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BURKECALIBRATION.COM

Calscan Falcon Electronic Deadweight

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CALSCAN

precision
temperature pressure
& flow measurement

FALCON ELECTRONIC DEADWEIGHT



THE FALCON is a quick, convenient and inexpensive way to accurately measure pressure in almost any environment. Under 4 inches in diameter, the Falcon will fit in your hand and, yet, hold most standard quick-connects and fittings. The custom-made aluminum case is water-resistant and has an advanced shock-absorbing system that is designed to take more abuse than the typical electronic deadweight, before being damaged.

Have you ever used a electronic pressure gauge when the temperature is changing rapidly? Most gauges will have extremely poor accuracies unless the temperature is stable. To prevent this we calibrate the Falcon from -40°C to +60°C, and use advanced digital compensation technology, unlike almost all other pressure gauges. As a result, you don't have to worry about the outside temperature changes affecting the

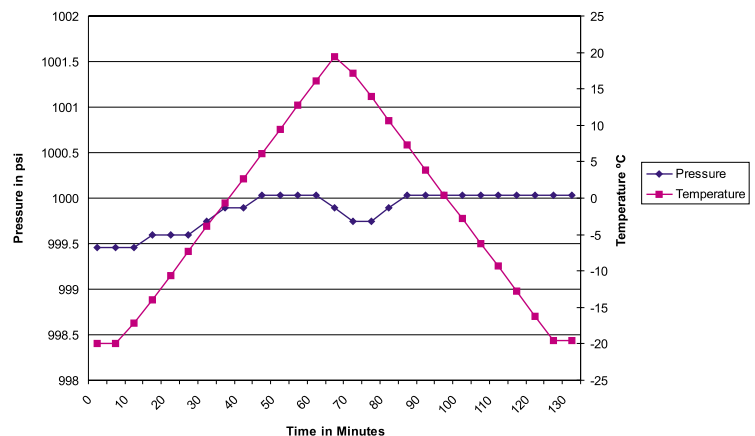
displayed pressure. For example, on the graph below, you can see data from a typical Falcon with a range of 3500 psi, tested at 1000 psi of pressure. The temperature was then ramped from -20°C to +20°C in 1 hour, and then back down. There is 0.5 psi (0.015% Full Scale) deviation from the correct value, well below the stated accuracy of +/- 0.04% Full Scale.

Software features such as one touch memory, peek pressure detect, and manual zero makes the Falcon convenient to operate. Included with every deadweight is a watertight carrying case to keep your Falcon safe when its not being used and, it even has enough room to house most pressure connections too. In short, we built this electronic deadweight to satisfy the needs of the field operator for ruggedness, and unparalleled accuracy for the instrumentation technician.



Included with every deadweight is a watertight carrying case to keep your Falcon safe when it's not being used.

Pressure Deviation on 3500 psi Falcon with 1000 psi Head



SPECIFICATIONS

- **Accuracy:** +/- 0.04% Full-Scale Total Error Band
- **Resolution:** 0.1 psi or 1 kPa
- **Calibrated Operating Temperatures:** -40°C to +60°C
- **Storage Temperature:** -40°C to +85°C
- Div I Class 1 Groups A, B, C, D EEx ia IIC T4, Maximum Ambient: +50°C
- CSA / UL / CENELEC-ATEX-100
- CE approved for Europe
- Rugged Case
- Weather Proof NEMA IV, IP65
- 3.9 inches in Diameter
- Advanced Shock Resistant Design
- **Long Battery Life:** One year if used continuously for 3 hours day, 7 days a week
- Low Battery Indicator
- **Engineering Units:** psia, psig, kPaa, kPag
- 1/4 NPT or 3/4 NPT Process Connection
- **Power:** 2 AA Lithium Battery Pack
- **Calibration Traceability**
 - Masses: NIST
 - Pistons: NIST and LNE (France)
- **Agency Approvals**
 - UL 913, Fifth Edition
 - CSA C22.2 157-M1992
 - ATEX-100
 - EN 50081-2
 - EN 61000-6-2
- **Pressure Ranges:** 750, 1500, 3500, 5000, 10000 psi
- Water Tight Carrying Case Included

Specifications are subject to change due to a policy of continuous improvement. This product not restricted under DOT and LATA shipping regulations.



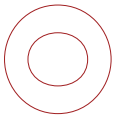
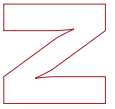
For warranty, calibration, replacement battery, and local distributor information contact:

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4188 93 Street, Edmonton, Alberta, T6E 5P5



Falcon

Electronic Deadweight

User's Manual 1v06



Overview

The Falcon Electronic Deadweight is a quick and inexpensive way to measure static pressure.

Since it's calibrated from -40 °C to +60 °C you don't have to worry about the outside temperature changes affecting the pressure, unlike most other electronic deadweights.

The custom-made aluminum case and advanced shock-absorbing system are designed to take more abuse before being damaged than the typical deadweight. Included is an impact-resistant, water-resistant case that is big enough to hold most standard quick connects and fitting's while still being attached to the Falcon.

In short, we have built this deadweight to satisfy the needs of the field operator for toughness, reliability and unparalleled accuracy.

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Installation

The Falcon Electronic Deadweight ships with a 1/4" NPT to 1/2" NPT adapter that allows you to easily hook up to almost any adapter or quick connect. There are just a few points to remember.

Installing Fittings

The Falcon is designed to be robust but, if you do not use a wrench to attach any fitting or install the deadweight on a pressure source, you could damage it.



