



**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 solution for monitoring the pressure of pressurized, non-liquified Inert gas and compressed gases cylinders, such as Inergen®, Nitrogen, Oxygen, Propane, Methane, Chlorine, Ammonia, Hydrogen, CO₂.

How does it work? It utilizes sophisticated signal processing and acoustic technology to detect even small changes in internal cylinder pressure, with precision below the 5% required by regulations.

What does it do? It detects marginal changes in the internal cylinder pressure with precision well below 5% demanded by the regulations, making it a valuable tool for ensuring safety and compliance.

- **Type** – Acoustic, non-invasive pressure monitoring system, in an intuitive Android platform
- **Part Number** – 3107505-GAS

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



APPLICATIONS



Portagas® is an acoustic technology, it can be used for any compressed gaseous agent. Gases can easily be added to the database.

Types of gases: Inergen®, Nitrogen, Oxygen, Propane, Methane, Chlorine, Ammonia, Hydrogen, CO2.

List of applications:

- **Healthcare** - Respiratory therapy, anesthesia, and other medical applications.
- **Pharmaceutical** - Production of medicine.
- **Food and Beverage** - Carbonation and preservation of food and beverages.
- **Power Generation** - Fuel sources for power generation and heating.
- **Oil and Gas** - Maintain pressure and prevent corrosion in oil and gas pipelines.
- **Manufacturing** - Used in welding, cutting, and other industrial processes.
- **Environmental** - Monitor and reduce greenhouse gas emissions.
- **Mining** - Mine ventilation and safety.
- **Chemicals** - Production of chemicals and fertilizers.
- **Transportation** - Alternative fuels for vehicles.
- **Agriculture** - Enrich the air in greenhouses to enhance plant growth.
- **Construction / Metal** - For welding, cutting and heating.
- **Textile** - Spinning and weaving of textile fibers.
- **Aerospace** - Pressurization and propulsion.
- **Refrigeration** - Refrigerants in commercial and industrial refrigeration systems.



FREQUENTLY ASKED QUESTIONS

Why do I need to monitor pressure?

Gases stored in a sealed container exert pressure on the internal walls, which is dependent on both the temperature of the gas and the amount of gas present. Thus, pressure, when corrected for temperature variations, can be used as a direct indicator of the quantity of gas stored in a cylinder. Fire industry regulations, such as **ISO 14520** and **NFPA 2001**, require regular monitoring of pressure in inert gas systems.

What does the Portagas® test for?

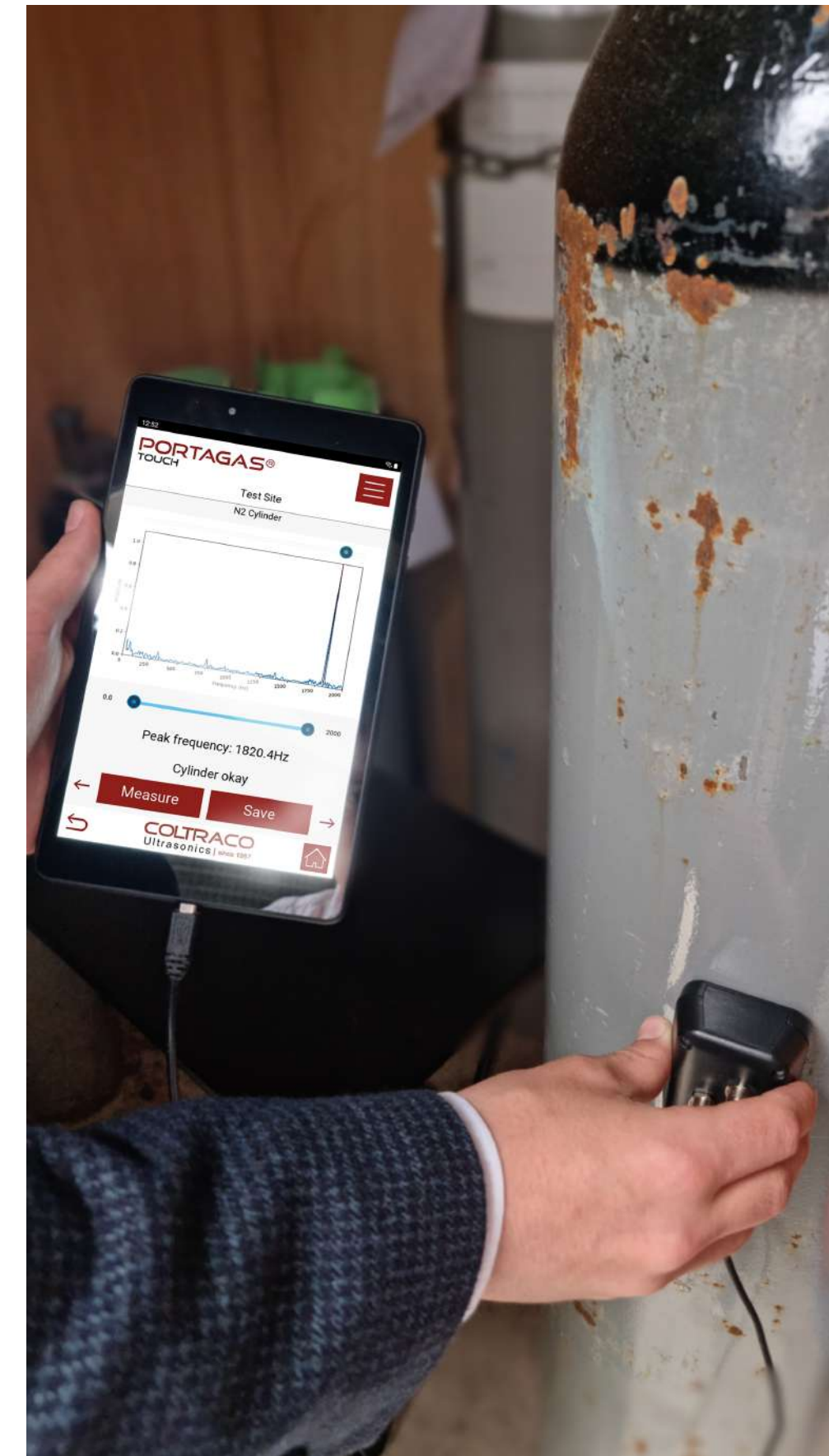
Portagas® detecting changes in pressure from an initial known value. These changes in pressure are adjusted for changes in temperature and used to determine precisely whether an observed change is due to temperature or a leak.

