



INTRODUCING PORTAGAS®

First in the world acoustic, non-invasive
pressure monitoring system

INTRODUCING THE PORTAGAS®



Portagas® is a world's first for non-invasive, monitoring of pressurised, inert gas systems.

What is it? It is a unique and innovative contents monitoring solution for pressurised, non-liquefied inert gas cylinders such as Inergen™.

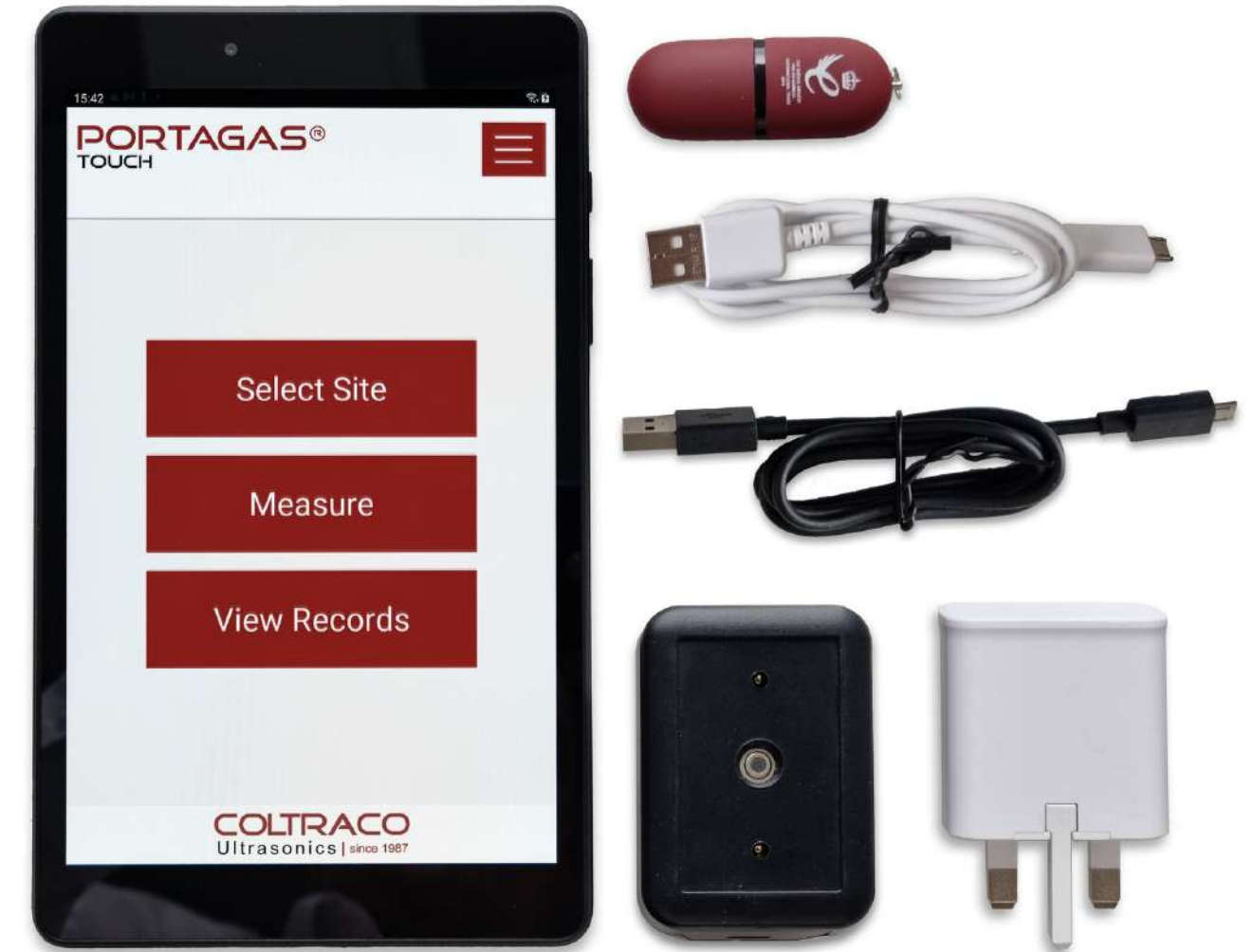
How does it work? Through sophisticated signal processing **Portagas®** utilises acoustic technology to monitor changes in pressure.

