



# COLTRACO ULTRASONICS

## COMPANY INTRODUCTION

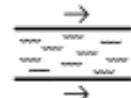
*Our solutions focus on Level, Tightness, Flow, Pressure and Thickness.*



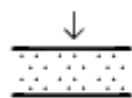
Level



Air + Space



Flow



Thickness



Pressure



# ABOUT COLTRACO ULTRASONICS



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)

*"To see the sounds that others cannot hear"*

*"To measure the hitherto unmeasurable"*



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.

# INTRODUCTION: LEVEL (FIRE)

## PORTALEVEL MAX® PLUS

Non-invasive, content detection & monitoring of fire suppression cylinders containing liquefied agents through ultrasonic portable instruments and fixed systems



Display screen on the Portalevel® MAX PLUS makes testing cylinders easy simply showing **LIQUID** or **GAS**



Intuitive Display

- Fire suppression agents, such as; CO<sub>2</sub>, FM200, NOVEC 1230, old Halon agents, FE-13, FE-25, NAF S III, and all core Clean Agent systems.
- UL Listed, RINA Accepted, ABS Type Approval.



# CASE STUDY - PERMALEVEL®



Bao Cloud, the largest data centre in China wanting to protect their people and facilities the **Permalevel® MULTIPLEX**:

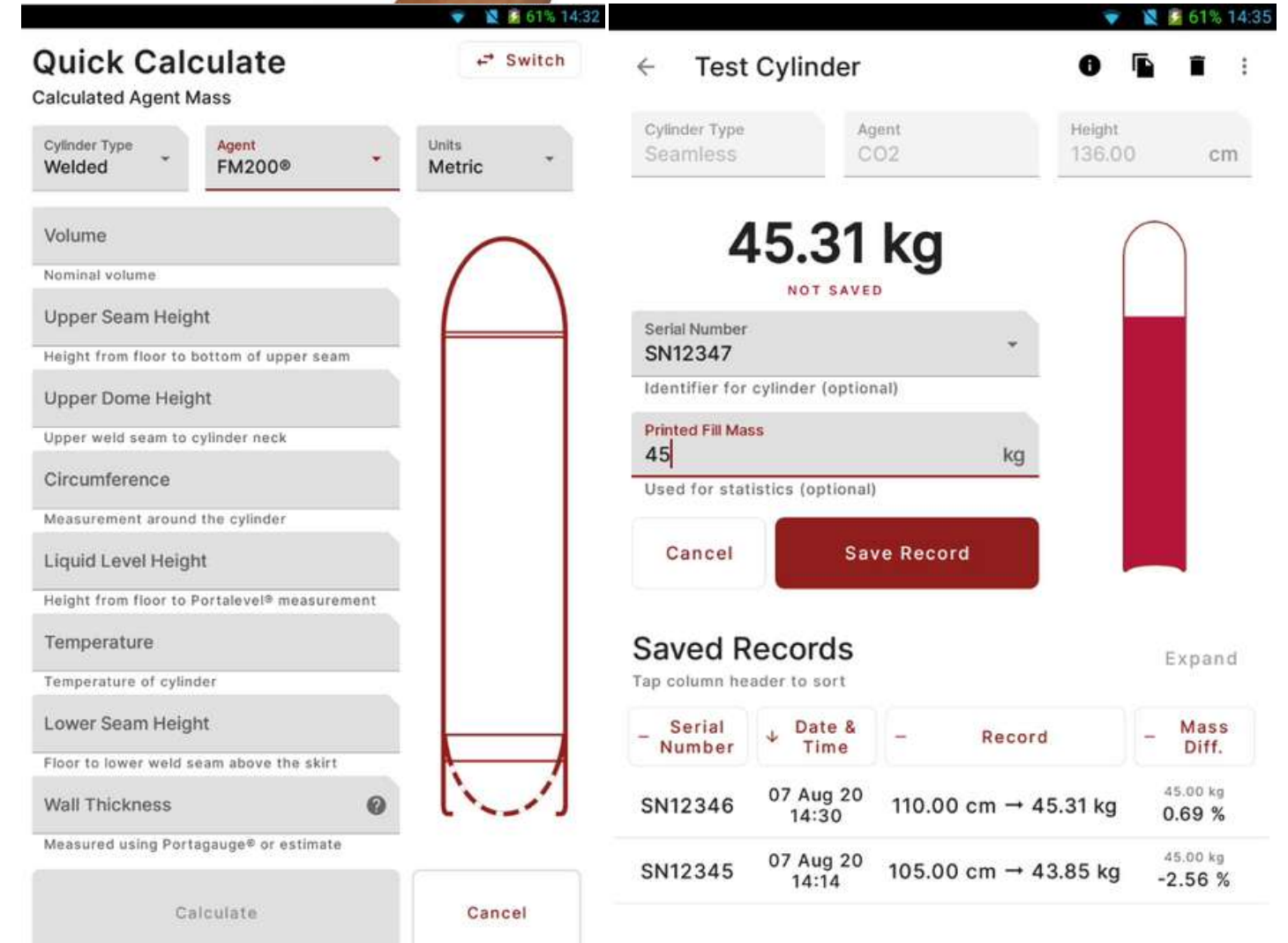
- ensured their FM200 systems are always full;
- was successfully completed installation on 12 FM-200® cylinders;
- 24/7 remote access to the systems status that notifies the user if a cylinder has leaked.

