Ultrasonic Level Meter

The ultrasonic level meter uses the time difference between the emission and reception of sound waves, as well as the speed of sound wave propagation, to calculate the liquid level height.

Ultrasonic level meter adopts non-contact measurement technology. It can be reliably applied to continuous liquid level measurement in various open tanks and ponds. Such as sewage, wastewater, tank pond and water measurement.

【Features】:

➢ 5m, 10m, 15m, 20m ranges available;   Supports customization of larger ranges.
➢ CE and explosion-proof certified, high explosion-proof level (Ex d IIC T6 Gb).
➢ With temperature compensation, high accuracy and adaptability.
➢ With RS-485 communication interface.
➢ Special echo processing method to avoid false echoes.
➢ IP66/IP67 protection level of the whole machine.
➢ PVDF material probe is suitable for corrosive liquid and environment.
➢ High cost performance and low maintenance cost.

In order to adapt to different working conditions, ultrasonic level meters are divided into the following two specific application models.

Standard ultrasonic level meter.
Explosion-proof ultrasonic level meter.
Split type ultrasonic level meter.

Ultrasonic level meter is dedicated to continuous liquid level measurement. The transducer (probe) of the ultrasonic level meter emits high frequency ultrasonic pulses. When it encounters the measured liquid level surface, the sound wave is reflected back. Part of the reflected echo is received by the transducer (probe) and converted into an electrical signal.

Standard Ultrasonic Level Meter

Standard Ultrasonic Level Meter is suitable for continuous level measurement of various tanks and pools in non-flammable and explosive gas environment. It is suitable for installation in large pools, tanks, drains, storage tanks, tanks, etc.

It adopts contactless measurement method, which is efficient and accurate, easy to install and maintain. It is widely used in various occasions such as sewage treatment, chemical industry, thermal power plants, ships, etc. for continuous level measurement.

The instrument is safe, clean, high precision, long life, stable and reliable, easy to install and maintain, etc. It is suitable for various fields such as acid, alkali, salt, anti-corrosion and high temperature.

It can be connected to display meters, PLC and various DCS systems via 4~20mA to provide real-time liquid level data for the automation operation of industry.

The instrument circuit is made of high quality power components from the power supply part, and imported highly stable and reliable devices are selected. It can completely replace the same type of instrument.

The software of acoustic intelligence technology can perform intelligent echo analysis. No need for any debugging and other special steps. This technology has the function of dynamic thinking and dynamic analysis. Make the accuracy of the meter greatly improved. The accuracy of liquid level reaches ±0.25%. Capable of resisting various interference waves.

Non-contact instrument, no direct contact with the liquid, so the failure rate is low.

The instrument provides a variety of installation methods, and the user can completely calibrate the instrument through this manual.

All input and output lines of the instrument are protected against lightning and short circuit.

【Typical Applications】:

➢ Level measurement in various open tanks and ponds, such as sewage and waste water tanks and ponds Water level measurement in reservoirs, rivers, lakes and other water conservancy hydrology.
➢ Level measurement in corrosive applications, such as biochemical reaction ponds, sedimentation ponds, etc.
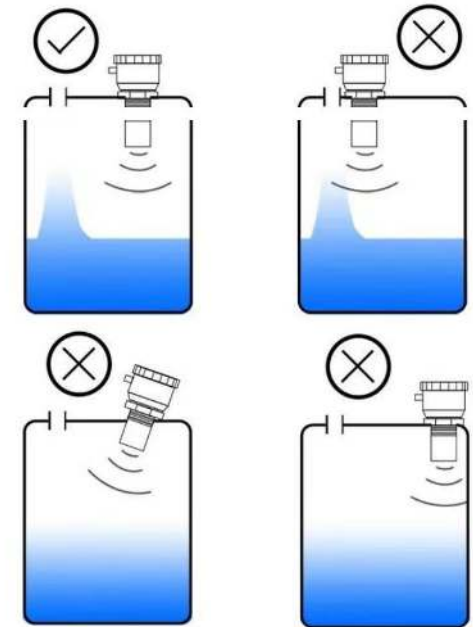
【Technical parameters】:

