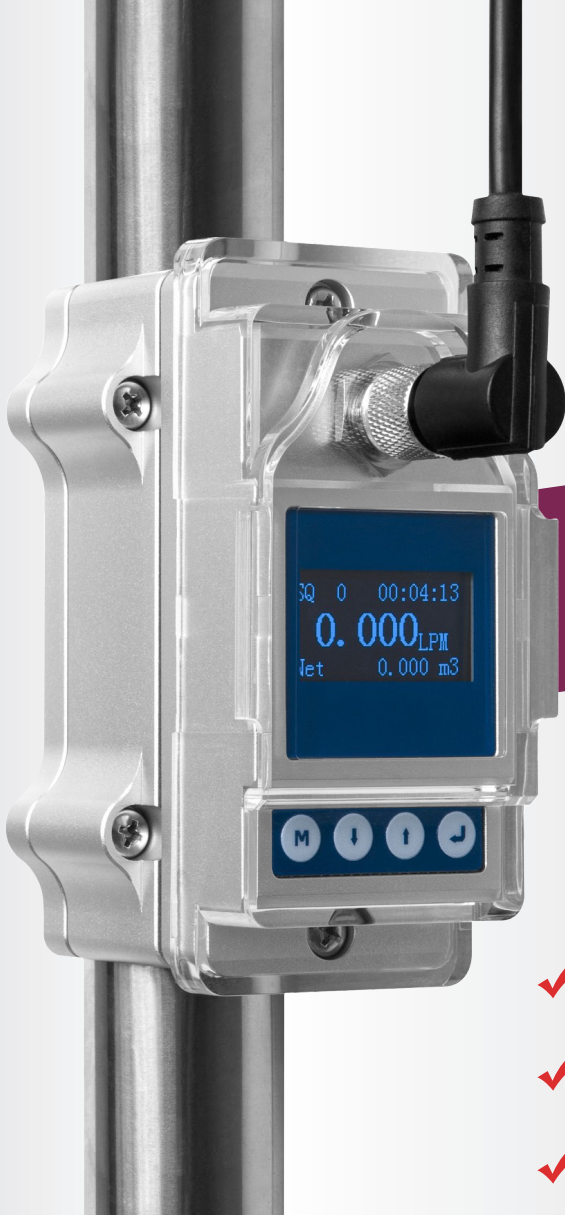


HNFOO-C

EXTERNAL
CARD TYPE

ULTRASONIC
FLOWMETER

Make measurement easy
Room temperature integrated type



We focus on the development of flow measurement technology, specializing in measuring the flow of various liquids in pipelines, achieving real-time flow measurement in the production process, outputting digital signals, analog signals, etc., and participating in the measurement and control of the production process.

- ✓ The flowmeter is stuck outside the pipe and does not require additional modifications to the pipeline.
- ✓ No professional knowledge is required, installation and measurement can be completed by selecting from the menu.
- ✓ No movable parts, no pressure loss, can be installed and used without stopping production.

PRODUCT OVERVIEW

Ultrasonic flowmeter
Built in advanced
measurement chip

Unique design with built-in
magnetic steel, automatic
locking, with non dislodging
screws for easy installation with
one hand in 60 seconds

Four row OLED display
screen

Date/Signal/Instantaneous/
Cumulative Quantity
stick out a mile

Insufficient lighting/dim
environment

Easy reading



Innovative menu selection method
(dropdown list) with four touch
buttons for easy setting (no need to
remember menu numbers)

APPLICATION INDUSTRY

Since its launch on the market, the product has been widely used in the cleaning equipment industry. Due to its simple installation and operation, as well as reliable measurement performance, it has been continuously promoted in new industries.

MAJOR INDUSTRIES

Semiconductors, food, pharmaceuticals, beverages, water, cleaning products, printing and dyeing, chemical products, etc.

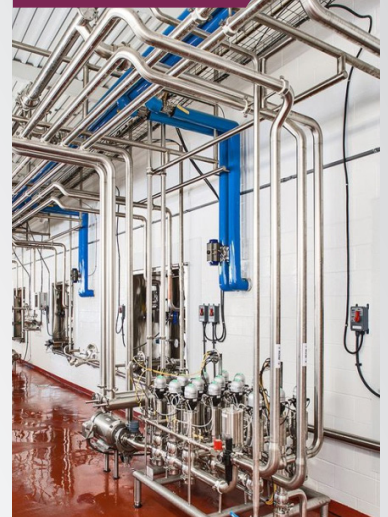
Semiconductor



Flat glass cleaning



Food industry



Pharmaceutical ratio



Beverage Industry



Fine Chemicals



In practical use, we encounter media types beyond our imagination, with a wide variety and different viscosities. Through on-site testing, customers can always find measurement solutions, making their applications increasingly widespread.

