



PORTABLE ULTRASONIC FLOW METER



UPC Instruments Pvt. Ltd.

An ISO 9001:2015, 14001-2015 CE & TÜV SÜD Certified Company

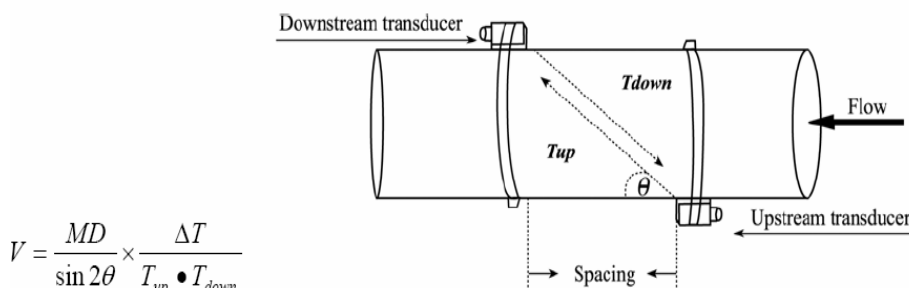
PORTABLE ULTRASONIC FLOW METER

Portable type Ultrasonic Flow Meter (Hand-held type)

- 4 Flow Totalizers
- Work properly near transverters
- 0.5 second totalizing period
- Built-in data-logger
- Built-in date Totalizers
- 100 Pico-second resolution of time measurement
- Patent balanced lower- voltage multi-pulse ultrasonic igniting

“UPC-USP-120” 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 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 transducer 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 the pipe and liquid characteristics. The flow meter operates by alternately transmitting and receiving a frequency modulated burst of sound energy 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, as shown in figure



Remarks

θ : is the include angle to the flow direction

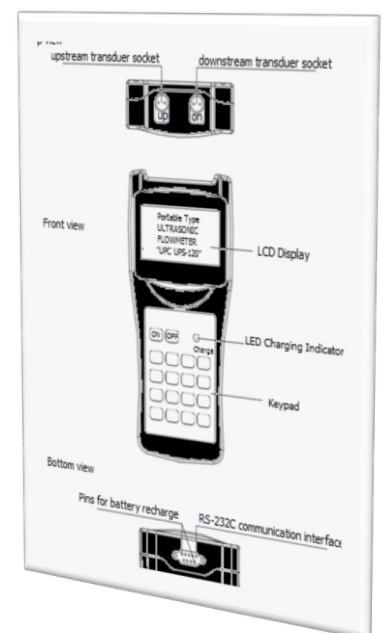
M : is the travel times of the ultrasonic beam

D : is the pipe diameter

Tup : is the time for the beam from upstream transducer to the downstream one

Tdown : is the time for the beam from downstream transducer to the upstream

one ΔT : Tup – Tdown



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Main Specification

Linearity	: 0.5%
Repeatability	: 0.2%
Accuracy	: $\pm 1\%$ of reading at rates > 0.2 mps
Response Time	: 0-999 seconds, user- configurable
Velocity	: ± 32 m/s
Pipe Size	: 20mm-6000mm
Rate Units	: Meter, Feet, Cubic Meter, Liter, Cubic feet user configurable
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-232C, baud-rate: from 75 to 57600. Protocol made by the manufacturer and compatible with that of the "UPC" Ultrasonic flow meter. User Protocols can be made on enquiry.
Transducers	: Model M1 for standard, other 3 models for optional
Transducer Cord Length	: Standard 2x10 meters, optional 2x500 meters
Power Supply	: 3 AAA Ni-H built-in batteries. When fully recharged it will last over 10 hours of operation.
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	: 100x66x20mm
Handset Weight	: 514g(1.2 lbs) with batteries

The codes for the keypad should be used when the instrument is connected with other terminals that operate the instrument by transmitting the 'M' command along with the keypad code. By this function, remote operation of this instrument can be realized, even via the internet.

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Key	Hexadecimal Key code	Decimal Key code	ASCII Code
0	30H	48	0
1	31H	49	1
2	32H	50	2
3	33H	51	3
4	34H	52	4
5	35H	53	5
6	36H	54	6
7	37H	55	7

WARRANTY

All meter are warranted against any manufacturing defect for a period of 12 months from date of supply, provided the meter has not been misused, damaged, installed for services it is not recommended or the seal has been tampered with. The company shall be liable to furnish part/ parts thereof or full water meter as the company may deem fit.

UPC INSTRUMENTS PVT.LTD.

AN ISO 9001:2015, 14001-2015 CE & TÜV SÜD CERTIFIED COMPANY

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