

PORTALEVEL® STANDARD

7th Generation Portable Ultrasonic Liquid Level Indicator
for CO₂, Halon, FM200™, NAF S III, FE 13, CEA 410 & Novec 1230
gaseous extinguishing systems

NATO Stock Number 6680-99-275-5292

RINA Approved

Coltraco Ltd is the OEM of the Portalevel® Standard with over 15,000 units in service in 105 countries worldwide.

Certifications and Approvals:

- Manufactured to BS EN 5750, ISO 9001
- Quality Standard
- RINA Approved
- Manufactured to US MIL-STD
- NATO Stock Number 6680-99-192-2735
- Coltraco Part Number 2290334
- Det Norske Veritas Accepted
- "Portalevel" Trade Mark Registered No 2290334
- UK Government Cage Code KD983
- US Department of Defense Halon
- Depletion Agency approval

Technology:

The **Portalevel® Standard** uses ultrasonic technology to identify the interface between liquid and air in any single skinned container. It therefore has none of the user problems associated with radioactive liquid level indicators which require dedicated training, storage, Health & Safety documentation, and transportation. It also replaces the traditional means of verifying liquid levels by dismantling and weighing in which the system may be closed down or disconnected, risking potential damage in so doing and involving considerable time, expense and inconvenience.

What Does 7th Generation Mean ?

We have upgraded the electronics to enable more intuitive handling and ease of operation, in terms of calibration to a cylinder and the lights and digital display. We have also made an easy-use membrane control and an easy clean fascia panel.



The **Portalevel® Standard** is powered by 4 x AA 1.5v batteries, 230mA current consumption, 10 hours continuous life, weight: 500 gm, measuring 155mm x 95mm x 45mm, wet and dry sensors 16 x 16 mm size, fixed 90° angled extension rod for use on multi-banked systems.





Operation:

The unit is simple to operate using push button controls and requires little training. It is calibrated to each cylinder at the touch of a button. The ultrasonic "dry" sensor requires no water or gel to ensure good transmission of the ultrasonic signal; the optional "wet" sensor to be used with ultrasonic gel, is suitable for use on poor condition cylinders where thick or irregular coatings or badly pitted and rusty surfaces prevent the dry sensor from obtaining a clear signal. The sensors are housed in a magnetic applicator which ensures good contact with the surface and allows hands-free operation.

To locate the liquid level in a vessel, the sensor applicator is placed on the test vessel below the expected liquid level and then calibrated and all LED lights are lit on the digital unit, or the meter fully deflected on the analogue. The sensor is then placed above the expected level – all lights extinguish. The sensor is moved between these two points in small steps until the interface is located.

For all types of bottles/cylinders, any that are found with unusual readings should be double-checked and if the same readings result, we recommend that the bottle be isolated and removed for weighing to double check its content.

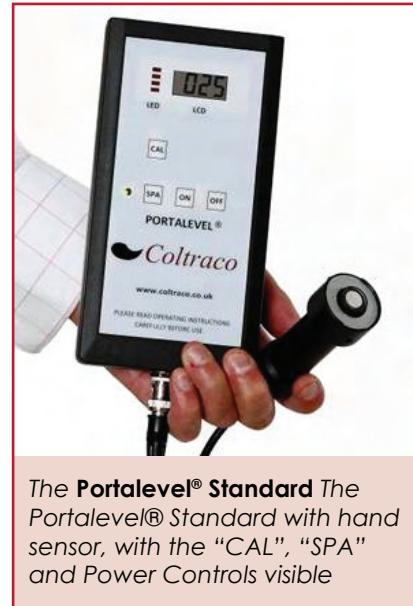
Applications:

The **Portalevel® Standard** is a versatile instrument that can locate the level of any liquid in any single skinned container of wall thickness 2 – 15 mm. Wall thickness of 15 mm – 90 mm is also possible, depending on material type and vessel size. It cannot monitor contents of plastic vessels as they do not conduct ultrasound.

It is typically used for high pressure CO₂ or Halon cylinders constructed of seamless spun steel, approx 5 ft high, 10 ins diameter, 45 kg or pressed steel with welded seams with low pressure fills of varying sizes and fill weights:

- a. **Fire Extinguisher Cylinders** – its primary application is to check levels of liquid gaseous extinguishants in fire cylinders where it can be used to locate levels of CO₂, Halon and Halon substitutes such as FM200® and NAF S III. It was recently selected after stringent comparative testing by the US Department of Defence Halon Depletion Agency for purchase who verified its accuracy to +/- 1.5 mm. We supply many units to fire service companies, offshore installations and utility companies worldwide for this purpose.
- b. **Marine Multi Banked Cylinders** – Using the multi-bank cylinder rod, the Portalevel Standard ® can also verify levels of extinguishants in multi-banked cylinder rows using this extension rod to reach the second and third rows. This type of installation is typically found on board ships and we have extensive experience of supplying this equipment to the marine sector. We also have a dedicated marine unit available, known as the Portamarine™, details available on request or at www.portamarine.co.uk
- c. **LPG** – Propane and Butane may be tested though the unit will function in reverse (see e below).