APPLICABLE MEDIUM

The product almost meets the measurement of different single clean liquids:

The main application is in the measurement and control of water (tap water, pure water, ultrapure water). Due to the continuous promotion of the application industry, various acids, bases, organic liquids, chemical solvents, alcohol, beverage water waiting has also been well applied.

User feedback on measured media:

Diluted sulfuric acid

Baijiu

Carbon hydrogen

Alcohol

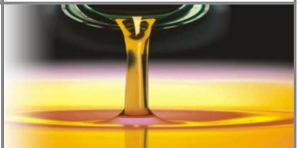
Sodium carbonate

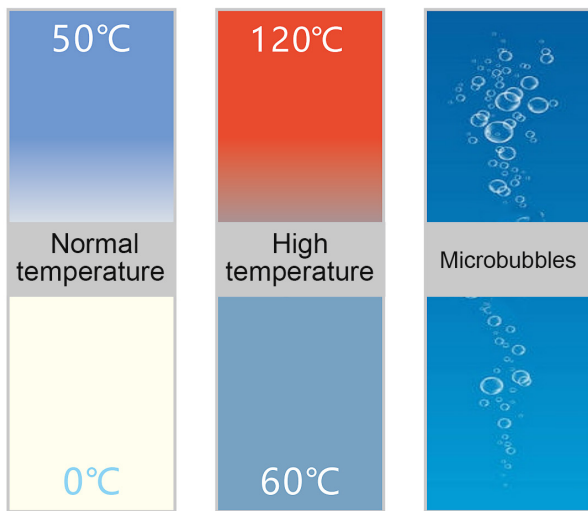
Triethylamine alcohol

Ethylenediamine

Sodium chlorate

Epoxy propane, etc

	Water
Chemical	
	Organic liquid
Oils	



Determination of Measurable Media

The medium maintains stable flow velocity in the pipeline

Maintain pressure at 0.3MPa

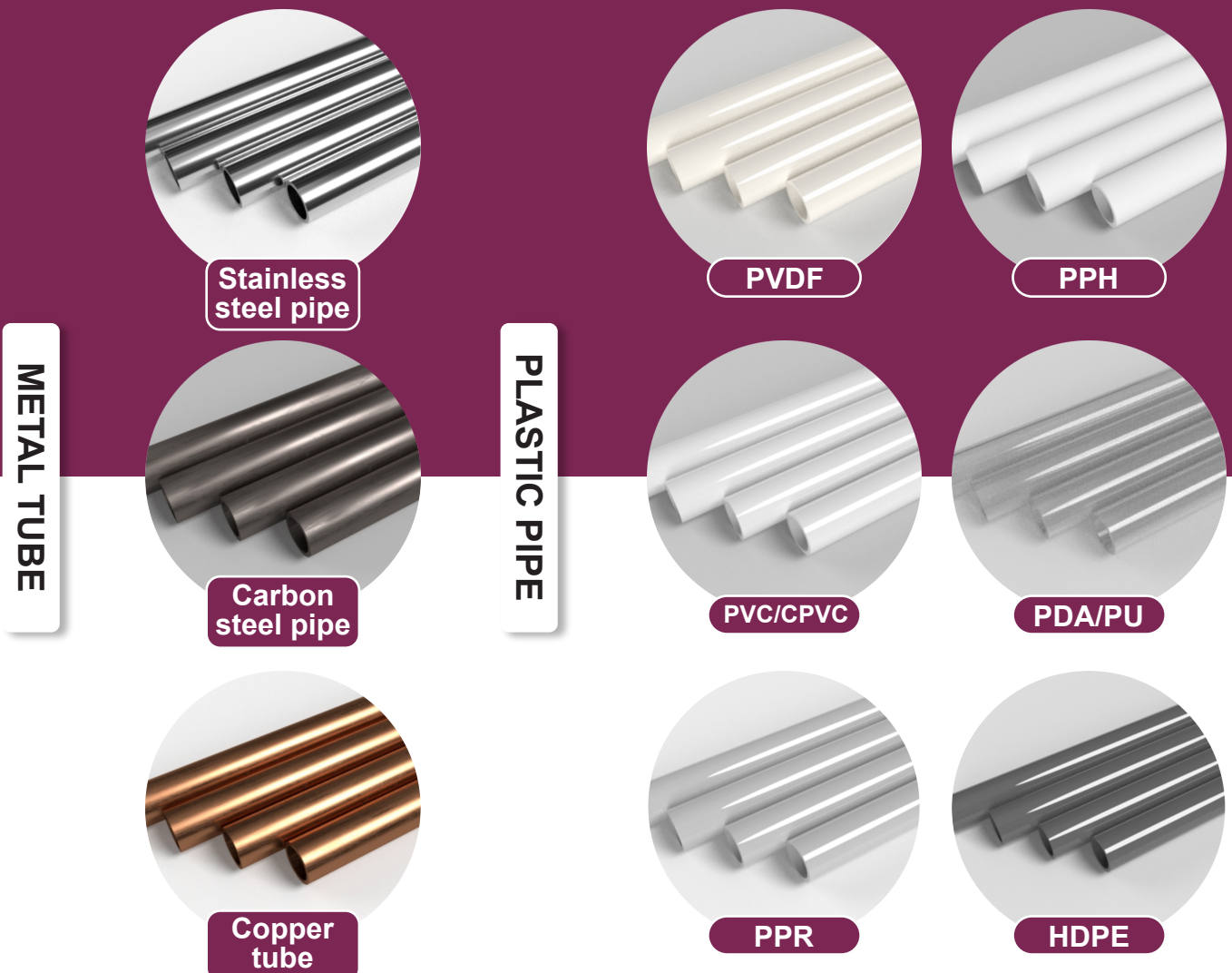
Will not generate bubbles (or air pockets) due to flow