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 and compressed gases cylinders.



FIRE INDUSTRY - CHANGING TEMPERATURES OR A LOSS OF CONTENTS?

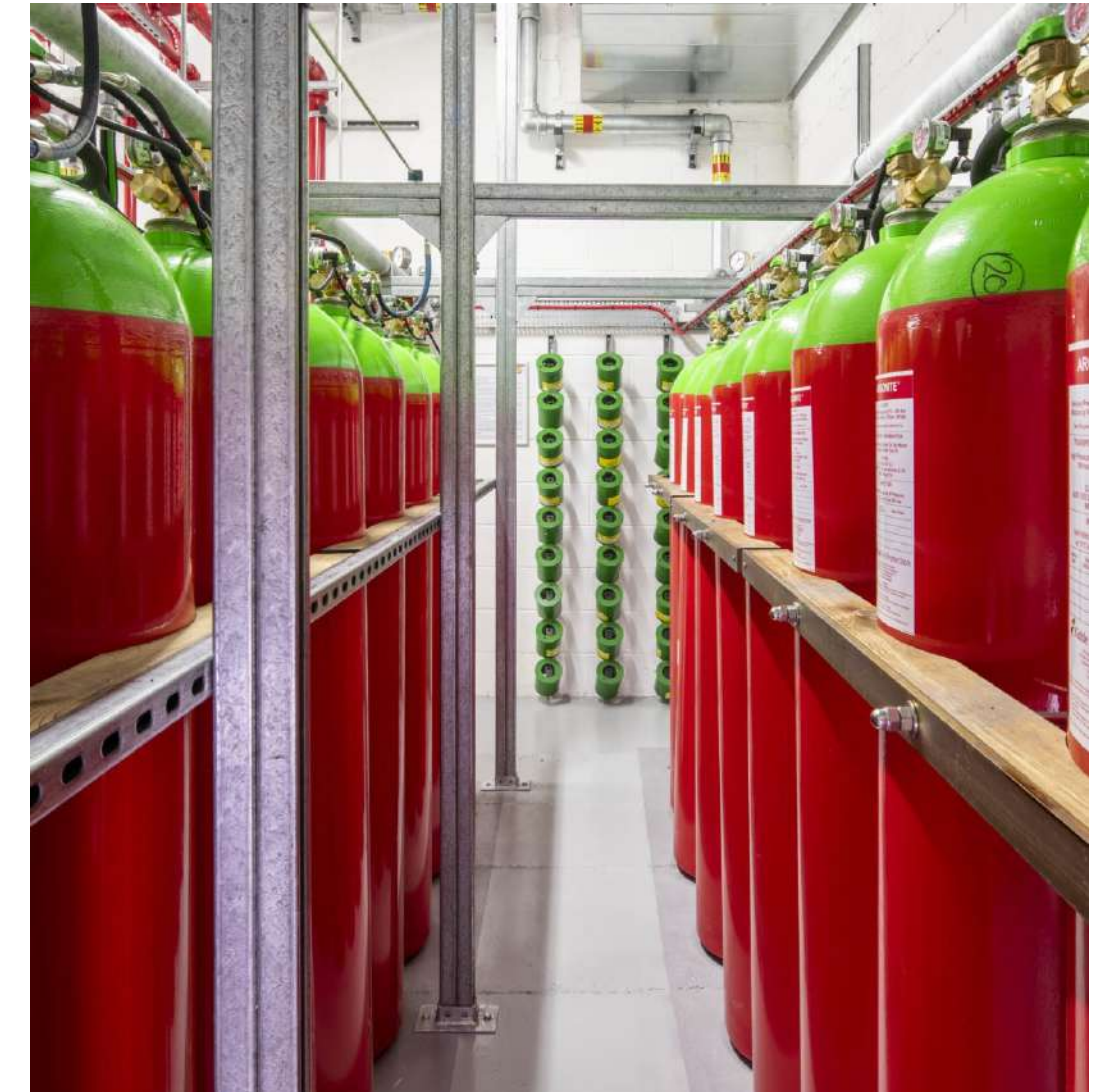


Inergen™ or Inert Gases are stored in seamless cylinders at pressures between 100-200 Bar. At such pressures cylinders are subject to slow seepage of contents or accidental discharge. If the gas available is not at the design concentration,
- **the fire will not be extinguished.**

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.

