Ultrasonic Level Meter

❖ Features

- Integrated design, easy to be installed.
- Protected from excessive voltage and current.
- Protected from thunder and lightning.
- Big LCD display and reading is easy to be read.
- By using clamp type wiring terminal, it ensures that wiring never loose.
- Smart signal processing technology, applicable to various operating condition.
- With plastic probe material, it becomes acid and alkali resistant, and adapt to bad environment.
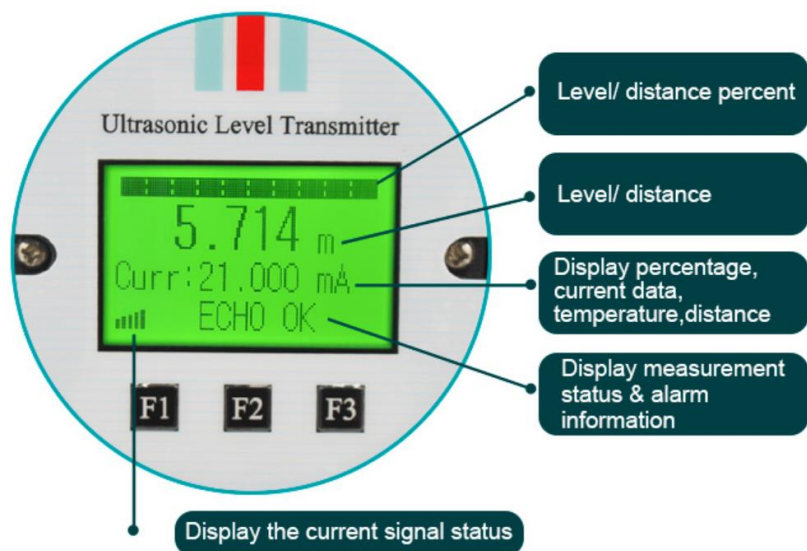
❖ Structure

Compact Type

Remote Type

Transmitter Display

Ultrasonic Level Transmitter

5.714 m
Curr:21.000 mA
ECHO OK

F1 F2 F3

Level/ distance percent

Level/ distance

Display percentage, current data, temperature,distance

Display measurement status & alarm information

Display the current signal status
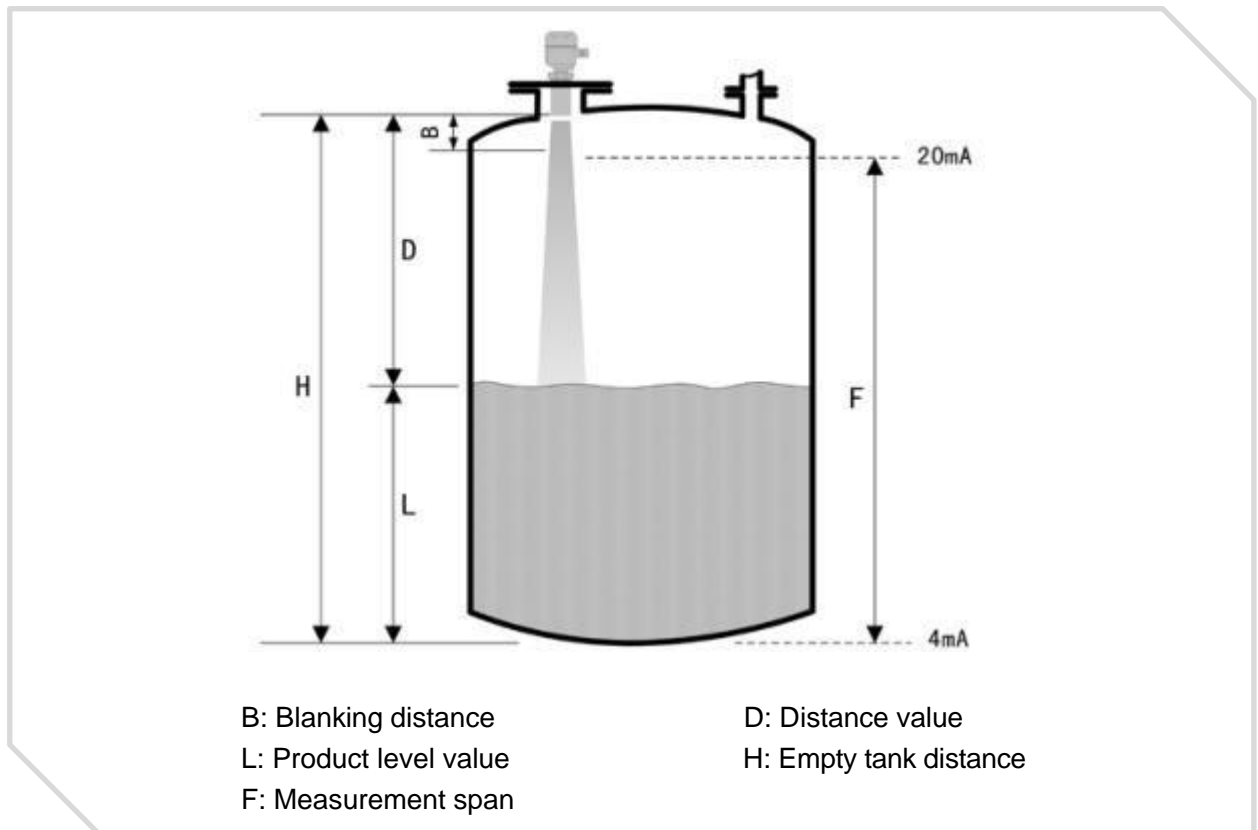
❖ Principle

The sensor transmits ultrasonic pulse waves to the direction of the product surface. Then, the ultrasonic waves will be reflected and received by the sensor. The smart signal processor will measure the transmission time (t) of pulse wave to transmit and receive by the sensor. The time (t) and the velocity of sound will then be used to calculate the travelling distance D between the sensor membrane and the product surface:

$D = c \cdot t/2$. As the device knows the empty distance H from a user entry, it can calculate the level as follows: $L = H - D$.

