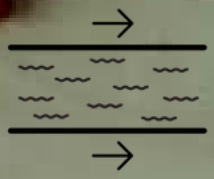
COLTRACO
Ultrasonics | since 1987



PORTABLE ULTRASONIC FLOW METER

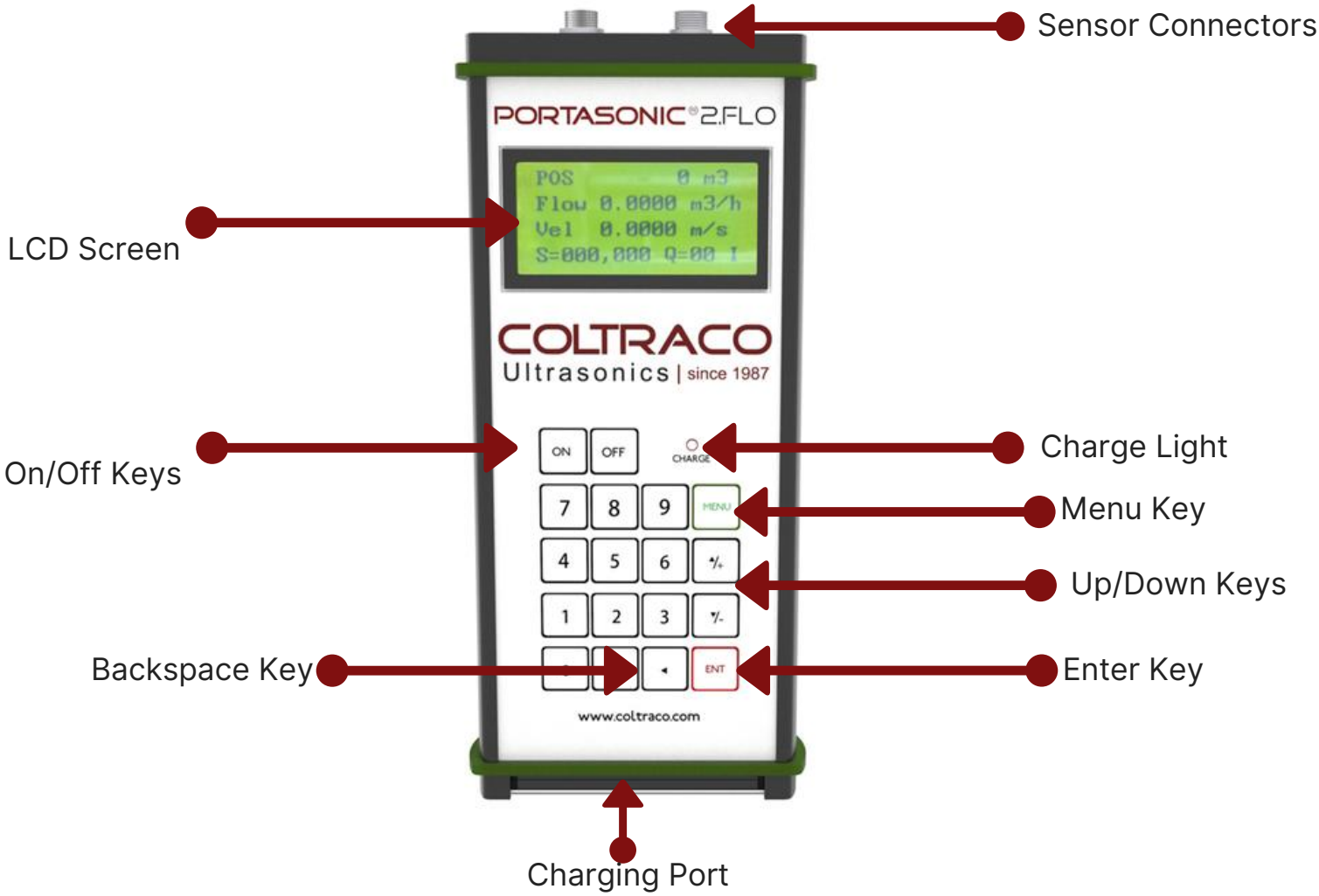
PORTASONIC® 2.FL0

BROCHURE

Introducing the Portasonic® 2.FL0

Portasonic® 2.FL0 is the second generation of ultrasonic flow meter by Coltraco Ultrasonics. It is accurate, easy to use, reliable and robust. Ideal for sprinkler systems, testing rate of flow for pumps etc.

- **Type** – Portable Ultrasonic Transit Time Flow Meter
- **Function** – Used to measure flow rates of clean liquid
- **Part Number** – PSO12



Advantages of the Portasonic® 2.FL0

Non invasive
flow measurement from outside of a pipe with clamp-on sensor.

