COLTRACO
Ultrasonics | since 1987

Introducing the new

PERMALEVEL® FEATHERWEIGHT

Gas Weight Constant Monitoring of
Fixed Fire Supppression Systems

Wyłączny dystrybutor: EKO-EFEKT Sp. z o.o. www.eko-efekt.pl e-mail: info@eko-efekt.pl tel.: 81 747 43 53

IMPROVE YOUR FIRE SAFETY

World's first dedicated three-gas system to continually monitor loss of agent quantity due to leakage in high-pressure seamless CO2 cylinders, liquefied clean agents (NOVEC™1230, FM-200® with Nitrogen) and non-liquefied clean agents (Inert gases e.g.Inergen™).

Permalevel® FEATHERWEIGHT electronics enable multi-relay power and communications up to four electronic units, each controlling 12-cylinders, totalling 48-cylinder monitoring capability from 1 power source.

01

Constantly monitor cylinders 24/7 to ensure they are at designed capacity. We also provide real-time information on the exact amount of agent in your cylinder.

02

Immediate notice of leakage on a full-colour 4.3" display. The system will show the exact amount of agent loss, including percentage loss with 100-gram accuracy.

03

Pre-programmed thresholds based on regulatory needs: 10% for CO2 and 5% for Clean Agents, for Inergen™, you will also be given the pressure loss which is intrinsically linked to mass.

coltraco.com/product/permalevel-featherweight/

PERMALEVEL® FEATHERWEIGHT IS DESIGNED FOR TOTAL FLOOD FIRE SUPPRESSION SYSTEMS IN SEAMLESS CYLINDERS

BRAND NEW TECHNOLOGY RELEASED JANUARY 2021

Coltraco brings you the innovative answer to the question of monitoring fire systems. Merging fundamental mathematics with cutting edge engineering, to continuously monitor the mass of your cylinder contents. This is a critical way of measuring agent loss and is the only method that is not affected by pressure or temperature.

3-GAS SOLUTION: CO2, CLEAN AGENTS, INERT

Choose Permalevel® FEATHERWEIGHT for CO2, liquefied and non-liquefied clean agents.

For non-liquefied clean agents where pressure is used as a direct indication of agent quantity, our system converts the cylinder's fill pressure to agent mass.

The user does not have to worry about temperature fluctuations during maintenance schedules. This is because agent mass is independent of temperature, with the ability to set pressure-equivalent leak alarm thresholds, allowing you to adhere to ISO and NFPA regulatory requirements more easily.

MEASUREABLE

A unique combination of electronic hardware (highly accurate strain gauge sensors), software design (intuitive interface), and enhanced mechanical capabilities.

EVIDENCE BASED

In an easy-to-install system, that displays and monitors in real-time highly pressurised liquefied and non-liquefied extinguishing systems in seamless cylinders.

SAVES TIME

The simplicity of the design enables a unique installation capability with commonly available mechanical parts for customisation and allowing for different cylinder-spacing between the valves and hanging mechanism, a common deficiency of competitor load-weigh systems.

