

LSU100 SERIES

ULTRASONIC LEVEL TRANSMITTER

FEATURES

- ◎ Non-contact, maintenance-free measurement
- ◎ Measurement unaffected by media properties, like dc value or density
- ◎ Calibration without filling or discharging
- ◎ Unbeatable price performance
- ◎ Intelligent regulator
- ◎ 8-Bit Micro-Controller form Atmel-Stable and reliable



INTRODUCTION

The LSU100 series Ultrasonic Level transmitter is a non-contact, highly reliable, and cost-effective solution for material level measurement. Designed for easy installation and minimal maintenance, it effectively meets a wide range of level measurement needs without making contact with the medium. This versatility allows the LSU series to accurately measure the height of various liquid and solid materials, making it ideal for a diverse array of applications across different industries.

APPLICATIONS

- ◎ Widely used in all kinds of liquid and solid height measurement
- ◎ Hygienic type with high requirements for the sites

Type	Compact type	Remote type
Range	5m、10m、15m、20m、30m、40m、50m、60m	5m、10m、15m、20m、30m、40m、50m、60m、70m
Accuracy	0.25%-0.5%	0.25%-0.5%
Resolution	3mm or 0.1%	3mm or 0.1%
Display	English and Chinese LED	English and Chinese LED
Analog output	Four-wire 4 ~20mA/510 Ω load Two-wire 4~20mA/250 Ω load	4~20mA/510 Ω load

Relay output	Two groups: AC 250V/ 8A or DC 30V/5A, Status programmable	Two groups for single channel Four groups for double channels AC 250V/ 8A or DC 30V/ 5A, Status programmable
Power supply	Standard:24VDC, Optional:220V AC+15%50 Hz	Standard:220V AC+15% 50Hz Optional:24VDC 120mA or Customize:12VDC or battery
Environment temperature	LED: -20 ~ +60 °C , Probe: 20 ~ +80°C	LED: -20 ~ +60°C , Probe: 20 ~ +80°C
Communication	Option: RS485,232 Communication (manufactures agreement)	Option: RS485,232 Communication (manufactures agreement)
Ingress protection	LED: IP65, Probe: IP68	LED: IP65, Probe: IP68
Cable probe	No	standars:10m longest:100m
Probe installation	According to the range and the probe type	According to the range and the probe type

TYPE OVERVIEW

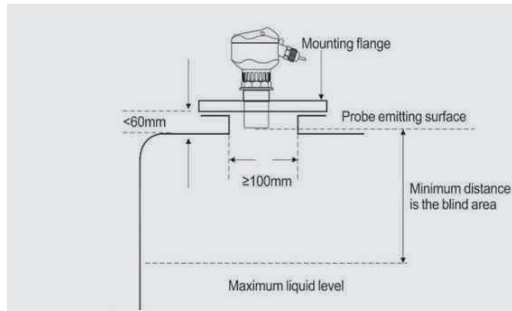


Compact type



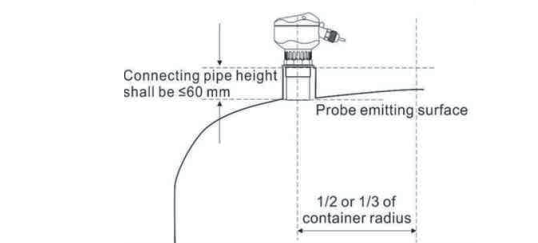
Remote type

INSTALLATION



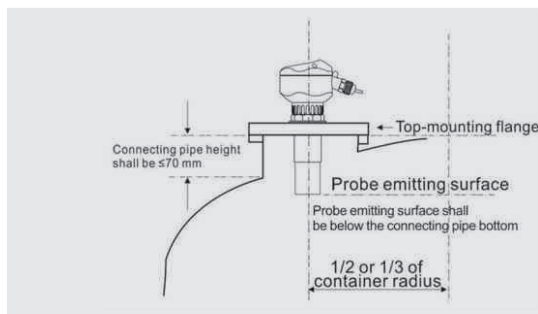
Flat Tank Installation Guidelines

A reference surface exists on the connected tube beneath the flange. The tube should have a length of ≤ 60 mm and an inner diameter of ≥ 100 mm. The inner wall must be smooth (free of burrs or protrusions). After installation, the probe's emitting surface should be positioned 3 cm below the underside of the flange for accurate measurement.



