STUF-300H

HANDHELD ULTRASONIC FLOWMETER

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

STUF-300H Ultrasonic Flowmeter is one of the most powerful portable flowmeters available for liquid flow measurement. It is carefully designed so that it is very compact and easy to use. You can use one hand to hold as well as to operate the flowmeter. The user interface is self-explanatory and very easy to follow. The unique clamp-on fixture design makes the installation very simple and no special skills or tools required.

Shenitech offers StufManager™ PC software for data logger download and to explore the full potential of STUF-300H flowmeter.

Features and Benefits:

- High accuracy measurement
- Non-intrusive. Clamp-on installation. Easy and fast
  No moving parts. Maintenance free
- Light weight, compact design
- Suitable for all commonly used pipe materials and liquids
- Suitable for pipes from 1” ~ 120” (DN25~DN3000mm)
- Rechargeable battery for 10 hours of operation
- Built-in data logger and flow totalizers
- Self-explanatory user interface. Easy to operate
- StufManager™ PC software for data download and real-time data acquisition
- Signal quality tracking and self-adaptation for robust performance
- USB interface for PC link

Applications:

The STUF-300H handheld flowmeter is one of the most portable but yet powerful flowmeters on the market. The utilization of our proprietary ultrasonic signal processing, transit-time detection, signal quality tracking as well as self-adaptation technologies allows the flowmeter to measure liquid flow rate from outside of a pipe reliably and accurately. It is an ideal tool for flow surveys and closed-pipe applications where non-invasive measurement of liquids is essential.

Examples of applications include:

- 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 processors.
- HVAC hot and cool water, water/glycol solutions.
- Water and waste treatment.
- Power plants (nuclear, thermal & hydropower, etc.) heat energy boiler feed water.
- Energy consumption supervision and water conservation management.
- Metallurgy and mining applications (e.g., acid recovery)
- Marine operation and maintenance.
- Pulp and paper.
- Pipeline leak detection, inspection, tracking and collection.
- Energy measurement and balancing.
- Water distribution network monitoring.

Specifications:

Linearity	Better than 1%
Repeatability	0.5%
Accuracy	±1% of velocity reading or ±10mm/s, whichever is bigger
Response Time	0-999 seconds, user-configurable
Velocity	-52ft/s ~ +52ft/s (-16m/s ~ +16m/s), bi-directional
Pipe Size	1" ~ 120" (DN25mm ~ DN3,000mm)
Pipe Material	All metals, most plastics, lined pipe
Units	English (U.S.) or metric
Totalizer	Three 7-digit totalizers for totalizing net, positive and negative flows
Liquid Types	Virtually all liquids (full pipe)
Liquid Temp	32˚ F ~ 176˚ F (0˚C ~ 80˚C) or 32˚ F ~ 312˚ F (0˚C ~ 155˚C), depending on transducer type
Security	Setup Modification Lockout. Access code needed for unlocking
Display	4x16 letters

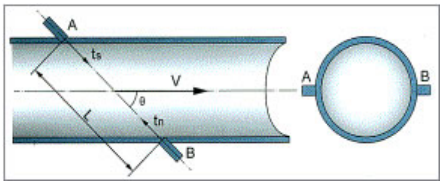
Digital Interface	USB interface: serial communication port with simplified protocol StufManager™ Windows PC software for data download and real-time data acquisition
Transducers	Refer to Optional Transducers section for more details
Transducer Cord	Standard 2x15' (2x5m). Extension cable available upon request
Power Supply	3 AAA Ni-H built-in batteries. When fully recharged, it will last over 10 hours of operation USB power charger
Data Logger	Built-in data logger can store over 2,000 lines of data
Housing Material	Aluminum alloy protective case. Suitable for normal and harsh environment
Case Size	7.9"x3.6"x1.3" (200mmx92mmx32mm)
Handset Weight	1.2 lbs (538g) with batteries

How does the STUF-300H flowmeter work?

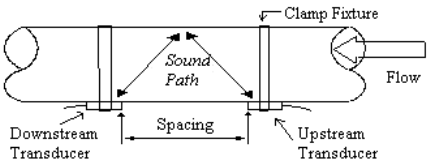
The STUF-300H flowmeter is based on transit-time measurement principle, as shown in the following figure.

A typical transit-time flow measurement system utilizes two transducers (A and B) that function as both ultrasonic transmitter and receiver. The transducers are clamped on the outside of a closed pipe at a specific distance from each other. The flow meter operates by alternately transmitting and receiving a coded 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.

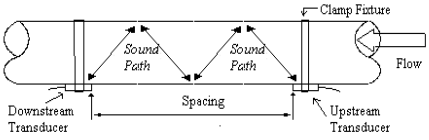
The transducers can be mounted in three methods, Z-method, V-method and W-method, depending on pipe size. Z-method is used for large pipe. The two transducers are installed on opposite sides of the pipe. V-method is used for medium size pipe. The two transducers are on the same side, thus, the sound transverses the flow twice. W-method is usually used for small pipe. The sound transverses across the flow channel four times.



Z-method



V-method



W-method

Transducers:

	**Type HS** Handheld small size transducer (magnetic) Dim 7.9”x1”x1” (200x25x25mm3), handle length 3.9” (100mm) For pipe size: 1” ~ 4” (DN25 ~ DN100mm) Temperature: 32˚ F ~ 176˚ F (0˚C ~ 80˚C)
	**Type S1HT** Small size, high temperature transducer Pipe size: 1” ~ 4” (DN25 ~ DN100mm) Temperature: 32˚ F ~ 312˚ F (0˚C ~ 155˚C)
	**Type HM** Medium size transducer (magnetic with mounting rack) Dim 11”x1.6” x1.6” (280x40x40mm3) for each Pipe size: 2” ~ 28” (DN50 ~ DN700mm) Temperature: 32˚ F ~ 176˚ F (0˚C ~ 80˚C)
	**Type M1HT** Medium size, high temperature transducer Pipe size: 2” ~ 28” (DN50 ~ DN700mm) Temperature: 32˚ F ~ 312˚ F (0˚C ~ 155˚C)
	**Type TL1** Large size transducer Dim 3.1”x2.7” x2.2” (80x70x55mm3) Pipe size: 11” ~ 240” (DN300 ~ DN6,000mm) Temperature: 32˚ F ~ 176˚ F (0˚C ~ 80˚C)

Model Selection:

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HS – Handheld type for pipe 1” ~ 4” *
S1HT – High-temp type for pipe 1” ~ 4”*
HM – Mounting-rail type for pipe 2” – 28”
M1HT – High-temp type for pipe 2” ~ 28”
TL1 – Standard type for pipe 11” – 240”

**Note:*
For pipes smaller than 2” (DN50), and the pipe is metal or copper, please inform us when place the order.

PC Software
0 – No (Default)
1 – Yes

Extension Cable
0 – No (Default)
1 – Yes

Example**:**

STUF-300H-HM1-1-0: handheld ultrasonic flowmeter with mounting-rail type transducer for pipes from 2” to 28” and PC software.

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