

LONGRUN

ULTRASONIC FLOWMETER SAMPLE BOOK

TYPE:LRF-3000H

Concentrating on Flow
Measurement

LONGRUN
Industrial Instrument
Co., Ltd



Introduction

LRF-3000H is an ultrasonic flow meter based on transit-time schematic design.

LRF-3000H Designed using the digital technology and low-voltage integrated circuit, it has broadband pulse transmission. While principally designed for full-pipe and clean liquid applications.

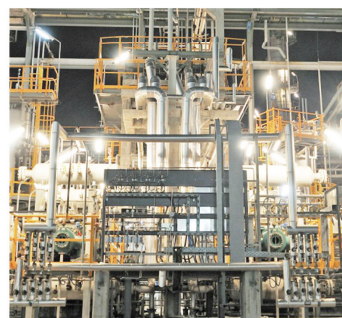
LRF-3000H is tolerant of liquids with small amounts of air bubbles or suspended solids found in most industrial environments. Integration design and high integration reduce the link between PCB boards, more reliable.

LRF-3000H have friendly menu selections make flow meter simple and convenient to use. It can easily check daily, monthly and yearly totalizer flow. Parallel operation of positive, negative and net flow totalizers.



Application

Widely used in chemicals, Irrigation, industrial process water, water supply, water treatment, boiler, etc.



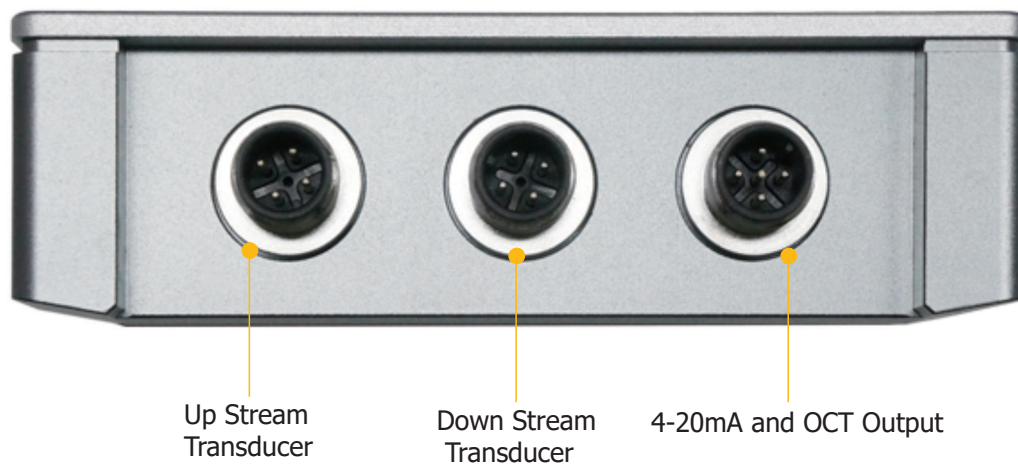
Specification

Performance specifications	
Flow range	0~±40 ft/s (0 ~±12 m/s)
Accuracy	±1.0% of measured value (±0.01m/s~12m/s)
Repeatability	0.2%
Linearity	±0.1%
Pipe size	1 inch to 80 inches (25mm to 2000mm)
Function specifications	
Outputs	Analog output:4 ~20mA (max load 750Ω)
Power supply	Built-in lithium battery (16 hour)
Keypad	20 key with tactile action
Display	2.8" TFT LCD 320*240
Temperature	Transmitter: -40°C~60°C (-40°F~140°F) Transducer: -40°C~80°C (-40°F~176°F) (standard)
Humidity	UP to 95% RH, non-condensing
Physical specifications	
Transmitter	Die-cast aluminum
Transducer	Cable Length (Std.): 16 ft (5 m) Extension length: 66ft (20m), per 16ft extension
Weight	Transmitter: approximately 1.85 lb (0.84kg) Transducer: approximately 2.21lb (1.29kg) (standard)

