

Ultrasonic Flowmeter

GTUM-100

Mounting on external pipe



- **Easy Setup:** Clamp-on; No pipe changes.
- **Simple Use:** No expertise needed; Manual-based.
- **No Downtime:** Zero pressure loss; Install while running.

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1. Introduction

Concentrates on the development of flow measurement technology.

The products serve real-time flow measurement and participation process control in the production process.

The main customers industries are:

chemical production process, fine chemical production, cleaning industry, beverage industry, etc.



Ultrasonic Flow Meter
With the world's most advanced time measurement chip (Time resolution up to 20ps)

The transducer can measurement the flow of liquid in plastic pipes quickly and reliably. The clamp-on transducer has no contact with the medium and is suitable for applications with hygienic standards, such as liquid flow monitoring in biopharmaceutical processes, medical equipment, and semiconductor equipment production.

The display content is comprehensive and intuitive
Date/Signal/Flowrate/Totalizer
Displayed on one screen
Poor ambient light
Easy to reading

The menu structure allows the operator to operate easily through four buttons for parameter setting and modification.
(No need to remember menu number)

2. Application

GTUM-100_Ultrasonic flowmeter can be used in many industries, the meter used in the cleaning equipment industry, it is easy to install and operate, as well as stable measurement, and many industries are mainly used at semiconductors, food, medicine, beverages, detergents, printing and dyeing, chemicals, etc.

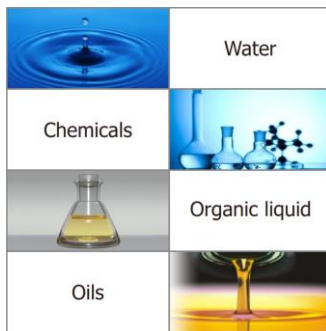




Many applications, many kinds of liquids, different viscosities.
 With the field test method, the customer can always find a measurement solution, which makes the application more and more widespread.

3. Applicable fluid

Product measurement medium requirements: single medium, no bubbles, no impurities.
 Main applications: tap water, pure water, ultrapure water, metering and control, due to the continuous promotion of the application industry, for all kinds of acids, alkalis, organic liquids, chemical solvents, alcohol, beverage water, etc.



User feedback on measured media:

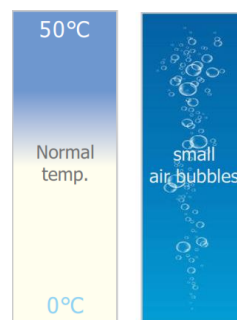
- dilute sulfuric acid
- White wine
- Hydrocarbon
- Alcohol
- Sodium chlorate
- Sodium carbonate
- Triethyl amyl alcohol
- Ethylenediamine
- Propylene oxide, etc.

As the market expands, we will also find that more and more media will be measured, and we hope that users will share more applications so that we can continue to enrich our products and improve them.

Determination of the measurable medium:

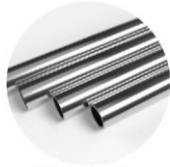
- Medium flow rate in the pipeline is stable
- Pressure is maintained at 0.3 Mpa
- No air bubbles (or cavitation) due to flow.

There are many other media that have been measured, so please feel free to inquire.

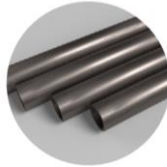


Measurable Pipe Materials

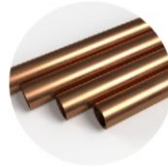
- **Steel pipe**



Stainless steel pipe



Carbon steel pipe

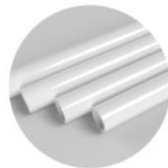


Copper pipe

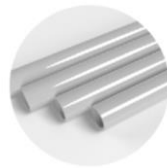
- **Plastic pipe**



PVDF



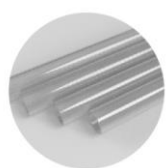
PVC/CPVC



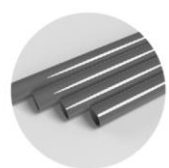
PPR



PPH



PFA/PU



HDPE

* For more measurable materials, please contact us.

4. Flow range

Due to different materials and standards, the outer diameter of the pipe varies greatly.

We have considered these factors in the design, and the structure can be compatible with the maximum outer diameter and the minimum outer diameter.

When ordering, please pay attention to the "minimum outer diameter" and "maximum outer diameter" on the on-site pipe diameter.

