LONGRUN

ULTRASONIC FlOWMETER SAMPLE BOOK

TYPE:LRF-3000S
Concentrating on Flow Measurement

LONGRUN

Industrial Instrument

Co., Ltd

▌Introduction▌

- LRF-3000S is a wall-mount, Insertion-type ultrasonic flow meter 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.

- LRF-3000S has a 240*128 back lit LCD with 4 line menu display and also the clear, user-friendly menu selections make flow meter more simple and convenient to use.Daily, monthlyand yearly totalized flow.

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

304 Stainless steel insertion transducers ,simple and convenient installation, high flexibility;

Integrated design and manufacturing, no need to connect their own,

the true meaning of IP68 waterproof;

Hidden pipe design, more beautiful after installation;
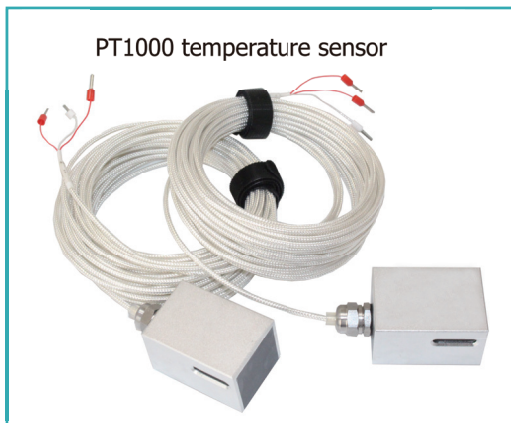
PT1000 temperature sensor
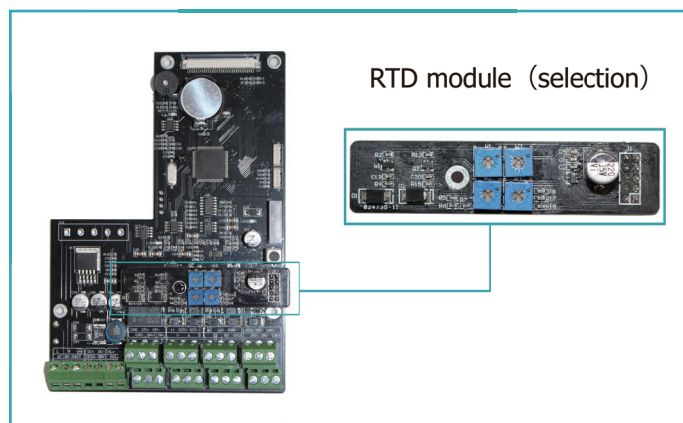
RTD module（selection）

The LRF-3000S can be used in conjunction with the RTD module and the PT1000 temperature sensor to become an energy meter for measuring the heat and cold consumption of heating pipelines and air-conditioning refrigeration pipelines;

The PT1000 uses high-temperature resistance lines, imported movements, and its sensitivity and working conditions durability are much higher than those of domestic PT100.
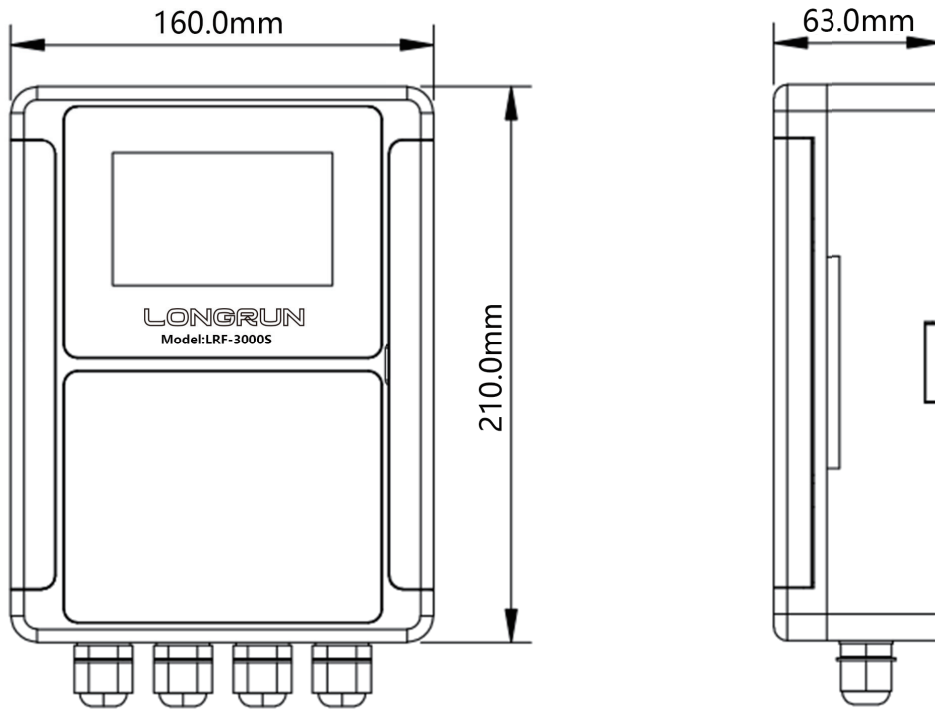
1.0 Clamp-on type