Accurate
+/- 1% of reading at rates > 0.2 m/s, calibrated at an ISO 17025 certified lab.

Long term reliability
battery life, light weight, compact and reliable.

Robust
Prevent water ingress into the charging port with new watertight flap.

Easy to use
simple set up thanks to unique clamp-on design

Variable
Use in different environments: 3 different modes of operation.

Integrity testing
Through the conducting spot checks at mandated intervals.

Cost Saving
Cost and time effective with easy digital set up.

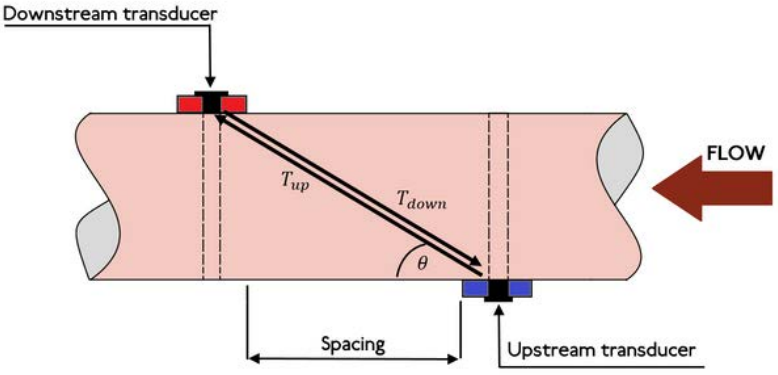
How does the Portasonic® 2.FL0 work?

The Portasonic® 2.FL0 ultrasonic flow meter is used to measure flow rates of clean liquid (liquid with not more than 5% solids or 2% gas) in pipes.

The equipment comes with clamp on transducers for non-invasive measurement.

The unit uses two sensor, one that acts as ultrasonic transmitters and the other a receivers.There are three methods of operation; V-method, W-method or Z-method which refers to transducer positioning (see next page).

The software calculates the time it takes for the ultrasonic pulse to pass from the transmitter to the receiver, which is dependent on the flow rate.



$$V = \frac{Dt}{\sin 2\theta} \frac{\Delta T}{T_{up}\, T_{down}}$$

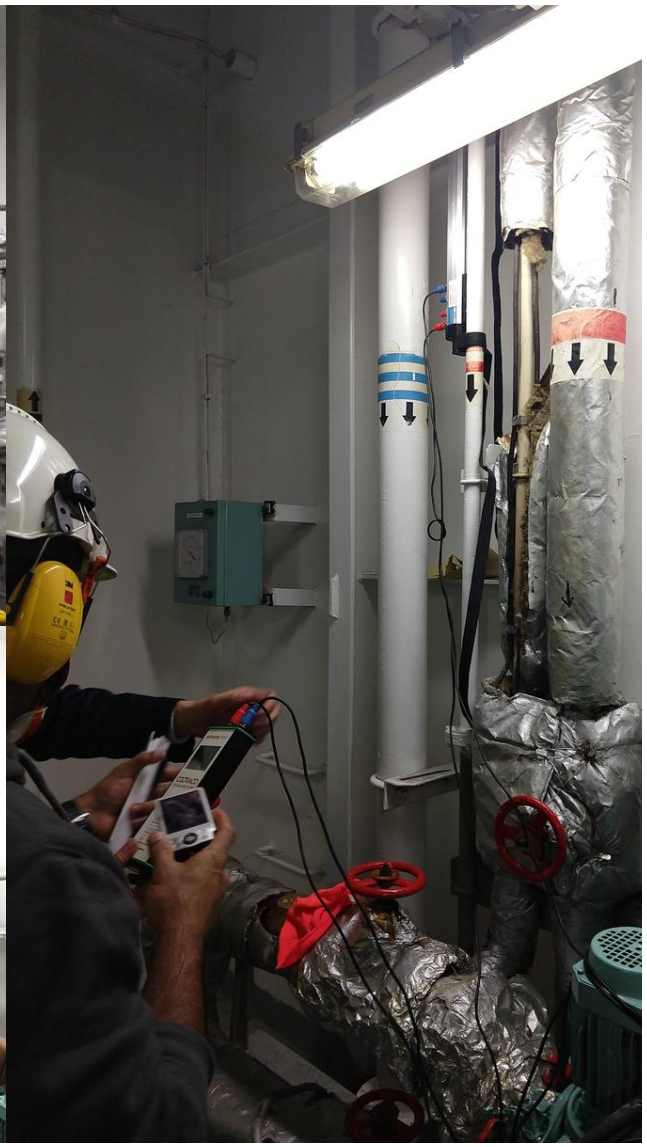
θ = the include angle to the flow direction
t = the travel times of the ultrasonic beam
D = the pipe diameter
T_{up} = the time taken for the beam from the upstream transducer to reach the downstream transducer
T_{down} = the time taken for the beam from the downstream transducer to reach the upstream transducer
$\Delta T = T_{up} - T_{down}$