Details explained in Operating Instructions or available on request



The Portalevel® Standard The Portalevel® Standard with hand sensor, with the "CAL", "SPA" and Power Controls visible



Typical application for the Portalevel Standard includes CO₂ Cylinders (as pictured above) FM200, NOVEC, Halon and a variety of other similar cylinder types





- d. **Sprinkler Systems** - The **Portalevel® Standard** is a useful tool to check the system integrity of sprinkler systems. The majority of sprinkler systems contain "clean agents" such as CO2, Halon and Halon substitutes for which the Portalevel® was designed and which few other instruments are able to locate.
- e. **Water** – The **Portalevel®** can be used to locate water levels but in this case the signal gives inverse readings, ie high readings below level and low readings above.



Quality Assurance/Warranty:

All our units are manufactured to BS EN quality standards. All electronics are covered by a 3 year warranty. Sensors are covered by a one year warranty. This warranty is valid provided that the unit has not been tampered with, opened, used contrary to instructions or damaged. The warranty covers free of charge repair and servicing of the unit to be carried out at our factory in the UK. The transport and return of the equipment and the insurance is the customer's responsibility.



Re-Calibration:

We recommend that units are returned for annual recalibration, usually a requirement for any ISO 9001 operation using test instrumentation. Units returned for recalibration are generally tested and certified within a 48 turnaround period. Customers with a number of units may arrange for a loan unit if necessary. Annual re-calibration is not however compulsory. There is a very basic test in the Operating Instructions and if the unit continues to pass this test, it is operating correctly and does not need servicing.



After Sales Service:

We are a dedicated Customer Services provider and service-led manufacturer with a mission to remedy any client concern in a friendly and professional manner. Our Technical Department is available at all times to discuss any technical or operational queries and experienced in giving telephone "teach-ins". All queries are answered on the same day and our technical staff are available to overseas clients outside UK office hours by arrangement. Our technical staff have many years' experience of the operation of the **Portalevel®** in the field in a wide variety of market sectors and climatic conditions.



Coltraco Ltd:

Coltraco specialises in the design, manufacture and supply of ultrasonic survey and safety instrumentation for the fire, marine, power generating and offshore-petrochemical sectors worldwide, and are the global leader in this market. We are BS EN ISO 9001 accredited, No. GB8237. During our last audit NIL non-conformities were found. We are members of the UK Fire Prevention Association, the US National Fire Prevention Association, the Fire Protection Association of New Zealand, the Germany FPA and the South East Asia Petroleum Exploration Society.





Technical Specifications

This is a brief table of the core technical information relating to the **Portalevel® Standard**.

Manufacturer	46 Mount Street, Mayfair, London, W1K 2SA, United Kingdom
Type	Portalevel® Standard , Digital, 7th Generation Ultrasonic Liquid Level Indicator
Function	To indicate liquid gaseous extinguishants and other liquids in high or low pressure, single-skinned steel containers up to 89 mm / 3.5" thick; also functions on most types of single skinned industrial fluid containers
Liquids/Gases Locatable	CO2, FM-200™, Novec, Halon and Halon substitutes, NAF S III, FE-13 FE-25, water, oils, amongst others
Sensor	Ultrasonic single crystal sensor fitted with a magnetic head for hands-free operation, 16 mm x 16 mm
Accuracy	+/- 1.5 mm (1/16")
Controls	On/Off – Power Controls SPA – Increases Transmitter power output and increases sensitivity of receivers CAL – Self-Calibration Control
Display	Digital: LED and LCD digital display
Power Supply	4 x AA 1.5V batteries, consumption 230mA, battery life 10 hours
Weight	500g (1lb, 1oz)
Dimensions	Instrument – 155 mm x 95 mm x 45 mm (6 2/3" x 3 ¾" x 1 25/32") (packed ex works for shipping including carrying case – 34 cm x 31cm x 18 cm, weight 3.5 kg)
Operating Temperatures	The unit will work effectively in temperatures between -10C to +70C. (The ability to operate is dependent on the chemical properties of the liquids/gases being monitored.)
Approvals	ISO 9001, CE Mark, Classification Society Approved by RINA NATO Stock Number: 6680 99 275-5292, Det Norske Veritas (DNV) accepted, winner of Safety at Sea Award, US Department of Defence Ozone Depleting Substances Reserve Program Office Approved and selected, supplied to US Govt MIL-STD and British Navy, manufactured to BS5750 / ISO9001, UK Patent Office Trade Mark Reg No 2290334.
Warranty	The sensor is covered by a one year warranty, the unit is covered by a 3 year warranty provided that it has not been opened, tampered with or subjected to intentional or accidental damage
Calibration	Digitally self Calibrating but we recommend annual servicing and re-calibration as per the common requirements of company certifications.
Accessories	"Wet" and "Dry" sensors for poor condition and good condition cylinder surfaces respectively, extension rod for 2-3-4 multi-banked cylinder row installations and pipe work





