



PORTASONIC® PLUS

Ultrasonic Flow Meter with Thickness Gauging
Functionality & Datalogging

Made in the UK.

INTRODUCING THE PORTASONIC® PLUS

Portasonic® PLUS is a portable ultrasonic transit-time flow meter designed to measure, internally record, and export the flow rate within a pipe with precision and ease.

Portasonic® PLUS uses a customisable pre-programmed database to allow it to work with a wide variety of pipe materials and liquid types as a highly versatile monitoring solution that can be adapted for specific applications.

Type – Ultrasonic Flow Meter with Thickness Gauging Functionality & Datalogging

Part Number – 2618949-PSOPLUS



APPLICATIONS

The adaptable **Portasonic® PLUS** can be used in many industries such as:



Manufacturing and Chemicals

Maintaining optimal flow rates is essential for controlling production processes. For example, ensuring the correct flow of raw materials in chemical manufacturing can prevent overproduction, reduce waste, and minimise defects, leading to cost savings and improved product quality.



Pharmaceuticals, Food, and Beverage industries

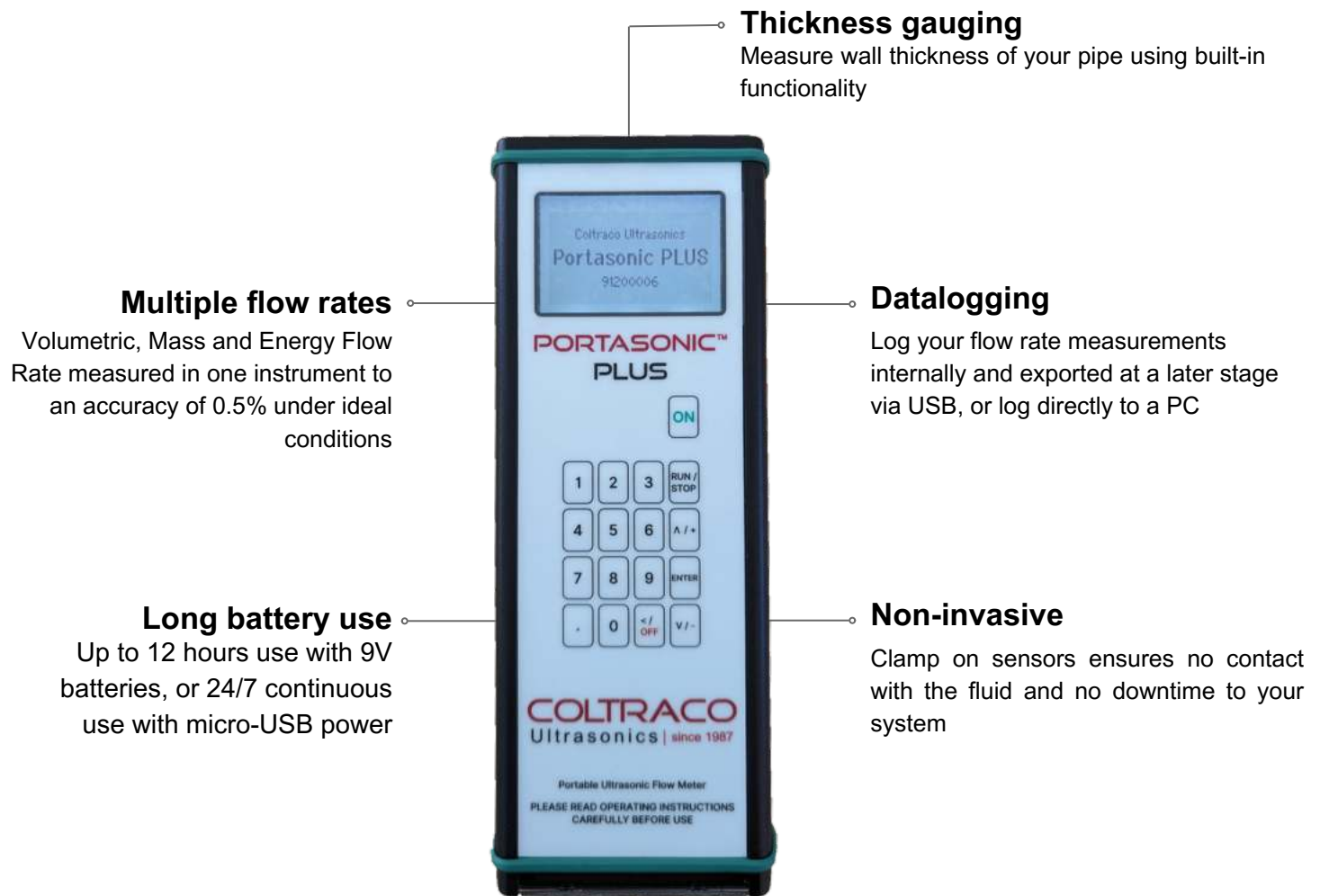
Flow rate measurements are vital for ensuring that ingredients are mixed in the correct proportions. A deviation in flow rate could result in batch inconsistencies, contamination, or product failure.