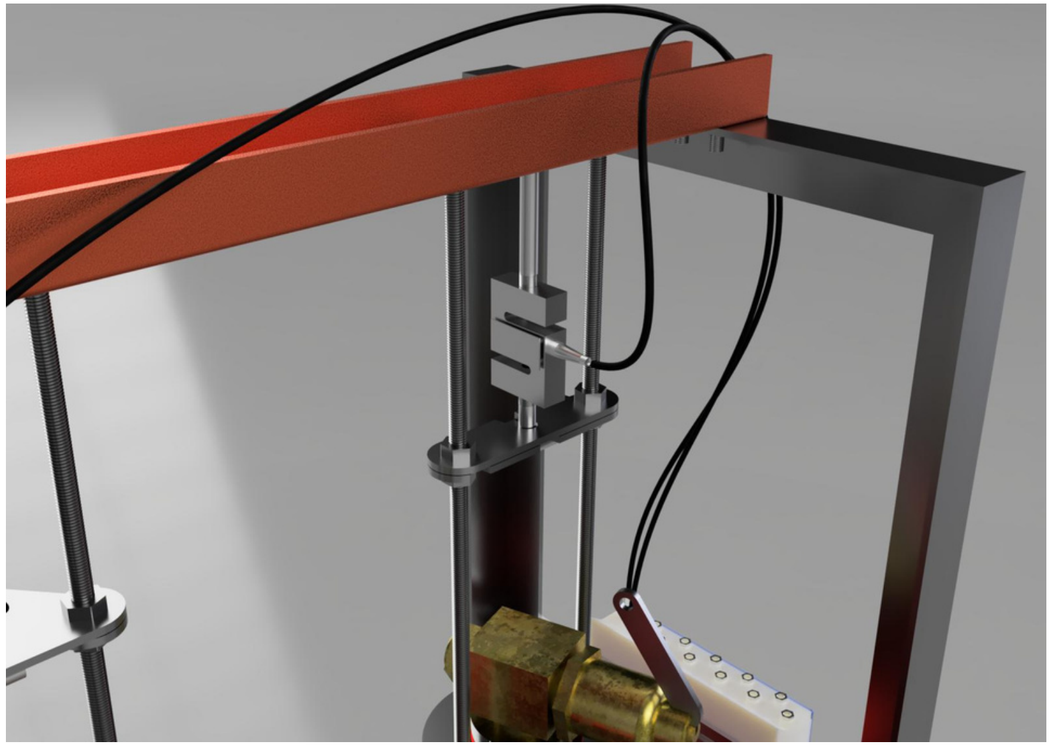
KEY FEATURES OF PERMALEVEL® FEATHERWEIGHT

12 CYLINDERS CAPACITY

per unit and by connecting units together via our sophisticated relay system will bring an entire installation under one continuous monitoring system.

LINK WITH FIRE PANEL

With the communication-ready version, your cylinders can be linked to the fire alarm system through a monitored input enabling instant notification of a critical leakage of the cylinders in real-time.



PROTECT YOUR PEOPLE

Mechanically Permalevel® FEATHERWEIGHT allows the removal of the strain gauge sensor without disconnecting the cylinders, giving protection to your personnel and assets during servicing schedules.

NO DISRUPTION

With our new in-built calibration procedure, you no longer have to shut down your entire system during maintenance and calibration.

UNIQUE LOCKING SYSTEM

We have designed a unique cylinder locking system that disconnects the weight sensor from your cylinder without disconnecting the valves or moving the cylinder from the rack, giving you the ability to remove the sensors for calibration and maintenance without disconnecting the system while keeping your facility and staff protected throughout the process.

coltraco.com/product/permalevel-featherweight/

BENEFITS

MOST ACCURATE METHOD

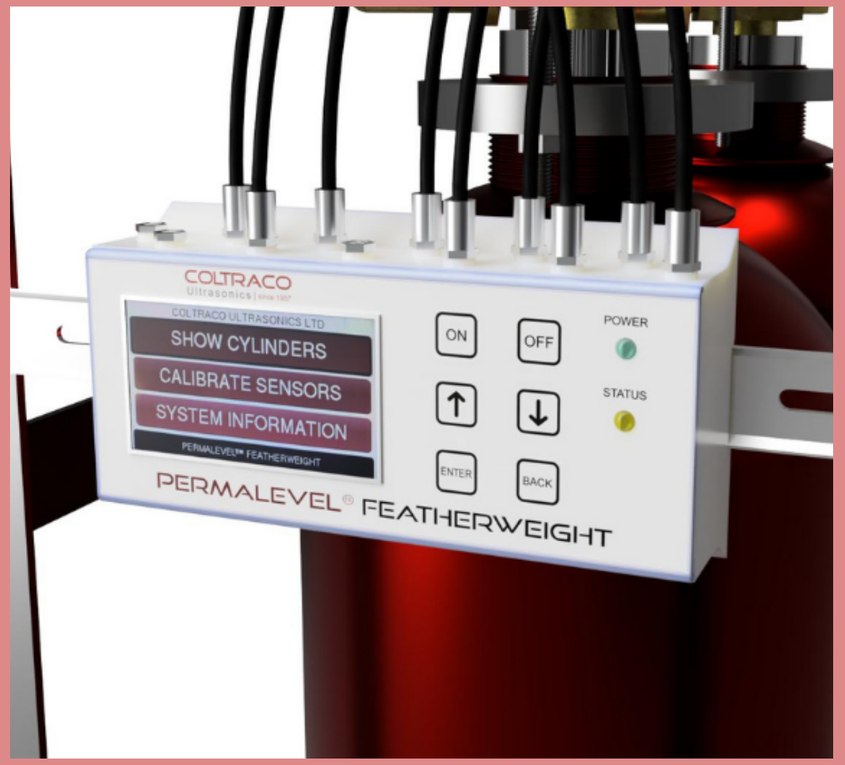
Weight**:** <1% above 10kg agent
Pressure: <1% for Inergen™
Versus traditional methods:
Weight: ~5%
Pressure gauges: 2.5%

