PORTALEVEL®
MAX

TECHNICAL SPECIFICATIONS

COLTRACO
Ultrasonics | since 1987

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PORTALEVEL® MAX

8th Generation Ultrasonic Liquid Level Indicator from Coltraco Ltd, UK

DESIGNED to inspect the content of Fire Suppression System Cylinders of CO_2, FM-200™, Novec 1230, FE-13, FE-25, NAF S III, CEA410, Halons and a range of other extinguishing agents.

UNPARALLELED new display and operation methods Portalevel® MAX will help to make your business more efficient and enhance the Safety Practices of your company and customers

IDEAL tool to replace Weighing and Radioactive devices as a typical method of testing

QUICK, accurate and efficient method of inspecting cylinder content

Portalevel® MAX builds on Coltraco Limited's 20 Years Experience in designing, manufacturing and supporting Ultrasonic Liquid Level Equipment, in 105 Countries and numerous market sectors and environments. The development program was born out of the desire to further improve on our existing 8 designs and taking on board feedback and opinions of our customers.

Following an extensive Research & Development program to achieve these goals, we have introduced a wide range of new technologies, features and processes. Whilst the Portalevel® MAX would be familiar in how it works to our existing customers, they would also appreciate the developments.

We are aware many users of the Portalevel equipment operate in Safety Critical Environments and often under significant time constraints; To enhance our previous model therefore, we created this new generation model on THREE CORE PRINCIPLES:

1. SIMPLICITY

To create a unit which was simple enough to allow any Operator to be quickly trained on the Portalevel® MAX, and then reliably and accurately carry out testing.

2. DEFINITIVE RESULTS

A unit that provided completely definitive results, in a "Go / No-Go" format, and ensure the results were delivered to the user in as quick AS method as possible.

3. SPEED OF OPERATION

An efficient operating procedure allows THE USER TO test large numbers OF cylinders, faster than any similar device on today's market.

SPA: The SPA capability enables an increased output to achieve better readings for poor condition cylinders, more challenging applications and large volume uses

CAL: The CAL button is the standard procedure feature enabling self-calibration prior to testing on each individual cylinder, to ensure accurate and reliable readings

BATTERY COMPARTMENT: The battery compartment is on the bottom of the unit and has a double gate way to be waterproof * must be opened by flat head tool, e.g. a screwdriver to change the battery

SPA: to check the SPA feature is working

CAL: to check the CAL feature is working

BAT OK: to check the level of Battery life

GROMIT: the gromit at the top of the unit is the ultra secure simple fastening for the Sensor

SEALING: Red sealing ring for watertight integrity and enhanced aesthetics

DISPLAY: 'Go-No-Go' readings for quick and easy use

ON: simple power ON button – powered by 1 x 9V battery providing approximately 8 hours life

OFF: simple power OFF button – keep turned off to save battery life

V0.10: version 0.1

DIGITAL DISPLAY: numerical readings for an experienced user to gauge a better interpretation of the ultrasound's behaviour

BAR GRAPH DISPLAY: easy to interpret visual reading

OPERATION
So how does it work?

The Portalevel® MAX has been specifically designed to be as easy, simple and definitive for a user to operate as possible. Simple touch buttons now operate the controls and a new digital screen provides clear and definitive results to the user. The 7 steps below outline the simple testing process. Further technical support is available to all users for the life-time of the equipment if required.

1. Attach the sensor to the main Portalevel® MAX, switch the unit on and ensure the "Battery Low" Indication is not showing.

2. Depending on the condition of the cylinder, some couplant may need to be applied to the side of the cylinder, this could be in the form of Water spray, Ultrasonic Gel or an Oil&Water mix depending on what is easily accessible. This is not always essential and they all accomplish the required results.

3. Place the senor towards the top of the cylinder and engage the "CAL" feature. This will set the unit to that particular cylinder, catering for the material thickness, paint or surface covering.

4. When engaging the "CAL" feature, the Bar Graph on the screen will extend all the way to the right and the numbers will read high values.

5. The user should then move the sensor down the cylinder in small steps, making sure not to drag the sensor down the cylinder face.