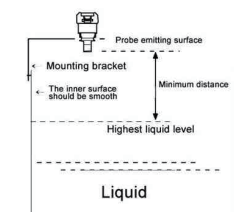
Arched Tank Installation Guidelines

Do not install the probe at the center of the tank's top. Instead, position it at a point located $1/2$ to $2/3$ of the tank's radius from the center. This is because the arched top acts like a convex lens, installing the probe at the focal point can cause it to receive false echoes due to the concentration of ultrasonic pulses.

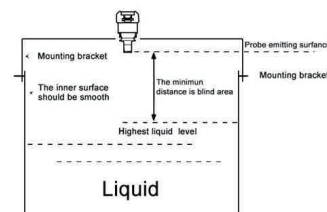


Installation on Nipple Joint – Arched Tank Top

For most arched tank tops, the combined length of the connected tube and flange is typically between 150–180 mm. However, the standard thread length of the probe is shorter. (Our company can provide customized probes to ensure the emitting surface extends below the end of the connected tube.) In such cases, it's important to verify the ratio of the tube's diameter to its length to ensure proper installation and reliable measurement.



Bracket mounting—installed on the side of the open container

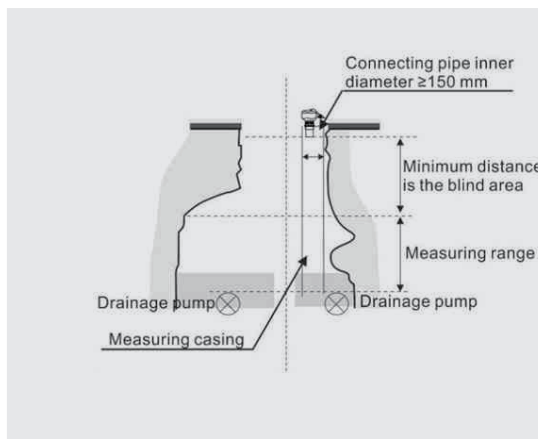


Bracket mounting—installed on the center of the open container

Opening container

If the container wall is flat, refer to the table below for the required distance between the sensor and the container wall:

Max. range	Distance
5m	0.5m
10m	1m
15m	1.5m
20m	2m
30m	3m
40m	4m
50m	6m
60m	7m
70m	8m



