

LONGRUN

ULTRASONIC FLOWMETER SAMPLE BOOK

TYPE:LRF-2000M

Concentrating on Flow
Measurement

LONGRUN
Industrial Instrument
Co., Ltd



This ultrasonic module is inline measurement for long-term. The converter and transducer are installed fixing on the pipe, with the advantages of small



| Features |







- **High Accuracy**
Better than $\pm 1\%$
- **Wide Measuring Range**
Several types transducer for selection, pipe size from Dn32mm to Dn6000mm
- **High Reliability**
Adopt low voltage, multi-pulse technology to improve accuracy, useful life and reliability.
- **Strong Anti-interference**
Dual-balance signal differential receiver/driver circuit to avoid interference of converter, TV tower, high voltage line etc.
- **Powerful Recording Function**
Automatically record the following data:
 1. The totalizer data of the last 512 days/128 months/10 years
 2. The time and corresponding flow rate of the last 64 times of power on and off events
 3. The working status of the last 32 days
- **Far transmission distance, easy for networking**
RS485 support wireless network, connect GPRS module to accomplish wireless transmission .
- **Support Heat Measurement**
Connect the temperature transducer ,can finish the heat/energy measurement

LRF-2000M Ultrasonic Flow Module/RTU

| Liquid Type |

This flowmeter can be virtually applied to a wide range of measurement. A variety of liquid applications can be accommodated: ultra-pure liquids, potable water, chemicals, raw

| Measuring Diagram |

Flow Measurement	Heat Measurement	Features
		<ul style="list-style-type: none">• No need to cut off water , no pressure loss• Easy for installation• Connect clamp on temperature transducer, can finish the heat/energy measurement
Clamp on		
		<ul style="list-style-type: none">• No need to cut off water, no pressure loss• Stable and reliable for long term operation• Connect Pt100 temperature transducer, can finish the heat/energy measurement
Insertion		
		<ul style="list-style-type: none">• Need to cut off pipe• With high accuracy and stability• Connect Pt100 temperature transducer, can finish the heat/energy measurement
Pipe		

| Applications |

Water supply and drainage

Heating

Construction of Energy-saving












Metallurgy

Petrochemical





Power




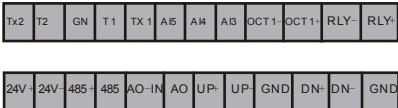

Optional Transducers

Types	Picture	Spec.	Model	Measurement Range	Temperature	Dimension
Clamp on		Small Size	TS-2	DN32~DN100	-30~90℃	45×25×32mm
		Medium Size	TM-1	DN50~DN700	-30~90℃	64×39×44mm
		Large Size	TL-1	DN300~DN6000	-30~90℃	97×54×53mm
High temp. clamp on		Small Size	TS-2-HT	DN32~DN100	-30~160℃	45×25×32mm
		Medium Size	TM-1-HT	DN50~DN700	-30~160℃	64×39×44mm
		Large Size	TL-1-HT	DN300~DN6000	-30~160℃	97×54×53mm
Insertion		Standard	TC-1	DN80~DN6000	-30~160℃	190×80×55mm
		Lengthen	TC-2	DN80~DN6000	-30~160℃	335×80×55mm
Pipe		π type	G3	DN15~DN25	-30~160℃	Pls refer to detailed pipe dimensions
		Standard	G2	DN32~DN40	-30~160℃	
		Standard	G1	DN50~DN6000	-30~160℃	

Optional Temperature Transducers

Picture	Specification	Model	Meas. Range	Temperature	Cut of water	Accuracy
	Transducer Pt100 Clamp on temperature	CT-1	≥DN50	-40~160℃	No	100℃ ± 0.8℃
	Transducer Pt100 Insertion temperature	TCT-1	≥DN50	-40~160℃	Yes	
	Insertion Pt100 Installation with pressure	PCT-1	≥DN50	-40~160℃	No	
	Insertion Pt100 Small size pipe diameter	SCT-1	< DN50	-40~160℃	Yes	

Parts Descriptions

Front View	Wiring Diagram	Back View
 <ul style="list-style-type: none"> Dimensions: 92×90 × 34mm LCD Display: 60 × 19mm 4 keyboard operation 		 <ul style="list-style-type: none"> Installation Method: Guide Rail (width is 35mm)

Module type

LRF-2000M Ultrasonic Flow Module/RTU

Datasheet

Items		Performance & Parameter
Convertor	Principle	Transit-time ultrasonic flowmeter
	Accuracy	± 1%
	Operation	4 keyboards operation
	Signal Output	1 way 4~20mA output, electric resistance 0~1K, accuracy 0.1%
		1 way OCT pulse output (Pulse width 6~1000ms, default is 200 ms)
		1 way Relay output
	Signal Input	3 way 4~20mA input, accuracy 0.1%, acquisition signal such as temperature, press and liquid level
		Connect the temperature transducer Pt100, can finish the heat/energy measurement
	Data Interface	Insulate Rs485 serial interface, upgrade the flowmeter software by computer, support the MODBUS
Special Cable	Twisted-pair cable, generally, the length under 50 meters. Select the RS485, transmission distance can over 1000m	
Pipe Installation Condition	Pipe Material	Steel, Stainless steel, Cast iron, Copper, Cement pipe, PVC, Aluminum, Glass steel product, liner is allowed
	Pipe Diameter	32~6000mm
	Straight Pipe	Transducer installation should be satisfied: upstream 10D, downstream 5D, 30D from the pump
Measuring Medium	Type of Liquid	Single liquid can transmit sound wave, such as Water (hot water, chilled water, city water, sea water, waste water, etc.); Sewage with small particle content; Oil (crude oil, lubricating oil, diesel oil, fuel oil, etc.); Chemicals (alcohol, etc.); Plant effluent; Beverage; Ultra-pure liquids, etc.
	Temperature	-30~160℃
	Turbidity	No more than 10000ppm and less bubble
	Flowrate	0~±7m/s
Working Environment	Temperature	Convertor: -20~60℃; Flow Transducer: -30~160℃
	Humidity	Convertor: 85%RH; Flow Transducer: can measure under water, water depth ≤ 2m (transducer sealed glue)
Power Supply	DC 8~36V or AC 85~264V (optional)	
Power Consumption	1.5W	
Dimension	95*95*35MM (Convertor)	

Ordering code

LRF-2000M- Flow Transducer -DN Diameter mm - Pipe Material -- Pressure MPa ----- Cable Length m --- Temperature Transducer

TS-2	0 Carbon Steel	None
TM-1	1 Stainless Steel	CT-1
TL-1	2 Cast Iron	TCT-1
TS-2-HT	3 Glass Fiber reinforced	PCT-1
TM-1-HT	4 PVC	SCT-1
TL-1-HT	5 Cement	
TC-1	6 Others	
TC-2		
G		

Example: LRF - 2000M+TM-1+DN300+0+1.6MPa+10m+PCT-1

PS: Standard configuration = LRF - 2000M (convertor)+TM-1+5M cable +Steel belt (DN200)+Couplant(1 pc)

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