COLTRACO
Ultrasonics | since 1987

THE QUEEN'S AWARDS FOR ENTERPRISE: INTERNATIONAL TRADE 2019

Introducing

PORTASONIC® PLUS

Ultrasonic Flow Meter with Thickness Gauging Functionality & Datalogging



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FLOW

PORTASONIC® PLUS

Portable, clamp-on ultrasonic transit time flow meter

PN: 2618949-PSOPLUS

Non-invasive for measuring the flow rates of most clean liquids in pipes with gas/solid content less than 10% of volume, built-in thickness gauge, datalogging and ability to incorporate heat quantity measurements





MULTIPLE METRICS

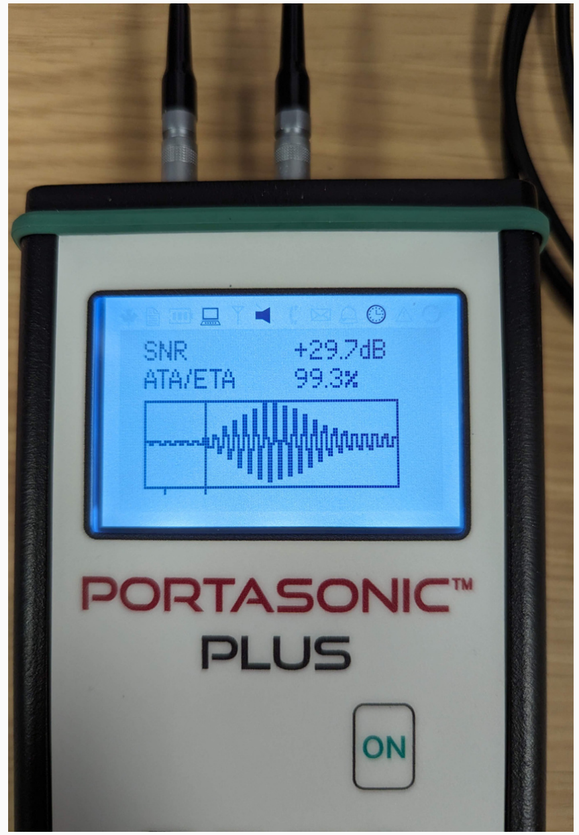
Measure wall thickness (includes A-scan functionality), volumetric flow rate, mass flow rate, energy (heat quantity) flow rate all from one instrument

TOTAL FLOW

All measured values can be totalised giving you the total flow rate that has been measured during a particular measurement session

ADAPTABLE

Two sensor sizes available depending on the size of the pipe being measured, and fully waterproofed variants available on request.



DATALOGGING

Flow rate measurements logged internally in 4MB storage and exported later, or directly logged onto a PC.

PORTASONIC® PLUS

VERSATILE

Capable of working on pipes DN15 – DN 2500, across multiple different pipes/pipe sections. Large internal database of pipe, fluid and lining materials (19+ for fluids, 23+ for pipe and lining materials)

CLAMP ON

Clamp-on therefore no installation costs such as drilling into pipes and no downtime to the pipe network is present

RELIABLE

Measures flow velocities between 0.01 m/s – 25m/s.



DIAGNOSTICS

Built-in signal oscilloscope for sensor positioning and diagnostics to achieve maximum accuracy with the measurement while providing visibility of the potential issues with the installation for troubleshooting purposes.

DATALOGGING

Log flow rate measurements internally on the Portasonic® PLUS and export later or directly log measurements onto a PC via micro USB

DUAL FUNCTIONALITY

Measure both flow and pipe thickness

MICRO-USB POWER

Enables 24/7 continuous operation of the unit by plugging into any regular mobile phone charger

ACCURATE

Accurate to +/- 0.5% under ideal conditions.Repeatability of 0.15% of measured value.

FLEXIBLE

Both metric (i.e litres per hour) and imperial (i.e. gallons per minute) options for entering pipe dimensions.

LONG-LIFE

IP65 main unit enclosure. Battery life up to 12 hours' continuous use, standard 9V PP3 battery or 24/7 hours with micro-USB mains power.

ROBUST

Sensors temperature range -20°C to +150°C.
Sensors rated IP66

HOW TO TEST

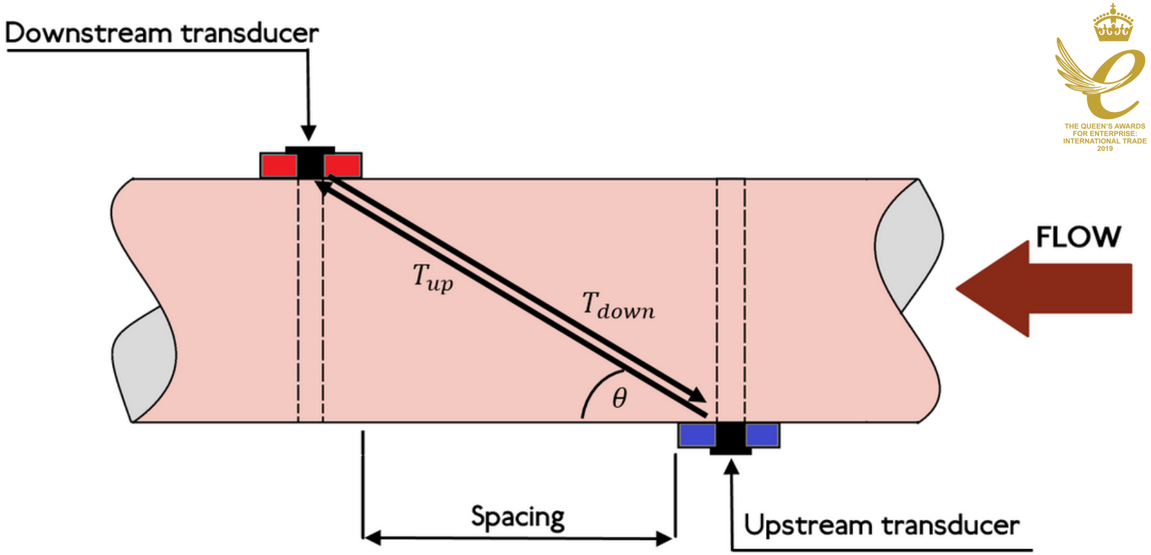
Portasonic® PLUS is used to measure the flow rates of most clean liquids with gas/solid content less than 10% of volume in pipes.

