Ultrasonic Flow Meter

Clamp On Type

Compact construction

Easy to install

2024

Introduction

We are development of flow measurement technology. The products serve real-time flow measurement and process control in the production process.

Customer groups include:
chemical production process, fine chemical production, cleaning industry, beverage industry, etc.

The time measurement chip
Accurate less than 10ps

The structure is equipped with strong magnets, which can assist the installation very well.

OLED display screen
Date/Signal/Flowrate/Totalizer
Displayed on one screen
Poor ambient light
Easy to reading

Menu Method (Picklist)
Touch key (easy setup)

Hightlight

- Clamp on type, No need to cut the pipe or changes pipe line.
- No need for training, installation and measurement can be done based on the guide.
- No moving parts or pressure changes involved, installation can be done without stop provide.

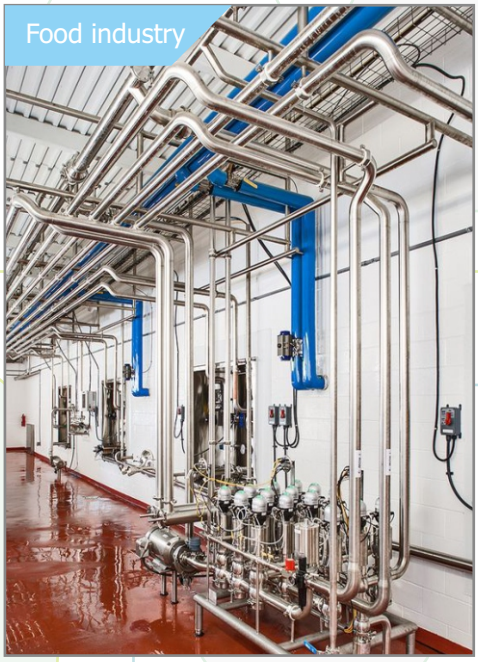
Application

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 used.

Including: semiconductors, food, medicine, beverages, detergents, printing and dyeing, chemicals, etc.

Semiconductor industry

Food industry



Cleaning industry

Pharmaceutical industry

Beverage industry

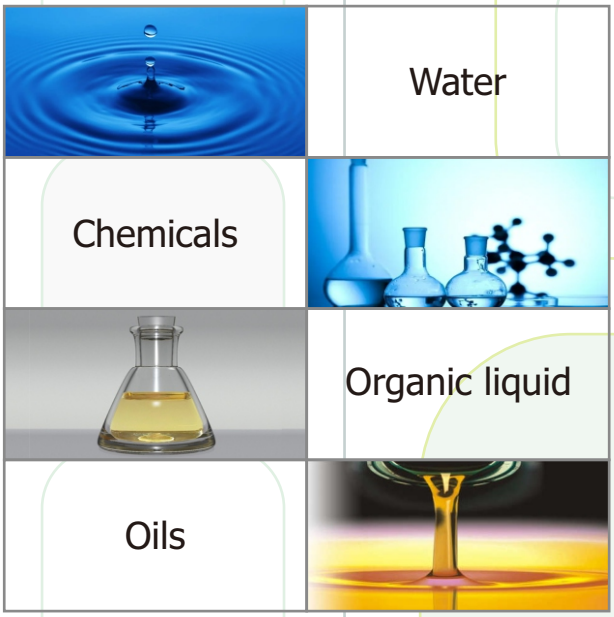
Fine Chemistry

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.

Appropriate media

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:

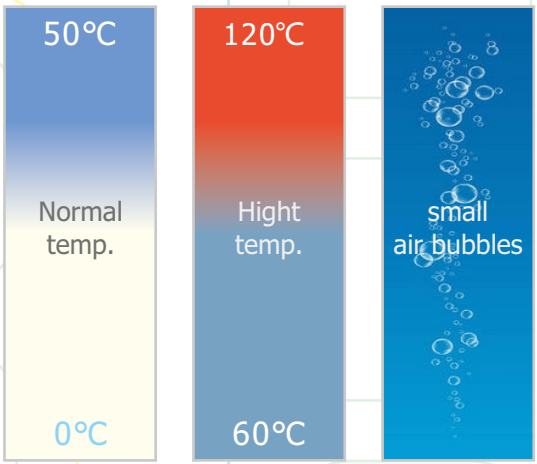
- dilute sulfuric acid
- White wine
- Hydrocarbon
- Alcohol
- Sodium chlorate
- Sodium carbonate
- Triethylamyl alcohol
- Ethylenediamine
- Propylene oxide, etc.