Leading UK Gas-Fired Power Station has chosen to improve their fire safety, the **Permalevel® SINGLE POINT** was installed on 2 x 60 kg and 180 kg FM-200® cylinders:

- ensured the level within a container;
- constantly verified in real time therefore guaranteeing safety;
- essential at a safety critical site

# INTRODUCTION: LEVEL (FIRE) PORTASTEEL® CALCULATOR

- **Input** your cylinder details and liquid level (as found by Portalevel® MAX PLUS),
- **Calculate** in under 30 seconds
- **Save** your results in a spreadsheet and export



Coltraco is the **only company** globally who provides **traceability** of your liquid level measurements to agent weight, which is the **only documented evidence** of cylinder contents by the manufacturer

# INTRODUCTION: LEVEL (FIRE)

## PERMAMASS® FEATHERWEIGHT

Continuous monitoring of high-pressure fire suppression agents, such as

1. Inergen 2. Carbon Dioxide (CO2) and 3. Clean Agent cylinders with combined Nitrogen.

Continuously monitoring a loss of agent quantity in real-time, un-affected by temperature



### Highly Accurate

- Within 1% of true agent weight
- Within 1% pressure loss in Inergen systems (pressure converted to equivalent weight in software)

**Regulation Compliance**  
ISO 14520-1 & ISO 6183

# INTRODUCTION: PRESSURE

## PORTAGAS®



World's first technology for non-invasive, non-destructive monitoring of pressurised, inert gas systems. It is unique and innovative contents monitoring solution for pressurised, non-liquified inert gas cylinders such as **Inergen™**. **Portagas®** utilises acoustic technology to monitor changes in pressure.

**INTUITIVE** - Intelligent and automatic determination whether an observed change in pressure is due to changing temperatures or a loss of contents

**REPORTING** - Effortlessly keep track of your maintenance by saving and reporting records straight from the instrument



- **Type** – Acoustic, non-invasive pressure monitoring system, in an intuitive Android platform
- **Regulation Compliance:** NFPA 2001 & ISO 14520-1

