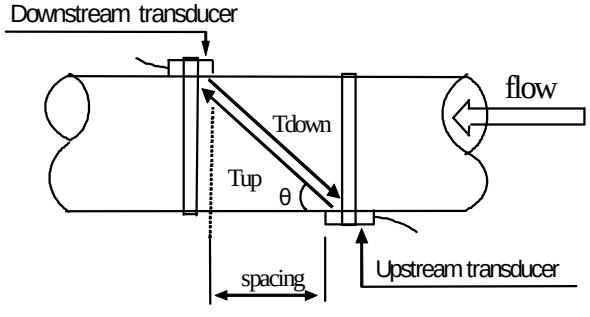
Safmag House, 498 Sydney Rd, Congella, Durban
P.O. Box 17143,Congella, 4013, Durban, South Africa
Tel: 086 110 6028, Fax: 086 516 8460
Website: www.flowmetrix.co.za
Email: enquiries@flowmetrix.co.za

SAFSONIC P
PORTABLE ULTRASONIC FLOWMETER

KEY FEATURES

- Wide flow measurement range 0,01m/s to 32m/s
- Bi-directional flow measurement
- Flow totaliser – positive, negative and net
- Pipe size range from DN15 to DN6000
- Rechargeable battery with 10hour battery life.
- Easy to use menu structure
- Non-invasive
- No moving parts
- No pressure loss
- Hygienic flow measurement
- Easy and economical to install
- Measurement is independent of fluid conductivity and pressure
- No contact with medium ensures no risk of corrosion when measuring aggressive media.

The Safsonic P portable flowmeter utilises ultrasonic technology for the accurate measurement of clean or opaque liquids in full pipes. The principle of measurement, Ultrasonic Time Difference Correlation, more commonly known as Transit Time or Time of Flight, is based on the theory that sound waves are affected by a flowing medium. Measurements are taken by penetrating the pipe with an ultrasound signal by means of two ultrasonic transducers, each having a turn to act as a transmitter and receiver. The transit time of the sound waves in both upstream and downstream directions of the flow are monitored with the resulting time difference being directly proportional to the flow velocity.
This process is controlled and closely monitored by the hand held, microprocessor based display unit which returns the calculated data in user selected units of measurement.



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

Where :
θ *is the sensor angle to the flow direction*
M *is the number of the ultrasonic beam paths*
D *is the pipe diameter*
Tup *is the transit time of the beam from the upstream transducer to the downstream transducer*
Tdown *is the transit time of the beam from the downstream transducer to the upstream transducer*
ΔT=Tup –Tdown

APPLICATIONS

The Safsonic P has been designed to meet the needs of any individual wishing to check the flow rate of liquids in most closed-pipe applications around the plant. The easy to use menu structure allows the user to obtain the required flow data within minutes.

Examples of applications include:

- Water applications (hot water, chilled water, sea water, irrigation / raw water, potable water, etc)
- Chemicals (including aggressive media)
- Solvents
- Beverage and food processes
- HVAC Hot and cool water / glycol solutions
- Water and waste water treatment plants
- Power plants (nuclear, thermal and hydropower plants)
- Energy consumption and water conservation management
- Metallurgy and mining applications
- Marine operation and maintenance
- Pipeline leak detection, inspection and tracking

SPECIFICATIONS

Linearity:	Better than 1%	Response time:	0-999 seconds (user configurable)
Accuracy:	1% to 5% of measured value, depending on application.	Velocity range:	0.01 to 32m/s (bi-directional)
		Pipe range:	DN15 to DN6000
		Totaliser:	7 digit totaliser (forward, reverse and net total)
Units:	English / Metric		
Liquids:	All clean and opaque liquids	Temperature range:	0°C to 160°C with high temp sensors
		Display:	4 x 16 characters
Security:	Setup lockout / access codes	Power supply:	3 x AAA Ni-H batteries (rechargeable-allows approximately 10hour use)
Repeatability:	0.2%	Transducer cable:	Standard 2 x 5m (consult factory for longer length cables)

SENSOR OPTIONS

Type M2 Sensors
Medium sensors for pipe sizes: DN50 to DN700
0°C - 70°C

Type L1 Sensors
Large sensors for pipe sizes: DN300 to DN6000
0°C - 70°C

Type S1 Sensors
Small sensors for pipe sizes: DN15 to DN100
0°C - 70°C

Mounting rack for medium sensors
280x40x40
0°C - 70°C

Mounting rack for small sensors
200x25x25
0°C - 70°C

Transducer cable
Standard length 5m (x2)
Consult factory for extra length