There are many other media for measurement please feel free to consult.

With the expansion of the market, we will also find that there will be more and more measured media. We hope that users can share more applications so that we can continuously enrich our products and improve them.

PIPING MATERIAL

The product can almost meet the measurement needs of pipes made of different sound guiding materials, including both "metal pipes" and "plastic pipes". Through the menu options, a flowmeter can measure both metal and plastic pipes.



FLOW RANGE

The product is suitable for metal and plastic pipes. Due to the different materials and standards of the pipes, the outer diameter of the pipes varies greatly. We have considered these factors in the design and the structure is compatible with both the maximum and minimum outer diameters.

Please pay attention to whether the "minimum outer diameter" and "maximum outer diameter" match the on-site pipe diameter when placing an order.

Model		-9.53	-12.7	-15	-20
Outer diameter of plastic pipe	mm	Φ9.53	Φ12.7	Φ15	Φ20
Nominal pipe diameter (metric)	DN	DN6	DN8	DN10	DN15
Nominal Pipe Diameter (Imperial System)	NPS	1 points	2 points	3 points	4 points
Outer diameter range	mm	9.53-12.7	12.7-14	14-17	17-20
Flow range	L/min	0.2-20	0.44-30	0.57-50	0.92-70
Flow range	m³/h	0.01-1	0.03-2	0.03-3	0.06-4

Model		-25	-32	-40	-50
Outer diameter of plastic pipe	mm	Φ25	Φ32	Φ40	Φ50
Nominal pipe diameter (metric)	DN	DN20	DN25	DN32	DN40
Nominal Pipe Diameter (Imperial System)	NPS	6 points	1 inch	1.2 inch	1.5 inch
Outer diameter range	mm	22-30	30-35	38-45	48-54
Flow range	L/min	1.36-150	2.71-200	4.24-330	6.8-460
Flow range	m³/h	0.08-10	0.16-15	0.25-20	0.41-30

Model		-63	-75	-90	-110
Outer diameter of plastic pipe	mm	Φ63	Φ75	Φ90	Φ110
Nominal pipe diameter (metric)	DN	DN50	DN65	DN80	DN100
Nominal Pipe Diameter (Imperial System)	NPS	2 inch	2.5 inch	3 inch	4 inch
Outer diameter range	mm	58-68	68-78	88-96	108-116
Flow range	L/min	9.54-700	14.8-1030	21.8-1360	36.5-2170
Flow range	m³/h	0.57-40	0.89-60	1.31-80	2.19-130