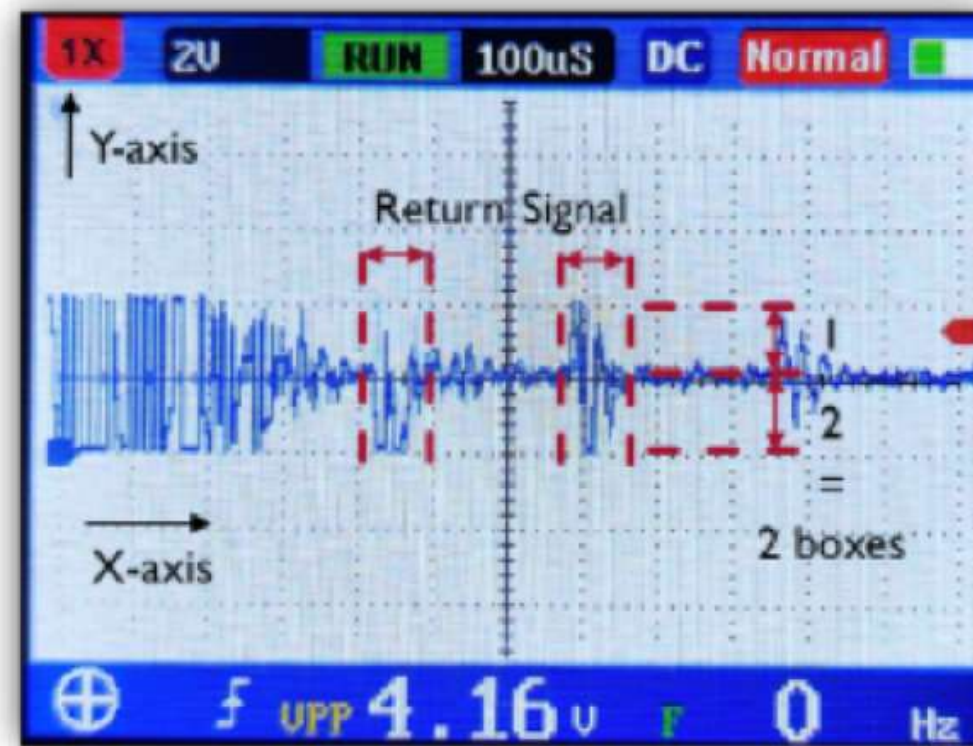
# INTRODUCTION: LEVEL (INDUSTRIAL)

## PORTATANK®

The **Portatank®** ultrasonic tank liquid level indicator is a portable and non-invasive instrument to locate liquid levels through external side walls of tanks – therefore, no drilling or tank opening is required, thus no downtime.



No liquid: LED OFF  
Liquid: LED ON



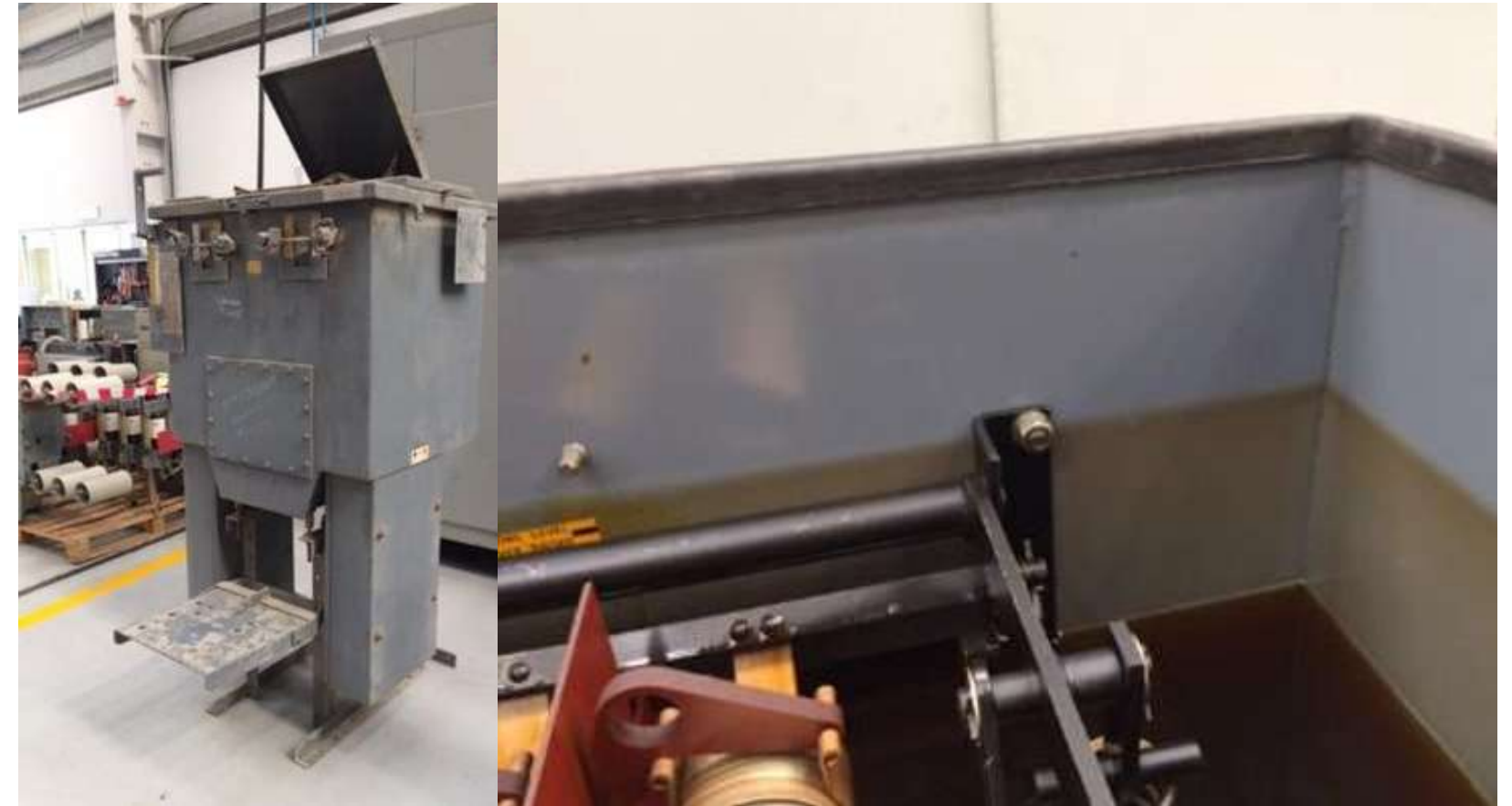
Oscilloscope provided to view return signals for confirmation and added accuracy (return signal only present if liquid is present)