Bad



Good



If you damage the deadweight by stripping the threads or by rotating the case to remove a fitting without a wrench, you will void your warranty !!!

Using Quick Connects and Valves

Using a quick connect is okay as long as it does not seal fluid in the connection. If the quick connect seals the fluid, drill it out so the pressure has somewhere to bleed, otherwise changes in temperature can put thousands of pounds of pressure on the transducer, possibly overpressuring it. This can also happen when using valves that seal fluid against the sensor.



Trapping fluid against the pressure sensor and exposing it to a change in temperature can damage the sensor and void your warranty !!!
If you use a quick connect on the gauge ensure the stem on the Falcon has no check valve, a SESO type !!!


Operating the Falcon


To turn on the Falcon Deadweight, press either the **Menu** or **Save** key. The unit will turn off automatically depending on what the Sleep-Mode is set to, see below. There are three main modes the Falcon can be in: *Sampling*, *Memory* and *Setup*. These modes are reached by repeatedly pressing the **Menu** key.

Sampling: The Falcon Electronic Deadweight samples every 3 seconds. When the gauge is sampling, *busy* will come up on the display, and the gauge won't respond to key presses until it's finished sampling.


In gauge mode (psig or kPag), it is possible to zero the deadweight to atmospheric pressure. While the Falcon is sampling, press both the **Save** and the **+** key to zero the pressure. Note that this has no effect in absolute mode. You can reset the zero offset back to the factory zero which will be explained below.


The Falcon can either save the current pressure for later viewing by pressing the **Save** button, or if Peak-Detect has been activated, the highest pressure recorded will be saved automatically. If the Peak-Detect is on pressing the **Save** button will clear the peak value so a new lower peak will be recorded.


Memory: After pressing the  button a second time, the Falcon will show the last saved value or if the PeakMin-Detect is on, the peak and minimum pressure. In this case the two values will be shown by alternating the display every 3 seconds (The lower value is the minimum and the higher the peak pressure).


Setup: Pressing the  button a third time will allow you to change the settings of the Falcon.

Changing the Engineering Units: kPaa, kPag, psia, psig


Press the  button until *Setup* is displayed.

Press the  button to display *Units*, and the current unit will be displayed.

Press the  button, and the units will toggle between psia, psig, kPa and kPag.


Press the  button to save the desired unit.


Reset the Zero Offset: This useful if the Falcon has been accidentally zeroed under pressure, or if you want to see how much the deadweight has shifted from the factory zero.


Press the  button until *Setup* is displayed.

Press the  button to display *Units*.

Press the  button to display *Reset*.


Press the  button to reset the gauge back to factory zero.

PeakMin-Detect: This feature changes how the memory mode works. If the PeakMin-Detect is ON, the deadweight will display the last peak and minimum pressure sampled (instead of showing the last saved pressure). When *memory* is displayed the peak and minimum pressure will be shown, alternating every 3 seconds. By pressing the  key when the deadweight is in sampling mode, and it will clear the peak and minimum pressure, so new pressures can be recorded.

Press the  button until *Setup* is displayed.


Press the  button to display *Units*.

Press the  button to display *Reset*.


Press the  button to display *Pon* or *Poff*.


Press the  key to toggle between *Pon* or *Poff*.


Sleep-Mode: Changes how the Falcon automatically turns off. Normally, the sleep-mode is set to *toff*. In *toff*, the deadweight will stay on as long as there is more than 2 pounds of pressure. As soon as there is less than 2 pounds of pressure, it will shut off after 5 minutes of inactivity. If the Falcon has been set to *ton*, it will shut off in 5 minutes, after you stop pressing any of the buttons.

Press the  button until *Setup* is displayed.

Press the  button to display *Units*.

Press the  button 3 times, until *toff* appears.

Press the  key to toggle between *toff* and *ton* modes.

Press the  key to save the desired mode.

Battery Replacement

The supplied battery pack is designed to operate the Falcon across its temperature range, and protect it from the possibility of causing a spark.

Replace only with Cal-Scan Services Battery pack model: **LS14500/2BPW**



Failure to use replacement battery pack LS14500/2BPW will impair the intrinsic safety of the Falcon Deadweight !!!

Specifications

- Accuracy: +/- 0.04% full-scale
- Resolution: 1 kPa or 0.1 psi
- Calibrated Temperatures from -40 to +60 °C, Calibration traceable to NIST
- Div I Class 1 Groups A, B, C, D Max Ambient +50 °C CSA / UL / CENELEC
- Advanced Shock Resistant Design, CE approved for Europe
- Long Battery Life (One year if used continuously for 3 hours a day, 7 days a week)
- Engineering Units: psia, psig, kPaa, kPag
- 1/4 NPT Process Connection
- 3.9 Inches in Diameter
- Power: 2 AA Lithium Cell Battery Pack

All specification are subject to change without notice

Warranty

Cal-Scan Services Ltd. agrees to repair or exchange a product that fails, resulting from a defect in manufacturing, within a period of one year from the date of purchase by the original owner. **Proof of purchase will be required for warranty credit.** If proof of purchase is not supplied, the manufacturing date will be used to verify warranty status. Parts that are damaged due to normal use or accident are not covered by the warranty. Warranty repairs must be performed by the manufacturer or one of its authorized repair centers. Shipping charges to the repair center are to be prepaid by the customer, and the return shipping costs will be paid by Cal-Scan if the unit is repaired under warranty. Upon receipt of the product, it will be tested and, if it is found to have failed, a warranty exchange or repair will be authorized by Cal-Scan.

Contact Information

For warranty, calibration, replacement battery and local distributor information contact:

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