LIGHTER, CHEAPER

Much reduced total weight compared to traditional full-mechanical load weigh systems.

LOW COST

Designed and built for large installations providing a low-cost system at quantity. Lighter weight substantially reduces shipping costs too.



A rendering of the unit connected to 2 cylinders in-situ. Each unit connects to up to 12 cylinders identically. Multiple units can be chained together.

EASY INSTALLATION

Our technology is designed with ease of installation in mind. Our installation process is easily configurable to suit retrofitting along with full refits of your fire suppression system, allowing greater flexibility.

OPERATES AT HIGH TEMPERATURE

Works for CO2 systems stored at high-temperature conditions (above 31C) and removes the need, risk and inconvenience of manual weighing.

INTEGRATED POWER

Integrated the shared power-relay system, like communications feature, that allows you to power multiple units from one source, reducing the number of required power outlets improving cable management and reducing cable congestion.

HOW TO SET UP

MOUNTING

Permalevel® FEATHERWEIGHT is designed to be DIN rail mounted. A DIN rail is a strip of metal used to mount equipment and cabinets and are the global industry standard for rail-mounting. The advantages of using these rails are that components and equipment simply and securely snap into place rather than the alternative panel mount option. DIN rails are convenient and cost-effective, allowing installation in areas with limited space at low cost. They are simple to install or customise and help organise component layout and wiring.

On the left is an example of a section of DIN rail (Google Images), and on the right is a 3D illustration showing the Permalevel™ Featherweight mounted to a cylinder rack.

Permalevel® FEATHERWEIGHT has been designed with installation in mind

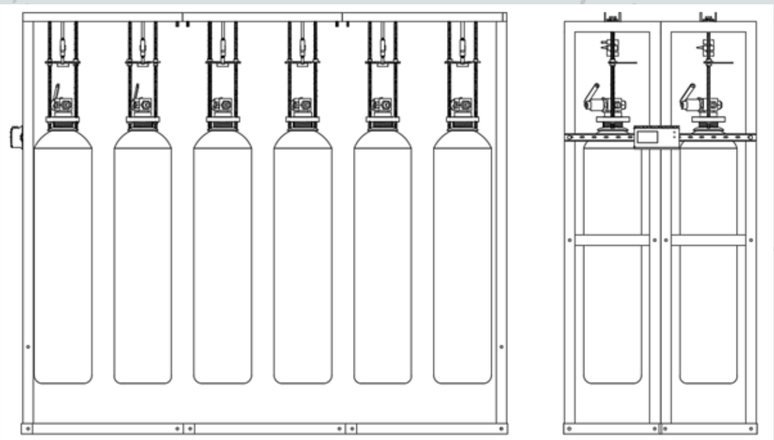
NEW SYSTEMS The method for installing this device will depend on the type of cylinder installation in place. If this is being installed as part of a new cylinder installation, then the cylinder rack can be designed to accommodate the hanging mechanism.

RETROFIT The other type of installation will be retrofit meaning that the hanging mechanism will have to fit into the current cylinder rack. In both cases, only minimal work is needed to accommodate the hanging mechanism.

