

Atlantiss Marine Systems Pte Ltd

Loyang Offshore Supply Base, Blk 104C TOPS Ave 1

27D Loyang Crescent, Singapore 506823

Tel : +65 6745 8151 Fax : +65 6745 4060

E-mail : info@atlantissgroup.com.sg

Website : www.atlantissgroup.com.sg



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With Speed . Our Expertise . Your Safety

Atlantiss® Handheld Ultrasonic Flow Meter



Features

Large-screen LCD
Built-in data-logger
High accuracy measuring
Small and light

Non-contacting measuring
Built-in rechargeable battery
Wide measuring range
RS-232 serial interface

Typical application

The Handheld ultrasonic flow meter can be virtually applied to a wide range of measurements. A variety of liquid applications can be accommodated: ultra-pure liquids, potable water, chemicals, raw sewage, reclaimed water, cooling water, river water, plant effluent, etc. Because the instrument and transducers are non-contacting and have no moving parts, the flow meter cannot be affected by system pressure, fouling or wear. Standard transducers are rated to 110 °C. Higher temperatures can be accommodated. For further information, please consult the manufacturer for assistance.

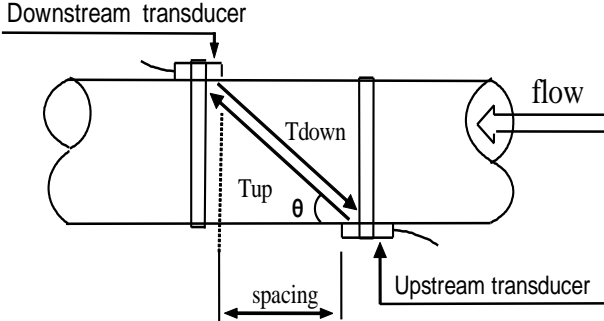
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Flow measurement principle

The AT-100H 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 AT-100H 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:

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


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

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

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Specifications

Linearity	0.5%
Repeatability	0.2%
Accuracy	±1% of reading at rates>0.2 mps
Response Time	0-999 seconds, user-configurable
Velocity	±32 m/s
Pipe Size	15mm-6000mm
Totalizer	7-digit totals for net, positive and negative flow respectively
Liquid Types	Virtually all liquids
Security	Setup values Modification Lockout. Access code needs unlocking
Display	4x16 English letters
Communication Interface	RS-232, baud-rate: from 75 to 57600. Protocol made by the manufacturer and compatible with that of the FUJI ultrasonic flow meter. User protocols can be made on enquiry.
Transducer Cord Length	Standard 5m x 2, optional 10m x 2
Power Supply	3 AAA built-in Ni-H batteries. When fully recharged it will last over 12 hours of operation. 100V-240VAC for the charger
Data Logger	Built-in data logger can store over 2000 lines of data
Manual Totalizer	7-digit press-key-to-go totalizer for calibration
Housing Material	ABS
Case Size	210x90x30mm
Handset Weight	500g with batteries

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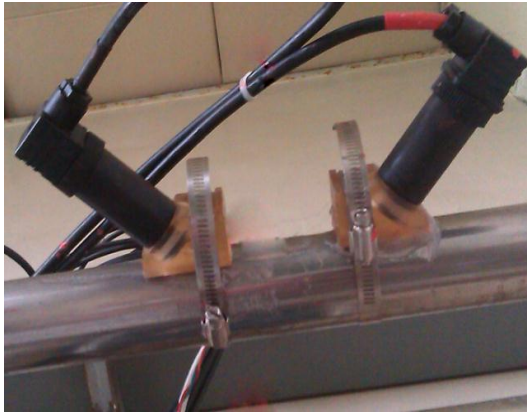
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Installation



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Packing



- 1、 Main Unit
- 2、 User manual
- 3、 Belt stretcher
- 4、 Ultrasonic transducers
- 5、 Tape
- 6、 AC adapter
- 7、 Coupling agent
- 8、 Ultrasonic signal cable

Name	QTY (pcs)
Main Unit	1
Ultrasonic transducer	2
Ultrasonic signal cable	2
Data line	1
AC adapter	1
Coupling agent	1
Belt stretcher	2
Tape	1
User manual	1
Carrying case	1

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Optional Transducer



Standard clamp-on 	S1 small size	DN15-100mm	-30-70°C
	M1 medium size	DN50- 700mm	
	L1 large size	DN300-6000mm	
High temperature clamp-on 	S1H small size	DN15-100mm	-30-160°C
	M1H medium size	DN50-700mm	