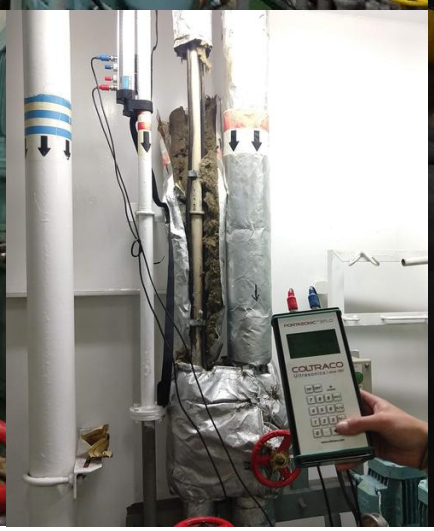
mathematical equations that show how the Portasonic 2.FL0 work

Applications

FIRE SPRINKLER SYSTEMS	HEAVY FUEL OIL METERING	BALANCING SYSTEMS
ULTRAPURE WATER	HYDRAULIC SYSTEM TESTING	CONDENSATE MEASUREMENT
PUMP VERIFICATION	LEAK DETECTION	MARINE MAINTENANCE

Photos from LPG Vessel Field Trial UK





Technical Specifications

Linearity (variance in accuracy across liquid measurements)	0.5%
Repeatability (consecutive measurements)	0.2%
Accuracy	±1% of reading at rates>0.2 mps
Velocity	±32 m/s
Pipe Size	15mm-6000mm
Totalizer	7-digit totals for net, positive and negative flow
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.
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 (exportable)
Manual Totalizer	7-digit press-key-to-go totalizer for calibration
Pipe Materials	Carbon Steel, Stainless Steel, Cast Iron, Ductile Iron, Copper, PVC, Aluminium, Asbestos, Fiberglass, ABS, Bronze, GRP, Glass, Polyethylene
Case Size	210x90x30mm
IP Rating	IP54
Main Unit Weight	500g with batteries

Sensor Options

Each device is individually calibrated in ISO 17025 traceable standards to ensure the equipment measures accurately to 1%. Each unit is issued with its own calibration certificate indicating approved accuracy ratings. Multiple sensors are also available depending on the different pipe dimensions.

Small Sensor

No mount*

- Pipe diameter range: 15mm – 100mm
- Sensor dimensions: 45mm x 25mm x32mm

With mount

- Pipe diameter range: 15mm – 100mm
- Sensor dimensions: 318mm x 59mm x 85mm

Operating temperature: -30C to 90C

Medium Sensor

No mount*

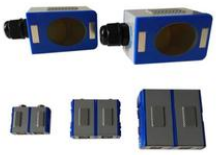
- Pipe diameter range: 50mm – 700mm
- Sensor dimensions: 64mm x 39mm x44mm

With mount

- Pipe diameter range: 50mm – 300mm
- Sensor dimensions: 568mm x 59mm x85mm

Operating temperature: -30C to 90C

Large Sensor



No mount*

- Pipe diameter range: 300mm – 6000mm
- Sensor dimensions: 97mm x54mm x53mm

Operating temperature: -30C to 90C

For sensors with mount it is beneficial because it is easier to secure on pipes using Velcro straps instead of jubilee clips. It is easier to achieve a stable signal with mounted sensors as the setup is more stable. It is also easier to measure the transducer distance between the two sensors on a mount as the mount has a built-in ruler).

*For sensors without mount, jubilee clips are provided to secure the sensors to the pipes.

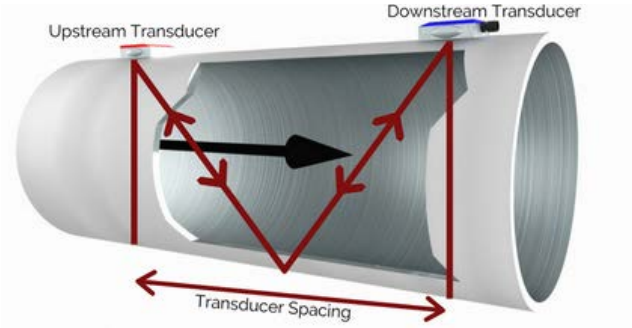
Other options available:

- For fluid temperature exceeding 90°C, high temperature sensor available up to 160°C.
- For installation in tight spaces, please note the sensor dimensions below. Loose sensors can be supplied if options below are too large.

