SENSORS.NL

TM605 Compact Ultrasonic Flow Meter

Ultrasonic Flowmeter

09:23:12

Flow(m³/h)

1.356

3.378 m³

Easy Installation

Just
Clamp-On

Product Description

Flo-Instruments concentrates on the development of flow measurement technology. Our products serve the real-time flow measurement of the production process and participate in process control. The main application industries are chemical production process, fine chemical production, cleaning industry, beverage industry, HVAC, building management, swimming pool etc. It is widely used in flow measureing and monitoring during production process. The application of ultrasonic flow meters can effectively and accurately control the flow of liquids while improving the performance of products, saving personnel investment, and bringing benefits to production enterprises. Therefore, TM605 ultrasonic flow meter came into being.
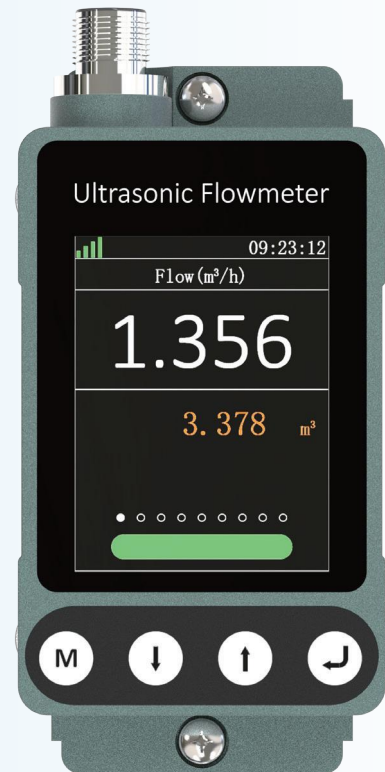
TM601 is a integrated ultrasonic flow meter, specially designed for meeting small-middle pipe diameter. It's very easy and simple in setting and installing. TM605 developed and adopted the ultrasonic principle of transit-time difference method sends and receives ultrasonic signals through the sensor. When the ultrasonic signal is transmitted and received through the flowing liquid, there will be one difference value between upstream and downstream, which can be used to calculating flow and velocity.

Product Features

TM605 adopts clamp-on installation. There is no need to change and break the and measured according to operation guide. Because of no moving parts, and no pressure loss, so no need stop production, it can be installed directly. In addition to above features, TM605 still features obvious advantage.

- **Unique Structure Design**: The TM605 adopts a circular magnetic steel design in structure, which can automatically clip-on and lock during installation. It only takes 2-3 minutes from installation to measurement.

- **Colorful Display Screen**: TM605 uses the currently popular IPS LCD display screen, which can easily read the data, even in low-light environments.

- **Flow Curve/Column Graph**: TM605 is equipped with total flow/-temperature column graph and a real-time flow curve graph, so that users can more clearly understand the real-time flow changes.
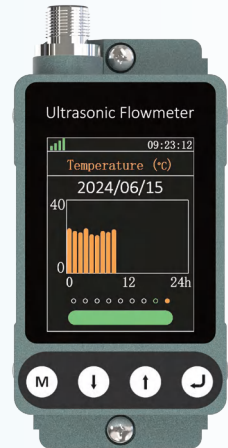
- **Temperature Display**: The bottom of display unit has tempeature probe. It can measure the real-time temperature of pipe wall during liquid flowing and it will shown in flow/velocity data interface.

- **Easy Menu Option**: User can set up parameter and change easily through four keys. In addition, "Up Key" and "Down Key" can swtich up display interface at random. The carousel points below the display screen can also be switched by using "Up Key" and "Down Key", and each interface displays different information。

- **Compatible Various Material & Liquids**: TM605 can almost meets the measurement of different clean liquids and pipe meterials. Through the menu options, a set of TM605 can measure both metal pipes and plastic pipes, also both water and oil.

