

CULMI AIR-COND & REFRIGERATION PARTS SUPPLY SDN BHD

ULTRASONIC FLOW METER (LRF-2000H) PARTS IDENTIFICATION

TS-2 Clamp-On
Transducers
(**NOT INCLUDED**)

Coupling
Compound
(Chemical Prod)

Flow Meter
Main Unit

TL-1 Clamp-On
Transducers
(**NOT INCLUDED**)

TM-1 Clamp-On Transducers
(**INCLUDED**)
(DN50~DN700mm, 0°C ~ 90°C)

3m Tape Ruler

Power Adapter,
Charger

Strainer or
Fastener

Signal Cables

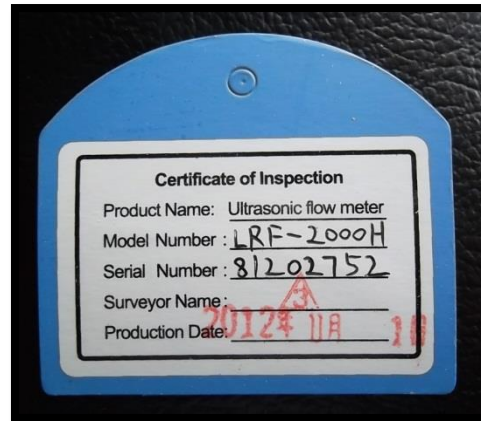


Note:

Coupling Compound is Chemical Product as such it cannot be shipped by Air Express.
It can be used with industrial grease instead.

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ULTRASONIC FLOW METER (LRF-2000H) PRODUCT OUTLOOK



TM-1 Clamp-On Transducers
(DN50~DN700mm, 0°C ~ 90°C)



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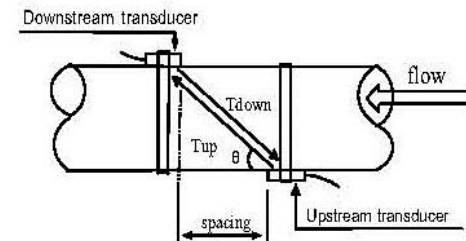
ULTRASONIC FLOW METER (LRF-2000H) APPLICATION



The LRF-2000H ultrasonic flow meter is designed to measure the fluid velocity of liquid within a closed conduit. The transducers are a non-contacting, clamp-on type, which will provide benefits of non-fouling operation and easy installation.

The LRF-2000H transit time flow meter utilizes two transducers that function as both ultrasonic transmitters and receivers. The transducers are clamped on the outside of a closed pipe at a specific distance from each other. The transducers can be mounted in V-method where the sound transverses the pipe twice, or W-method where the sound transverses the pipe four times, or in Z-method where the transducers are mounted on opposite sides of the pipe and the sound crosses the pipe once. This selection of the mounting method depends on pipe and liquid characteristics. The flow meter operates by alternately transmitting and receiving a frequency modulated burst of sound energy between the two transducers and measuring the transit time that it takes for sound to travel between the two transducers. The difference in the transit time measured is directly and exactly related to the velocity of the liquid in the pipe, show as follows:

$$V = \frac{MD}{\sin 2\theta} \times \frac{\Delta T}{T_{up} \cdot T_{down}}$$



Where

θ is the include angle to the flow direction

M is the travel times of the ultrasonic beam

D is the pipe diameter

T_{up} is the time for the beam from upstream transducer to the downstream one

T_{down} is the time for the beam from downstream transducer to the upstream one

$\Delta T = T_{up} - T_{down}$