❙Specification❙

Performance	
Flow range	±0.09ft/s ~ ±39ft/s (±0.03m/s ~ ±12m/s)
Accuracy	±1% of measured value
Repeatability	0.2% of measured value
Linearity	±1%
Pipe size	DN25mm~DN1200mm(A pair of sensors)
Function	
Outputs	Analog output: 4~20mA, max load 750Ω. Pulse output: 0~10KHz
Communication	RS232/RS485 Modbus
Power supply	10~36VDC/AC90~245V
Display	240*128 backlit LCD
Temperature	Transmitter: -14°F~140°F(-20°C~60°C) Transducer:-40°F~266°F(-40°C~130°C)
Humidity	Up to 99% RH,non-condensing
Physical	
Transmitter	PC/ABS,IP65
Transducer	Encapsulated design,IP68 Double-shielded transducer cable Standard/maximum cable length:30ft/1000ft(9m/300m)

1.0 Clamp-on type

size and weight

● Transmitter size

160.0mm

63.0mm

210.0mm

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● Transmitter weight

Transmitter weight:
0.96kg

1.0 Clamp-on type

● Transducer weight

Transducer weight：
2.83kg

▌Installation diagram▌

- Dedicated carton
- 304 Stainless steel insertion transducers
- Hall valve
- LED display screen
- Welded base
- Aviation plug terminal
- Membrane keypad
- Innovative cover design (hidden screws)
- Mounting strip
- Expansion screws
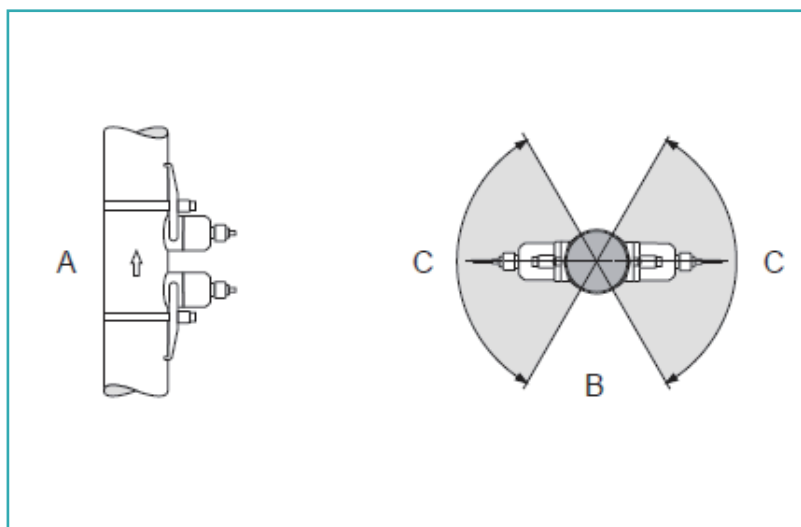
Installation site selection

The first condition for ultrasonic flow meter is the pipe must be full of liquid, the bubbles will greatly influence the accuracy of the measurement, please avoid the follow installation position:
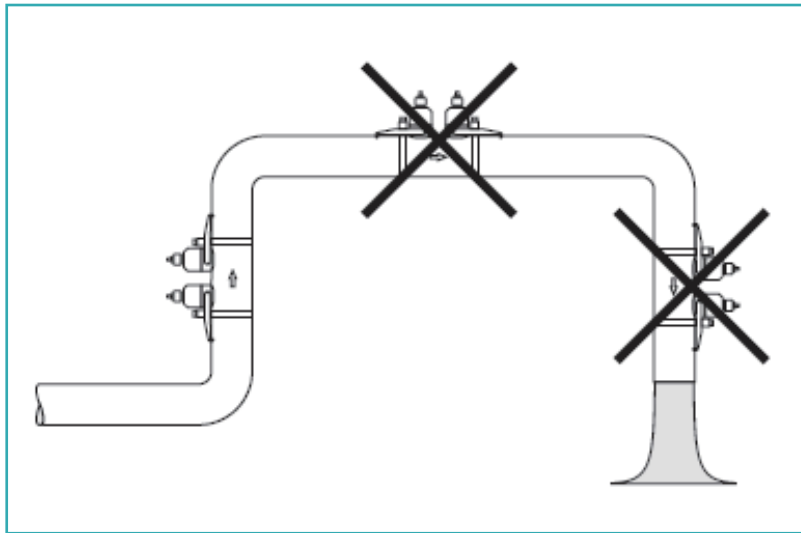

The suggestion installation area is as following:

1.0 Clamp-on type

- A is for upright pipeline, please notice the water direction is from the bottom to top.