Product Application

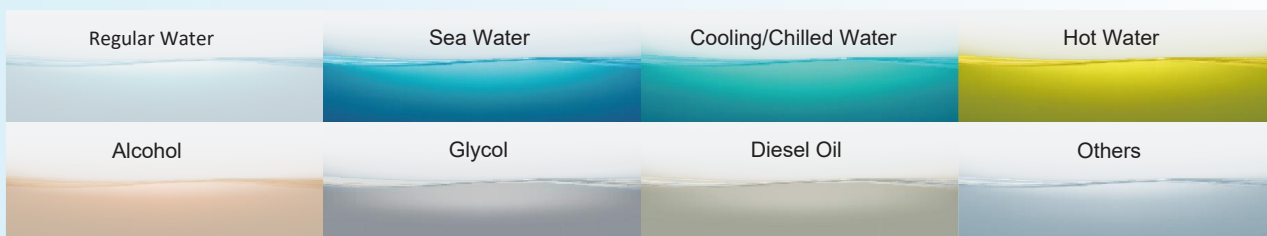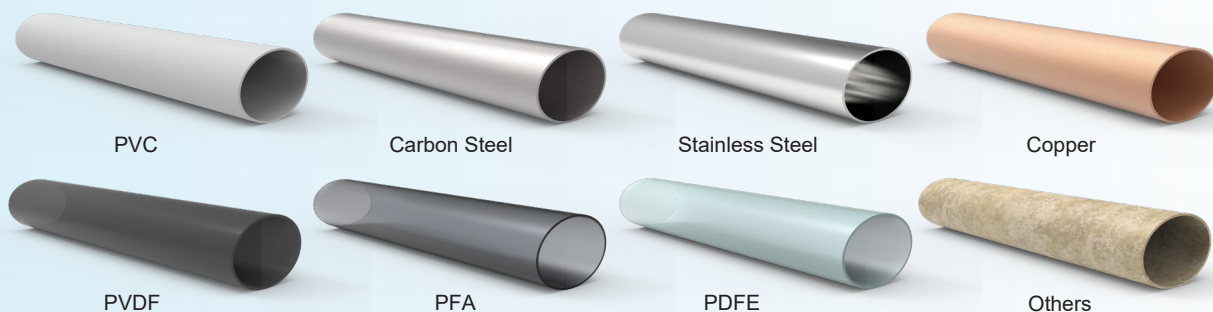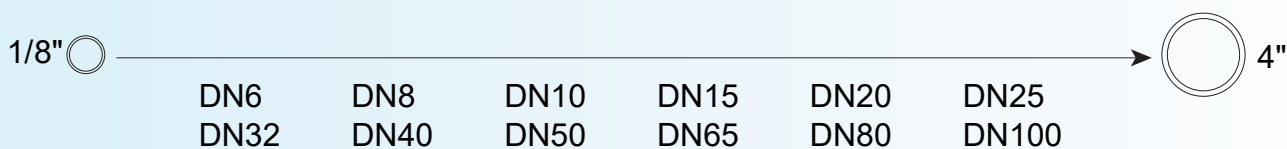| HVAC | Agricultural Irrigation | Water Treatment | BMS | Food & Beverage | Swimming Pool | Cooling Tower |

