

Focus on the development of ultrasonic flowmeters



## Metal Color Screen

Ultrasonic Flowmeter

## Introduction



It is a wall-mount, clamp-on type ultrasonic flowmeter which uses the transfer time technology. Designed using FPGA chip and low-voltage broadband pulse transmission.

Both Clamp on type sensors and Insertion type sensors are available.

The ultrasonic flowmeter has a 320\*480 back lit Color TFT with 10 line menu display and also the clear, user-friendly menu selections make flow meter more simple and convenient to use.

Daily, monthly and yearly totalized flow.

Parallel operation of positive, negative and netflow totalizes with scale factor (span) and BTU Capacity. While the output of totalize pulse and frequency output are transmitted via relay and open collector.

The ultrasonic flowmeter could add the RTD model and temperature sensor become an energy meter to monitoring the energy use, help to save the energy.

The ultrasonic flowmeter is equipped with an all-metal casing, providing high protection. It has excellent conductivity and heat conductivity, and boasts outstanding durability and impact resistance.



## Application

The ultrasonic flowmeter widely application in HVAC, water treatment, irrigation.

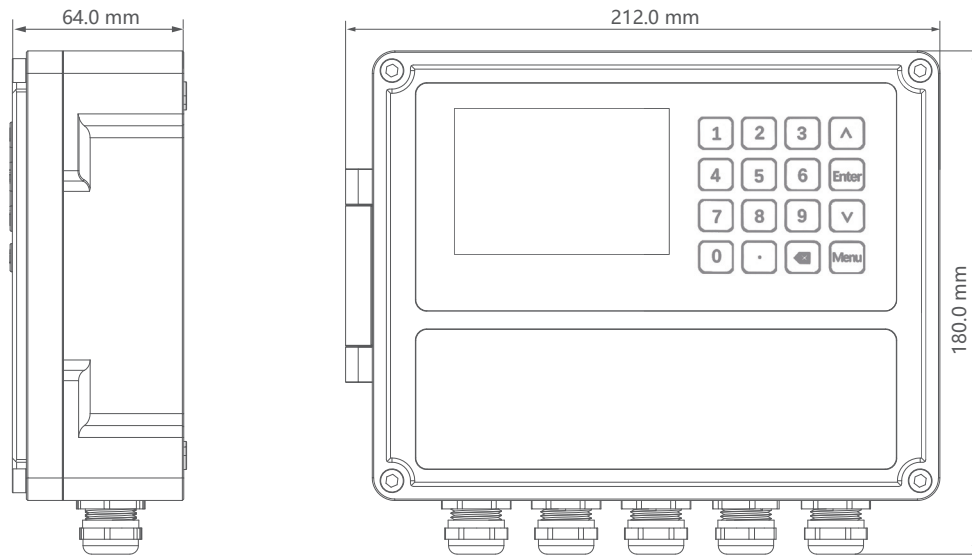


## Specification

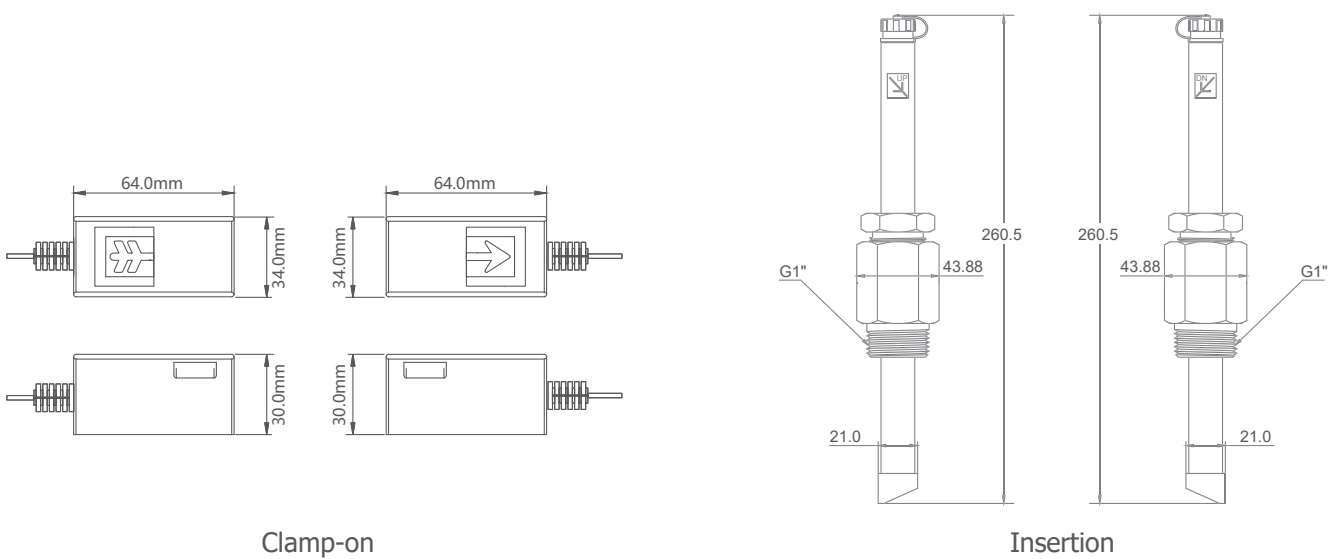
Performance	
Flow range	$\pm 0.03\text{m/s} \sim \pm 12\text{m/s}$
Accuracy	$\pm 1\%$ of measured value
Repeatability	0.2% of measured value
Linearity	$\pm 1\%$
Pipe size	DN15mm~DN1200mm
Function	
Outputs	Analog output: 4~20mA, max load 750Ω. Pulse ourput: 0~10KHz
Communication	RS232/RS485 Modbus
Power supply	10~36VDC/AC90~245V
Display	320*480 Color TFT screen display
Temperature	Transmitter: -40°F~140°F (-20°C~60°C) Transducer: -40°F~176°F (-40°C~80°C, TT01、TT02) Transducer: -40°F~266°F (-40°C~130°C, TT03、TT05) Transducer: -40°F~356°F (-40°C~180°C, TT02H) Transducer: 32°F~149°F (0°C~65°C, TT02S) Transducer: 32°F~239°F (0°C~115°C, TT03S) Transducer: -40°F~266°F (-40°C~130°C, Piping )
Humidity	Up to 99% RH, non-condensing
Physical	
Transmitter	Aluminum alloy, IP65
Transducer	Encapsulated design, IP68 Double-shielded transducer cable Standard/maximum cable length: 30ft/1000ft (9m/300m)