SET UP 2

The image to the left shows two hanging mechanisms fully installed side-by-side. These mechanisms are secured to the support beam above through three carefully drilled holes.

The spacing of these hanging mechanisms will be determined by the diameter of the cylinders and to the discretion of the customer. However, the technical team will provide recommendations.



The drawing left illustrates a typical 12-cylinder set-up with Permalevel® FEATHERWEIGHT monitoring unit connected to all 12 load cells sharing power and communications by connecting adjacent unit together.

The hanging mechanisms and load cells are located above each cylinder

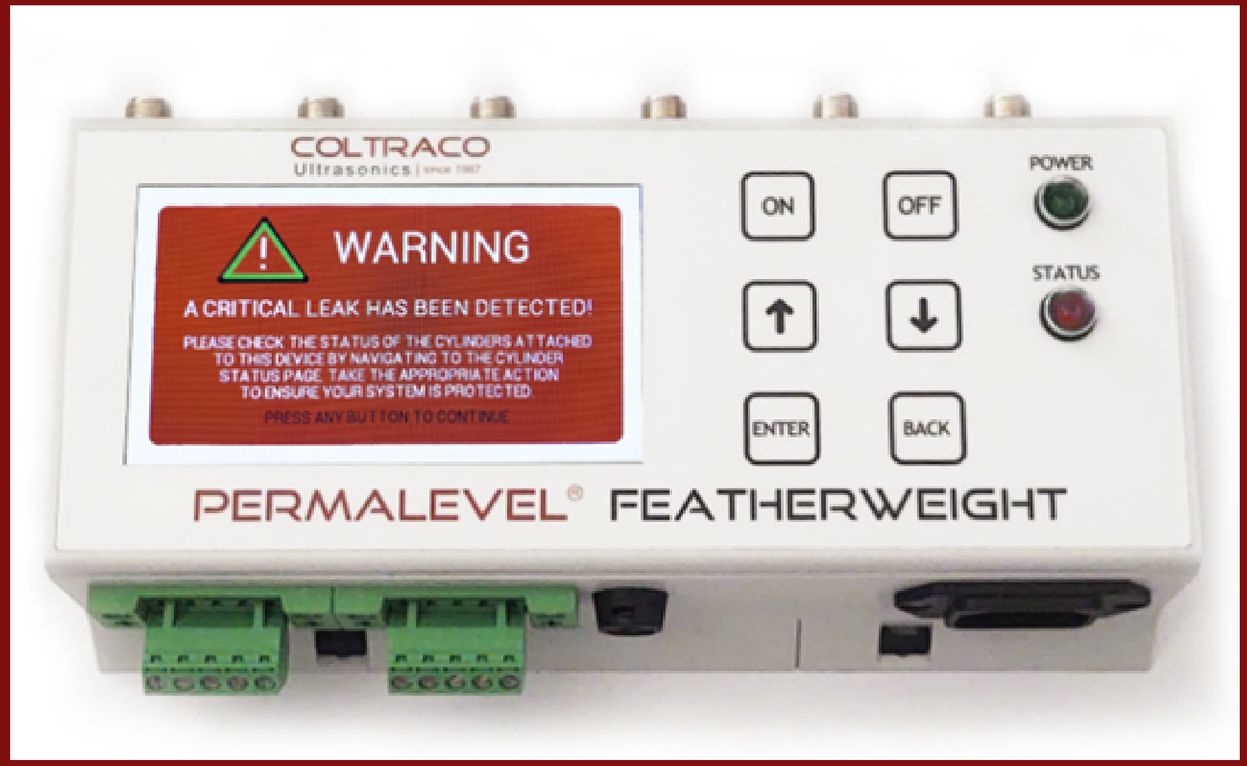
FIRE SAFETY REGULATIONS

Regulations state that a leakage greater than 5% for liquefied and non-liquefied clean agents and 10% for CO2 requires cylinder refilling.

Therefore, the Featherweight allows the user to select either 5% or 10% threshold depending on which agent is being monitored.

Regulations are in place to guide industry in following safety protocols that save lives. At Coltraco, we provide safety equipment for safety sake and our technology is guided by the industry standard and regulations. The Permalevel™ Featherweight monitors multiple agent types and therefore needs to meet different regulations depending on which agent is being monitored.