Characteristics

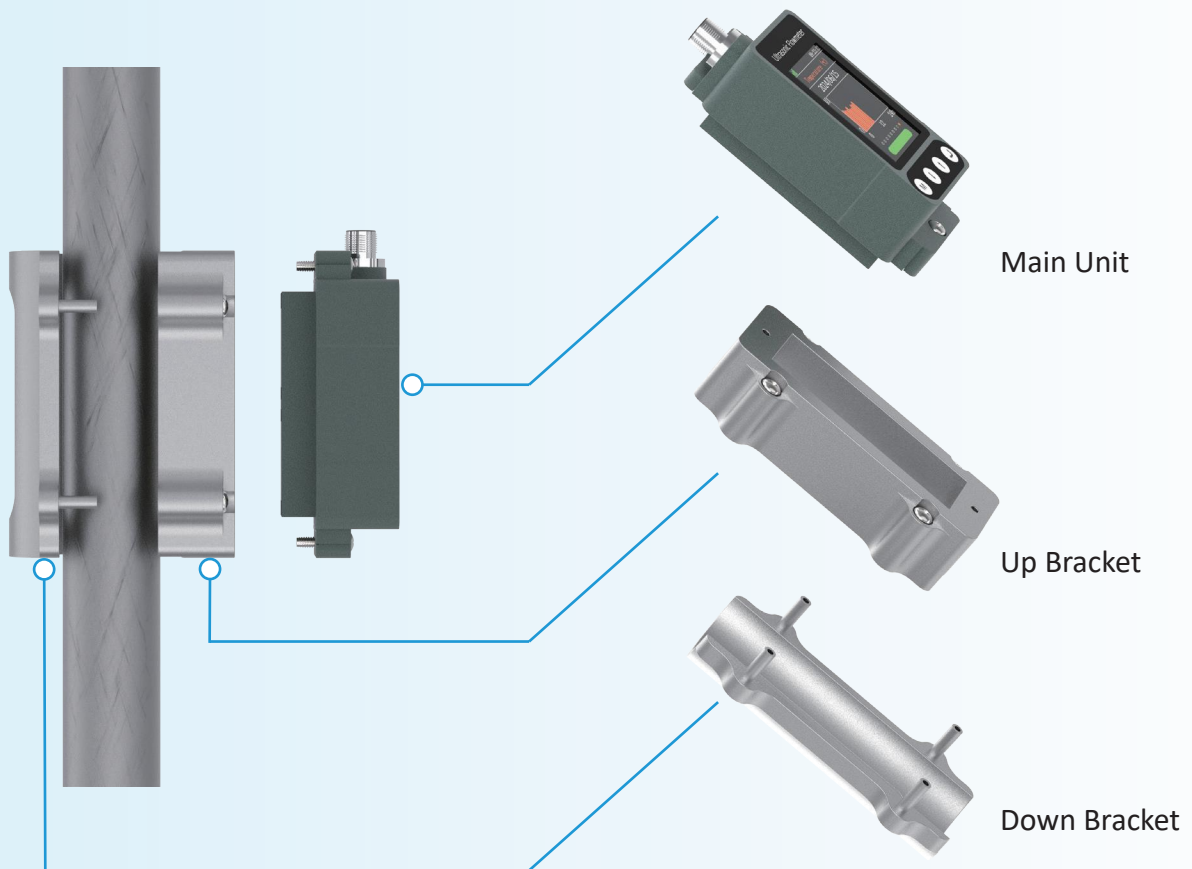Ideal in Nearly any Situation

Detectable Fluids

Regular Water	Sea Water	Cooling/Chilled Water	Hot Water
Alcohol	Glycol	Diesel Oil	Others

Compatible Pipe Materials

PVC	Carbon Steel	Stainless Steel	Copper
PVDF	PFA	PDFE	Others

Available Pipe Sizes

1/8" ⟶ 4"

DN6	DN8	DN10	DN15	DN20	DN25
DN32	DN40	DN50	DN65	DN80	DN100

Schematic Picture

Main Unit

Up Bracket

Down Bracket

Product View

Ultrasonic Flowmeter

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Flow(m³/h)