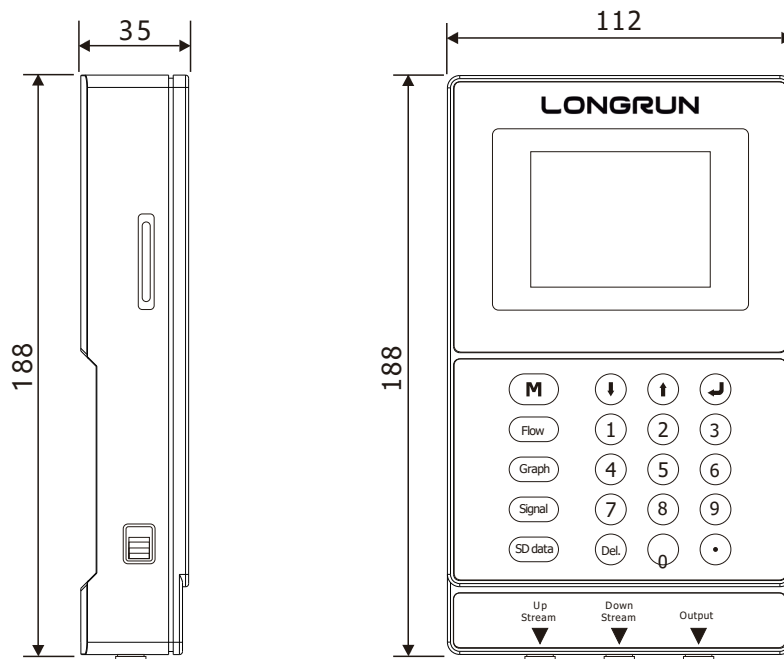
Installation diagram



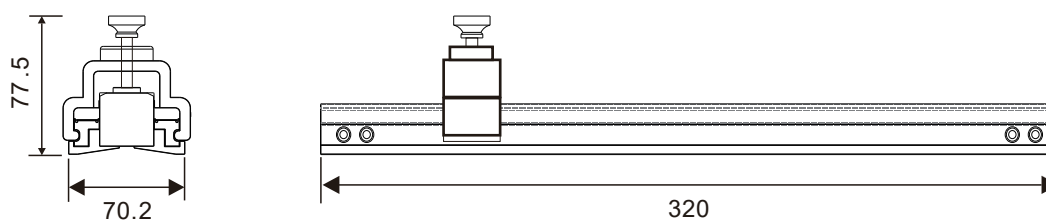
Wiring diagram



Dimensions

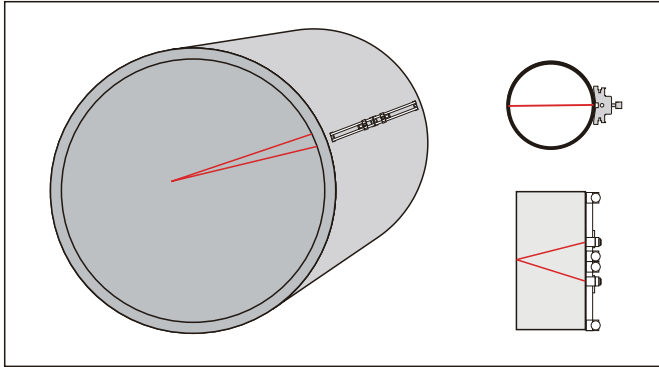


Transmitter dimensions(mm)



Rack Size(mm)

Installation methods



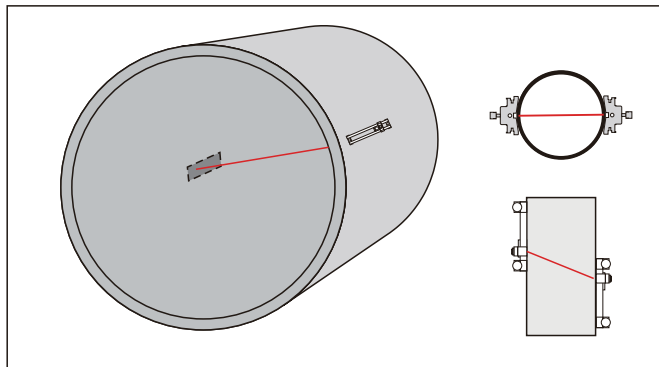
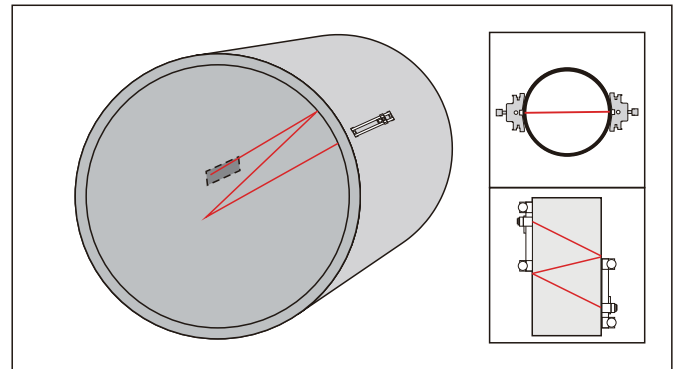
V Method