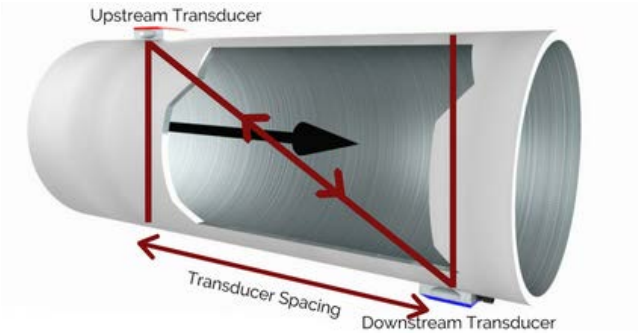
NB: There are cost differences between the sensors. Please ask sales team for information.

Methods of Measurement

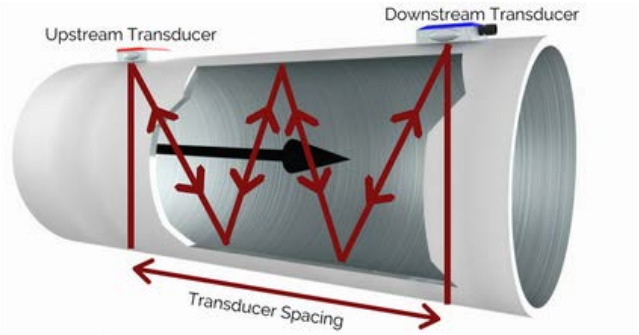
V Method
V-method is for pipes with an inner diameters ranging from 15 mm to 400 mm.



Z Method
Z-method is commonly used when the pipe diameter is above 200mm.

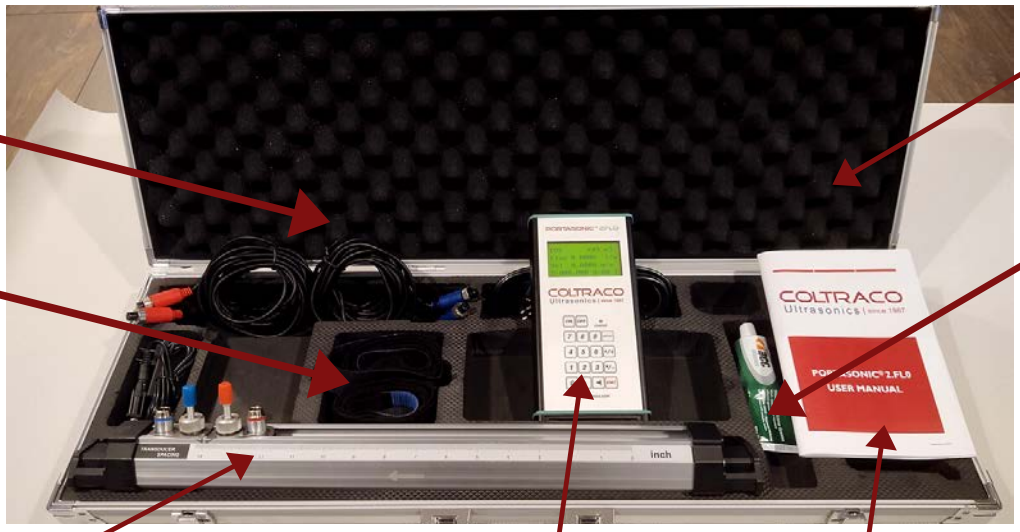


W Method
W-method is usually used on plastic pipes with a diameter from 15mm to 50mm.



Package

Comes in a ready to go package with all you need to conduct flow rate testing.



Sensor cables

Straps for sensor if selected

Sensor & Mount (as selected)

Main Unit

Robust carrying case

Ultrasonic gel

Operating Instructions
Calibration Certificate

Customer Care Commitment

Enjoy Coltraco Ultrasonics' after sales support

Every unit comes with 3 year warranty supporting the manufacturing quality of the main unit and 1 year on sensor,

Technical Support provided free of charge for the unit's lifetime.

OPTIONAL TOTAL CARE PACKAGE: PORTACARE® for extra support.

We have local partners to support you worldwide through our global network of Partners, Distributors and ODA (Organisational Delegated Authorities) Service Centres.

PROUD TO SUPPORT EXPORTING IS GREAT
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