1.356

3.378 m³

Front View

Top View

Side View

Product Dimension

Display Unit
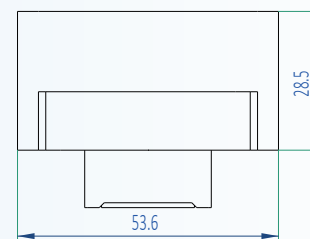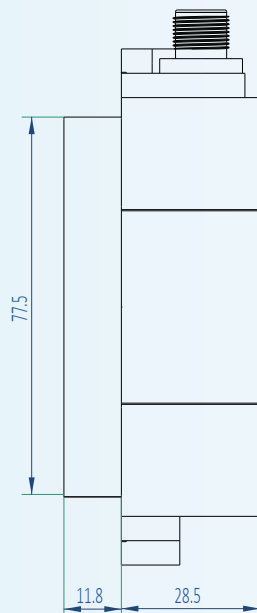
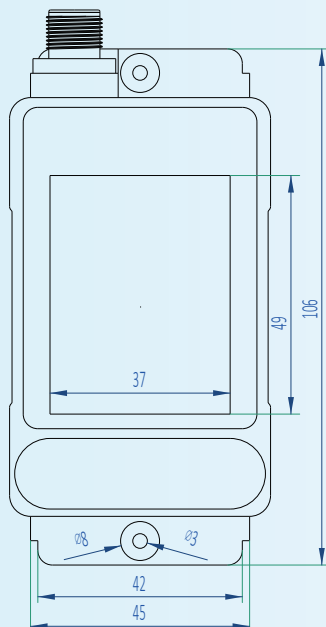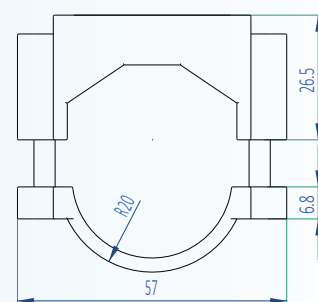Pipe Clamp
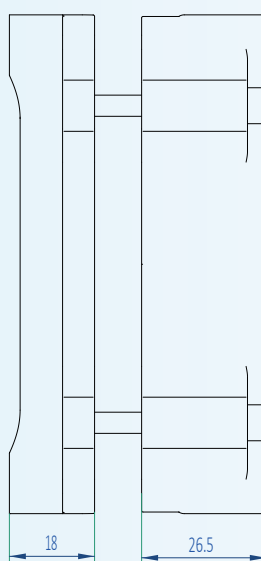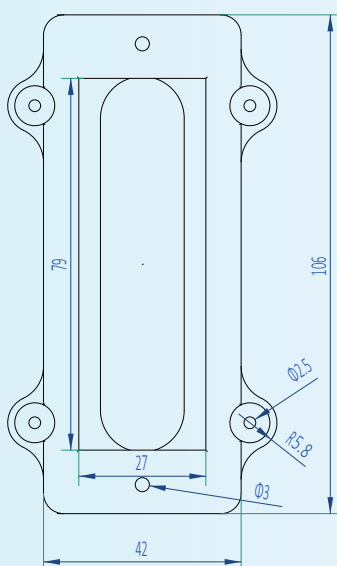
Pipe Size & Weight

Model	Φ9.53	Φ1 2.7	Φ1 5	Φ20	Φ25	Φ32
Weight(KG)	0.75	0.75	0.74	0.74	0.75	0.77
Model	Φ40	Φ50	Φ63	Φ75	Φ90	Φ1 1 0
Weight(KG)	0.76	0.77	0.94	0.98	1.49	1.75

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Operation Step

01 Clean the pipe
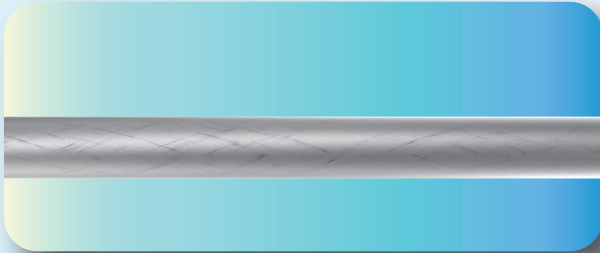
No dirt and oil contamination outside the pipe.

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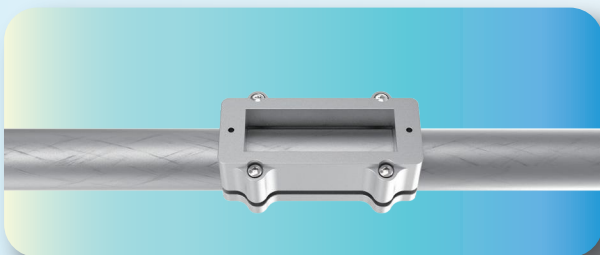
Align flow meter to the pipe position, install screw on top part of the bracket, and then the bottom part of the bracket will automatically connect with the top part. Fasten the four M4 screws.

