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PORTABLE AND FIX TYPE ULTRA SONIC FLOW METER

Advanced Clamp - On Transit-time Technology for Accurate Flow Measurement



The TDS – 100H Handled Clamp-on Ultrasonic Flow meter is of the most powerful flow meters available for liquid measurement Utilization of our proprietary Ultrasonic Transit-Time measurement and signal quality tracking technologies allow accurate flow measurement of the liquid flow rate from outside of a pipe.

The TDS-100 flow meters carefully designed so that it is very compact and easy to use. A user can use one hand to hold as well as operate the flow meter main unit. The user interface is self explanatory and very easy to follow. Besides, the unique clamp on fixture design makes the non-intrusive nature of the clamp on technique, there is no pressure drop no moving parts, no leaks and no contamination.

Portable ultrasonic flowmeter

FEAUTES AND BENEFITS:-

- Wide flow measurement range, from 0.01 m/s to 32 m/s
- Bi-directional measurement, totalize for net, positive and negative flow.
- High accuracy, better than $\pm 1\%$ of velocity
- Wide pipe size range, from DN 15 to DN 6000 mm
- Suitable for all commonly used pipe materials
- Rechargeable battery with 10 hours of operation
- Built – in data logger
- Self –explanatory user interface.
- Windows PC software for data down-load and real time data display
- Single quality tracking and self-adjusting capabilities that automatically match transducer to pipe material
- Compact light weight enclosure @ 538g for the handset
- Can also be deployed as a remote RTU for long –term flow monitoring application
- Easy and economical installation
- Non invasive. No pipe disturbance. no moving parts. no pressure drop.
- Ideal for both clean and opaque liquid flows.



APPLICATIONS:-

The TDS-100H Flow meter is ideal for flow surveys and closed pipe applications where non-invasive measurement of liquids is required. Benefited from our advanced digital signal processing technology, the handled flow meter works reliably in both clean and opaque Liquid flow. Examples of applications include:

- Power plants (nuclear power plants, thermal & hydropower plants) heat energy boiler feed water.
- Energy consumption supervision and water conservation management.
- Metallurgy and mining application (e.g. acid recovery)
- Marine operation and maintenance.
- Pulp and paper.
- Pipeline leak detection, inspection, tracking and collection.
- Energy measurement and balancing.
- Network monitoring.
- Water, including hot water, chilled water, city water, sea water etc.
- Sewage and drainage water with small particle quantity.
- Oil, including crude oil, lubricating oil, diesel oil, fuel oil, etc
- Chemicals, including alcohol, acids, etc
- Solvents.
- Beverage and food processes.
- HVAC hot and cool water, water / glycol solutions
- Water and waste treatment



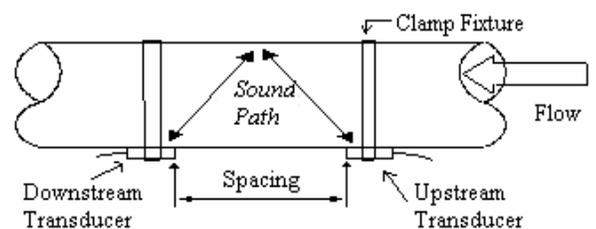
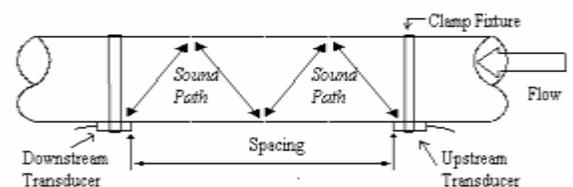
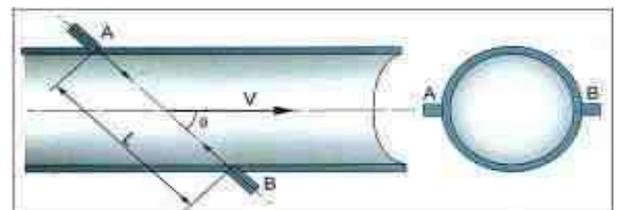
Fix type ultrasonic flowmeter