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.

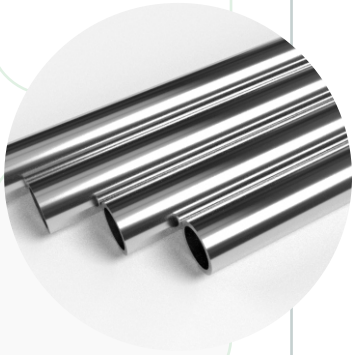
There are many other media that have been measured, so please feel free to inquire.



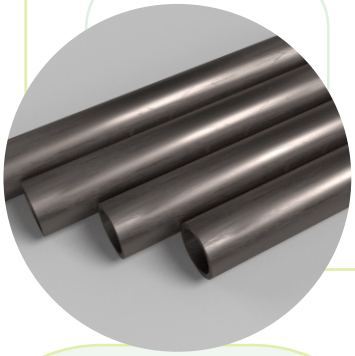
Pipe material

The product can be used for almost pipe material, including both steel pipe and plastic pipe.
Menu options: The flow meter can measure steel pipe / copper pipe and plastic pipe.

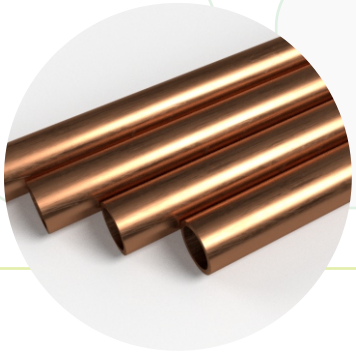
Steel Pipe



Stainless steel pipe

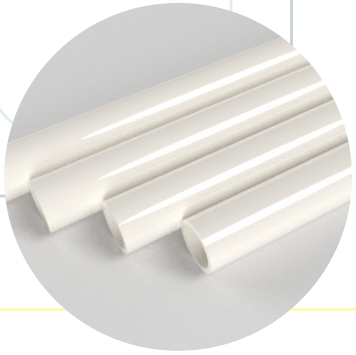


Carbon steel pipe

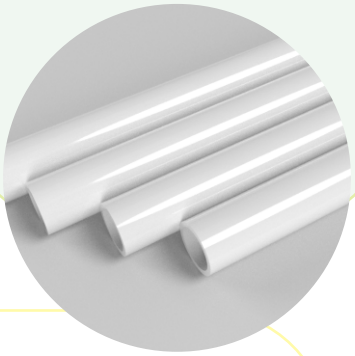


Copper pipe

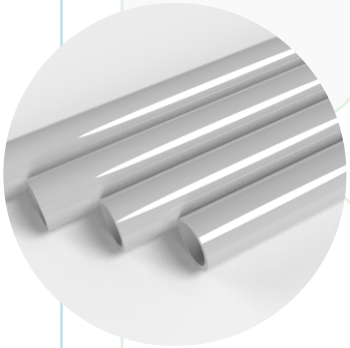
Plastic pipe



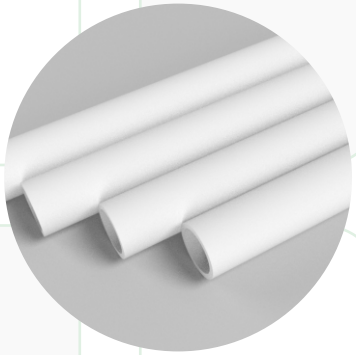
PVDF



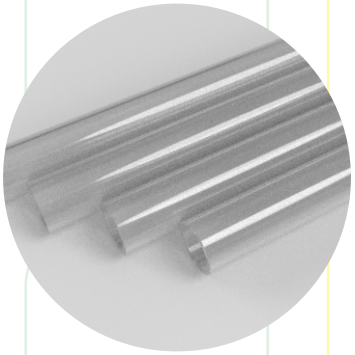
PVC/CPVC



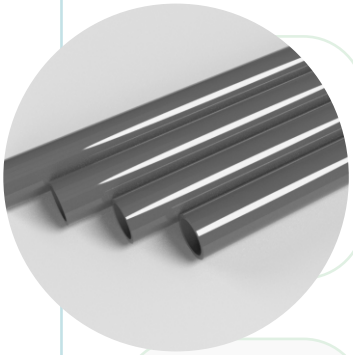
PPR



PPH



PFA/PU



HDPE

For more measurable materials, please contact us

Flow range

This product can measure steel pipes and plastic pipes, but the outer diameter of pipes is different for different standards. We have taken these factors into account in the design, and the structure can be compatible Minimum and maximum outer diameters, When ordering, please pay attention to whether the minimum outer diameter and the maximum outer diameter are on-site pipe diameters.