Measuring range	5m 10m, 15m
Transducer material	General: ABS
	Anti-corrosion: PVDF
Blind Area	≤0.3m (5m/10m)
	≤0.6m (15m)
Resolution	0.5% of the set range of earth
Beam angle	6°(5m range)
	8°(10m range)
	10°(15m range)
Error	≤1%
Display	LCD display
Input Rated Voltage	85~264VAC50/60Hz
	18~30VDC
Output Type	2-wire system 4~20mA
	4-wire system 4~20mA
	Optional: RS-185/relay output
Relay contact capacity	4A 250V AC/30V DC
Ambient temperature	-20~60℃
Process temperature	-20~80℃
Process pressure	Atmospheric pressure
Cable Interface	M20×1.5
Process connection	Thread
	Flange
Protection class	IP65/IP66/IP67
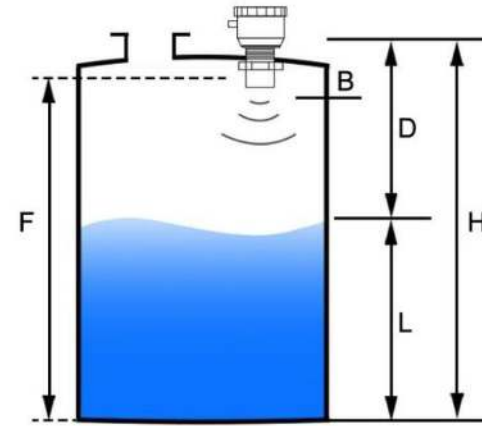
B:Blind Area   D:Empty Distance   L:Level   H:Mounting Height   F:Level Fullness
L:H-D

➤ The reference plane for measurement is the lower edge of the sensor
➤ The upper limit of the level must not enter the measurement blind zone
➤ When measuring the material level, the inlet must be avoided.
➤ When installed outdoors, it is best to protect it from long-term rain.

Explosion-Proof Ultrasonic Level Meter

【Features】:

➢ Safety / Die-cast aluminum alloy waterproof and explosion-proof casing; the explosion-proof grade of the instrument reaches Ex d IIC T6 Gb.

➢ Stable and reliable/We choose high-quality modules from the power supply part in circuit design, and select high-stable and reliable devices for the procurement of key components, which can completely replace foreign imported instruments.

➢ The patented technology/ultrasonic intelligent technology software can carry out intelligent echo analysis without any debugging and other special steps. This technology has the functions of dynamic thinking and dynamic analysis.

➢ High precision / The patented technology of sonic intelligence owned by our company greatly improves the precision of the ultrasonic level gauge, the bath level precision reaches 0.3%, and it can resist various interference waves.

➢ Low failure rate, easy installation, and easy maintenance/This instrument is a non-contact instrument that does not directly contact the liquid, so the failure rate is low. The instrument provides a variety of installation methods, and the user can completely calibrate the instrument through this manual

➢ The protection level of various protection/instruments reaches IP65;

➢ All input and output lines have lightning protection and short circuit protection functions.

The explosion-proof ultrasonic level meter is designed with an explosion-proof housing and certified by the National Explosion-Proof Certification Center, with an explosion-proof rating of Ex d IIC T6 Gb.

The difference with the standard ultrasonic level meter is that it can be applied not only to general working conditions, but also to working conditions containing explosive environments.

【Technical parameters】:

Measuring range	5m, 10m, 15m, 20m
Transducer material	General: ABS
	Anti-corrosion: PVDF
Blind Area	≤0.3m(5m/10m)
	≤0.6m(15m)
Resolution	±0.5% of the set range
Beam angle	6°(5m range), 8°(10m range), 10°(15m range)
Error	≤1%
Display	LCD display
Pushbutton	Three buttons
Input Rated Voltage	85～240V AC 50/60Hz
	18～30V DC
Output Form	2-wire 4～20mA
	4-wire 4～20mA
	Optional: RS-485/relay output
Relay contact capacity	4A 250V AC/30V DC
Ambient temperature	-20～60℃
Process temperature	-20～80℃
Process pressure	Atmospheric pressure
Cable interface	M20×1.5
Housing Material	Aluminum alloy
Process connections	Thread
	Flange
Protection class	IP65/IP66/IP67
Explosion protection class	Ex d IIC T6 Gb

【Typical Applications】:

➢ It is suitable for level measurement in open tank pools containing explosive gases.