Why do you need it? **NFPA 2001** and **ISO 14520** demand that inert gas cylinders with a pressure loss greater than 5% (adjusted for temperature) must be replaced/refilled. **Portagas®** detects marginal changes in the internal cylinder pressure with precision well below 5% demanded by the regulations

- **Type** – Acoustic, non-invasive pressure monitoring system, in an intuitive Android platform
- **Part Number** – 3107505-GAS
- **Regulation Compliance:** NFPA 2001 & ISO 14520-1

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



COLTRACO ULTRASONICS ARE GLOBAL LEADERS IN THE MONITORING OF LIQUEFIED AND NON-LIQUEFIED GASEOUS EXTINGUISHING SYSTEMS THAT PROTECT HIGH-ASSET VALUE AND CRITICAL NATIONAL INFRASTRUCTURE INSTALLATIONS.

CHANGING TEMPERATURES OR A LOSS OF CONTENTS?



Inergen™ or Inert Gases are stored in seamless cylinders at pressures between 100-200 Bar. At such pressures cylinders are subject to slow seepage of contents or accidental discharge. If the gas available is not at the design concentration,
- **the fire will not be extinguished.**

Pressure alone does not tell the full story. To understand the status of a cylinder's contents, we must consider the pressure and temperature together. This is because in a sealed container pressure is directly related to temperature. So, a change in temperature does not always mean that the cylinder has leaked.

Conventional pressure gauges typically address this by indicating a range of acceptable pressures based on different temperatures. This is a useful indication; however, these ranges are broad and open to user error.



The **Portagas®** tackles this issue head on, with an infra-red thermometer built into the sensor to record the temperature correctly. This temperature, combined with Fill Pressure and Fill Temperature (printed on the cylinder) precisely determines the current pressure. Portagas® calculates this automatically with **no user input**.

This temperature-adjusted pressure is then compared with the pressure determined acoustically by the **Portagas®**. This allows it to recognise if a change in pressure is due to changing temperatures or loss of contents, **all with the tap of a finger**.

Portagas® is the only way to get a true status on the cylinder contents

FREQUENTLY ASKED QUESTIONS

Why do I need to monitor pressure?

Gases stored in a sealed container will exert a pressure on the internal walls. This pressure depends on the temperature of the gas as well as on how much gas is contained. Pressure, therefore, when properly adjusted for changing temperatures, is a direct measure of the amount of gas stored in a cylinder. Regulations such as **ISO 14520** and **NFPA 2001** state that pressure must be monitored for inert gas systems.

What does the Portagas® test for?