Model		-9.53	-12.7	-15	-20
OD	mm	φ9.53	φ12.7	φ15	φ20
DN	DN	DN6	DN8	DN10	DN15
NB	NPS	⅛"	¼"	⅜"	½"
Range of OD	mm	9-15	9-15	15-21	15-21
Flow range	L/min	0.17-8.48	0.30-15	0.47-24	1.06-53
Flow range	m^3/h	0.01-0.51	0.02-0.90	0.03-1.41	0.06-3.18

Model		-25	-32	-40	-50
OD	mm	φ25	φ32	φ40	φ50
DN	DN	DN20	DN25	DN32	DN40
NB	NPS	¾"	1"	1¼"	1½"
Range of OD	mm	21-28	28-36	36-44	44-52
Flow range	L/min	1.88-94	2.95-147	4.83-241	7.54-377
Flow range	m^3/h	0.11-5.68	0.18-8.84	0.29-14.5	0.45-22.6

Model		-63	-75	-90	-110
OD	mm	φ63	φ75	φ90	φ110
DN	DN	DN50	DN65	DN80	DN100
NB	NPS	2"	2½"	3"	4"
Range of OD	mm	52-66	66-80	80-95	100-115
Flow range	L/min	11.8-589	19.9-995	30.2-1508	47.1-2356
Flow range	m^3/h	0.71-35.3	1.19-59.7	1.81-90.5	2.83-141

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

Easy to install

4 screws to tighten bracket

Magnetic design to prevent screws from falling.

2 screws to fix measuring unit

Easy tightening with anti-loosening screws.

✓ Installation complete!

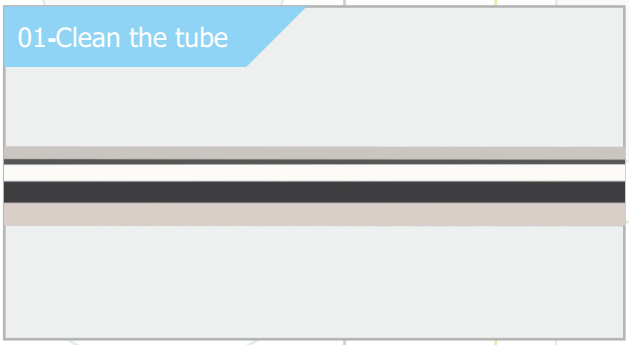
Power on and measure, it's that simple.

Composition

Measuring unit	Base bracket	Cable
		

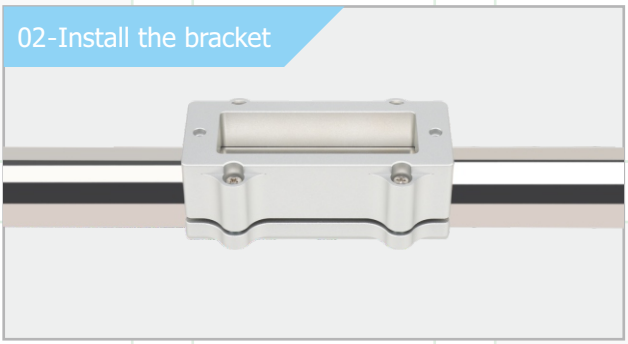
Step by step

01-Clean the tube



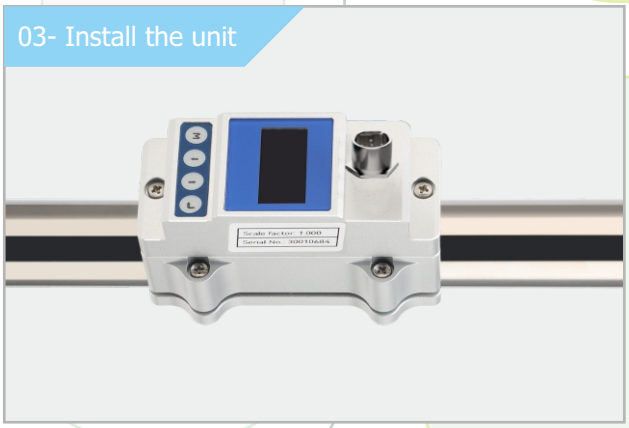
Make sure no dirt, paint, or other stains on the surface of the tube.