The V method is considered as the standard method. It usually gives a more accurate reading and is used on pipe diameters ranging from 25mm to 400mm (1"~16") approximately. Also, it is convenient to use, but still requires proper installation of the transducer, contact on the pipe at the pipe's centerline and equal spacing on either side of the centerline.

N Method

With the N method, the sound waves traverse the fluid three and bounce twice times off the pipe walls. It is suitable for small pipe diameter measurement.

The measurement accuracy can be improved by extending the transit distance with the N method (uncommonly used).



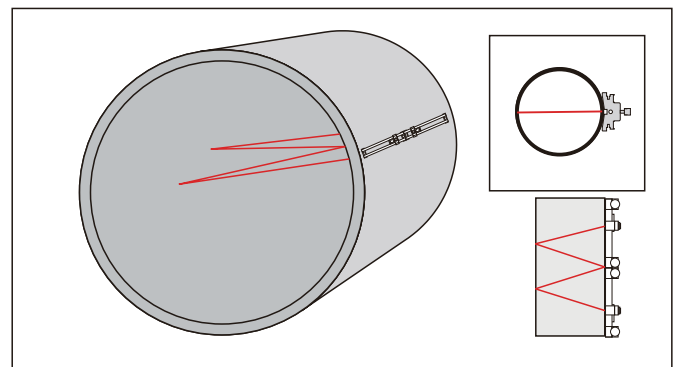
Z Method

The signal transmitted in a Z method installation has less attenuation than a signal transmitted with the V method. This is because the Z method utilizes a directly transmitted (rather than reflected) signal which transverses the liquid only once.

The Z method is able to measure on pipe diameters ranging from 100mm to 5000mm (4" ~200")

W Method

As with the N method, the measurement accuracy can also be improved by extending the transit distance with the W method. The sound wave traverses the fluid four times and bounces three times off the pipe walls. It is suitable for very small pipe (diameters less than 50mm, 2")