Portalevel® USER LIST:

The following are examples of major **Portalevel®** users worldwide to whom over 15,000 units have been supplied to during the past ten years. We are sole manufacturers and the only company authorised to calibrate and repair.

Government Agencies / Navies:

- | | | |
|--|--|---|
| <ul style="list-style-type: none">US Department of Defence Ozone Depletion Substances Agency | <ul style="list-style-type: none">Royal NavyUS NavyUS CoastguardRoyal AirforceRNLI | <ul style="list-style-type: none">Royal Netherlands NavyRoyal Canadian NavyHK Fire Service Department |
|--|--|---|

Fire Safety Companies:

- | | | | |
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| <ul style="list-style-type: none">Tyco
Azerbaijan, Australia, Belgium, Denmark, France, Hong Kong, Italy, Malaysia, Netherlands, New Zealand, Norway, Spain, Sweden, UK, | <ul style="list-style-type: none">Singapore, Taiwan, Thailand, United Arab Emirates, USA | <ul style="list-style-type: none">Chubb
UK, South Africa, Australia, Taiwan, Spain, Qatar | <ul style="list-style-type: none">Kidde
UK, Germany, Italy, Singapore |
| | | | <ul style="list-style-type: none">Siemens
Malaysia, Taiwan, Hong Kong, Singapore |

Offshore Petrochemical and Power Generating Companies:

- | | | |
|---|--|--|
| <ul style="list-style-type: none">TexacoMarathonBP-ExxonShellEnterprise OilTotalMaersk OilMobil Europe | <ul style="list-style-type: none">National PowerMidlands ElectricityNuclear ElectricPowergenBritish GasScottish NuclearNuclear Power Corp, India | <ul style="list-style-type: none">British Nuclear FuelsNational GridHong Kong ElectricDubai ElectricityConocoRolls RoyceSaudi AramcoICI |
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Units have been supplied to over 110 of the 160 UK North Sea platforms and the majority of the offshore safety-service companies.

Marine Companies:

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| <ul style="list-style-type: none">A.P. MøllerUnitorRNLIAmerada Hess | <ul style="list-style-type: none">Maersk Ltd, UKShell TankersP&O ContainersUnitor Ships | <ul style="list-style-type: none">V ShipsChevronAcomaritBP Shipping |
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RINA





Optional Accessories

We also offer a variety of optional accessories which are designed to add capabilities to the basic unit set up. For a brief example of the accessories available, please find below:

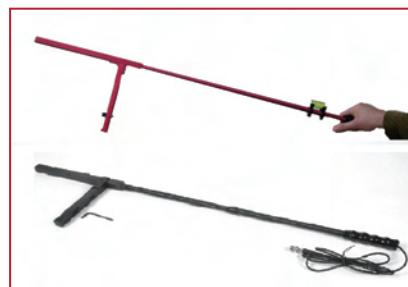
Sensor

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.



Multi-Banked 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.



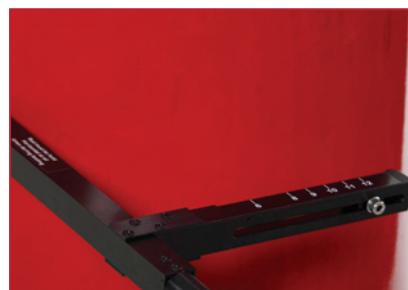
Portatherm® - Portable Infrared Thermometers

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.



Permalevel®

We also invented the **Portalevel®** for monitoring systems on a continuous 24/7 basis.



Portacare®

Our After Sales "Total Care" Programme which can be extended to 3, 5 or 8 years. Tailored to each customer's particular requirements, **Portalevel®** provides a capped cost maintenance agreement for complete confidence in the equipment and service support for year.