03 Install the sensor part
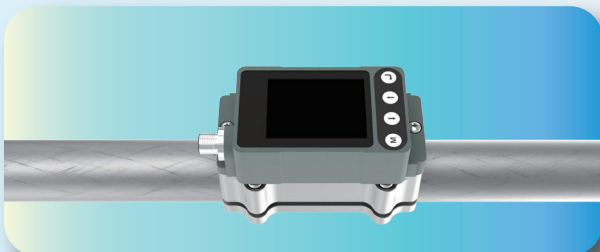
Remove the protection film outside the sensor, put the sensor part into the bracket, and fasten the three M4 screws.

04 Cable connection
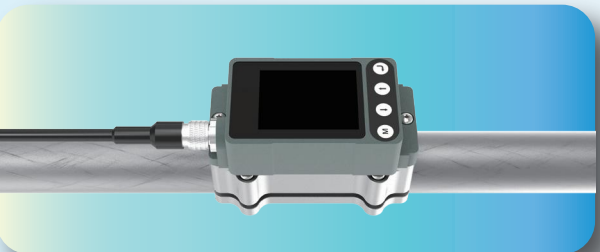
Take out the cable, and fasten it on the socket

05 Operation

Power on and see if the SQ is more than 50. If yes, this indicates that the measurement has been stable.

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Panel Introduction

For different pipe diameters and pipe designs, the factory defaults have defaulted to the specified standard settings. there is no need to reset.

M16 socket

OLED display screen

Ultrasonic Flowmeter

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Flow(m³/h)

1.356

3.378 m³

Flow Sensor

Temperature probe

Flow Sensor

Keypad area

M   ↓   ↑   ↵

Mounting screw

Menu Display

09:23:12
Flow(m³/h)

1.356

3.378 m³

09:23:12
Total (m³)

6.576

10

0
0   12   24h
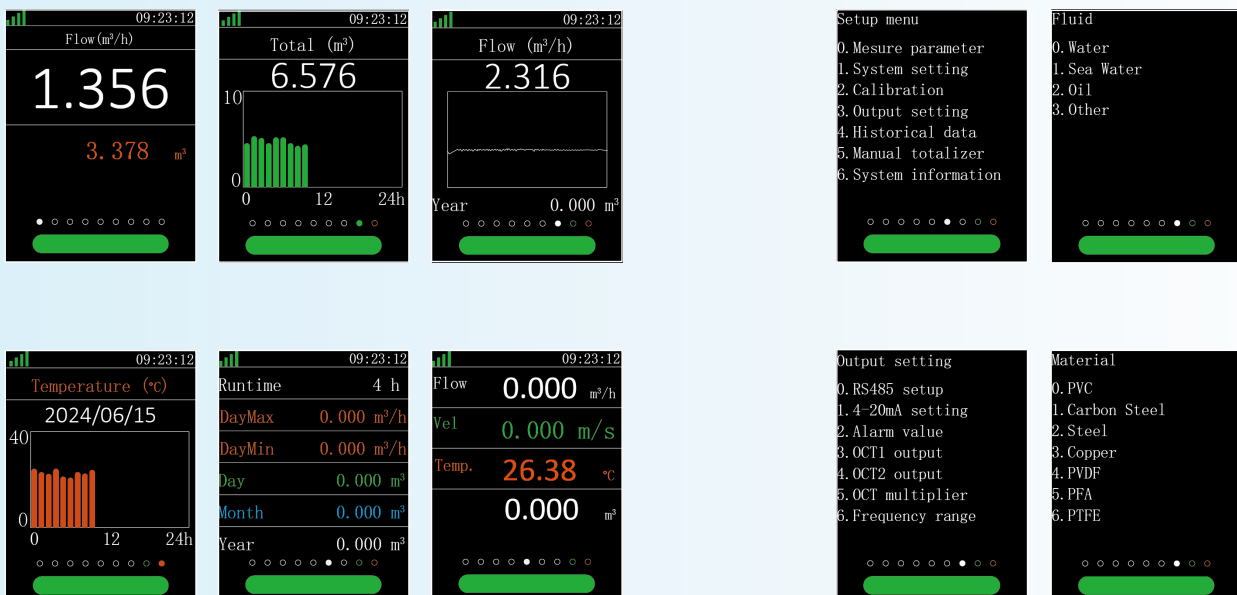

09:23:12
Flow (m³/h)