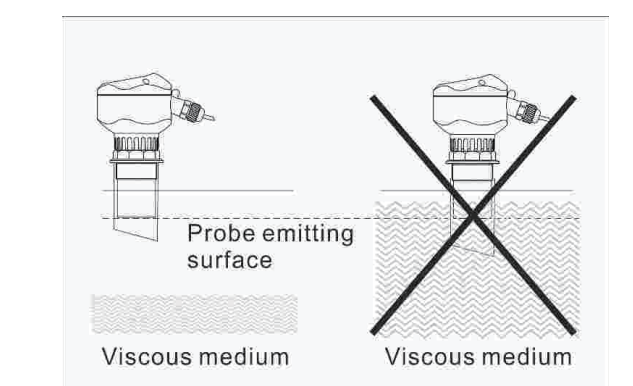
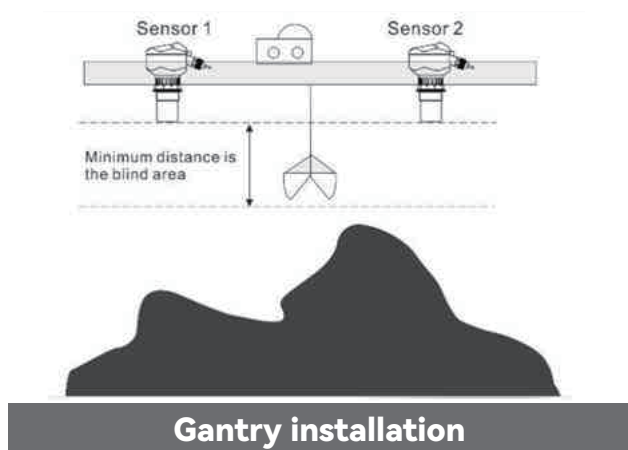
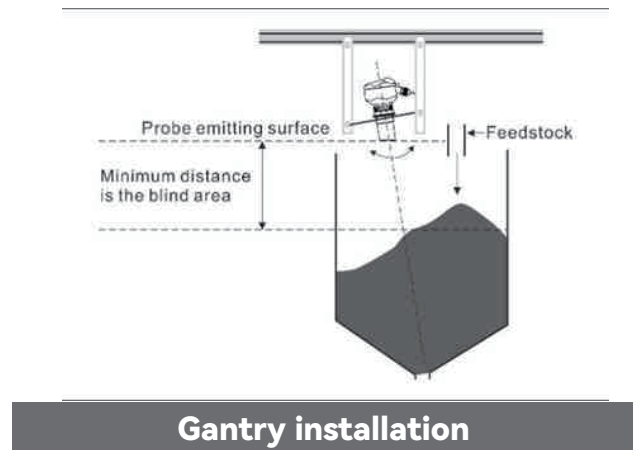
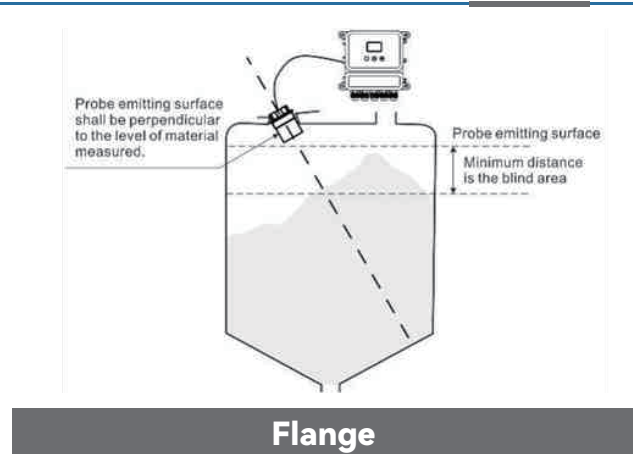
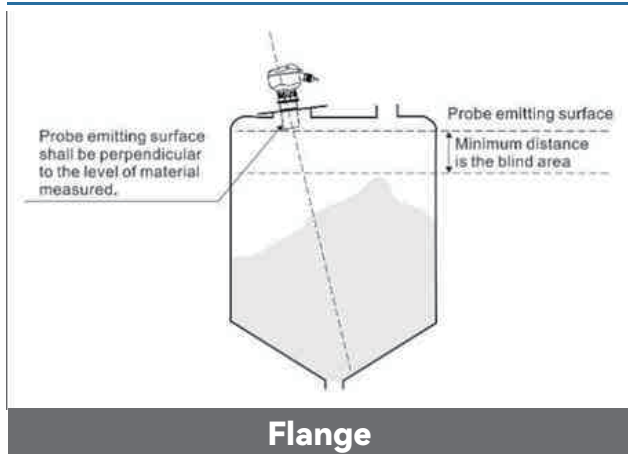
Draining Wells and Standard Wells

Wells and wellheads are typically narrow, and their inner walls are often uneven. This issue can be addressed by installing a section of connected tube or a full bushing.

Note: Installing the sensor inside a connected tube will increase the blind zone by approximately 50–100%.