02-Install the bracket



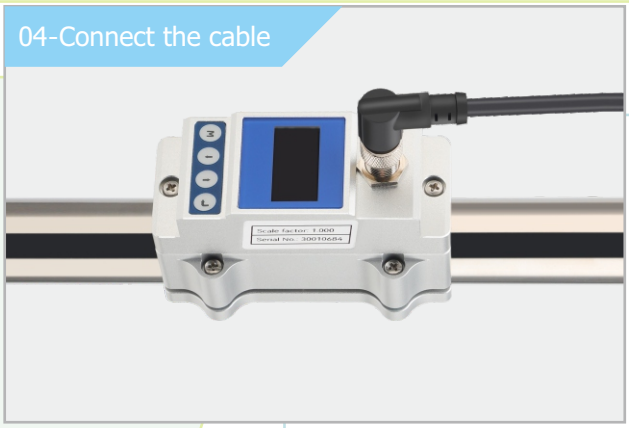
Align flow meter to the pipe position, Install screw on top part of the bracket, the bottom part of the bracket will automatically connect with the top part. tighten the four M4 screws.

03- Install the unit



Put the Unit into Upper bracket, and tighten two M4 screws.

04-Connect the cable



Take out the cable, connect it to the socket, and rotating.

05- Run the host

Please refer to the manual for cable connection; Power on and the SQ≥50 which indicates that the measurement has been stable.

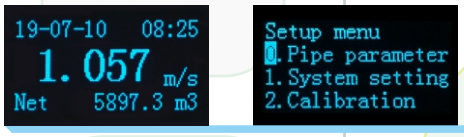
Setting

The products are calibrated in standard piping with the water before leaving the factory, all product achieves the Nominal accuracy (+/-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:

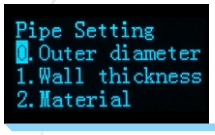
Keypad

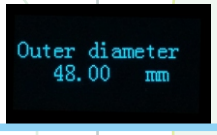
press (M) To switch between setting and display modes, when setting modes press (M) To return to the upper-level menu; (↑) and (↓) Up and down Scroll display interface, set the mode, press (↓) For moving to the next digit, press (↑) To select a number, loop from 0 to 9 in the end press (↵) notarize.

Setup operation

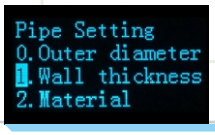


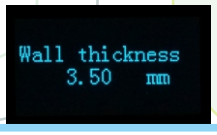
Main screen press (M) ,into setup menu.



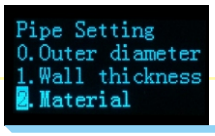


Press (↵) , into 0.pipe setting.
Press (↵) , into 0.outer diameter.
Press (↓) shift, press (↑) adjusted value , press (↵) confirm.

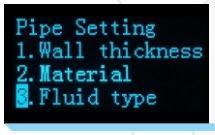


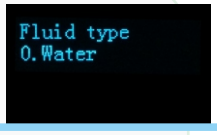


Press (M) , return to 0.Pipe Setting.
Press (↓) and (↵) , into 1.Wall thickness.
Press (↓) shift , press (↑) adjusted value , press (↵) confirm.



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

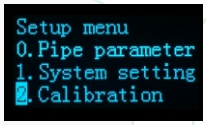


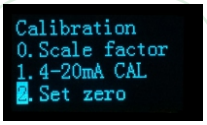


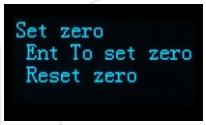
Press (M) , return to 0.Pipe Setting.
Press (↓) and (↵) , into 3.Fluid type.
Press (↵) select , Water, Oil... etc, press (↵) confirm.

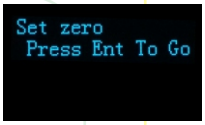
Calibration zero

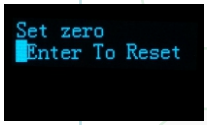
Note: If the valve cannot be closed on site, this operation may not be done.