2.316

Year   0.000 m³

Setup menu

0. Mesure parameter
1. System setting
2. Calibration
3. Output setting
4. Historical data
5. Manual totalizer
6. System information

Fluid

0. Water
1. Sea Water
2. Oil
3. Other

09:23:12
Temperature (℃)

2024/06/15

40

0
0   12   24h

09:23:12

Runtime   4 h
DayMax   0.000 m³/h
DayMin   0.000 m³/h
Day   0.000 m³
Month   0.000 m³
Year   0.000 m³

09:23:12

Flow   0.000 m³/h
Vel   0.000 m/s
Temp. 26.38 ℃
        0.000 m³

Output setting

0. RS485 setup
1. 4-20mA setting
2. Alarm value
3. OCT1 output
4. OCT2 output
5. OCT multiplier
6. Frequency range

Material

0. PVC
1. Carbon Steel
2. Steel
3. Copper
4. PVDF
5. PFA
6. PTFE

Specification

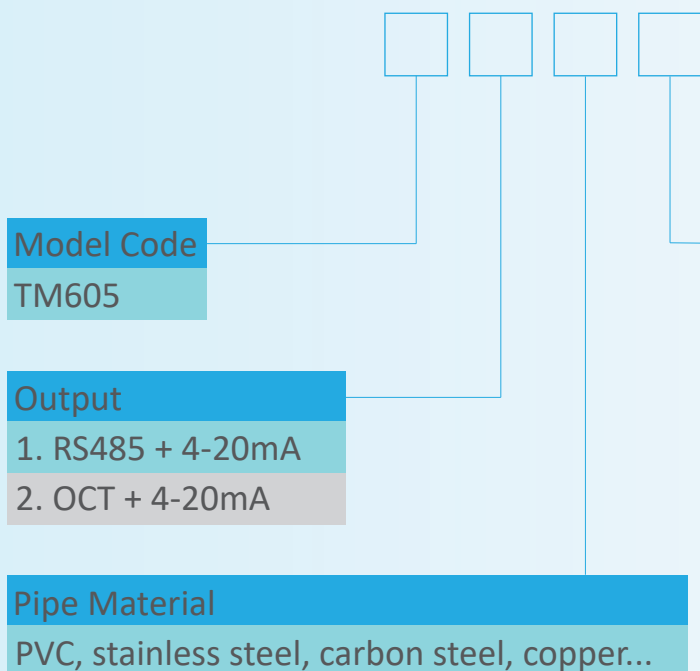| Performance Specifications	
Velocity Rate	0.328 ft/s ~ ±16ft/s (0.1m/s ~ ±5m/s)
Accuracy	± 2.0%
Pipe Size	DN6 DN8 DN10 DN15 DN20 DN25 DN32
	DN40 DN50 DN65 DN80 DN100
Liquid	Regular water, sea water, cooling/hot water, alcohol...
Pipe Material	PVC, stainless steel, carbon steel, copper...

Function Specifcations	
Power Supply	24V DC, maximum 500mA
Communication	Support MODBUS protocol, RS485
Analog Output	4-20mA, Maximum 600Ω
Alarm Output	OCT upper and lower limit alarm function (optional)
Display	OLED 320*240 dot-matrix display screen
Key Panel	Four touch buttons
Flow Unit	Support metric unit selection, Cubic Meters(m³), Liters(l),
	USA Gallons(gal).
Time Unit	/hour, /min, The factory default unit is cubic meters per hour.
	Daily, Monthly, and Annual Flow Totalizer
Temperature	Ambient: 32℉~ +122℉ (0℃ ~ +50℃)
	Liquid: 32℉~ +122℉ (0℃ ~ +50℃)
Ambient Humidity	RH 0~95%, No condensation

| Physical Specifications	
Housing Material	Aluminum alloy, CNC machined processing
Protection Rate	IP54
Cable Length	6.6ft (2m) standard

Order rule: TM605-1-A-DN25

Model Code

TM605

Output

1. RS485 + 4-20mA
2. OCT + 4-20mA

Pipe Material

PVC, stainless steel, carbon steel, copper...