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

EASY PRODUCT INSTALLATION

Fix the pipe clamp with 4 screws

Equipped with magnetic steel anti loosening design, not afraid of screws falling off

Fix the measuring unit with 2 screws

Adopting anti loosening screws for easy tightening

installation is complete

Measure when powered on, it's that simple



PRODUCT COMPOSITION

Host



Up and down card



Output cable



INSTALLATION STEPS

01

CLEAN PIPE

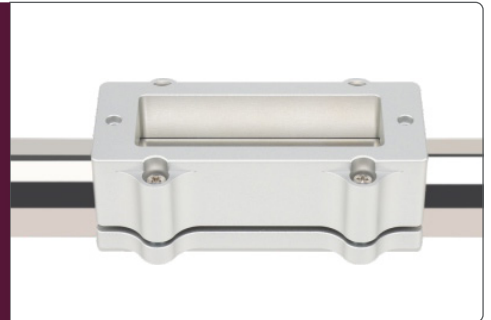
Ensure that the surface of the pipeline is clean and free of dirt, paint, debris, etc



02

INSTALL THE UPPER AND LOWER CARDS

Attached to the installation position, the screw of the lower card is inserted into the upper card, and the upper and lower cards will automatically adhere. Tighten the four M4 screws.



03

INSTALL HOST

Remove the protective film from the sensor, insert it into the upper card, and tighten the two M4 screws.



04

WIRE

Remove the output cable, connect the plug, and tighten it.



05

RUN THE HOST

Connect the other end of the cable to the power supply, observe when powered on, and if SQ stabilizes above 50, it indicates that the measurement has been stabilized.



SETTING STEPS

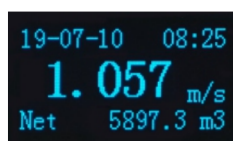
The products are calibrated using standard pipelines before leaving the factory, with water as the medium, to ensure that each product reaches the nominal accuracy (+/-2.0% accuracy) before leaving the factory.

It is possible that there may be differences between the on-site pipelines and standard pipelines, media, etc. For the first installation, data confirmation is required. The operation is as follows:

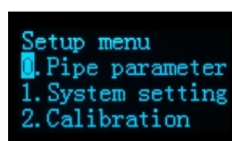
KEYBOARD ▼

Press  Switching between settings and display modes, Press during setup  To return to the previous menu;  Gentle  Scroll up and down the display interface, and when setting the mode, press  To move to the next position, press  To select a number, cycle from 0 to 9 and finally press  Confirm.

SET OPERATION ▼



19-07-10 08:25
1.057 m/s
Net 5897.3 m3



Setup menu
0. Pipe parameter
1. System setting
2. Calibration

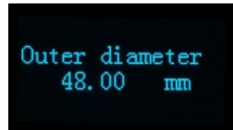
Main page press  Enter the Setup menu.



Pipe Setting
0. Outer diameter
1. Wall thickness
2. Material

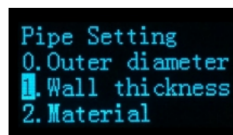
press  , enter 0. Pipe Setting

press  , Enter 0. Outer diameter (pipe outer diameter)



Outer diameter
48.00 mm

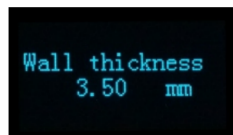
press  Shift, press  Adjust the value, press  Confirm.



Pipe Setting
0. Outer diameter
1. Wall thickness
2. Material

press  , return 0. Pipe Setting

press  gentle  , Enter 1. Wall thickness (pipe wall thickness)



Wall thickness
3.50 mm

press  Shift, press  Adjust the value, press  Confirm.



Pipe Setting
0. Outer diameter
1. Wall thickness
2. Material

press  , return 0. Pipe Setting

press  gentle  , Enter 2. Material (pipeline material)



Material
2. Steel

press  Choose from PVC, Steel, etc., press  Confirm.

Pipe Setting
1. Wall thickness
2. Material
3. Fluid type

press  , return 0. Pipe Setting

press  gentle  ,Enter 3. Fluid type

Fluid type
0. Water

press  Choose from options such as Water, Oi1, etc., press  Confirm.