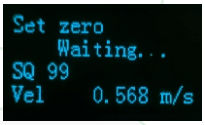












The first installation of the new product requires a zero-point calibration operation, during which it is confirmed that the tube is filled with medium without bubbles, the valve is closed, and the medium is stationary.
Main screen press (M) , into Setup menu, select 2.Calibration, select 2.Set zero, 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.

Specification

Product	Clamp On Type Ultrasonic Flow Meter
Accuracy	+/-2.0% (at 0.5m/s to 5.0m/s)
Flow range	0.1 m/s-5.0m/s
Linearity	+/-2.0% (at 0.5m/s to 5.0m/s)
Repeatability	0.8%
Respone	500ms
Display screen	1.3" 128*64 OLED can 180 spins (easy to read)
Language	English
Display unit	Metric and English units are available, m³/h、LPM、GPM、LPH, Default unit setting: m³/h
Display data	Flow rate, Flow velocity, net totalizer, single totalizer, 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 (option)
Relay output	30VDC@1A, switching frequency less than 2Hz (Option)
Medium	Water, Chemical solvents etc (inclusions less 4%)
IP Grade	IP54/IP65
Installation	Compact Unit, upper and down bracket and Measure Unit tightened by screws
Pipe range	OD9.53-OD110 (DN6-DN100)
Housing material	Aluminum alloy
Medium temp	Compact : -10°C-50°C
Environment temp	-10°C-50°C
Environment humidity	0-95% relative humidity, without condensation
Viscosity	<300CST (mm²/s)
Cable length	stand length: 2m (Can be extended to 20 m.)

Weight

Unit: kg

Model	-9.53	-12.7	-15	-20	-25	-32
Kgs	0.71	0.71	0.70	0.70	0.70	0.73
Model	-40	-50	-63	-75	-90	-110
Kgs	0.73	0.74	0.93	0.95	1.21	1.39