6. When the sensor passes the level mark, the numbers will drop dramatically and the Bar graph will reduce all the way to the left. It is this change in display readings which identifies the difference between Air (above Level) and Liquid (below Level) in a cylinder.

7. Through moving the sensor up in smaller steps, one can accurately pinpoint the exact liquid level location.

APPROVALS

- Assembled under IPC-A-610 American national standards, institute protocols and Full ESD electrostatic discharge protocols; Finished with lead-free Rohs compliant Tin/Copper SN100C patented solder

- Environmental metal enclosure rated to IP65

- UL Approved and Certified manufactured Circuit Boards to UL specifications

- RINA Classification Society Approved
- UK Government CAGE Code KD983
- P/N: 2290334-COMX

- UL Approval Certificate Number: 20140310-E455148

INTERACTIVE TRAINING PROGRAMME
To aid new users learn how to use the Portalevel® MAX and to provide the best methods for existing users to make the most of the equipment we have developed a training programme available both on DVD and online. www.youtube.com/user/ColtracoVideos

TECHNICAL SPECIFICATION

Manufacturer: Coltraco Ltd, 46 Mount Street, London, W1K 2SA, United Kingdom	Display: Membrane control operated, LCD back-lit Display measuring 55 x 28 mm
Function: Portable Ultrasonic Liquid Level Indicator	Power Supply: 1 x PP3 9V battery (battery life 10 hours)
Verifiable Liquids/Gases: CO2, FM200, NOVEC, Halon and other Halon replacements amongst a range of others	Sensor: TX/RX sensor 14 mm diameter head, contained within a magnetized sensor applicator; connected by BNC connectors to 1 m length co-ax cable
Type: Portalevel® MAX	Weight: 300 g
Unit Dimensions: 160 x 82 x 30 mm	Operating temperature:-20C to +70C Storage temperature:-10C to 50C

IN THE BOX

Portalevel® MAX comes in a ready-to-go package complete with all items required for liquid level indication:

EQUIPMENT: Main electronic unit, dry sensor, cable and applicator, gel, Calibration Certificate valid for a year at a time and Operating Instructions, all well fitted in a durable carrying case.

WARRANTY: Our manufactured instrumentation has a 3 year warranty; sensors have a 1 year warranty, guaranteeing against any manufacturing failures to ensure any issues with the equipment are quickly resolved and a new unit provided in the event of equipment failure.

SUPPORT: Together with the training programme DVD and access to the online interactive site, we provide After Sales telephone "Teach-ins" to help users understand how to operate the equipment. We are available around the clock to assist and also offer the Portacare® Programme which can provide up to 8 years "total care".

① **HARD WEARING CARRYING CASE**
(Peli cases available on request)

② **ULTRASONIC GEL**

③ **STANDARD DRY SENSOR**
(Wet sensors also available)

④ **MAIN ELECTRONIC UNIT**

⑤ **EXTENSION ROD HANDLE**
(Optional Ancillary)

⑥ **MULTI-BANK EXTENSION ROD**
(Optional Ancillary – 2 models available)

⑦ **PORTATHERM™**
(Optional Ancillary)

Storage without batteries is recommended in extreme temperatures.

ALL THE SPECIFICATIONS ARE SUBJECT TO ALTERATION AT THE MANUFACTURER'S DISCRETION.

MARKET SECTORS
Applications

FIRE PROTECTION

The Portalevel has been leading in the fire safety & protection sector since we first invented it in1987 and with the 8th generation model Portalevel MAX, we are pleased to offer an enhanced means of testing and certifying fire suppression systems. Ultrasonic Liquid Level Indication uses safe and clean technology. Portalevel® MAX aims to reduce time and cost; it is a must-have tool for fire system protection, and we have the technical know-how and credentials to verify this.

MARINE
Coltraco's history is steeped in the Marine sector and toda Ship Owners, Managers and Operators, Port Authorities, P&I Clubs, Towage & Salvage Operators, Shipyards and Service Stations and Marine Surveyors are among our key customers around the world. We have developed products and diversified our range to serve our customers' needs and Portalevel® MAX is our latest upgrade.