Up to tank width 15 metres.

**PORTATANK® IS THE IDEAL SOLUTION FOR NON-INVASIVELY IDENTIFYING LEVELS OF WATER AND CLEAN LIQUIDS IN LARGE INDUSTRIAL TANKS.**

# CASE STUDY - PORTATANK®



Tested on Single-Phase and Three-Phase transformers (multiple kVA ratings applicable i.e. 19.9, 25, 50, 75, 100 kVA etc.).

- Non-invasive;
- Transformers can remain “live” during measurement;
- Already in service in multiple energy utility companies for inspecting transformer oil levels.

Tested at a large public service infrastructure facility providing electricity and water services in the UAE.

- Saved time and money;
- Handheld, portable and non-invasively detected oil levels through side-walls of transformers;
- Suitable for many industries such as food processing, pharmaceutical, aerospace manufacturing and transformers.

# INTRODUCTION: AIR + SPACE

## PORTASCANNER® AIRTIGHT 520



The Portascanner® Airtight 520 is a world-first instrument:

1. **Identify** leak sites with a microscopic level of accuracy, and
2. **Measure** and quantify them using sophisticated algorithms, and
3. **Generate** a value for the air flow rate through each leak, as well as
4. **Calculate** the building's/room's overall air permeability.
5. **Store** photographic and quantitative data to generate traceable exportable reports.



Used in:

- **Hospital and Healthcare**

To identify leak sites, ensuring pressurisation systems work effectively in preventing infection spread such as COVID19 and maintaining critical sterilisation.

- **Built Environment**

Environmental, cost saving and occupant health benefits, by facilitating effective and efficient ventilation, filtration and heating of the building. Designed to deliver an effective ventilation strategy for buildings contributing towards Net Zero Strategy

- **Compartmentation**

Airtightness is imperative to ensure that, in the event of a fire, a room or compartment will contain a fire extinguishing agent for a sufficient time to completely extinguish the fire.



Innovate  
UK

# CASE STUDY - PORTASCANNER® AIRTIGHT 520



Successfully tested and trialled at the Air Tightness Testing & Measurement Association, the **Portascanner® AIRTIGHT 520**:

- designed to complement the Pulse Test and Door Fan Blower Test;
- performed outstandingly to identify and quantify leaks;
- number of leaks were identified in window and door seals.



Successful trial of the **Portascanner® AIRTIGHT 520** at a Passivhaus in UK:

- substantial air leakage was identified at the bottom of the door;
- indicated a “crack” in the bottom seal, this was confirmed by the site manager;
- determined that the door had not had a final adjustment.