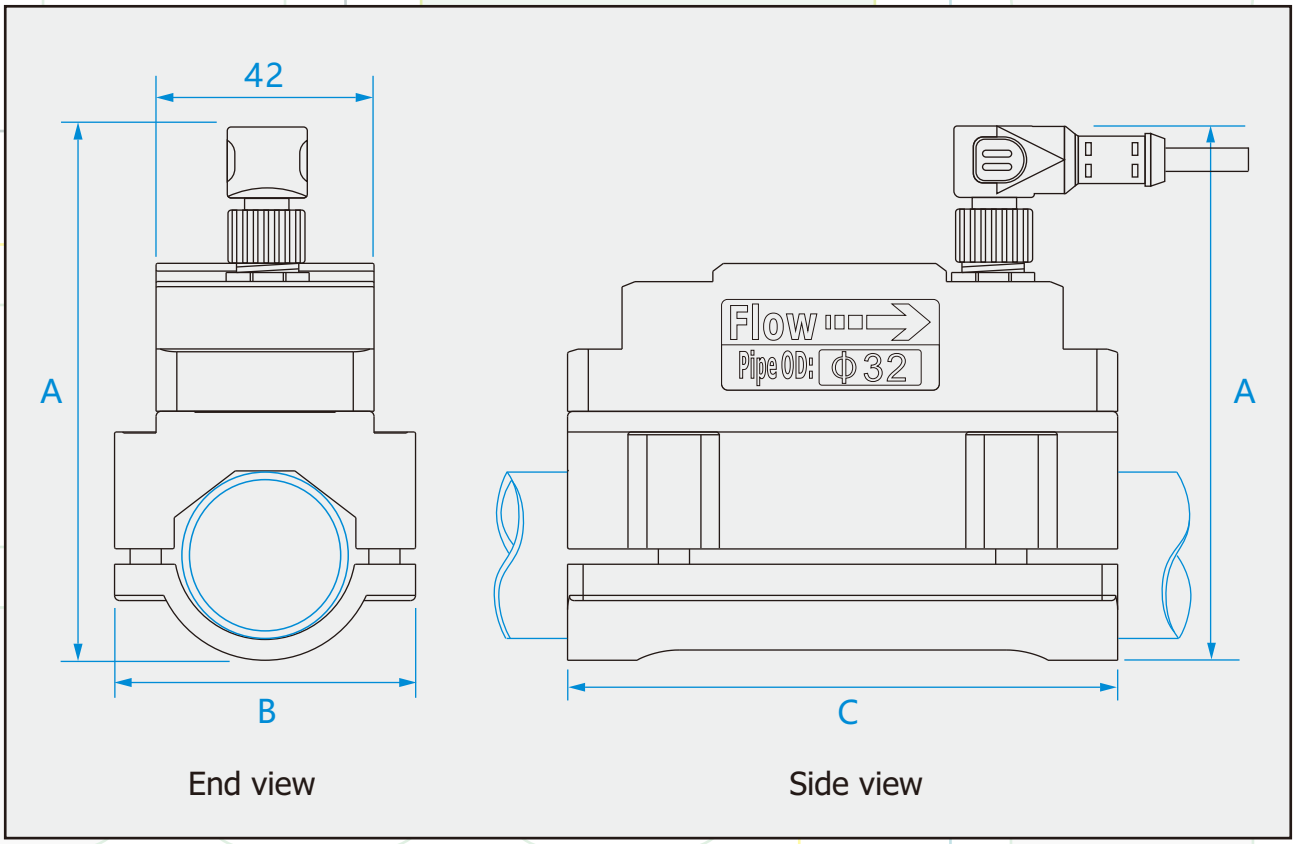
Package

Unit: mm

Model	L*W*H
-9.53 ~ -50	185*143*110
-63 ~ -75	185*143*146
-90 ~ -110	220*180*143

Dimensions

Model	DN	NB	OD (mm)	A max (mm)	B (mm)	C (mm)
-φ9.53	DN6	⅛"	9-15	98	54	106
-φ12.7	DN8	¼"	9-15	98	54	106
-φ15	DN10	⅜"	15-21	95	54	106
-φ20	DN15	½"	15-21	95	54	106
-φ25	DN20	¾"	21-28	103	54	106
-φ32	DN25	1"	28-36	111	62	106
-φ40	DN32	1¼"	36-44	119	70	106
-φ50	DN40	1½"	44-52	127	78	106
-φ63	DN50	2"	52-66	144	92	130
-φ75	DN65	2½"	66-80	158	106	136
-φ90	DN80	3"	80-95	173	121	150
-φ110	DN100	4"	100-115	193	141	174