Oil, Gas and Water

Rely on accurate flow measurements to optimise resource usage. Ensuring that resources are used efficiently helps minimise waste and reduce operational costs, making flow rate measurement a cornerstone of effective energy management.

HIGHLIGHTED FEATURES



WHY MONITOR FLOW RATES ?

Flow rate measures the volume or mass of fluid passing through a system at a given point in a system over a specific period. Monitoring flow rate is essential across a wide range of industries, for process control, quality assurance, and environmental compliance. Proper flow rate management ensures that the correct amount of fluid passes through each process stage, supporting efficient resource use, minimizing waste, and lowering operational costs. As a key component of effective energy management, flow rate measurement plays a vital role in boosting overall efficiency.

At Coltraco Ultrasonics, we are committed to providing cutting-edge flow measurement solutions. Our **Portasonic® PLUS** ultrasonic flow meter offers reliable, non-invasive, and cost-effective flow rate measurement, helping businesses enhance efficiency and reduce operational costs.

WHATS IN THE BOX?

- Portasonic® PLUS: Main Unit
- One Pair of DM10 Standard Sensors
- One Pair of Beaded Chain Clamps
- 10mm Ultrasonic Thickness Gauge Probe
- Ultrasonic Couplant
- Measuring Tape
- User Manual
- Installation Manual
- Calibration Certificate
- Robust Carrying Case

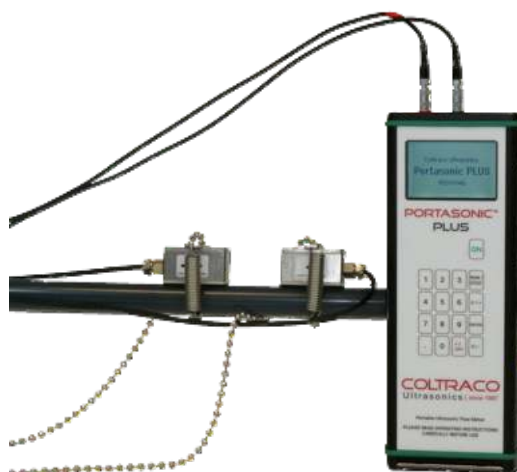
BENEFIT FROM WARRANTY AND SUPPORT

- Main Unit: 3 years
- Sensors: 1 year
- Lifetime customer support



OPTIONAL ACCESSORIES

- **Standard Sensor (Model No. DM10) – set of 2**
 - For pipes DN15 – DN700 / 1/2 inch – 28 inches
- **Large Sensor (Model No. DS10) – set of 2**
 - For pipes DN25 – DN2500 / 1 inch – 98 inches
- **10mm-width Ultrasonic Thickness Sensor**
 - For measuring pipes - minimum measurable pipe diameter: 25mm (1 inch)
- **6mm-width Ultrasonic Thickness Sensor**
 - For measuring small pipes - minimum measurable pipe diameter: 15mm (1/2 inch)
- **Sensor Upgrade** (Available with the Portasonic PLUS complete package)
 - Exchange the Standard Sensor (Model No. DM10) with Large Sensor (Model No. DS10)
- **ISO 17025 Calibration Certificate** Available with the Portasonic PLUS complete package
 - 5-point flow calibration at ISO 17025 certified laboratory in the UK
- **Micro USB cable** Available with the Portasonic PLUS complete package
 - 5-point flow calibration at ISO 17025 certified laboratory in the UK