**Portascanner® AIRTIGHT 520**, testing of the Class II Biological Safety Cabinet was very successful:

- each area of the cabinet was tested;
- identified significant leakage through the side panel of the cabinet;
- Precision Generators were ideal for this application as they are small enough to fit easily inside BSCs

# INTRODUCTION: FLOW

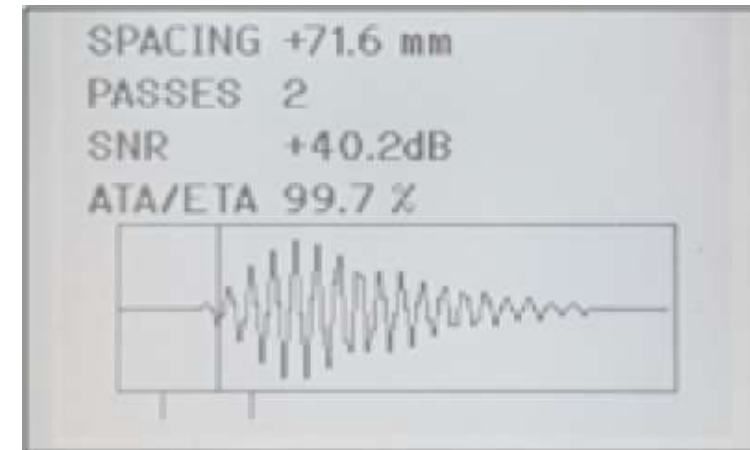
## PORTASONIC® 2.FLO + PERMAFLOW®



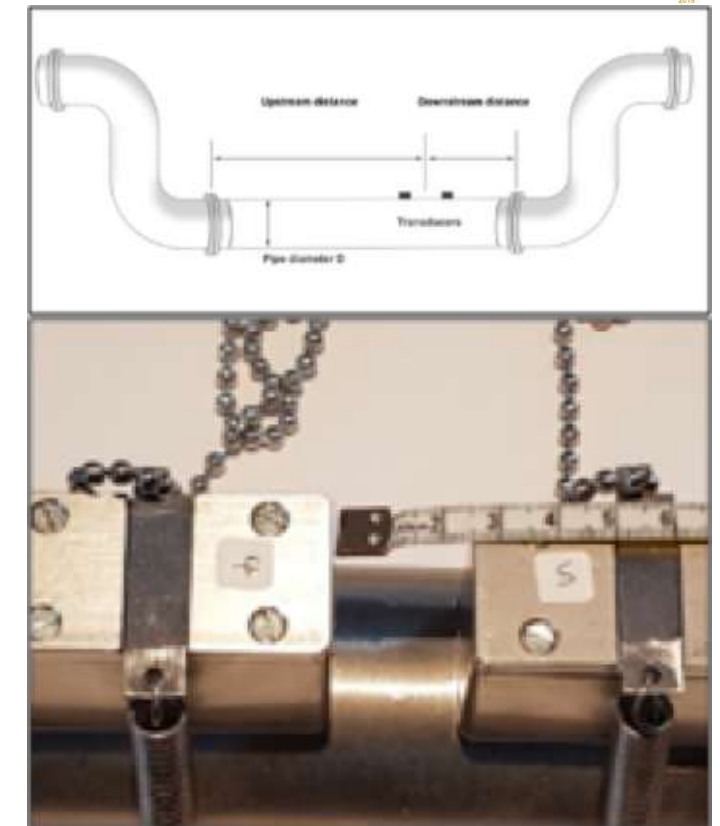
**Portasonic® 2.FLO**  
Handheld Flowmeter with built-in thickness gauging functionality



**Permaflow® Fixed Flowmeter**  
with USB, RS232, PT100 thermometer input options available



- Oscilloscope trace function for maximum accuracy & ease of installation
- Works on a variety of liquids i.e. water, oils, etc.
- Works on pipes DN15 – DN2500+
- Volume flow rates, heat flow rate (energy consumption) with thermometer integration



- Small sensors for installation in tight spaces
- Non invasive so no downtime, no risk of damage to sensor due to high pressure system / corrosive liquid etc.