## Product size

### Transmitter size



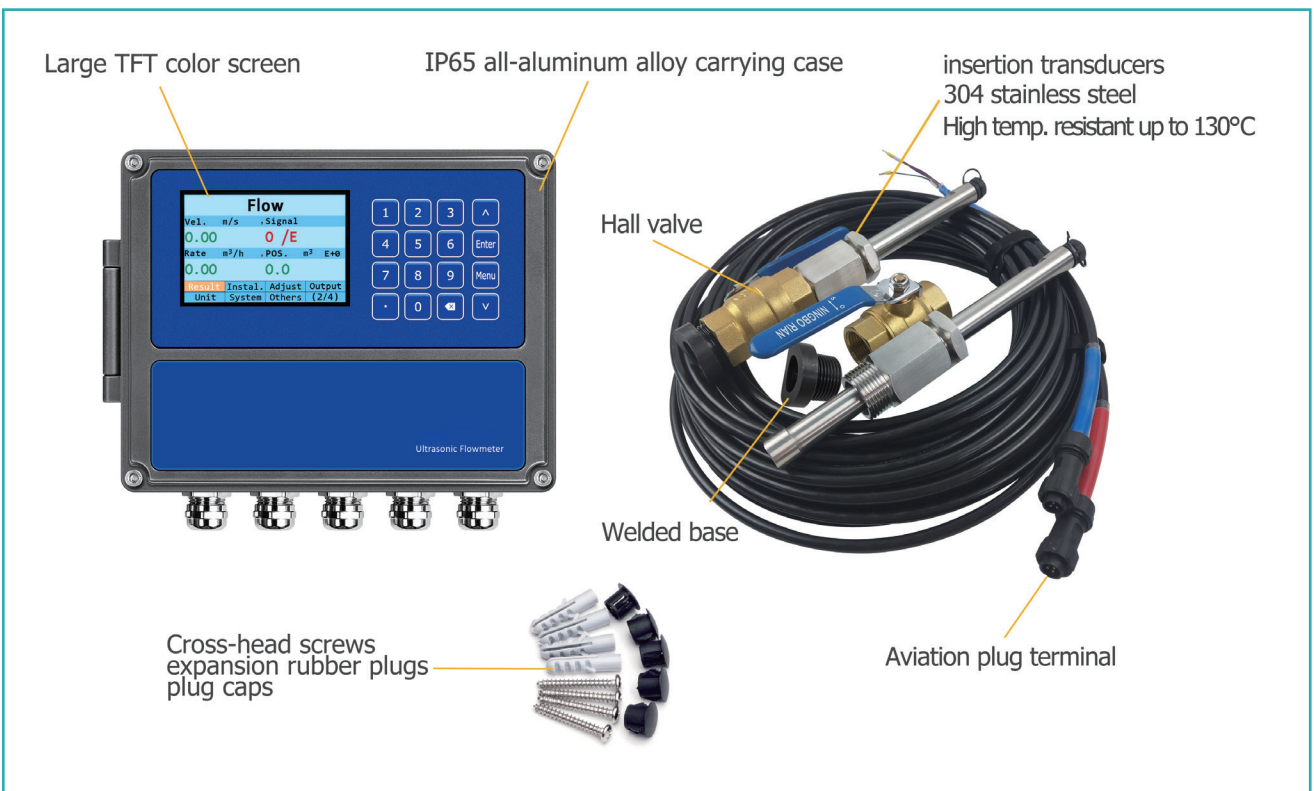
### Transducer size



## Configuration diagram



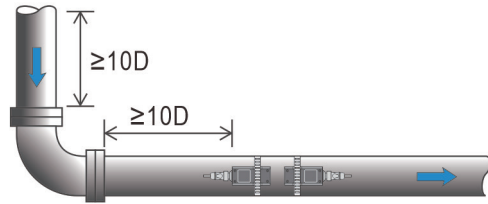
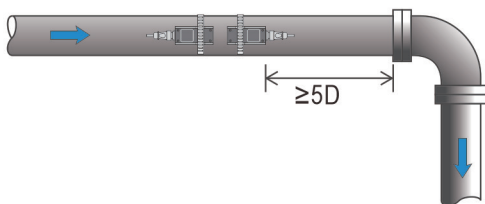
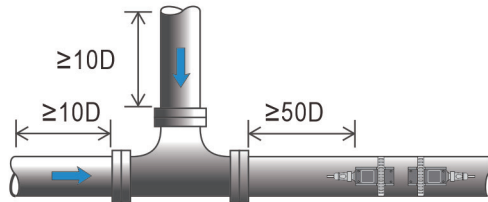
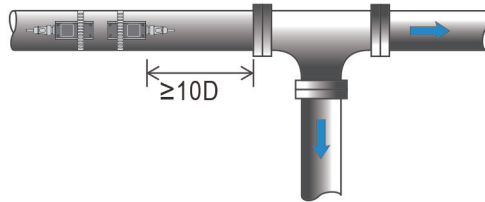
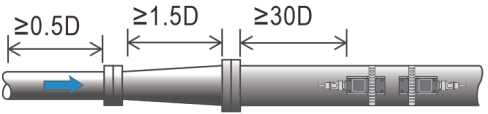
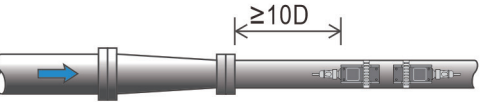
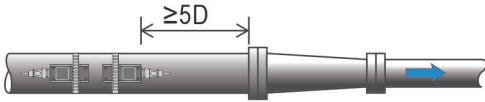
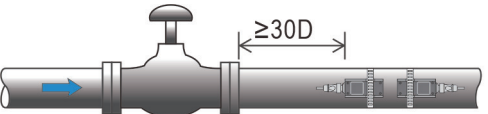
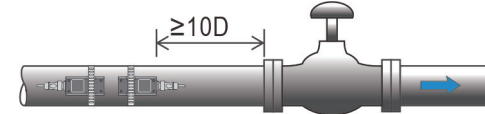
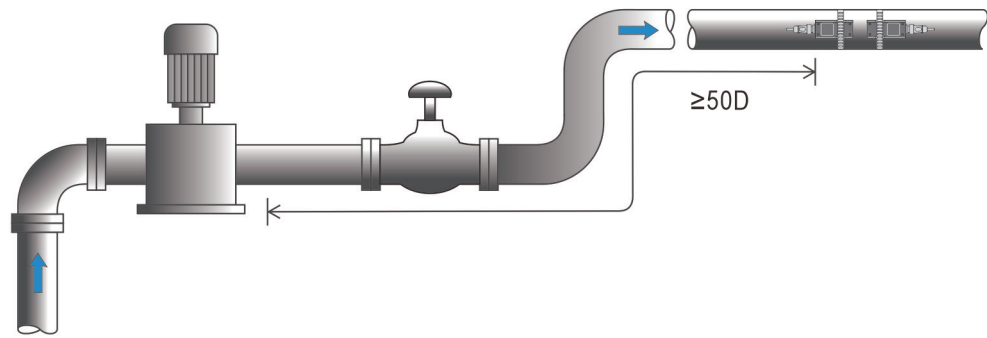
Standard configuration diagram of the clamp-on ultrasonic flow meter



Standard configuration diagram of the insertion ultrasonic flow meter

## Installation requirement

The first condition for using ultrasonic flowmeter is the pipe must be full of liquid. Bubbles in pipe will greatly influence the accuracy of the measurement. Please avoid the following installation position:

mounting point	straight pipe length before upstream transducer	straight pipe length after downstream transducer
90° bend		
Tee		
Expanding pipe		
Reducing pipe		
Valve		
Pump		