HOW TO TEST

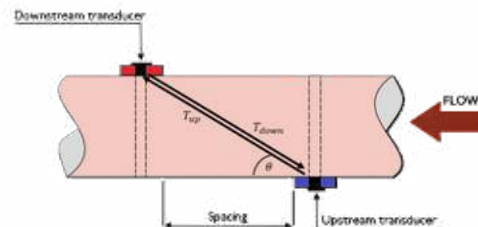
Portasonic® PLUS is used to measure the flow rates of most clean liquids with gas/solid content less than 10% of volume in pipes.

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.

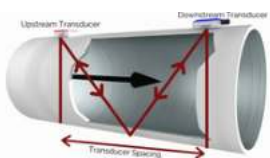
The software calculates the time it takes for the ultrasonic pulse to pass from the transmitter to the receiver, which is dependent on the flow rate.

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 number of passes which will result in a pass length in the fluid of 100mm or greater.



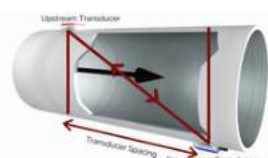
V Method

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



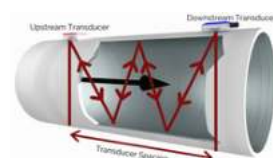
Z Method

Common for large diameter pipes. (1 pass)



W Method

Common for smallest diameter pipes. (4 passes)



WHAT IS IT COMPATIBLE WITH?

Fluid Types	Pipe Materials
Water	Carbon Steel
Sea Water	Stainless 304
Kerosene	Stainless 316
Petrol	Cast Iron
Fuel Oil	Ductile Iron
Crude Oil	Copper
Freon R134a	PVC
Freon R22	Lead
Diesel Oil	Nylon
Castor Oil	PE
F-76 Fuel Oil	Aluminium
NOVEC 1230	Asbestos
Glycol/water	Fibre Glass
Alcohol	Other (SoS provided by user on app)

OUR RANGE OF ULTRASONIC FLOW METERS



PRODUCT FEATURES

PORTASONIC® PLUS (HANDHELD INSTRUMENT)

PERMAFLOW® (FIXED SYSTEM)

PORTASONIC® PRO (ELECTRONIC TABLET)

Accurate to 0.5%

✓

✓

✓

Volumetric Flow Rate

✓

(various units - l/h, m3/h, etc.)

✓

(various units - l/h, m3/h, etc.)

✓

(various units - l/h, m3/h, etc.)

Mass Flow Rate

✓

(various units - kg/h, kg/m, etc.)

✓

(various units - kg/h, kg/m, etc.)

✓

(various units - kg/h, kg/m, etc.)

Energy (Heat) Flow Rate

✓

(various units - kWh, BTU, etc.)

✓

(various units - kWh, BTU, etc.)

✓

(various units - kWh, BTU, etc.)

Fluid Types (customisable)

✓

✓

✓

Database of 14+ customisable fluid types (water, fuel oils and diesel oils, refrigerants and many more)

Pipe Material (customisable)

✓

✓

✓

Database of 12+ customisable pipe materials (carbon steel, stainless steel, aluminium, PVC and many more)

Wall Thickness Gauging

✓

✗

✗

Calculate Pressure

✗

✗

✓

Temperature Compensation

✓

(with manual temperature input)

✓

(automatic input, using PT100)

✓

(with manual temperature input)

Totaliser Capability

✓

✓

✓

Record and Report

✓

✓

✓

(internal and USB)