If the agent leaks past the pre-selected threshold, the unit will alert the user (see image below). The user will then navigate to the cylinder page to see which cylinder has been affected and exactly what the leak quantity is.



It is imperative to be aware of slow leakage to allow maintenance to take place before a failure occurs.

REGULATIONS

ISO 14520 Regulation Chapter 6 6.2.4.2 & Annex F 5 Regulations for Gaseous Fire Extinguishing Systems and Room Integrity testing methods.

IMO SOLAS & FSS Code Chapter 2.1.1.3 “Means shall be provided for the crew to safely check the quantity of the fire extinguishing medium in the containers.”

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 Code 2001 7.11 & 7.13 and 12

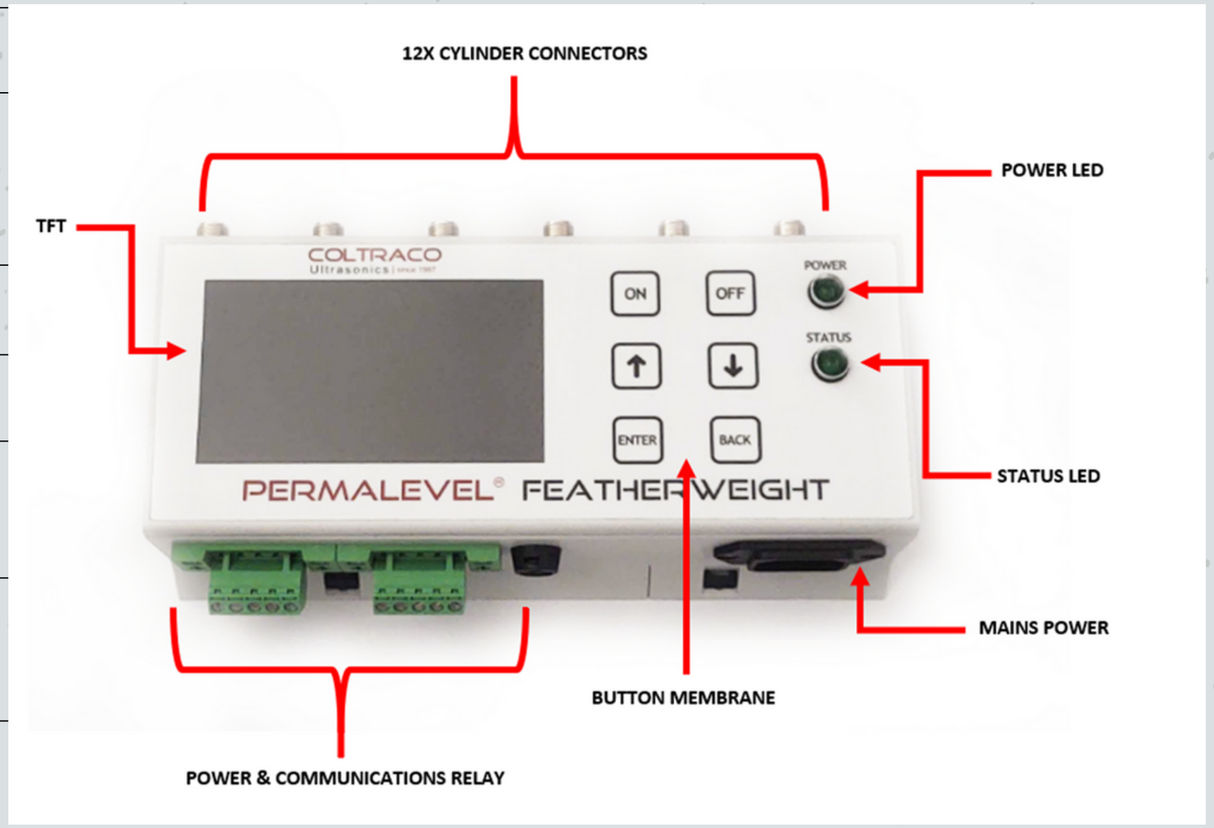
CO2 UK Marine Equipment Directive (MED) UK/EU legislation wth US Coast Guard Mutual Recognition 7.3.2.6 “Means should be provided to verify the liquid level in all the cylinders, either by weighing the cylinders or by using a suitable liquid level detector.”

