LONGRUN

ULTRASONIC FIOWMETER SAMPLE BOOK

TYPE:LRF-3000S

Concentrating on Flow Measurement

LONGRUN
Industrial Instrument
Co., Ltd

Introduction





- LRF-3000S is a high-end, wall-mount ultrasonic flow meter adopting TGA transit-time difference technology. It was designed and implemented by using Intel's FPGA chip. Both clamp-on and insertion transducers are available.
- Innovative and patented design of covers hides all screws after installation. 4 lines LCD screen presents a clearer and broader vision. Membrane keyboard offers longer service life and more comfortable hand feeling.
- LRF-3000S has superiority of high measuring rate of more than 300 times a second, high accuracy of better than 1.0% and high tolerance rate to continuous bubbles or impurities up to 5 seconds.

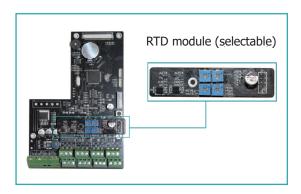






Clamp-on flow transducers adopt imported sealant and sealed by glue inside. Integrated production of transducer and signal cable makes it true IP68 waterproof rating. Matching degree between each pair of transducers is ≤ 2 nanoseconds. Innovative hidden design of clamp fixtures is attractive and practical.





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

PT1000 uses high-temperature resistance cables. Sensitivity and durability are much higher than normal PT100.

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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: $4{\sim}20$ mA, max load 750Ω . Pulse output: $0{\sim}10$ KHz		
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~176°F(-40°C~80°C,TT01) Transducer: -40°F~266°F(-40°C~130°C,TT03) Transducer: -40°F~356°F(-40°C~180°C,TT02H)		
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)		

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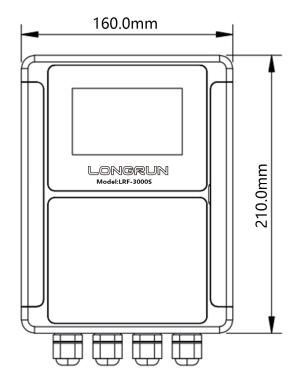
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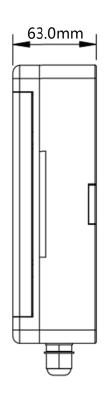
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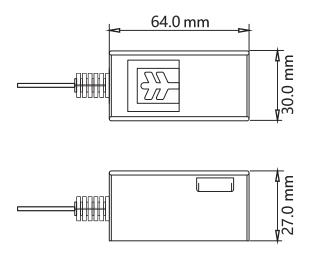
Product dimension

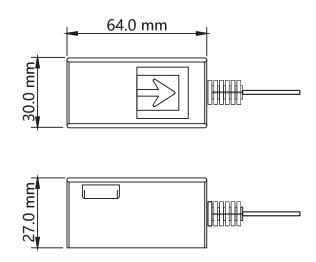
Transmitter dimension





Transducer dimension





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■ Configuration diagram



Product weight



Transmitter weight: 0.96kg



Transducer weight: 1.0kg



Gross weight: 3.11kg

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Installation requiremt

The first condition for using ultrasonic flow meter is the pipe must be full of liquid. Bubbles in pipe will greatly influence the accuracy of the measurement. Please avoid the following installation position:

mounting point	straight pipe length before upstream transducer	straight pipe length after downstream transducer
90° bend	≥10D ≥10D	<u>≥5D</u>
Tee	≥10D ≥10D ≥50D	≥10D
Expanding pipe	≥0.5D ≥30D ≥1.5D ≥30D	≥5D All the second of the se
Reducing pipe	k≥10D N	<u>≥5D</u>
Valve	≥30D	≥10D
Pump		≥50D

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Ordering confirmation

Model	Transmitter
LRF-3000S	Ultrasonic flowmeter wall-mount type 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, PC+ABS (Temperature: -20°C~50°C) Output: OCT pulse output 0-10KHz, Relay output, 4-20mA optional Communication: RS232/RS485, Modbus Protocol
Code	Output
1	OCT, Relay, RS232/RS485, 4-20mA
2	OCT, Relay, RS232/RS485, 4-20mA, RTD
Code	Transducer
TT01	Clamp-on, IP68. Operating temperature: -40 °F ~ +176 °F(-40°C ~ +80 °C)
	10 1 1270 1 (10 0 1 100 0)
TT03	Clamp-on, IP68. Operating temperature: $-40 \text{ °F} \sim +266 \text{°F} (-40 \text{°C} \sim +130 \text{ °C})$
TT03 TT02H	Clamp-on, IP68. Operating temperature:
	Clamp-on, IP68. Operating temperature: -40 °F ~ +266°F(-40°C ~ +130 °C) Clamp-on, IP68. Operating temperature:
TT02H	Clamp-on, IP68. Operating temperature: $-40 ^{\circ}\text{F} \sim +266 ^{\circ}\text{F} (-40 ^{\circ}\text{C} \sim +130 ^{\circ}\text{C})$ Clamp-on, IP68. Operating temperature: $-40 ^{\circ}\text{F} \sim +356 ^{\circ}\text{F} (-40 ^{\circ}\text{C} \sim +180 ^{\circ}\text{C})$
TT02H XXX	Clamp-on, IP68. Operating temperature: -40 °F ~ +266°F(-40°C ~ +130 °C) Clamp-on, IP68. Operating temperature: -40 °F ~ +356 °F(-40°C ~ +180 °C) Transducer cable length
TT02H XXX 030	Clamp-on, IP68. Operating temperature: -40 °F ~ +266°F(-40°C ~ +130 °C) Clamp-on, IP68. Operating temperature: -40 °F ~ +356 °F(-40°C ~ +180 °C) Transducer cable length Standard length 30ft (9m)
TT02H XXX 030 XXX	Clamp-on, IP68. Operating temperature: -40 °F ~ +266°F(-40°C ~ +130 °C) Clamp-on, IP68. Operating temperature: -40 °F ~ +356 °F(-40°C ~ +180 °C) Transducer cable length Standard length 30ft (9m) Max length to 1000ft (300m)
TT02H XXX 030 XXX Code	Clamp-on, IP68. Operating temperature: -40 °F ~ +266°F(-40°C ~ +130 °C) Clamp-on, IP68. Operating temperature: -40 °F ~ +356 °F(-40°C ~ +180 °C) Transducer cable length Standard length 30ft (9m) Max length to 1000ft (300m) Temperature sensor

Standard model: LRF-3000S - 1 - TT01 - 030

Description: Standard ensure clamp-on type ultrasonic flowmeter, OCT, Relay,

RS485, 4-20mA, 30ft cable.

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