CALIBRATE ZERO POINT ▼

Setup menu
0. Pipe parameter
1. System setting
2. Calibration

Calibration
0. Scale factor
1. 4-20mA CAL
2. Set zero

Set zero
Ent To set zero
Reset zero

Set zero
Press Ent To Go

Set zero
Enter To Reset

Set zero
Waiting...
SQ 99
Vel 0.568 m/s

A zero calibration operation is required for the new product to be put into use. During calibration, it is confirmed that the pipe is filled with medium without bubbles, the valve is closed, and the medium is in a static state.

Main page press  Enter the Setup menu, select 2. Calibration, select 2. Setzero, and press 3 times to set the static zero point  Calibrate the zero point, Ent To

setzero → Press Ent To Go → Enter To Reset. After completion, automatically return to the main interface and open the valve to measure the flow rate normally.

PERFORMANCE INDEX

NAME	SPECIFICATION
Product name	External card ultrasonic flowmeter
Measurement accuracy	+/-2.0% (0.3m/s-5.0m/s)
Flow rate range	0.1 m/s-5.0m/s
Linearity	+/-2.0% (0.3m/s-5.0m/s)
Repeatability	0.8%
response time	500ms
Screen display	1.3-inch 128 * 64 OLED with forward and backward rotation (convenient for reading)
Menu language	English
Display units	Support the selection of metric and imperial units, m ³ /h、 LPM、 GPM、 LPH, The default unit at the factory is m ³ /h
Display data	Instantaneous flow rate, instantaneous flow velocity, net cumulative amount, single cumulative amount, daily, monthly, and annual cumulative amount

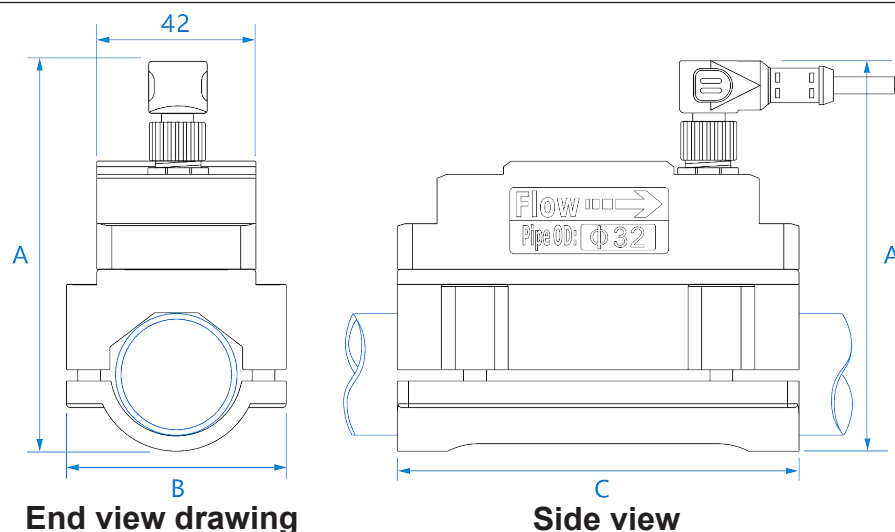
Accumulator	7-bit traffic accumulator
Accumulated data	10 years, 64 months, and 64 days
Operation buttons	4 touch buttons
Calendar Battery	CR1220
Power configuration	24VDC@3W
Communication interface	4-20mA, maximum load 600 Ω
Analog output	RS485, Supports Modbus RTU communication protocol
Alarm output	OCT upper and lower limit alarm output, pulse output, etc. (options)
Relay output	(Optional) 30VDC@1A The switching frequency is less than 2Hz
Applicable medium	Water, solutions, chemical reagents (impurities ≤ 4%), etc
Waterproof grade	IP54/IP65
Installation method	External card integrated, tightened by screws between the upper and lower cards and the host
Pipe diameter specification	OD9.53-OD110 (DN6-DN100)
Liquid receiving material	Non contact type
Medium temperature	Integrated: -10 ° C-50 °
ambient temperature	-10°C-50°C
ambient humidity	Relative humidity 0% -95%, no condensation
Suitable viscosity measurement	<300CST (mm²/s)
Cable length	2.0 meters (can be extended up to 20 meters)

QUALITY

PACKAGING SIZE

Specifications	-9.53	-12.7	-15	-20	-25	-32	Specifications	Length, width and height (mm)
Weight (kg)	0.71	0.71	0.70	0.70	0.70	0.73	-9.53 ~ -50	185*143*110mm
Specifications	-40	-50	-63	-75	-90	-110	-63 ~ -75	185*143*146mm
Weight (kg)	0.73	0.74	0.93	0.95	1.21	1.39	-90 ~ -110	220*180*143mm