The United States Coast Guard Marine Safety Alert – May 27, 2015 “Receive adequate training to perform routine inspections of their vessel’s fixed CO2 systems and fully understand their operation, particularly those protecting large spaces or multiple areas. “

TECHNICAL SPECIFICATIONS - MAIN UNIT

MATERIAL	Self-extinguishing Blend PC/ABS
OPERATING VOLTAGE	24V
FREQUENCY RANGE	47 ~440Hz
OPERATING TEMPERATURE	-20 ~ +50°C
OPERATING HUMIDITY	20 ~ 90% RH non-condensing
DISPLAY	4.3 Inch TFT (Thin Transistor)/Transmissive, no module
NUMBER OF CYLINDERS	12
POWER RELAY POTENTIAL	4-Units
MOUNTING OPTIONS	DIN (EN 60715) rail
ACCURACY	100g (1% or less of agent weight above 10kg)
CONNECTIVITY OPTIONS	Monitored Input (for external fire panel integration) on the communications model

WEIGHT	700g
DIMENSIONS	213x89x53.3 mm (L x H x W)
POWER	115 ~ 264VAC 120 ~ 370VDC
IP RATING	IP 54 Max



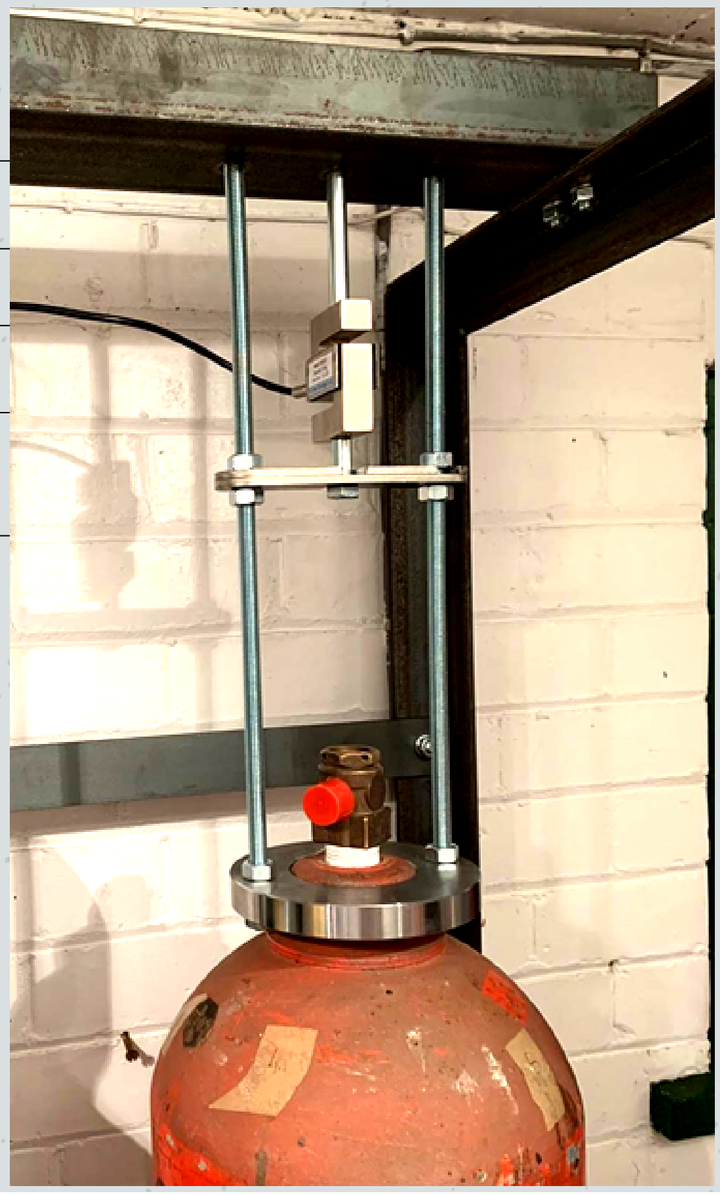
TECHNICAL SPECIFICATIONS - CYLINDER HANGING MECHANISM