➢ Suitable for corrosive occasions where explosive gases are present. Such as urban drainage pumping stations, water collection wells, biochemical reaction ponds, sedimentation ponds, etc.

Split Type Ultrasonic Level Meter

Split type ultrasonic level meter is an intelligent non-contact level measurement instrument.

The product has automatic power adjustment, gain control and temperature compensation.

Advanced detection technology and calculation technology are adopted. Improve the measurement accuracy of the instrument. There is a suppression function for interference echo to ensure the true measurement results.

The product can be widely used in the measurement of liquid level and solid level of various liquids, and can also be used for distance measurement.

【Features】:

➢ Adopt SMD technology to improve instrument reliability.
➢ Automatic power adjustment, gain control, temperature compensation.
➢ Advanced monitoring technology, rich software functions to adapt to various complex environments.
➢ Adopt new waveform calculation technology to improve the measurement accuracy of the instrument.
➢ With interference echo look-up function to ensure the truthfulness of measurement data.
➢ 16-bit D/A conversion to improve the precision and resolution of current output.
➢ The sensor is made of tetrafluoroethylene material, which can be used in various corrosive situations.
➢ Output form: programmable relay output, high precision 4-20mA current output, RS-485 digital communication output.
➢ Equipped with a barshall flume or cofferdam to measure the flow of open channels.
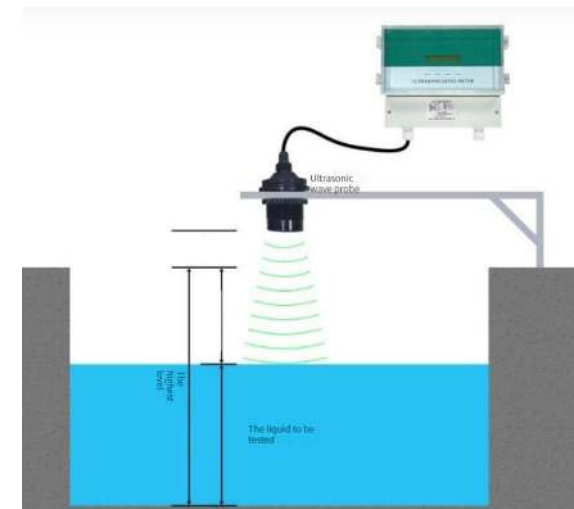
【Technical parameters】:

Measurement range	Liquid: 0~15m/20m/30m/40m Solid: 0~6m/10m /15m /25m
Blind Area	0~15m：0.6m；0~20m：0.8m；0~30m：1.2m；0~40m：1.5m
Accuracy (in air)	0.2% of the measuring range
Current Output	4~20mA
Output Resolution	0.03% of the actual range
Output Load	0~500Ω
Switching Output	High and low relays normally open
Relay Specifications	AC250V 5A/DC30V
Display Resolution	1 cm
Display Method	4-digit LCD (character height 15cm) or 6-digit LED digital tube
Input Power	DC24V (±10%) 80mA or AC220V 50mA
Temperature compensation	Full range auto
Medium temperature	-45℃~+85℃
Pressure range	±0.1MPa
Acoustic beam angle	5°(3TL)
Detection period	1second
Parameter setting	3 position sense button
Cable device	PGl3.5 sealing sleeve
Housing material	ABS
Sensor material	PVC
Protection level	IP67
Installation method	Thread (flange) or fixing hole (bracket)
Installation requirements	Probe emitting surface should protrude from the vessel mounting port