SPECIFICATIONS:-

Linearity	Better than 1%
Repeatability	0.2%
Accuracy	Normally better than $\pm 1\%$ for velocity above 0.2 m/s.
Response Time	0-999 seconds , user – configurable
Velocity	+ 0.01~+32 m/s , bi-directional
Pipe Range	DN 20 MM~ DN 6000 MM
Pipe Material	All metals , most plastics , concrete lined pipe
Units	English metric
Tantalizer	7-digit totals for net positive and negative flow respectively
Liquid Types	Virtually all liquids (full pipe)
Liquid Temp	0°C~100°C (IF over 80 c pls choose high temp. sensor)
Security	Set-up Modification Locknut. Access code needed for unlocking
Display	4 x 16 letters
Digital Interface	Rs – 232 C User Protocol can be made on enquiry
Transducers	Model m1 for standard , other 3models for optional
Transducer Cable	Standard 2 x 5m. Contact the factory for longer cable
Power supply	3 x AAA Ni-H, built – in batteries. When fully recharged, it will last over 10 , hours of operation , 100 V AC – 240 V AC
Data Logger	Built-in data logger can store over 2000 lines of data
Housing Material	Aluminium alloy protective . Suitable for normal and harsh environment
Case Size	200 mm x 92 mm x 32mm
Handset Weight	538g with batteries

HOW DOES THE ULTRASONIC FLOW METERS WORK ?:-

- The flow meter is based on the transit time measurement principle, as shown in the following diagram's
- A typical transit-time flow measurement system utilizes two transducers (A and B) that function as ultrasonic transmitter and receiver. The Transducers are clamped on the outside of a closed pipe at a specific distance from each other. The flow sensors operate by alternately transmitting and receiving a coded burst of sound energy and measuring the transit time that it takes for sound to travel between the. The difference in the transit time measured is directly proportional to the velocity of the liquid in the pipe.
- The transducers can be mounted in three models diagonal mode , Reflex mode and double reflex mode , depending on pipe size . Diagonal mode is used for larger pipes and the two Transducers are installed on opposite sides of the pipe. Reflex mode is used for medium size pipes and the two.
- Transducers are mounted on the same side of the pipe, thus the sound transverses the flow twice. Double reflex mode is usually used for small pipe and the ultrasound transverses across the flow four times.



TRANSDUCERS WITH UNIT :-

Type S1:- Small size transducer (Magnetic with clamp-on fixture)

Dimension: 45mm x 30mm x 30mm,

Temp: - 0°C-70°C,

Weight: - 75g,

Protection class : IP55

For Pipe size : DN 15-DN-100mm,

Installation :- V-Method (N,W)



Type M1:- Medium size transducer (magnetic with clamp-on fixture)

Dimension: - 60mm x 45mm x 45mm,

Temp:- 0°C-70°C,

Weight: - 250 g,

Protection class: - IP65

For pipe size: - DN-50-DN 700MM,

Installation: - V Method and Z-Method



Type L1:- Large size transducer (magnetic with clamp-on fixture)

Dimension: - 80mm x 70mm x 55 mm,

Temp: - 0°C-70°C,

Weight: - 650g,

Protection Class: - IP65,

For pipe size: - DN300-DN600 mm,

Installation: - Z-method



OPTIONAL TRANSDUCERS:-

Type S1H:- Small size high temp. Transducer (with clamp-on fixture)

Dimension :- 90mm x 85mm x 24mm,

Temp:- 0°C-160°C,

Weight :- 94g,

Protection Class :- IP 65

For pipe size :- DN 15-DN-100 mm,

Installation :- V-Method (N,W)



Type M1H:- Medium size high temp. Transducer (with clamp-on fixture)

Dimension :- 90mm x 82mm x 29mm,

Temp:- 0°C-100°C,

Weight :- 150g,

Protection Class :- IP 65

For pipe size :- DN 50-DN-700 mm,

Installation :- V-Method and Z-method