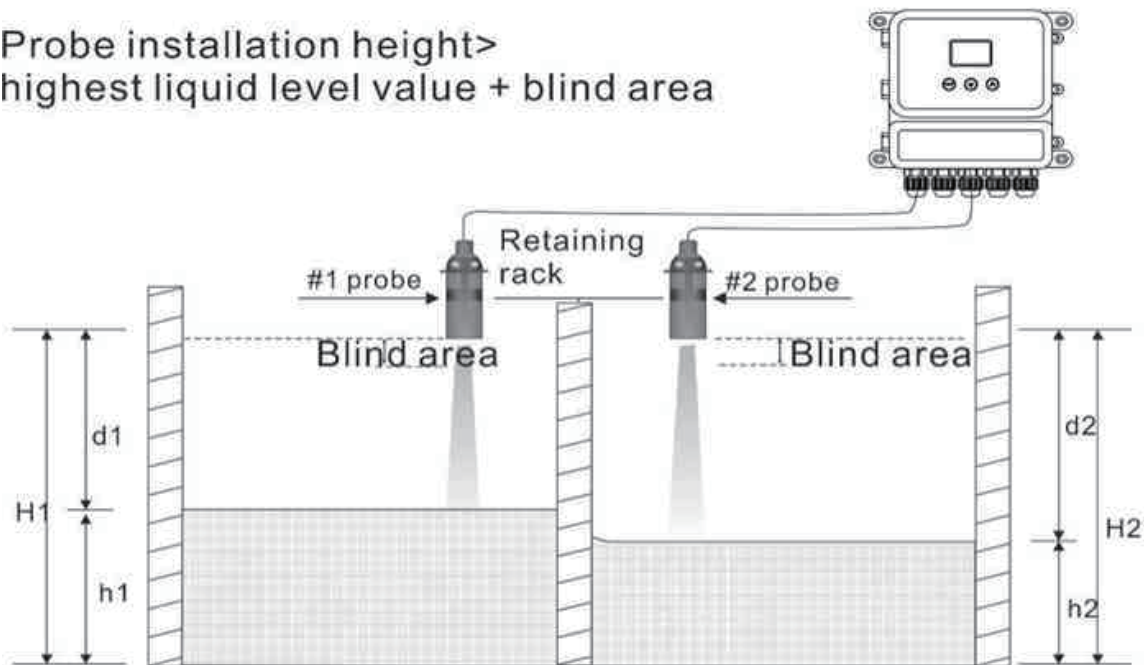
Standard Wells (Including Water and Deep Wells) typically have limited diameters, so using a measurement bushing can help achieve optimal results. The inner wall of the bushing must be smooth—materials like PVC or PE pipes are suitable. For a measurement range of 10 meters, the inner diameter should be at least 150 mm, and for a 20-meter range, at least 200 mm.

SOLID MEASUREMENT



Wave -guide pipe cannot be soaked in the viscous medium

Probe installation height > highest liquid level value + blind area

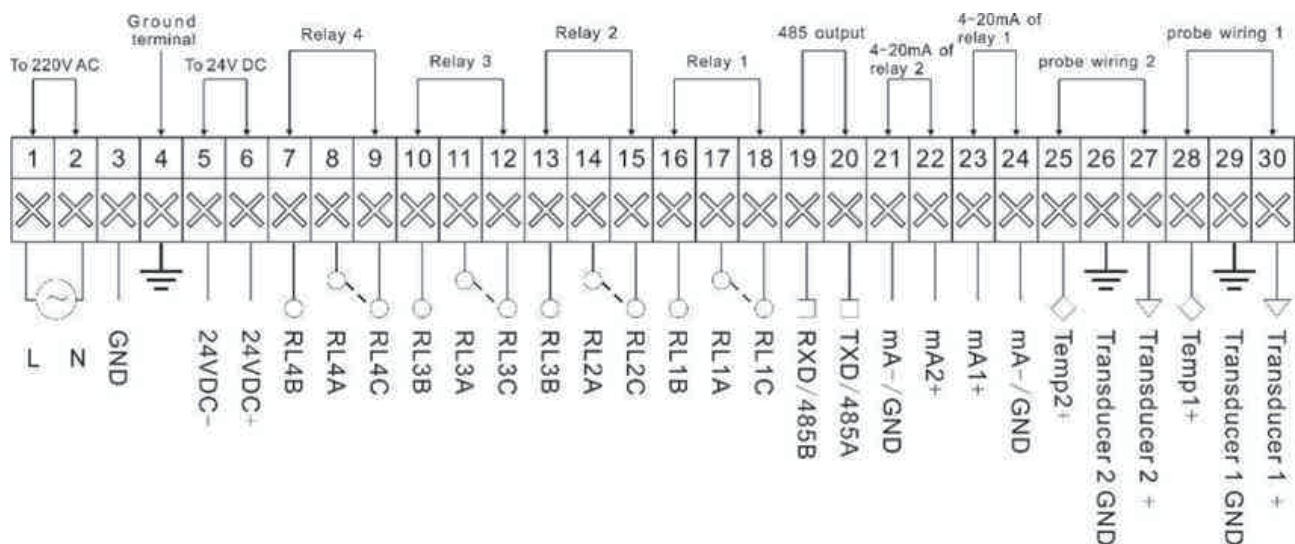


Symbols in figure:
H1: reference zero value 1
d1: distance value 1
h1: level value 1 $h1 = H1 - d1$