POWER GENERATION

Power plants, transmission sub-stations and distribution networks need to minimise the risks of fire at all costs. For safety critical areas such as nuclear power generation, and the conventional fossil fuel power generation, Portalevel® MAX provides a further means of improving the safety management and preventative maintenance procedures of the fire suppression systems.

OIL & GAS
We have units in operation on rigs, platforms and offshore support vessels around the globe, notably on approximately 160 of the North Sea rigs overtime, as well as with onshore drilling, exploration and production operations. Portalevel® MAX provides drilling operators, contractors and owners, down to the OIMs and barge managers with the assurance and confidence that their fire suppression systems are operating under an enhanced safety management plan.

DEFENCE
Government organisations and Defence forces around the globe, particularly Naval Forces and Coast Guards, have been using Coltraco equipment for over 20 years. These capabilities are focused upon Safety & Survey applications such as monitoring Naval vessel and Fleet Auxilliary vessel Halon 1301, typically using Portalevel to monitor contents of FM-Halon, FM-200™ , CO_2 & NOVEC™ 1230 systems.

THE TWO PRINCIPLES:

IF YOU ARE AN END USER...
to provide an additional means to check your systems more frequently, outside the regulatory certification checks and enhance your safety management.

IF YOU ARE A SERVICING COMPANY...
to conduct certified testing in compliance with regulations, the Portalevel is approved and certified: proven accurate to +/-1.5mm and to save 75% of the time to complete testing when compared to weighing cylinders.

AND MORE...
Data centres, Telecommunications centres, High Rise Buildings, MTR rooms, and others. Please ask if you want to know if Portalevel® MAX will work with your applications.

FIRE SERVICING ENGINEERS

OPERATING ENVIRONMENT
- We understand your operating conditions
- From temperate to extremely hot temperatures (-10C – +55C)
- Even when CO_2 is stored at ambient temps. above 31C, we have a "hot weather climate use" procedure
- We can cater for a range of cylinders from new to poorly painted and rusted

ACCURACY
- We understand your need for highly accurate and speedy results

QUICK
- Each cylinder can be tested in less than 30 seconds
- Each cylinder calibration is uniquely simple, taking just 10-15 seconds

FEATURES
- The unit is lightweight, easy to handle and transportable by air and by sea
- Very clear numerical and bargraph display give you true digital readings
- You can validate your results with mathematical formulae that supports the unit's readings

SUPPORT
- Animated training videos for English and non-English speakers alike
- additional demo videos and user videos taken in real time on our YouTube channel
- 24/7 access to our training team by request
- Upgrades to the newest models available at any time – we will always offer a trade-in value even on 20 year old units

THE UNIT OPERATES ON
- CO_2 from standard 45KG/100LB cylinders through to heavier wall thickness Asian cylinders manufactured in Japan
- NOVEC™ 1230 in all industry standard cylinder types
- FM-200™ - as above
- FE-13, FE-25 and FE-36 – and we have designed unique operating instructions to cater for their temperature limitations
- Halon 1211 and Halon 1301 – still widely used in Government installations

FOR DATA CENTRES AND TELECOMMUNICATION APPLICATIONS
- We are the leaders in working in critical infrastructure applications
- We are in use with some of the leading operators in offshore-petrochemical, Government & Defence particularly Naval, power generating, electricity and gas transmission, rail and mobile phone communication infrastructure
- In use with 15,000 users worldwide and on 9,000 ships – nearly 18% of the worlds shipping fleet uses our equipment
- Using the leading ultrasonic technology that is clean, environmentally safe and UL approved
- We also manufacturing the world's only 24/7 continuous monitoring with data management and remote monitoring system in PML Multiplex

MARINE PACKAGE

Max Marine Package

The Portalevel® MAX is also available as a Marine Package. As well as the standard set the unit comes with the Multi-Bank Extension Rod which enables the Operator to monitor back to the 2nd, 3rd or 4th rows deep of cylinders in an installation. This is ideal for use onboard rigs, platforms, vessels, warships as a cost effective, time saving and regulation compliant tool for enhancing the fire safety management procedures onboard.