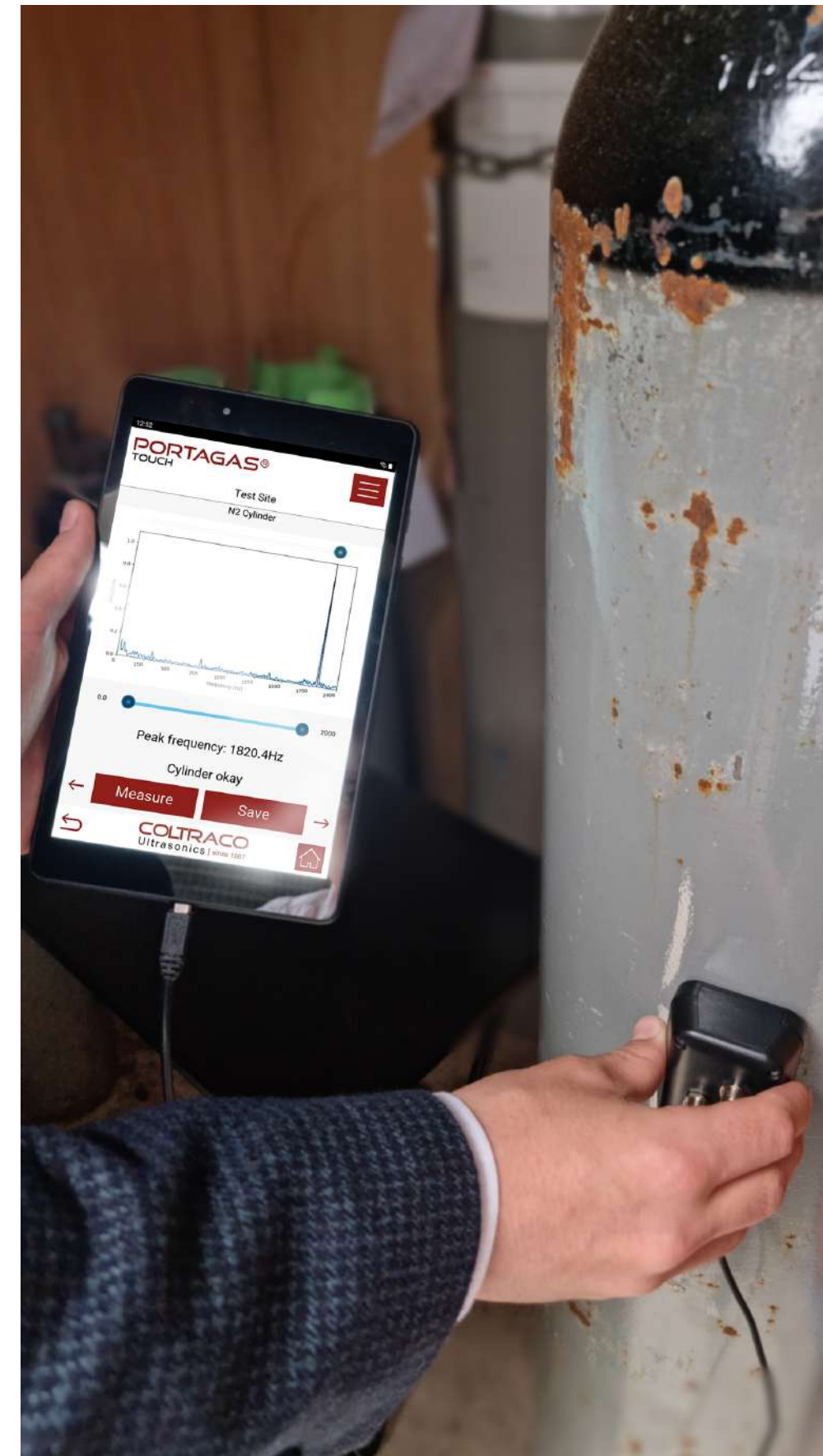
Portagas® detecting changes in pressure from an initial known value. These changes in pressure are adjusted for changes in temperature and used to determine precisely whether an observed change is due to temperature or a leak.

Does the device have datalogging and can I export data?

Portagas® keeps records of all tests, organised by date, time, site and cylinder. These records can easily be filtered and exported via email or USB as either a simple CSV file, or as an automatically generated PDF report.

What types of cylinders can the Portagas® test?

The **Portagas®** works on pressurised, seamed and seamless non-liquified inert gas cylinders.



COMPLY WITH ISO 14520 STANDARDS



STAY COMPLIANT WITH ISO 14520 REGULATIONS

PermaMass® FEATHERWEIGHT

Real-time monitoring of agent mass loss and equivalent pressure loss in inert gas, liquified and non-liquified fire suppression systems to less than 1% accuracy above 10 kg agent weight or 100 g below.



Portalevel® MAX PLUS

New liquid level indicator for a wide variety of fire suppression agents, such as: CO₂, FM200™, NOVEC™ 1230, Halon agents, FE-13™, FE-25™, NAF S III™ and all core Clean Agent systems, accurate to within +/-1.5 mm.



Portasteele® CALCULATOR

Precisely calculate the mass of agent in fire suppression systems to within 1% accuracy using the dimensional data of the cylinder, in combination with the liquid level found using the **Portalevel® MAX PLUS**.

Portascanner® AIRTIGHT 520

Leak quantification and air flow rate monitoring for compartments containing high-value assets protected by gaseous extinguishing systems. Detect leak sites as small as 0.06mm, with a tolerance of 0.02mm.



The complete ISO 14520 range for liquid and gaseous fire suppression systems content verification and enclosure integrity monitoring.