B: Blanking distance   D: Distance value
L: Product level value   H: Empty tank distance
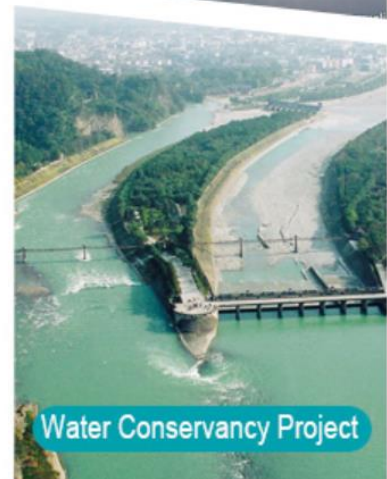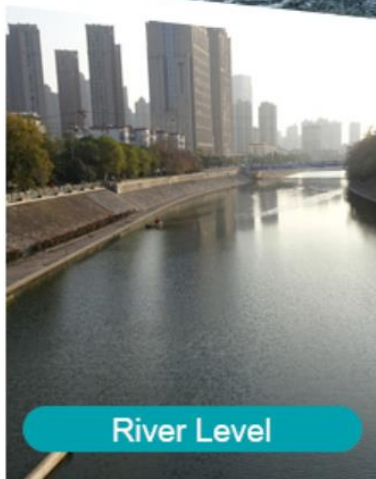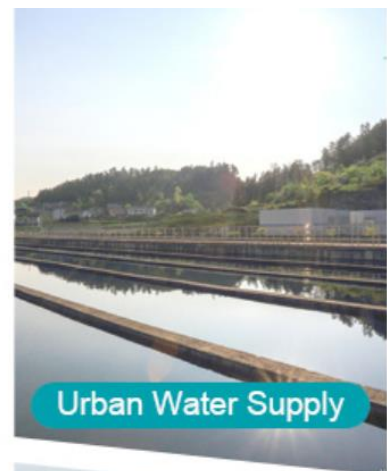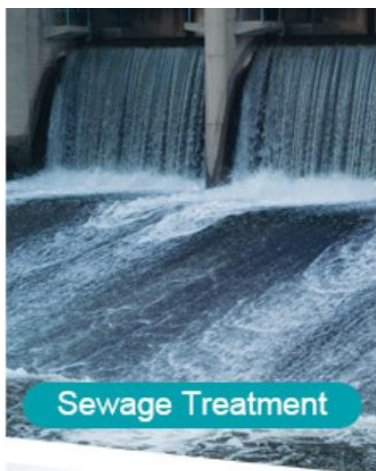F: Measurement span

The ultrasonic velocity in gas is interfered by changes of gas temperature. Hence, ultrasonic level meter will come with temperature sensor to measure gas temperature during level measurement, in order to compensate the interference.

Blanking distance: Span F cannot extend into the blanking distance B. Level echo from the blanking distance cannot be evaluated due to the transient characteristics of the sensor.

❖ Product Specification

Application	Liquid, slurry, solid & granule level measurement
Measurement Range	0.2 – 30.0 meter
Process Connection	G2" thread / M95*2.0
Transducer Housing	ABS / PVC / PTFE
Operating Temperature	-40~75 °C (LCD : -20~70°C)
Temperature Compensation	Automatic
Process Pressure	±0.1 MPa
Accuracy	0.2% of measurement range
Signal Output	4~20 mA (Option : RS485 Modbus)
Power Supply	20~32 Vdc
Display Resolution	1 mm
LCD Screen	4-digit big LCD display
Cable Entry	M20 / PG13.5
Cable Diameter	Ø 6~12 mm
Single Wire Diameter	Ø 0.5~1.78 mm
Beam Angle	8° (3 dB)
Measurement Cycle	1.5 second

Sewage Treatment

Paper Pulp

Urban Water Supply

River Level

Urban Sewage

Water Conservancy Project

❖ Model Selection

Measure Range
QTUL4   0-4m QTUL6   0-6m QTUL8   0-8m QTUL12   0-12m QTUL20   0-20m QTUL30   0-30m

Ex Class
P   Standard Type (None ex-proof) I   Intrinsically safe (Exia IIB T6 Ga)

Energy Transducer Material/Process Temperature/Protection Grade
A   ABS/ (-40-75)℃/ IP67 B   PVC/(-40-75)℃/ IP67 C PTFE/(-40-75)℃/IP67

Process Connection/Material
G   Thread D   Flange /PP

Electronic Unit
2   4~20mA/24V DC Two Wire 3   4 20mA/24V DC /HART Two Wire 4   4 20mA/24V DC /RS485 MODBUS

Shell / Protection Grade
L   Aluminum / IP67

Cable Entry
M   M20*1.5 N   1/2'' NPT

Programmer/Display
A   With Display