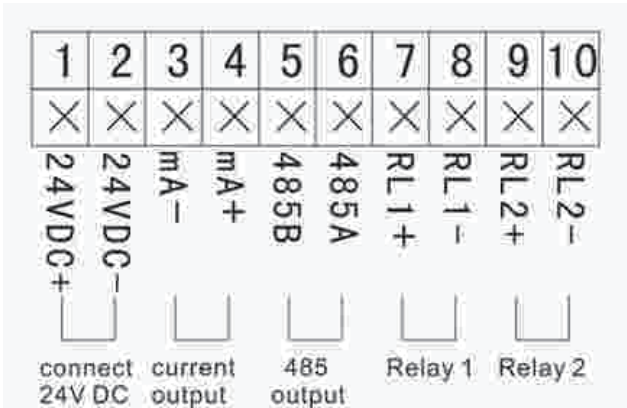
Level difference
value 1 $= h1 = h2$

Symbols in figure:
H2: reference zero value 2
d2: distance value 2
h2: level value 2 $h2 = H2 - d2$

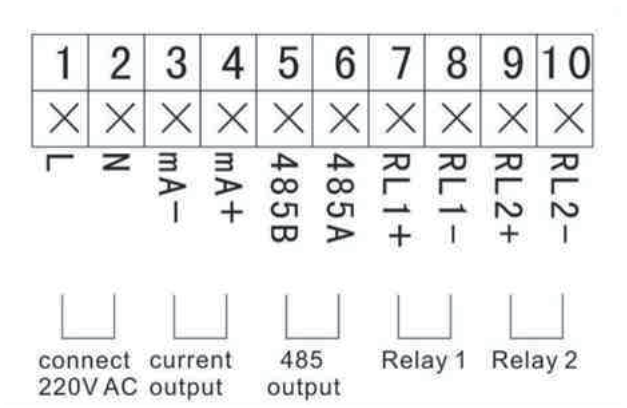
WIRING



Remote type



24V DC (Four Wire)

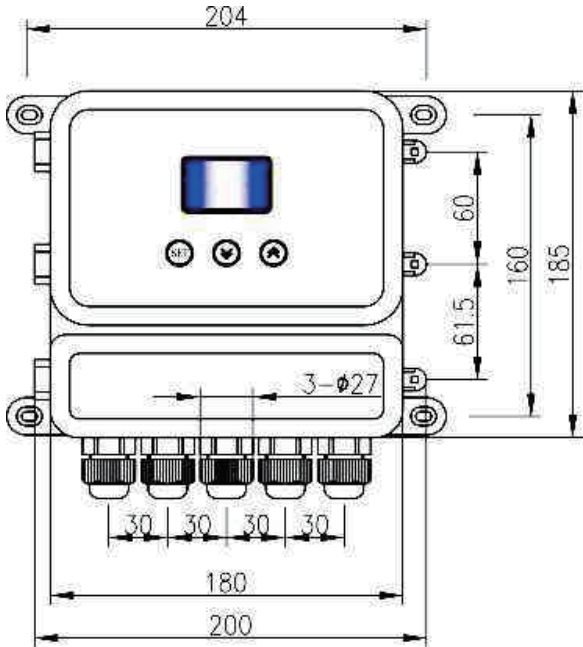


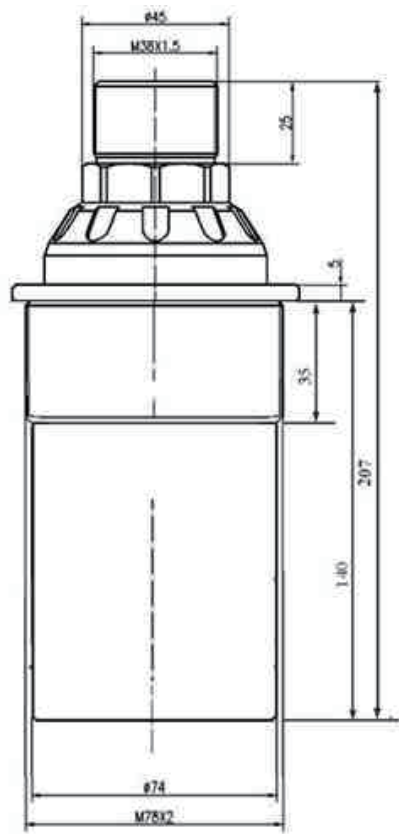
24V DC (Two Wire)