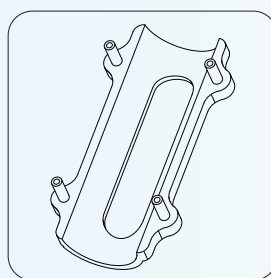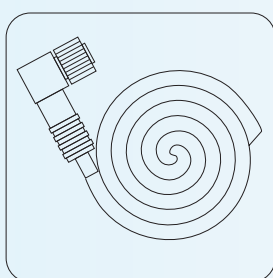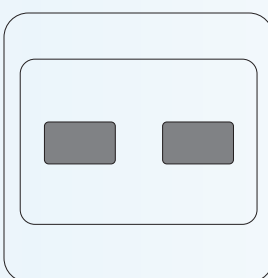| Pipe Size	Inch	Pipe Size	OD Range
DN6	1/8"	OD9.53	9.5mm-12mm
DN8	1/4"	OD9.53	12mm-14mm
DN10	3/8"	OD15	14mm-17mm
DN15	1/2"	OD20	17mm-20mm
DN20	3/4"	OD25	22mm-29mm
DN25	1"	OD32	30mm-35mm
DN32	1-1/4"	OD40	38mm-45mm
DN40	1-1/2"	OD50	48mm-54mm
DN50	2"	OD63	58mm-68mm
DN65	2-1/2"	OD75	68mm-78mm
DN80	3"	OD90	88mm-96mm
DN100	4"	OD110	108mm-116mm

Packing List
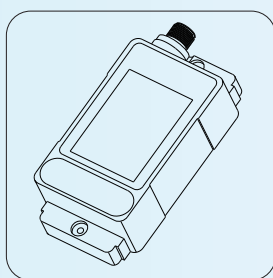
Main Unit
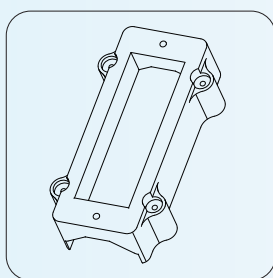
Up Bracket
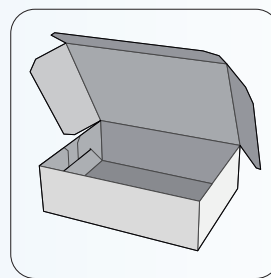

Down Bracket


Cable

Coupling Pad

Box

Appendix Ⅰ —— Pipeline Specifications & Flow Range

Diameter	DN	Inch	Diameter Range(mm)	Min (m³/h)	Max (m³/h)	Min (L/min)	Max (L/min)
Φ9.53	DN6	1/8"	9.5-12	0.02	0.7	0.4	12
Φ12.7	DN8	1/4"	12-14	0.05	1.7	0.9	28
Φ15	DN10	3/8"	14-17	0.09	3.0	1.5	49
Φ20	DN15	1/2"	17-20	0.06	3.2	1.1	53
Φ25	DN20	3/4"	22-29	0.11	5.7	1.9	94
Φ32	DN25	1"	30-35	0.18	8.8	2.9	147
Φ40	DN32	1-1/4"	38-45	0.29	14	4.8	241
Φ50	DN40	1-1/2"	48-54	0.45	23	7.5	377
Φ63	DN50	2"	58-68	0.71	35	12	589
Φ75	DN65	2-1/2"	68-78	1.2	60	20	995
Φ90	DN80	3"	88-96	1.8	90	30	1508
Φ110	DN100	4"	108-116	2.8	141	47	2356