STAY COMPLIANT WITH REGULATIONS



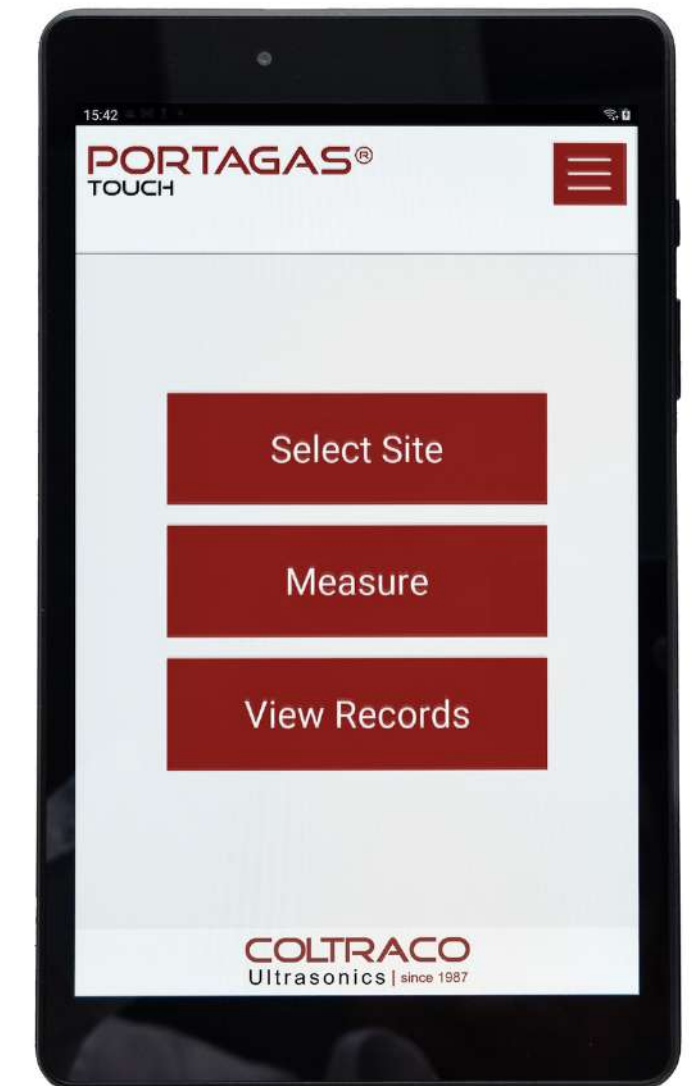
IMPROVE YOUR SAFETY TODAY

ISO 14520-1 Gaseous fire-extinguishing systems 9.2.1.3

The storage container contents shall be **checked at least every six months** as follows:
Non-liquefied gases: for inert gas agents, pressure is an indication of agent quantity. If a container shows a loss of agent quantity or a loss of pressure (adjusted for temperature) of more than 5%, it shall be refilled or replaced.

NFPA 2001 Inspection, Servicing, Testing, Maintenance, and Training 11.3.4*

For inert gas clean agents, if a container shows a loss in pressure (adjusted for temperature) of more than 5 percent, it shall be **refilled** or **replaced**.



MONITOR INERGEN® SYSTEMS CONTINUOUSLY



The **PermaMass® FEATHERWEIGHT** is the world's first with a **three-gas capability** meaning one system can effectively monitor high value non-liquefied clean agents, such as Inergen™ blends. Specifically, with Inergen™ blends, any agent loss is indicated as well as the percentage pressure loss which is intrinsically linked to agent mass. It also monitors high-pressure CO2, liquefied clean agents, such as NOVEC™ 1230 and FM-200® with combined Nitrogen, and other complex fire suppression systems.

Non-liquified, pressurised inert gas systems currently rely solely on pressure gauges to determine the condition of their contents. However, pressure monitoring alone requires temperature compensation. Any pressure loss could be either; a result of a temperature change or a loss of agent due to a leak.


The **PermaMass® FEATHERWEIGHT** directly relates a change in pressure of a cylinder at a known temperature to a change in its mass. The well-known 'ideal gas' equation predicts a 1:1 relationship between fractional changes in pressure and mass. There is an intrinsic relationship between the two; however, real gases are more complicated. Changes in pressure and mass depend on specific cylinder contents.

PermaMass® FEATHERWEIGHT accounts for this to accurately and reliably in specific cylinders and inert gas agents, allowing us to accurately and reliably convert a change in mass to a change in pressure - we do this with a level of accuracy not seen beyond a 1A class industrial pressure gauge.





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.

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.



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