Regulation Compliance: NFPA 2001 and ISO 14520 demand that inert gas cylinders with a pressure loss greater than 5% (adjusted for temperature) must be replaced/refilled.



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

STAY COMPLIANT WITH FIRE REGULATIONS

IMPROVE YOUR SAFETY TODAY

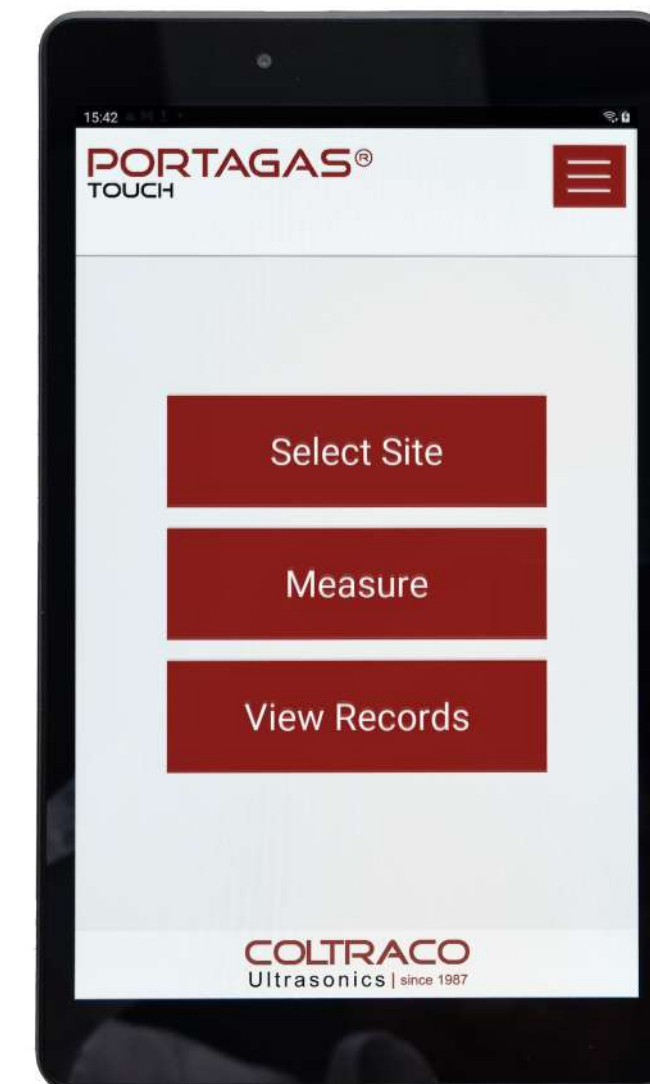
ISO 14520-1 Gaseous fire-extinguishing systems 9.2.1.3

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**.



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.



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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