NUMBER OF COMPONENTS	Standard kit ~16 (1 x neck ring, 2x studding bars, 2x bolts, 2x locking plates, 8x hex nuts, 2x connector nuts)
ADJUSTABLE	Yes
KITTING WEIGHT	3.2 – 3.6 Kg (including load cell)
MATERIAL	Mild Steel (bolts and studding are zinc coated)
STANDARD COLLAR INTERNAL THREAD	W80x1/11 grade, Internal Diameter: 78 mm

The image left shows the hanging mechanism fully installed with the locking plates closed on the load cell (S-Type) sensor.

A cylinder can be easily installed by screwing the cylindrical neck ring at the lower section around the threaded part of a cylinder neck.

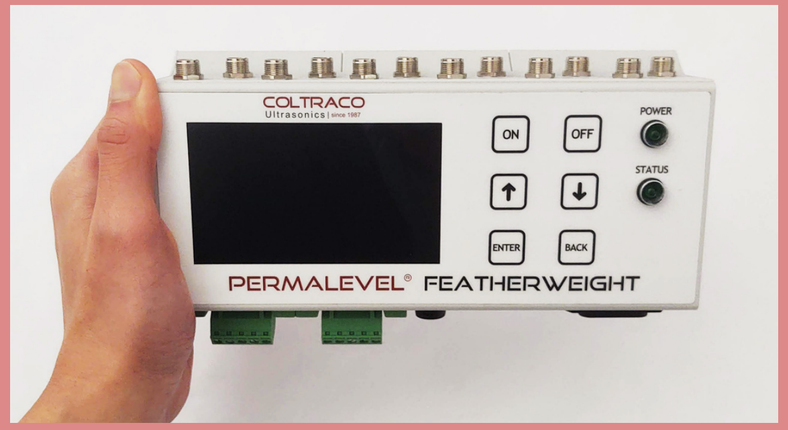
The image right is showing the standard kit fully installed (right) on a standard-size 45kg CO_2 cylinder, currently supported by the load cell (weight sensor).

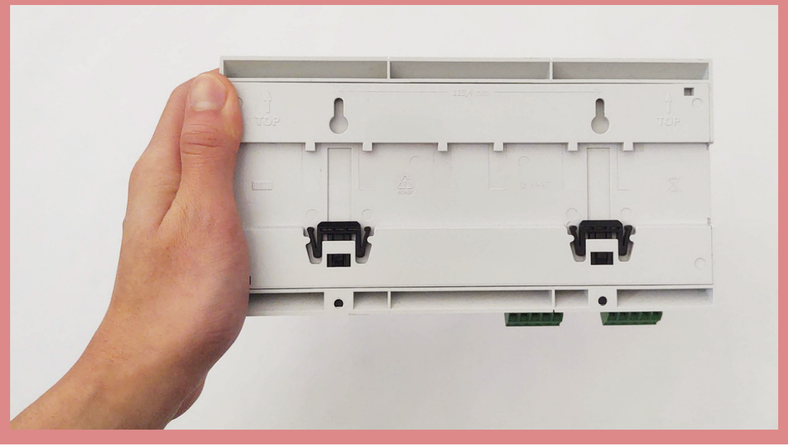


KITTING CONTENTS

We provide you with a package containing what you require to install the Permalevel® FEATHERWEIGHT.

COMPACT SIZE MODULE





COLTRACO
Ultrasonics | since 1987

Available worldwide

PERMALEVEL® FEATHERWEIGHT

EKO Sp. z o.o.
EFEKT

EKO-EFEKT Sp. z o.o.

www.eko-efekt.pl

e-mail: info@eko-efekt.pl

tel.: 81 747 43 53

ISO 14001 REGISTERED FIRM

CE

ISO 9001 Certified ExVeritas®