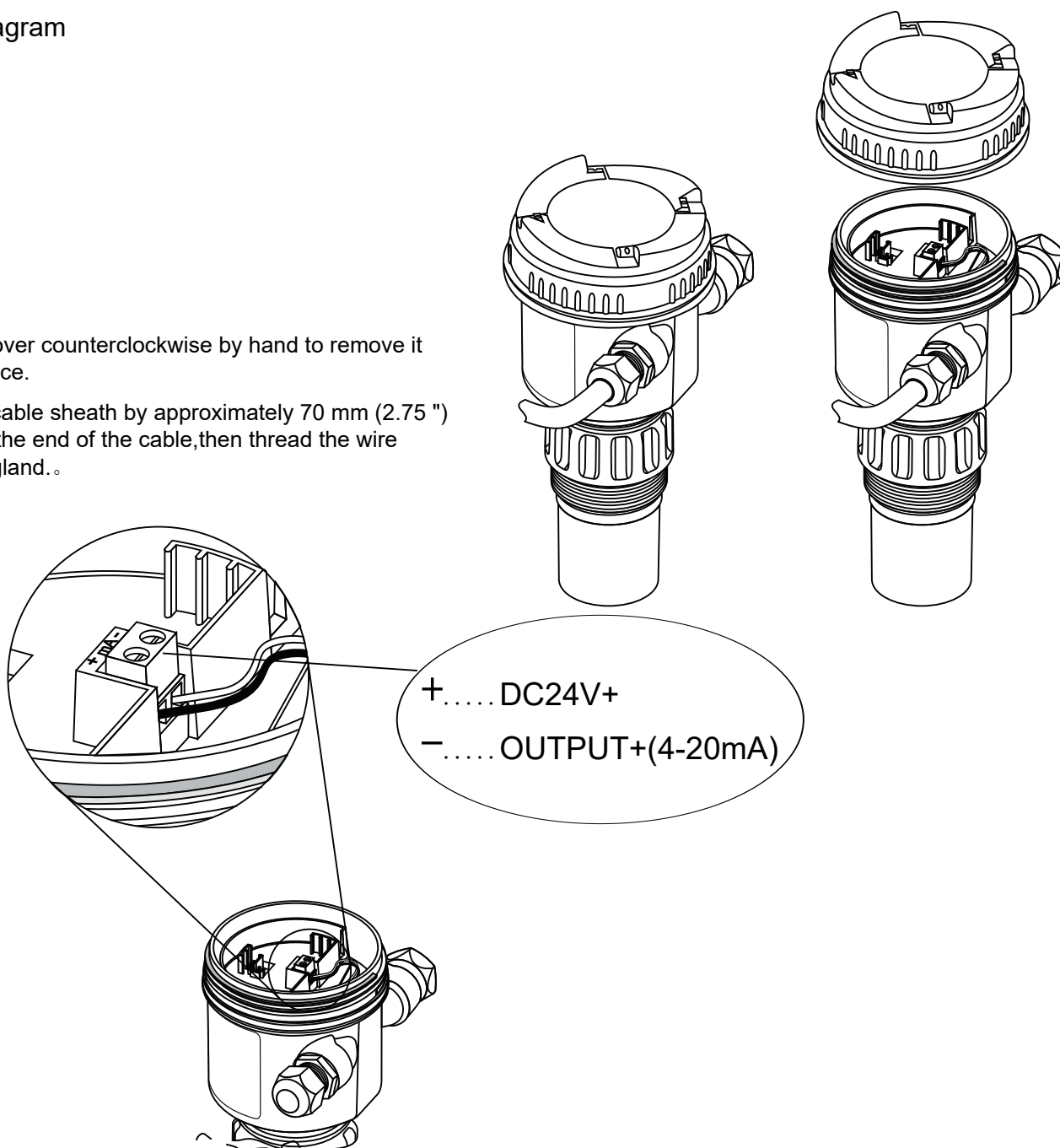
Optional flange adapter

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 displayer cable into the 4-pin plug. View the demonstration to install a new display screen.
6. Set the optional displayer 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.