Size	Model	GTUM-100-6		GTUM-100-8	
	Unit	-6		-8	
Pipe O.D.	mm	≤5~7		≤7~9	
Flow range	ml/min	0~300:	±8 ml/min	0~400:	±10 ml/min
		300~6,500:	±2.0%	400~9,200:	±2.0%

Size	Model	GTUM-100-10		GTUM-100-12	
	Unit	-10		-12	
Pipe O.D.	mm	≤9~11		≤11~13	
Flow range	ml/min	0~600:	±12 ml/min	0~1,100:	±25 ml/min
		600~13,800:	±2.0%	1,100~20,000:	±2.0%

*The measurable flow range is (0.1m/s~5.0m/s), and the accuracy flow range is (0.3m/s~5.0m/s).

5. Specifications

Product	Clamp On Micro Ultrasonic Flow Meter
Accuracy	±2.0% (at 0.3m/s to 5.0m/s)
Flow range	0.1m/s~5.0m/s
Linearity	±2.0% (at 0.3m/s to 5.0m/s)
Repeatability	0.8%
Response	50ms
Display screen	2.4" 320*240 IPS LCD can 360 spins (easy to read)
Language	English
Display unit	Metric and English units are available, m ³ /h, ml/min, GPM, LPH Default unit setting: m ³ /h
Display data	Flow rate, Flow velocity, net totalizer, single totalizer, Daily max, Daily min, day-month-year totalizer
Number of displays	Display 7 digits
Data storage	10 years, 64 months, 64 days
Keypad	4 touch key
Calendar battery	CR1220
Power supply	24VDC@3W
Analog output	4 ~ 20mA, Maximum load: 600Ω
Communication	RS485, support Modbus RTU protocol
Alarm output	OCT, Upper and lower limit alarm function
Relay output	30VDC@1A, switching frequency less than 2Hz
Medium	Water, Chemical solvents etc (Inclusions less 4%)
IP Grade	IP65
Installation	Clamp-on split type, clamp-on design. Just tighten the screws by hand
Pipe range	Ø9~ Ø12
Housing material	Aluminum alloy
Medium temp.	-10°C~60°C
Environment temp.	-10°C~50°C
Environment humidity	0~95% relative humidity, without condensation
Viscosity	<300CST (mm ² /s)
Cable length	Standard length: 2m (Max. 20m.)