Compact type

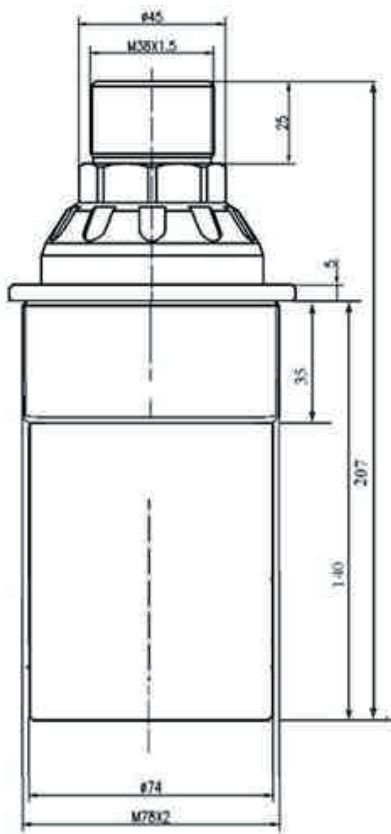
DIMENSION

Remote type

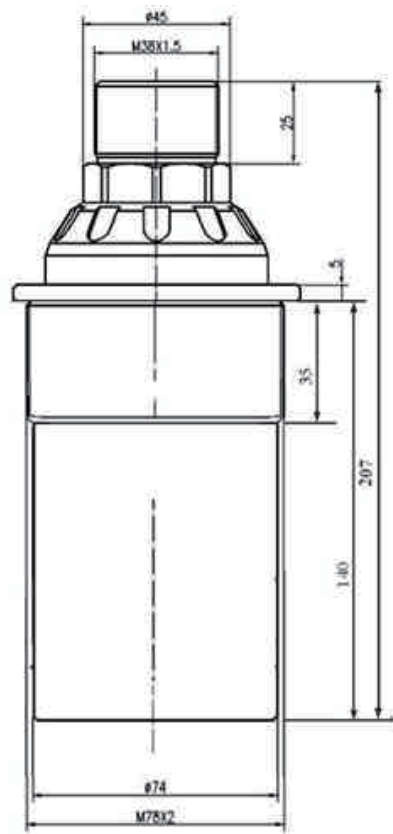




0.8m - 20m

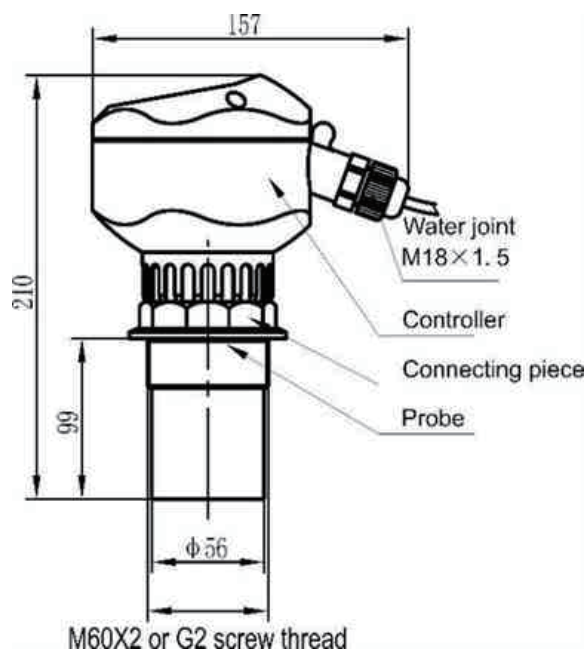
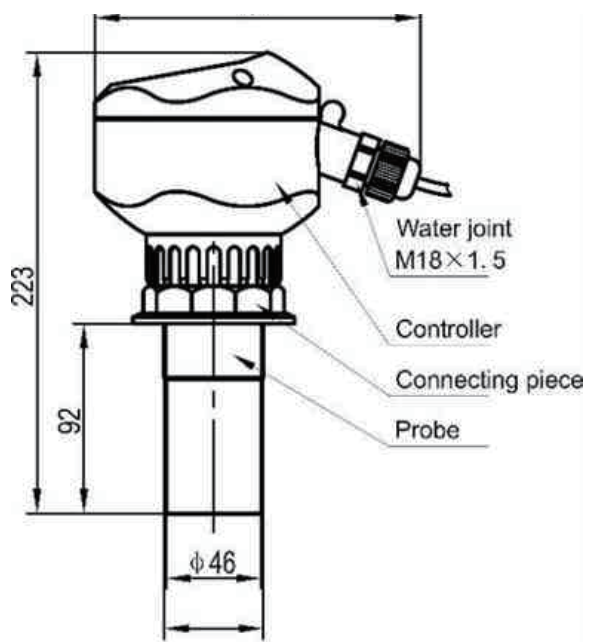