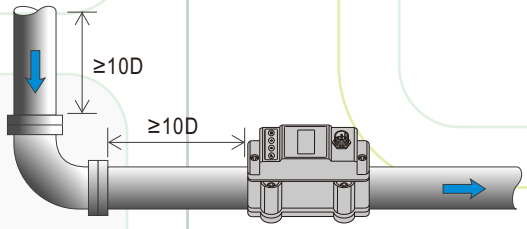
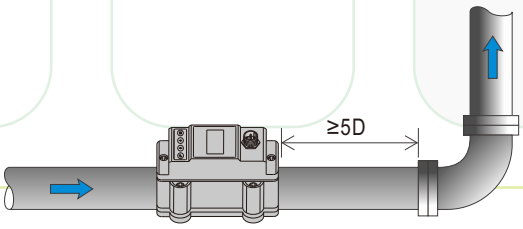
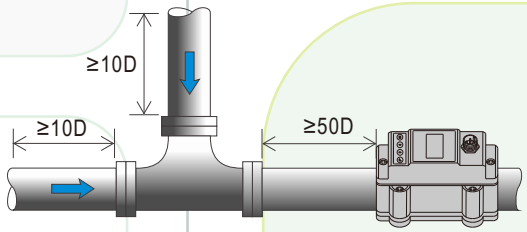
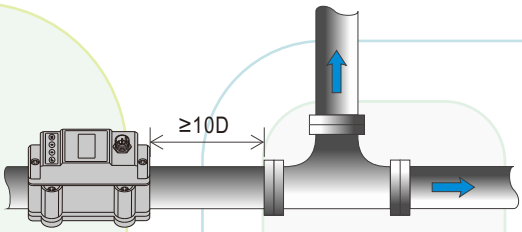
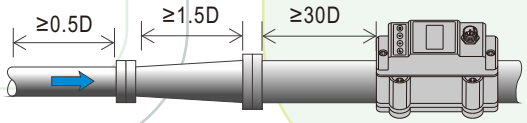
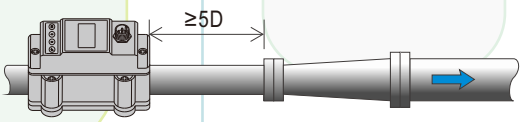
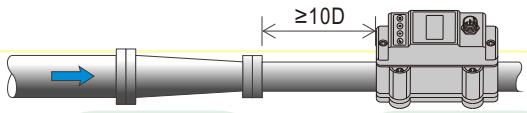
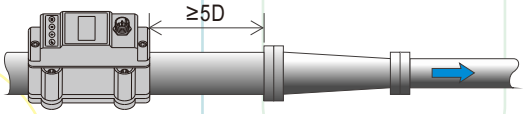
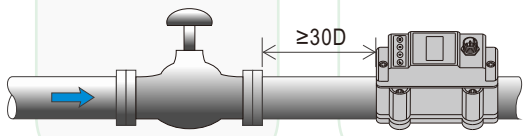
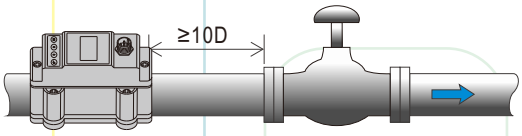
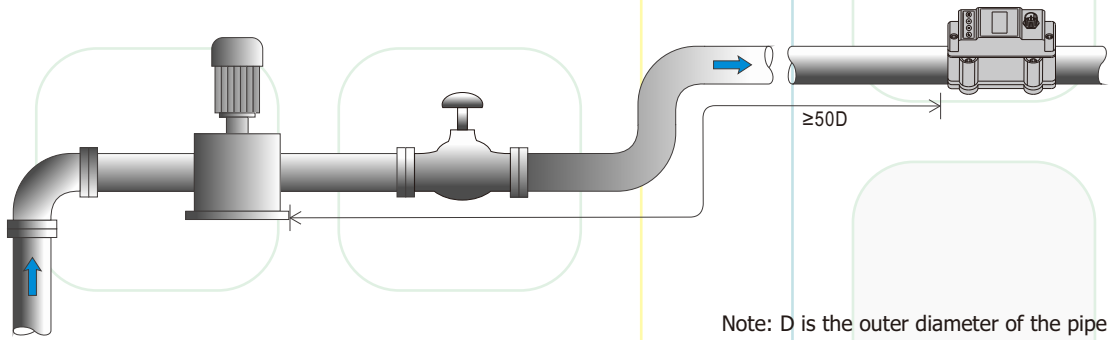
End view

Side view

Measurement Site Selection

When selecting a measurement site, it is important to select an area where the fluid flow profile is fully developed to guarantee a 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 its inside is free 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

Ordering infomation

Ultrasonic flowmeter data sheet

Please fill in your information in as much detail as possible, if you need help, please contact our business manager, we will be happy to help you.

Name:	Tel:	Title:	Unit:	Filling date:
Quantity on demand:	In the next 12 months:		In the next 2 to 3 years:	

Pipe material:	Outer diameter: mm	Wall thickness: mm	Fluid:	Temperature: °c	Corrosivity: ☐ Yes
Minimum flow:	Maximum flow:		Viscosity:	Velocity of sound:	Pressure: mpa
Unit of measurement: ☐ L/min ☐ m^3/h ☐ Else _____					

Available Power supply:	The standard product is 24VDC power supply, if you need 220VAC, optional external power converter? ☐ Yes		
Straight pipe: upstream length _____ mm, downstream length _____ mm		Installation site: ☐ Vertical tube	☐ Horizontal pipe
IP Grade ☐ IP54 ☐ IP66	Installation area: ☐ not dangerous ☐ danger, anti-hazard classification _____		

Output: ☐ RS485, 4-20mA ☐ 4-20mA, OCT ☐ Other requirements (please specify): _____	
Cable length (standard 2 meters): need to be extended m, ☐ No need for extension	☐ See list for more requirements

The above information is not detailed enough, what else do you have to say:

Learn more

In addition to the whole series of products, there are also Separate type, Separate high-temp type, anti-corrosion type, PP material to choose from, if you are interested,
please contact our business manager for information.

Separate type	Separate type (Hi-temp.)	Separate type (Anti.)	Separate type (Hi-temp./Anti)
			

There is one for your needs.....