6. Composition



Measuring unit

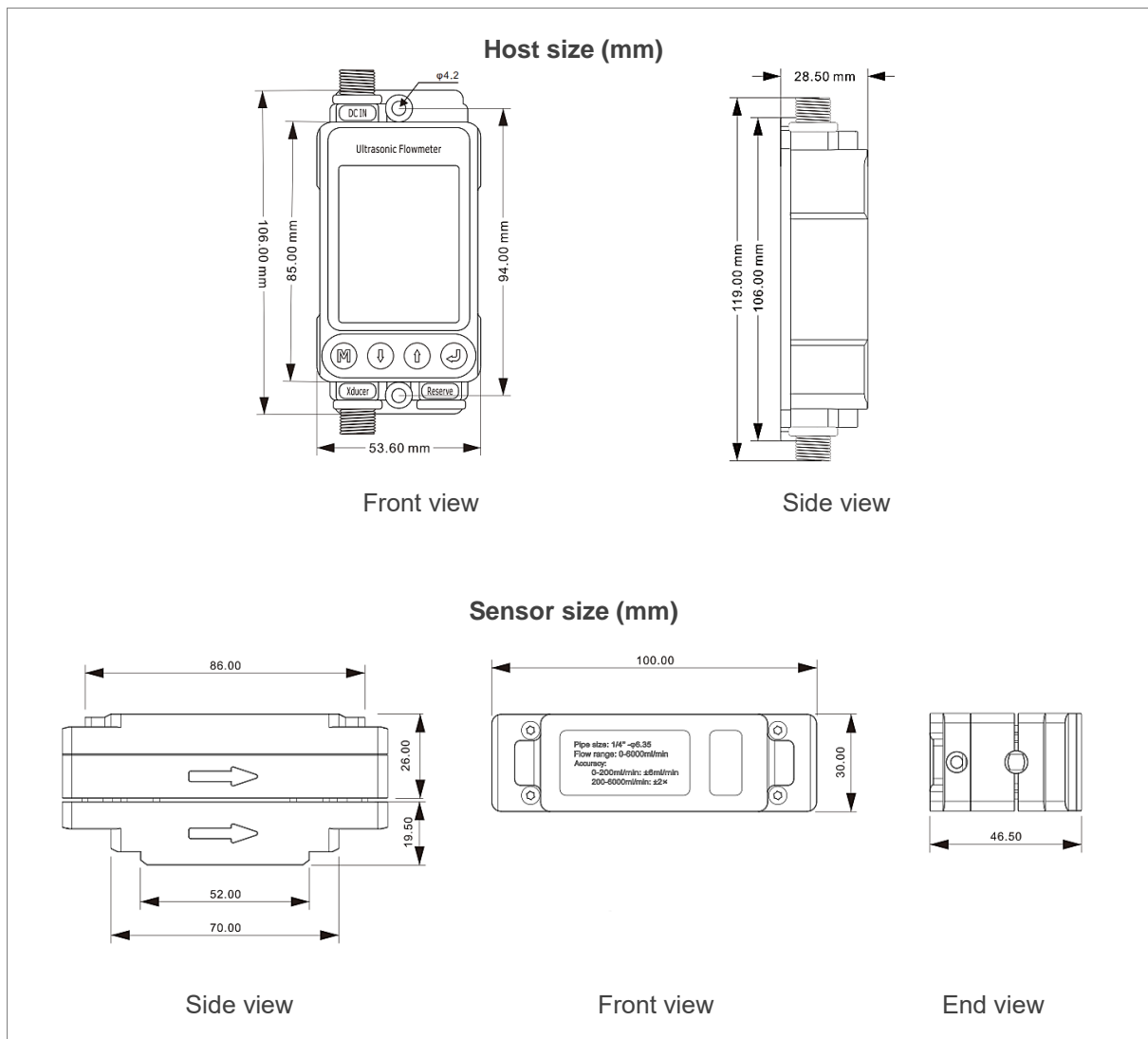


Sensor



Signal Cable

7. Dimension/ Model code



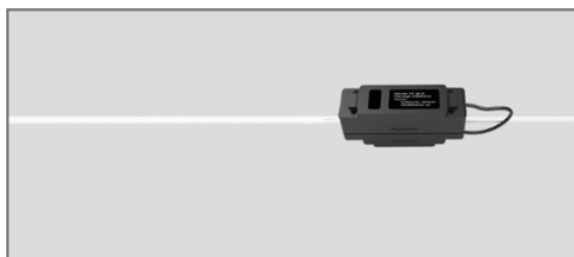
*Remark: Different size, external dimensions are same.

8. Installation



1. Clean the tube

Make sure no dirt, paint, or other stains on the surface of the tube.



2. Installing a sensor

Clip the upper and down rack of the sensor on to the pipe and tighten the screws.



3. Connect the Unit and the transducer

Connect the transducer to the unit.
One end of the cable is connected to the unit.



Power-on operation

Take out the cable, connect it to the socket, and tighten up.
Please refer to the manual for cable connection;
Power on and see if the $SQ \geq 50$ which indicates that the measurement has been stable.

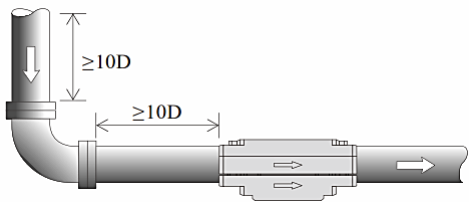
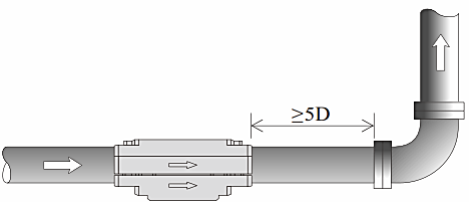
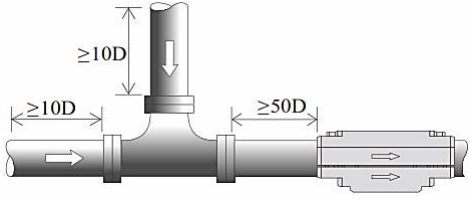
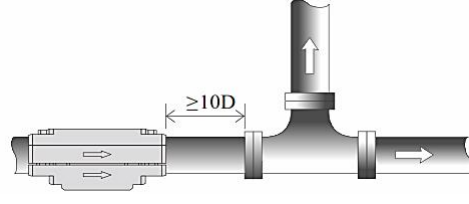
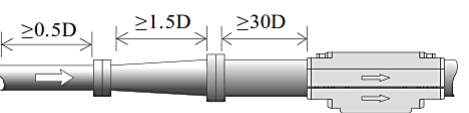
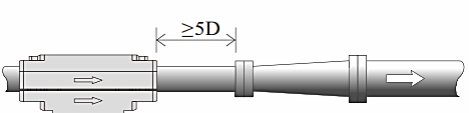
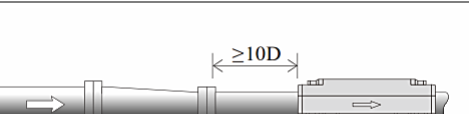
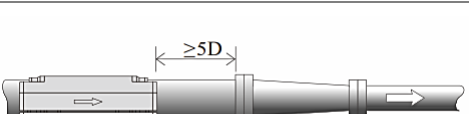
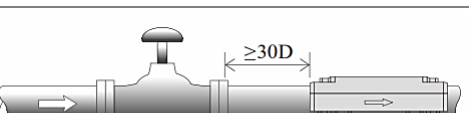
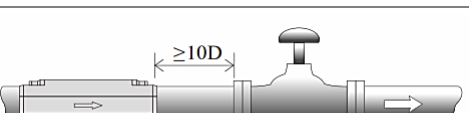
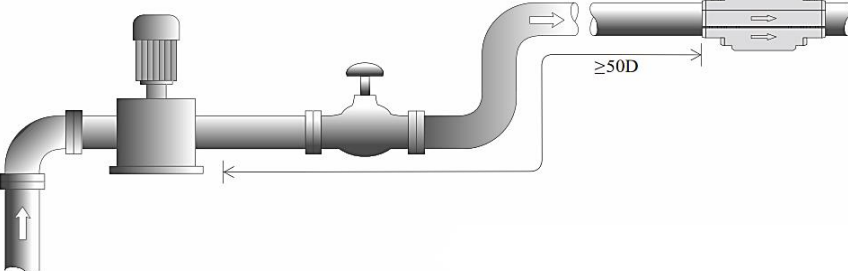
8. Pipe design and installation