## FLOW -> PRESSURE



### Portasonic™ Calculator

Convert your volumetric flow rate to pressure required to pump your liquid in a pipe



### Improve Safety

Determine if your pipe is pressurised to within a safe tolerance



### Save & Export

All flow and pressure measurements, as well as pipe information can be saved and exported via USB

# CASE STUDY - PORTASONIC® 2.FLO + PERMAFLOW®



Our engineers conducted a successful test using our **Portasonic® 2.FLO** onboard a LPG Vessel.

- Accurate to +/- 0.5% under ideal conditions;
- Single instrument which works on a wide range of pipe materials;
- Measures flow velocities between 0.01 m/s – 25m/s;
- No installation, therefore no downtime.



Our **Permaflow®** System has been installed at a Major Textile Company in Singapore to replace a magnetic flow meter.

- Non-invasive for measuring the flow rates;
- Mains powered, designed for 24/7 monitoring
- Accurate to +/- 0.5%;
- Supplied with 15m cable as the measurement location;
- Supplied with 4-20MA Output in order to integrate the Permaflow® with customers systems.

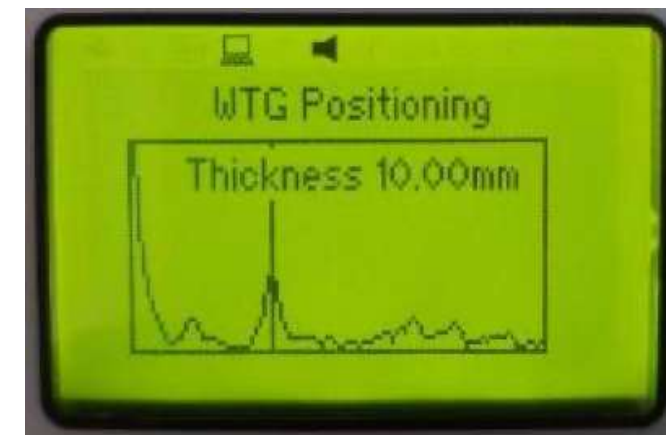
# INTRODUCTION: THICKNESS

## PORTAGAUGE® 5

Ultrasonic multi-echo thickness gauge with multiple built-in functionalities such as A-scan, oscilloscope trace, and ability to adjust sound velocity to test various different materials