Diameter	Flow Value(L/min)
Φ9.53	Min: 0.4L/min Max: 12L/min
Φ12.7	Min: 0.9L/min Max: 28L/min
Φ15	Min: 1.5L/min Max: 49L/min
Φ20	Min: 1.1L/min Max: 53L/min
Φ25	Min: 1.9L/min Max: 94L/min
Φ32	Min: 2.9L/min Max: 147L/min
Φ40	Min: 4.8L/min Max: 241L/min
Φ50	Min: 7.5L/min Max: 377L/min
Φ63	Min: 12L/min Max: 589L/min
Φ75	Min: 20L/min Max: 995L/min
Φ90	Min: 30L/min Max: 1508L/min
Φ110	Min: 47L/min Max: 2356L/min

Appendix Ⅱ —— Product Dimension

Diameter	DN	Inch	Diameter Range(mm)	A（mm) Max	B（mm）	C（mm）
Φ9.53	DN6	1/8"	9.5-12	83	52	106
Φ12.7	DN8	1/4"	12-14	83	52	106
Φ15	DN10	3/8"	14-17	83	52	106
Φ20	DN15	1/2"	17-20	89	52	106
Φ25	DN20	3/4"	22-29	90	52	106
Φ32	DN25	1"	30-35	94	58	106
Φ40	DN32	1-1/4"	38-45	104	68	106
Φ50	DN40	1-1/2"	48-54	113	78	106
Φ63	DN50	2"	58-68	132	91	130
Φ75	DN65	2-1/2"	68-78	142	105	136
Φ90	DN80	3"	88-96	157	119	150
Φ110	DN100	4"	108-116	180	143	174
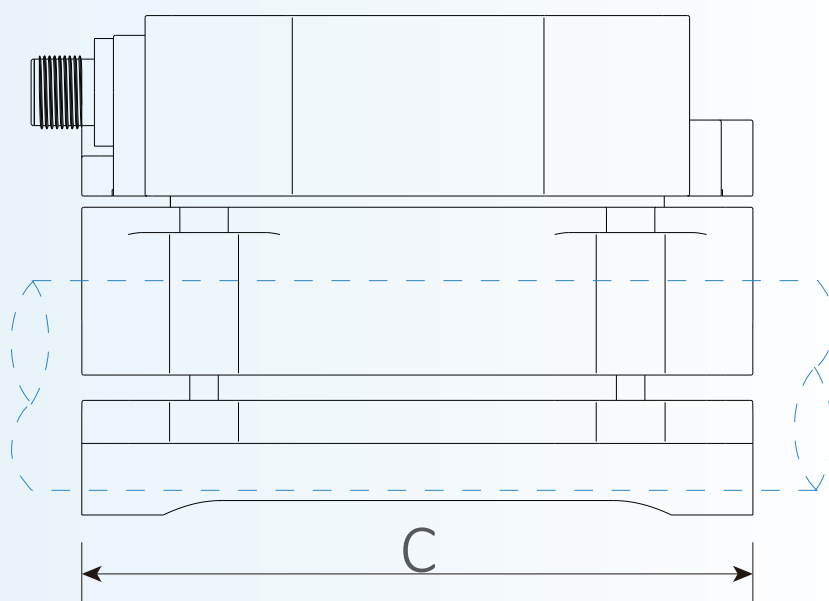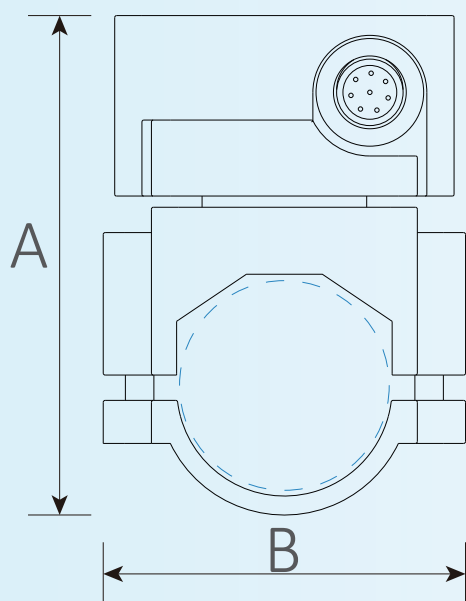
The ultrasonic flow meter specifically designedfor water treatment and chemical industry

TM601S

TM602

SE603