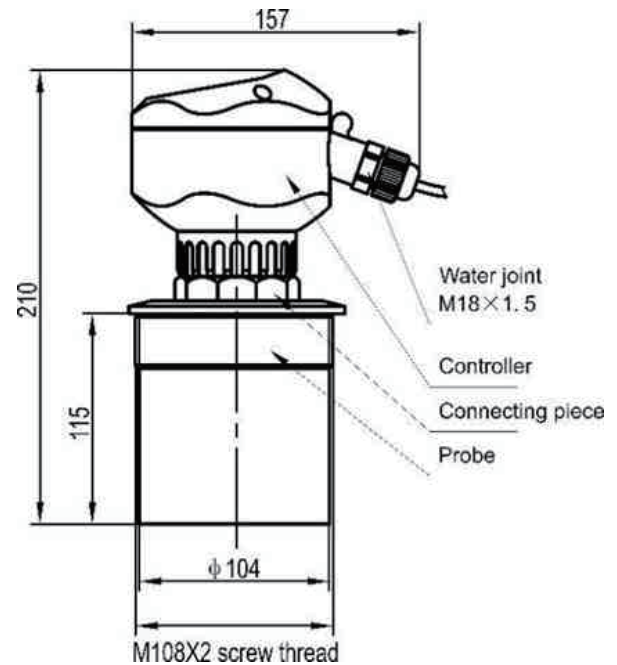
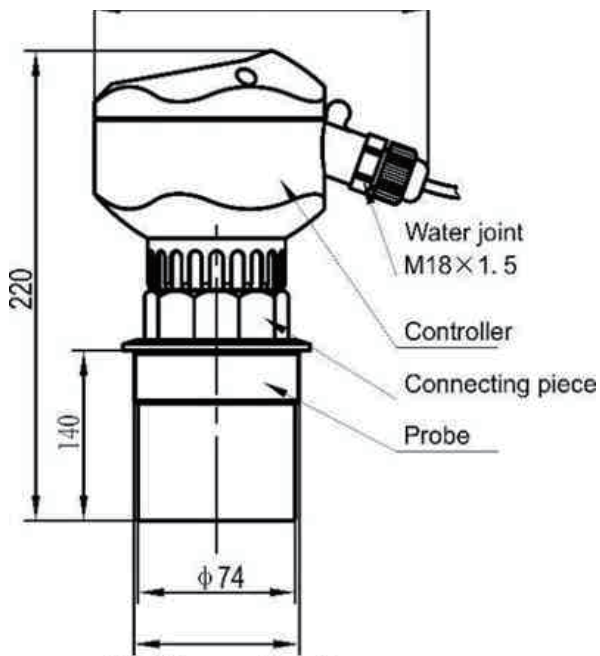
0.5m - 10m



0.4m-5m

Compact type





ORDER FORMAT

LSU100 - 10MACC2002

Range	Code
0-5 meters	5M
0-10 meters	10M
0-15meters	15M
...	...

Power supply	Code
24VDC	DC
220VAC	AC

Code	Output signal
C2	4~20mA 2 wires
C4	4~20mA 4 wires

Code	Electrical connection
0	No alarm
2	2 alarms
4	4 alarms

Code	Communication
00	No communication
R2	RS232
R4	RS485

Example:

LSU100-10MACC2002, LSU100 series, measuring range 0~10 meters, power supply 220VAC, output signal 4~20mA 2 wires, no communication, 2 alarms output.