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

The unit uses two sensors, one that acts as ultrasonic transmitter and the other as a receiver.

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.

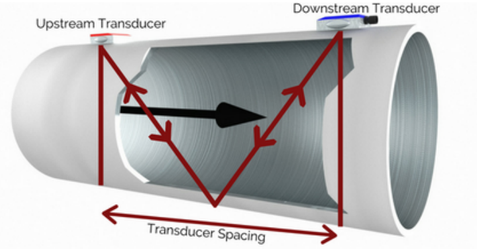
There are three methods of operation; V-method (2 passes), W-method (4 passes) or Z-method (1 pass) which refers to transducer positioning. Our recommendation is to choose the the number of passes which will result in a pass length in the fluid of 100mm or greater.



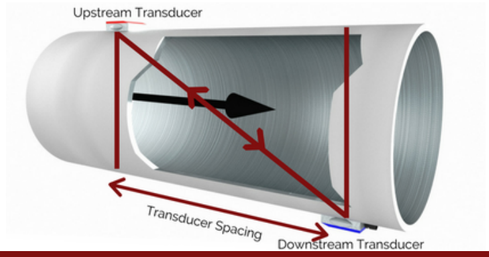
$$V = \frac{Dt}{\sin 2\theta} \frac{\Delta T}{T_{up}\, T_{down}}$$

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

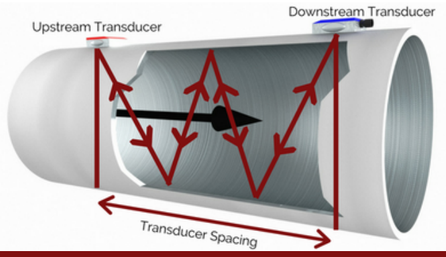
V Method
The most commonly used method. Simplest to set up. (2 passes)



Z Method
Common for large diameter pipes. (1 pass)



W Method
Common for smallest diameter pipes. (4 passes)



ABOUT COLTRACO ULTRASONICS

"To see the sounds that others cannot hear"

"To measure the hitherto unmeasurable"

Led by our Chairman, Dr Carl Hunter OBE, founder of Coltraco Ultrasonics.

Headquartered in **London**, we are a British high-exporting advanced manufacturer.

Operating in **120 countries**, with Distributors in **80 countries**.

Our technologies are used across a diverse array of **25 Market Sectors**, from shipping to safety engineering, from process control to mining, from offshore energy to renewables, from healthcare to the built environment, naval and space.

Proud winners of the Queen's Award for Enterprise in International Trade, in both 2019 and 2022.

Our organisation comprises of Manufacturing, Scientific, Research and Technological Development & Solutions:

- Our **Company:** COLTRACO ULTRASONICS
- Our **Laboratory**, co-located with the Centre for Advanced Instrumentation, part of the Department of Physics, Durham University
- Our **Research Organisations**, the Durham Institute of Research, Development & Invention (DIRDI)
- Our **Centre for Underwater Acoustic Analysis** (CUAA)

Delivering **Safesite™** on land in areas such as the airtightness of a building, data centre or ICU Hospital Ward and

Safeship™ at sea in the watertight integrity of a ship or offshore platform or the monitoring of the gaseous extinguishing system contents that protect them against fire.

BY BEING SCIENCE-LED:

We identify and nurture brilliant minds, creating a unique research environment at Durham University, a globally outstanding centre of teaching and research excellence.

In our research at DIRDI, we undertake fundamental research into the physical laws of the universe, alongside applied research in Physics, Mathematics, Engineering and Computer Science in acoustics, electromagnetism and information engineering.

It is our research and manufacturing excellence and our enduring commitment to the "through-life" sustainment of our technologies by aerospace standards of Maintenance, Repair, Overhaul, Calibration & Certification.

We deliver genuine value for our customers through our scientific and institutional values, and the global quality of our instrumentation, commercial and technical services.

OUR CUSTOMER CARE COMMITMENT

Global Support

You can receive worldwide support through our network of Global Partners, Distributors, and Service Centres (ODA's).

More than 150 Exclusive local distributors worldwide.

10 ODAs:

- Europe - UK, Turkey
- Middle East - UAE
- Asia - India, Singapore
- Australia - New South Wales
- USA - Florida
- Canada - Vancouver
- Central America - Trinidad
- South America - Brazil

*Accurate as of December 2023

When purchasing a Coltraco product you receive FREE Lifetime Technical Support in addition to a 3 year warranty on the main unit and 1 year on the sensor.



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