When selecting a measurement site, it is important to select an area where the fluid flow profile is fully developed to guarantee highly accurate measurement. Please follow these guidelines for selecting a proper measurement installation site:

Choose a section of pipe which is always full of liquid, such as a vertical pipe with flow in the upward direction or a full horizontal pipe.

Make sure that the pipe surface temperature at the measuring point is within the transducer temperature limits. Consider the inside condition of the pipe carefully. If possible, select a section of pipe where the inside is free of excessive corrosion or scaling.

Examples acceptable measurement site selection are shown in the figure below.

Site	Installation point front straight section	Straight pipe section after installation point
Elbow		
Tee		
Expanded pipes		
Reducing pipe		
Valve		
Pump		

Note: D is the outer diameter of the pipe

10. Setting parameter

The products are calibrated in standard piping with the water before leaving the factory, all product achieves the Nominal accuracy ($\pm 2.0\%$ accuracy).

There may be differences between the site piping and the standard piping, media, etc., the first installation needs to confirm the data, the operation is as follows:

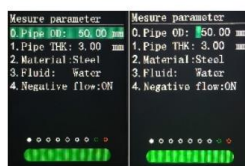
● Keypad

press **M** To switch between setting and display modes, when setting modes press **M** To return to the upper- level menu; **↑** and **↓** Up and down Scroll display interface, set the mode, press **↓** For moving to the next digit, press **↑** To select a number, loop from 0 to 9 in the end press **↩** notarize. **↩**

● Setup operation



Main screen press **M**, into setup menu.



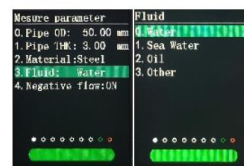
Press **↓**, into 0.pipe setting.
Press **↓**, into 0.outer diameter.
Press **↑** shift, press **↑** adjusted value ,
press **↓** confirm.



Press **M**, return to 0.Pipe Setting.
Press **↑** and **↓**, into 1.Wall thickness.
Press **↑** shift, press **↑** adjusted value ,
press **↓** confirm.



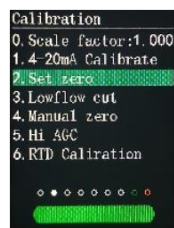
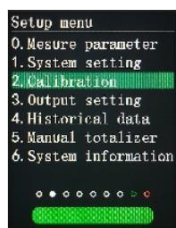
Press **M**, return to 0.Pipe Setting.
Press **↑** and **↓**, into 2.Material.
Press **↓** select , PVC\Steel\Copper... etc,
press **↓** confirm.



Press **M**, return to 0.Pipe Setting.
Press **↑** and **↓**, into 3.Fluid type.
Press **↓** select , Water, Oil... etc,
press **↓** confirm.

● Calibration zero

Note: If the valve cannot be closed on site, this operation may not be done.



The first installation of the new product requires a zero-point calibration operation, during which it is confirmed that the tube is filled with medium without bubbles, the valve is closed, and the medium is stationary. Main screen

press **M**, into Setup menu, select 2.Calibration, select 2.Set zero, Press 3 times **↩** Calibration zero, Ent To set zero → Press Ent To Go → Enter To Reset ,

The system automatically returns to the main screen.

Open the valve to measure the flow normally.

11. Ordering code

GTUM-100 Clamp On Micro Ultrasonic Flow Meter		
Model & Size	GTUM-100-6	Please select one.
	GTUM-100-8	
	GTUM-100-10	
	GTUM-100-12	
Meter type	DS	Diredct general version / 0~50°C
	SS	Serparate general version/ 0~60°C