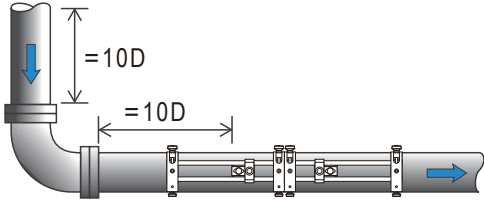
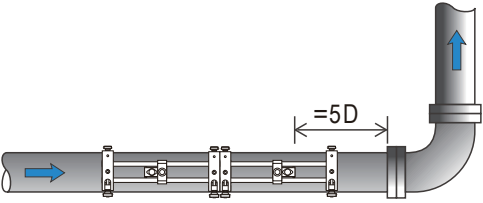
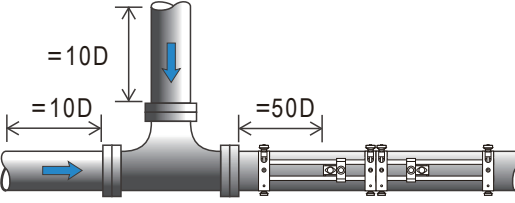
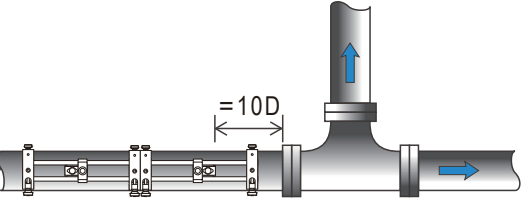
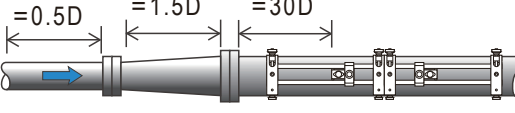
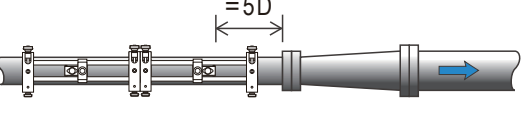
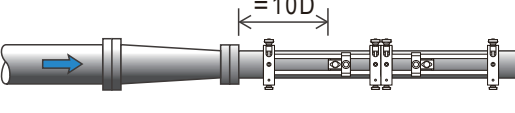
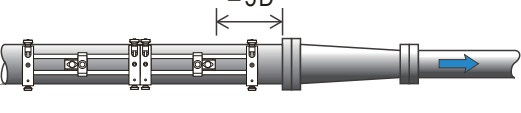
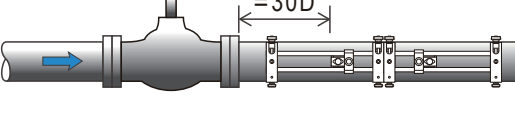
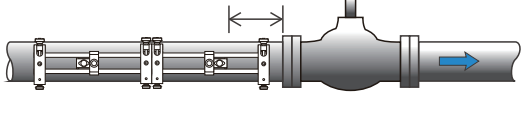
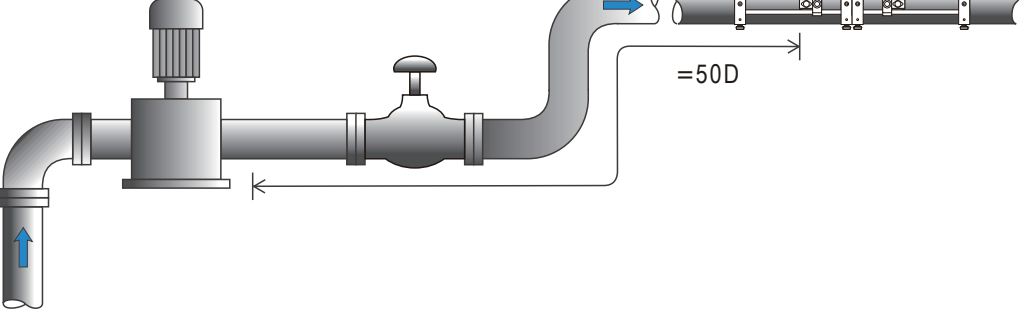


Installation site selection

Choose a section of pipe, which is always full of liquid, such as a vertical pipe with flow in the upward direction or a full horizontal pipe. Ensure that the pipe surface temperature at the measuring point is within the transducer temperature limits.

Consider the inside condition of the pipe carefully. If possible, select a section of pipe where the inside is free of excessive corrosion or scaling. Choose a section of sound conducting pipe.

Examples of acceptable measurement site selection are illustrated in the figure on the below.

Site	Installation point front straight section	Straight pipe section after installation point
90° bend		
Tee		
Diffuser		
Reduce		
Valve		
Pump		

Ordering information

Code	Description
LRF-3000H	Portable Ultrasonic Flow meter Installation method: Portable Flow range: 0~±40 ft/s (0~±12 m/s) Accuracy: ±1.0% of measured value (±0.01m/s~12m/s) Repeatability: 0.2% Linearity: ±1.0% Pipe size: 1 inch to 80 inches (25 mm to 2000mm) Keypad: 20 key with tactile action Display: 2.8" TFT LCD 320*240 Power supply: Built-in lithium battery (16 hour) Transmitter enclosure: IP54, die-cast aluminum machined enclosure Output: 4~20mA and OCT
Code	Input and output
1	4-20mA and OCT output
Code	Transmitter enclosure area classification
1	IP54, die-cast aluminum machined enclosure
2	Customer specific requirements
Code	Type of transducers
CP6	Rack transducer. Operating temperature: -40°F~176°F (-40°C~80°C)
Code	Transducer cable length
016	Cable length 16.5 feet (5m)
xxx	Extended length, up to 66 feet (20m), per 16 feet (5m) is a lengthen unit

Product Component



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