## Ordering confirmation

Model	Transmitter
	Flow range: $\pm 0.09\text{ft/s} \sim \pm 39\text{ft/s}$ ( $\pm 0.03\text{m/s} \sim \pm 12\text{m/s}$ ) Accuracy : $\pm 1\%$ of the measure value Repeatability: 0.2% of the measure value Display: 320*480 Color TFT screen display Power supply: DC10~36V/AC90~245V Transmitter: Aluminum alloy, IP65 Output: OCT pulse output 0-10KHz, Relay output, 4-20mA Communication: RS232/RS485, Modbus Protocol. (M-BUS or HART optional)
Code	Output
1	OCT, Relay, RS232/RS485, 4-20mA
2	OCT, Relay, RS232/RS485, 4-20mA, RTD (Cold and heat function)
Code	Transducer
TT01	Clamp-on. Material:engineering plastics or SUS304. $-40\sim+80^{\circ}\text{C}$ ,DN25~DN1200 pipes.
TT02	Clamp-on. Material:aluminium alloy. $-40\sim+80^{\circ}\text{C}$ , DN25~DN1200 pipes.
TT03	Clamp-on. Material:aluminium alloy. $-40\sim+130^{\circ}\text{C}$ , DN25~DN1200 pipes.
TT05	Insertion. Material:SUS304. $-40\sim+130^{\circ}\text{C}$ , DN80~DN1200 pipes.
TT02H	Clamp-on. Material:aluminium alloy. $-40\sim+180^{\circ}\text{C}$ , DN25~DN1200 pipes.
TT02S	Clamp-on. Material:aluminium alloy. $0\sim+65^{\circ}\text{C}$ , DN15~DN40 pipes.
TT03S	Clamp-on. Material:aluminium alloy. $0\sim+115^{\circ}\text{C}$ , DN15~DN40 pipes.
G	Piping. Material:CS or SUS304. $-40-130^{\circ}\text{C}$ , DN15-DN500 pipes.
XXX	Transducer cable length
030	Standard length 30ft (9m)
050	Signal cable length 49ft (15m)
080	Signal cable length 82ft (25m)
XXX	Max length to 1000ft (300m)
Code	Temperature sensor
PT1000	Clamp-on or Insertion type (selectable)
Code	Memory
SD	32G SD card module (selectable)

Standard configuration: Ultrasonic flowmeter- 1 - TT01 - 030

Description: Ultrasonic flowmeter transmitter with TT01 clamp-on transducers , OCT,Relay, RS485, and 4-20mA output ,30ft cable.

## Available flow transducers and pictures (DN25-DN1200mm)



Clamp-on : TT01  
(Operating temperature: -40°C ~ +80°C)



Clamp-on : TT02  
(Operating temperature: -40°C ~ +80°C)



Clamp-on : TT03  
(Operating temperature: -40°C ~ +130°C)



Clamp-on : TT02H  
(Operating temperature: -40°C ~ +180°C)



Insertion-type: TT05  
(Operating temperature: -40°C ~ +130°C)

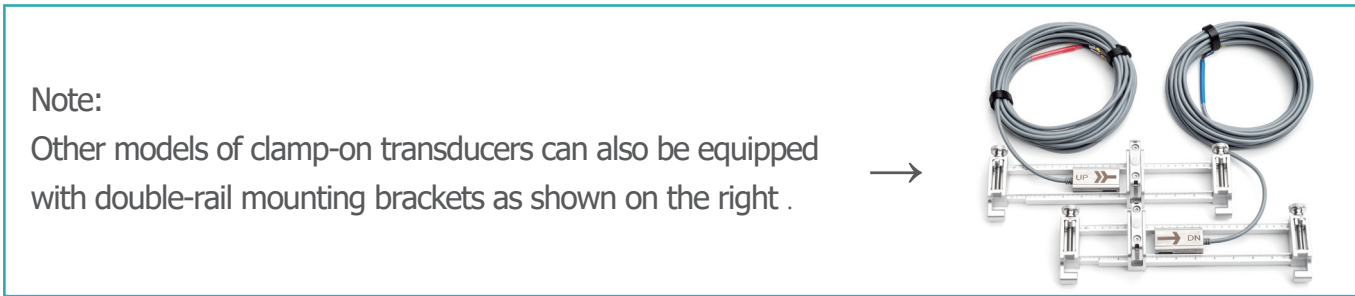


Pipe section: G  
(Operating temperature: -40°C ~ +130°C)

## Available flow transducers and pictures (DN15-DN40mm)



Clamp-on : TT02S (Operating temperature: 0°C ~ +65°C)  
 Clamp-on : TT03S (Operating temperature: 0°C ~ +115°C)



## Available temp. transducers and pictures