PRODUCT SIZE



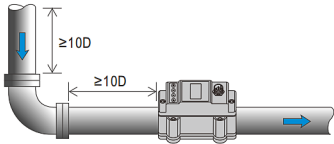
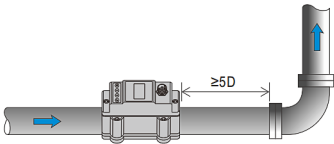
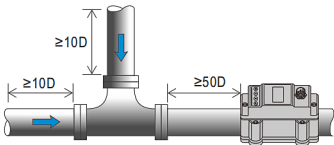
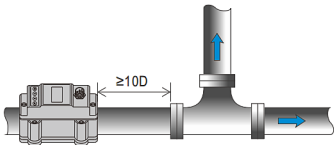
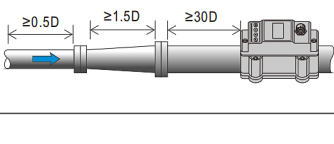
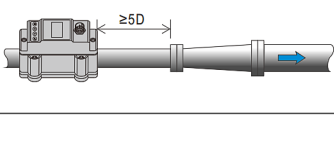
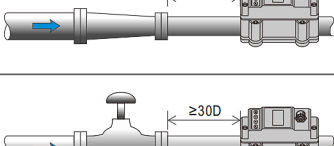
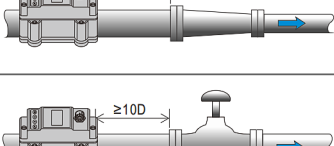
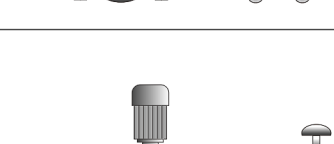
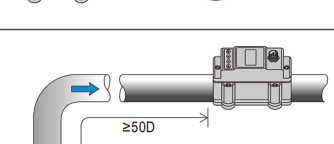
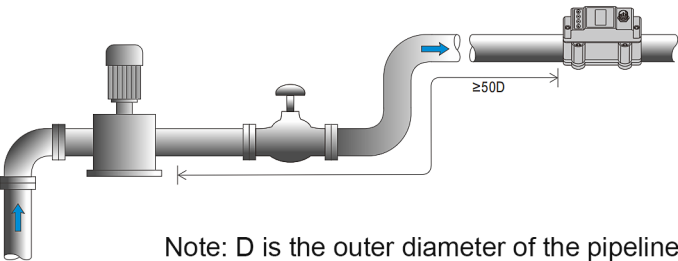
PRODUCT SPECIFICATIONS

Specifications	Nominal pipe diameter (metric)	Nominal Pipe Diameter (Imperial System)	Outer diameter range (mm)	A max(mm)	B(mm)	C(mm)
-φ9.53	DN6	1/8 inch	9.53-12.7	100	58	106
-φ12.7	DN8	1/4 inch	12.7-14	100	58	106
-φ15	DN10	3/8 inch	14-17	100	58	106
-φ20	DN15	1/2 inch	17-20	106	58	106
-φ25	DN20	3/4 inch	22-30	106	58	106
-φ32	DN25	1 inch	30-35	111	58	106
-φ40	DN32	1.2 inch	38-45	121	68	106
-φ50	DN40	1.5 inch	48-54	130	78	106
-φ63	DN50	2 inch	58-68	146	91	130
-φ75	DN65	2.5 inch	68-78	159	105	136
-φ90	DN80	3 inch	88-96	174	119	150
-φ110	DN100	4 inch	108-116	197	143	174

INSTALLATION SELECTION POINT

Choose a pipeline that is always filled with liquid, such as a vertically upward flowing pipeline or a horizontally flowing pipeline. Ensure that the surface temperature of the measuring point pipeline is within the temperature range of the sensor. Carefully understand the internal condition of the pipeline. If possible, choose parts of the pipeline that are not excessively corroded or scaled inside.

INSTALLATION SELECTION POINT

Installation point	Installation point front straight pipe section	Install the straight pipe section after the installation point
Elbow		
Tee		
Expand management		
Reduced diameter pipe		
Valve		
Pump	 Note: D is the outer diameter of the pipeline	

PRODUCT DISPLAY