Full measurement screen with various details – thickness **accurate to 0.01mm**



**A-scan functionality** to observe material condition, verify correct return backwall echo



**Oscilloscope trace** present to assist in performing a good measurement

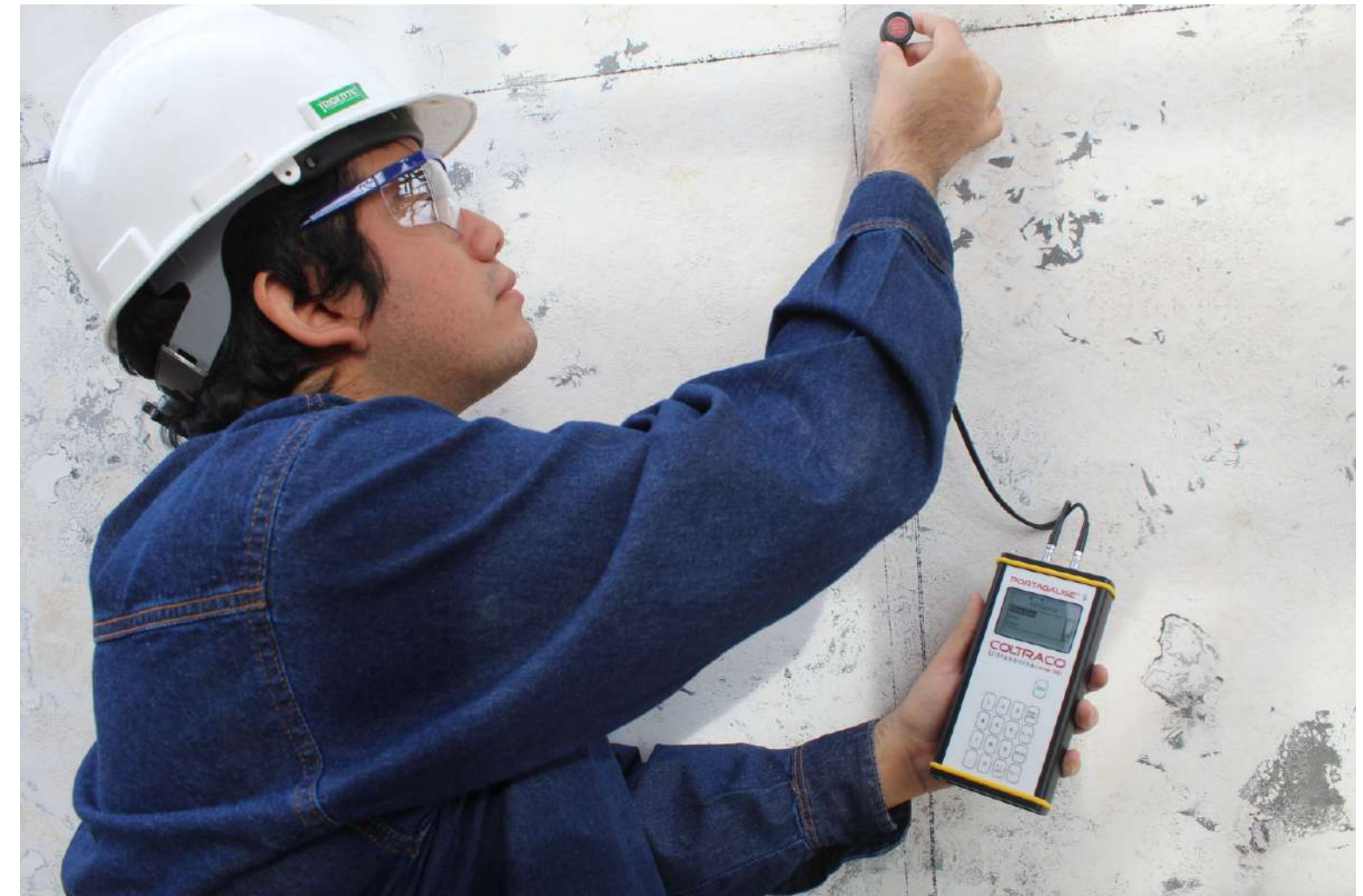
- Works on **different types of metals, plastics** etc. through sound velocity input
- **Multi-echo ignores paint** coating up to 20mm in thickness giving true metal thickness
- Different frequency sensors available **2.25 MHz, 5 MHz, 7 MHz** covering almost every application

# CASE STUDY - PORTAGAUGE® 5



Successful utilization of the **Portagauge® 5** by an airline in the Faroe Island.

- multiple echo thickness gauge for testing aluminium sheets on aircrafts
- supplied the **Portagauge® 5** with a **6mm diameter probe** to support the customer's needs



Customer in Trujillo, Peru used the **Portagauge® 5** to successfully test various materials.

- excellent results using our thickness measurements on copper, metal and glass
- accurate to +/- 0.1mm
- data of **12+ different materials** pre-loaded in the unit

# 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, in over 80 countries.

Service Stations worldwide including:

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



With every Coltraco purchase you receive FREE Lifetime Technical Support in addition to your 3 year warranty on the main unit and 1 year on the sensor.



Coltraco®, Coltraco North America®, Portamarine®, Portalevel®, Permalevel®, Portagauge®, Portasonic®, Portamonitor®, Portasteele®, Portascanner®, Permascanner®, Safesite®, Safeship® are trademarks or registered trademarks of Coltraco Limited, UK. DuPont™, FM-200®, FE-25™, FE-13™, and FE-241™ are trademarks or registered trademarks of E.I. du Pont de Nemours and Company and its affiliates. Novec™ 1230 is a trademark owned by 3M.





# THANK YOU FOR CHOOSING COLTRACO ULTRASONICS

BRITISH HIGH-EXPORTING ADVANCED MANUFACTURER

## *LEVEL*

- *Portalevel®*
- *Portasteele®*
- *PermaMass®*
- *Portatank®*

## *AIR + SPACE*

- *Portascanner®*
- Airtight 520*

## *FLOW*

- *Portasonic® 2.FLO*
- *Permaflow®*
- *Portasonic®*
- Calculator*

## *THICKNESS*

- *Portagauge® 5*

## *PRESSURE*

- *Portagas®*