COMMERCIAL SHIPPING AND NAVAL APPLICATIONS

Servicing Companies

- Marine Servicing Companies and Contractors, who carry out the inspections of the CO2 suppression systems, have always been a significant proportion of our customer base.
- In developing this new unit, we took significant feedback and inspiration from these companies and created the Portalevel® MAX to further meet these needs.
- A Ship's CO2 system often contains several hundred cylinders or more and there are often significant time and cost-saving pressures.
- This unit is faster to use, easier for operators to be trained on and the results are delivered to the user instantly; this allows incredibly large systems to be inspected efficiently and effectively.
- The re-designed Multi-Bank Extension Rod allows for inspecting cylinders stored in 2, 3 or 4 rows deep and can fit through even thesmallest gaps between cylinders.

Ship Owners, Managers, Operators

- For over 20 years, we have worked closely with Vessel owners, operators and managers to assist in enhancing the Safety Management and Preventative Maintenance procedures onboard.

- If any accidental discharge or slow seepage of CO2 takes place and goes undetected, the effectiveness of the overall fire system could be critically reduced in the event of a fire, thus increasing the risk onboard.
- A number of leading fleets globally use this equipment as part of their existing safety management procedures, to monitor the suppression systems on a more frequent basis and to protect against the danger of accidental discharge.
- This helps to protect the vessel, crew and cargo from damage and enhance safety onboard.

Compliant with IMO SOLAS Regulations

EXTRACT FROM IMO & FSS CODES:
International Maritime Organisation (IMO)
Safety of Life at Sea (SOLAS)
International Fire Safety Systems (FSS) Code

CHAPTER 5 - FIXED GAS FIRE EXTINGUISHING SYSTEMS
1. Application - This chapter details the specifications for fixed gas fire-extinguishing systems as required by chapter II-2 of the Convention.

2. Engineering Specifications
2.1 General
2.1.1 Fire-Extinguishing Medium

2. 1. 1. 3 MEANS SHALL BE PROVIDED FOR THE CREW TO SAFELY CHECK THE QUANTITY OF THE FIRE EXTINGUISHING MEDIUM IN THE CONTAINERS.

ANCILLARY PARTS
Additional items for carrying out testing

PORTACARE®

SENSOR
The Sensor is the component which transmits and receives the Ultrasonic signal from the main unit. It achieves this using the piezoelectric effect, which involves the electrical stimulation of one crystal which emits an ultrasonic pulse of a fixed frequency. This signal is then transmitted through the walls and into the container that is being tested until the signal hits the opposite wall creating an echo.

This echo then returns back to the sensor, which stimulates the second crystal and creates an electrical reading which is then interpreted by the main unit itself. The crystal components are protected within a Metal applicator unit, which also provides an easy means to apply the sensor when carrying out testing and ensure the crystals are aligned correctly.

MULTI-BANK EXTENSION ROD
The Multi-Bank Extension Rod operates with exactly the same principles of the Sensor and has simply been adapted to provide an easy method for testing the 2nd, 3rd or 4th row of cylinders in a Banked Fire

Suppression System. The extension rod comprises 3 major components: the "L" shaped applicator, extension sections and handle.

When assembled it will allow an operator to reach through the gaps between cylinders and identify the cylinder content. The metal material provides the rigidity and strength to apply the pressure required onto the cylinder face, without the risk of causing any damage to the assembly and ensuring the operator does not need to dismantle the system to access the rear cylinders.

PORTATHERM®
We are able to supply small portable infrared non-contact thermometers which are simple, accurate and reliable for testing in climates when the liquid gaseous' critical temperature might be reached.

GAS MONITORS
We also supply various types of handheld monitors, for example Oxygen Detectors, to minimize risk when testing in environments where gas has potentially leaked.

Tailored to each customer's particular requirements, Portacare® provides a capped cost maintenance agreement for complete confidence in the equipment and service support for years.

3 or 5 Year Total Maintenance Program to completely cap the cost of ownership and guarantee maximum availability. Back up units provided in the event of unit breakages with beyond Warranty levels of support.

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