- B is for horizontal pipeline, the transducers need to be installed inside the C area, angle for area C, max 120°.
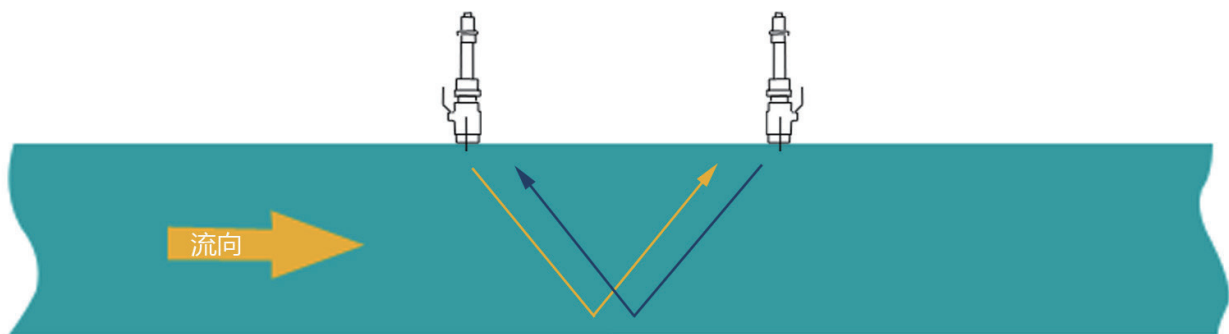
Straight pipe demand

We suggest avoiding the valve, T-branchpipe and elbows if the condition allow. Please satisfied the hardest position installation requirements when you face more than one interfering resource.

≥10 x DN   ≥ 5 x DN

1   ≥ 20 x DN
2   ≥ 20 x DN
3   ≥ 15 x DN

1. Valve
2. T-branch
3. Elbows
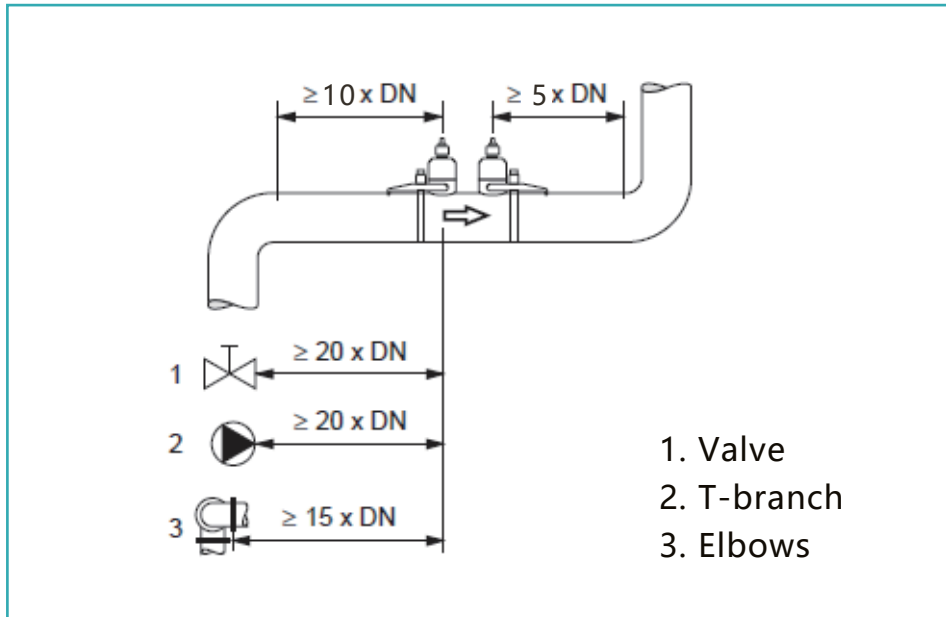
Measuring principle

Transfer time technical means the ultrasonic signal from the transducer is transmitted and received through the moving liquid, there will be a difference between the upstream and downstream transit time, which can be used to calculate flow and velocity.

流向

Ordering confirmation

Model	Transmitter
LRF-3000S	Ultrasonic flowmeter Wall mount Flow range：±0.09ft/s ~ ±39ft/s (±0.03m/s ~ ±12m/s) Accuracy：±1% of the measure value Repeatability：0.2% of the measure value Display：240*128 backlit LCD Power supply： 10~36VDC/AC90~245V Transmitter enclosure: IP65, ABS (Temperature: -20℃~50℃) Output: OCT pulse output 0-10KHz, Relay output, 4-20mA 　　　　optional Communication: RS232, Modbus Protocol
Code	**Output**
1	OCT，Relay，RS232/RS485，4-20mA
2	OCT，Relay，RS232/RS485，4-20mA，RTD
Code	**Transducer**
TT05	Insertion, IP68. Operating temperature: -40 ℉ ~ +266 ℉(-40℃ ~ +130 ℃)
XXX	**Transducer cable length**
030	Standard length 30ft (9m)
XXX	Max length to 1000ft (300m)
Code	**Temperature sensor**
PT1000	Pt1000 temperature sensor+RTD module(selection)
Code	**Memory**
SD	SD card(32G)+ SD card module(selection)

(side tab: 1.0 Clamp-on type)

Standard model: LRF-3000S - 1 - TT05 - 030

Description: Standard ensure clamp-on type ultrasonic flowmeter, OCT, Relay,
　　　　　　RS485, 4-20mA, 30ft cable.