Battery Operated

✓

✗

✓

Datalogging

✓

✓

✓

TECHNICAL DATA

DIMENSIONS	220mm (L) x 85mm (W) x 22mm (D)
WEIGHT	434g (with batteries)
PIPE DIAMETER RANGE	• Standard Sensor (Model No. DM10): DN15 – DN 700 (1/2” – 28”) • Large Sensor (Model No. DS10): DN25 – DN2500 (1” – 98”)
ACCURACY	±0.5% of True Flow Rate
FLOW VELOCITY RANGE	0.01m/s – 25 m/s
RESOLUTION	0.25 mm/s
REPEATABILITY	0.15% of measured value
TURN DOWN RATIO	1/100
MEASUREMENT RATE	1 Hz as standard
MEASUREMENT UNITS	Flow Velocity, Volumetric Flow Rate, Mass Flow Rate, Energy Flow Rate (Heat Quantity), Volume, Mass, Energy
DISPLAY	128 x 68 Backlit LCD
ADDITIONAL FEATURES	4MB internal storage for datalogging with export capabilities via Micro USB Integrated thickness gauging functionality, measures 2mm – 20mm range Signal oscilloscope for sensor positioning and diagnostics
DATALOGGING AND COMMUNICATION	16 MB datalogger included as standard – all measurement values can be logged Serial Communications RS232 and USB included as standard, can be used for device control (command line interface) and datalogger download via PC 4 – 20 mA, Digital, Modbus, Relay, OPTO, Open Collector Output available as optional plug-in modules
OPERATING TEMPERATURE	Main Unit: -10°C to +65°C (14°F to 149°F) Sensors: -20°C to +150° C (-4°F to +302°F)
POWER SUPPLY	1x 9V PP3 battery, up to 12 hours continuous use 24/7 power option via Micro USB port
SENSOR DIMENTIONS	Standard Model No. DM10: 40mm (L) x 20mm (W) x 25mm (D) Large Model No. DS10: 60mm (L) x 30mm (W) x 35mm (D)
SENSOR CONNECTIVITY	1.5m BNC Coaxial Cable (longer lengths available on request)
IP RATING	Main Unit: IP 65 enclosure Sensors: IP 66 (IP68 Variant Available)
CERTIFICATIONS AND APPROVALS	UKCA, CE, Coltraco is ISO 9001:2015 and ISO 14001 registered Option to include ISO 17025 calibration certification

OUR THROUGH-LIFE COMMITMENT TO YOU

We look after our customers throughout the lifetime of your equipment.

Every main unit is supplied with **3 years warranty** and **1 year warranty on its sensors and accessories**.

We are proud to offer free lifetime technical support and online training is available on request with a range of solutions designed to meet your calibration requirements:



Onshore Calibration

This can be done in our UK laboratory or in one of our 11 ODA Service Centres present globally

We also support 1-1 exchanges with a pre-calibrated unit to reduce processing time

We also offer a unit collection service for customers who are not used to sending equipment out of their respective countries.

ABOUT COLTRACO ULTRASONICS

Coltraco is ISO 9001:2015 and ISO 14001 approved

Our organisation comprises:

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

"To see the sounds that others cannot hear"

"To measure the hitherto unmeasurable"

Engaged in Research, Design, Development, Manufacture, Integration & Sustainment of high-exporting advanced technology systems, products and services.

We monitor and measure an array of specialised environments to deliver the Safesite™ on land and the Safeship™ at sea.

BY BEING SCIENCE-LED:



We identify and nurture brilliant minds, creating a unique research environment at Durham University, which is 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 this research and manufacturing excellence, and our enduring commitment to the sustainment of our technologies in the field, that makes Coltraco Ultrasonics the partner of choice for customers and distributors in 120 countries.



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

Safeship™

Today our instruments are aboard 17% of the world's 60,000 ships, preventing ships' catastrophic failure, by monitoring watertight integrity on the one hand, and the safe contents of fire extinguishing gases such as CO₂, on the other. These are the basic principles by which we became a Safeship™ company in the maritime sector.

Safesite™

Our instruments serve over 20 market sectors, to ensure that safety-critical systems, such as gaseous fire suppression systems, sprinkler systems, process control equipment, and ventilation systems in high-value assets always work effectively. In the Built Environment, we provide the ability to locate and measure airflow so that buildings are energy efficient and healthy for occupants and for our planet.

Contact and support

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British manufacturer of ultrasonic technologies, exporting to 120 countries and twice winners of The Queen's Award 2019 and 2022.

