

# 10 Reasons To Consider Hydraulic Load Cell Technology

## 1 IMMUNITY TO LIGHTNING DAMAGE

Unlike other load cell technologies including both digital and analog strain gauge load cells, hydraulic load cells are immune to damage resulting from lightning strikes or other electrical surges. Hydraulic load cells have neither strain gauges nor wiring like other load cell technologies thus making them unaffected by lightning strikes; one of the most common reasons for load cell failure.

## 2 IMMUNITY TO WATER DAMAGE

Hydraulic load cells are constructed using stainless steel components welded together then pressure tested to ensure there are no leaks. Keeping the hydraulic fluid inside the load cell also keeps water out. Hydraulic load cells will operate when continuously submerged in water for an extended period.

## 3 OPERATES OVER A WIDE RANGE OF TEMPERATURES

Hydraulic load cells are capable of operating over a wide range of temperatures. Using proprietary grades of aircraft hydraulic fluid, hydraulic load cells can and do operate at temperatures of  $-60$  degrees C ( $-76$  degrees F). A number of hydraulic vehicle scales are located across Canada.

## 4 HYDRAULIC LOAD CELLS NOT SINGLE SOURCE COMPONENTS

Unlike digital load cells, hydraulic load cells are currently available from at least two sources. Because there is no standard protocol for digital load cell outputs, you cannot replace a digital load cell with another digital load cell from a different manufacturer. Each manufacturer of digital load cells have their own proprietary output for the cell that works only with their weight indicators and other digital load cells.

## 5 CAN OFFER SAME ADVANTAGES OF A DIGITAL LOAD CELL

One advantage of a digital load cell is its ability to display weight data from each load cell in a multiple load cell scale (like a vehicle scale). Digital load cell systems can also alert the scale operator or service technician of a potential problem before the scale weights are affected. Hydraulic load cell systems are available with load cell system controllers that perform the same functions as found in digital load cell systems. These controllers digitize each hydraulic load cell output independently allowing the operator or technician to view the outputs of each load cell. Further, software is included to alert the operator when an excessive shift in the no-load output of one or more cells is detected prior to affecting the accuracy of the scale. Automatic calibration can be another feature of hydraulic load cell systems provided with a load cell controller.





## 6 MEETS THE SAME LEGAL AND METROLOGY PERFORMANCE STANDARDS

The hydraulic load cells available in today's scales have been thoroughly evaluated and have been found to be in compliance with NIST Handbook 44 requirements for Class III L multiple load cells with 10,000 divisions, just like their digital counterparts.

## 7 HYDRAULIC LOAD CELLS HAVE A LONG HISTORY OF USE

Hydraulic load cells have a long history of being used in scales; much longer than either the strain gauge load cell or digital load cell. They have not been as popular as the less expensive strain gauge versions of the load cell but, when the costs of ownership including cell damage, the hydraulic load cell is clearly less expensive to own.

## 8 HYDRAULIC LOAD CELLS COME WITH A LIFETIME WARRANTY

Most manufacturers of hydraulic load cells offer a lifetime warranty on their load cells against damage from voltage surges (lightning) and water damage; the two most common reasons for failure of strain gauge and digital load cells.

## 9 SAFE FOR OPERATION IN THE MOST HAZARDOUS AREAS

Because hydraulic load cells contain no electrical circuitry, there is no source of ignition when used in an explosive atmosphere. Hydraulic load cells are regularly used in hazardous areas where explosive materials are present. Fuel or other flammable materials leaking from a vehicle and collecting in the scale pit cannot be ignited by hydraulic load cells making them a safer alternative than strain gauge or digital load cell.

## 10 HYDRAULIC CELLS OFFER LOWEST POSSIBLE MAINTENANCE COST

A lifetime warranty on impervious, non-conductive environmentally-sealed stainless steel hydraulic load cell that are waterproof, shockproof, explosion-proof, and resistant to both caustic and corrosive environments means we are extremely confident in our Cardinal hydraulic load cells. You will never have to replace these due to damage or malfunction out of your own pocket, ever. That is Cardinal's promise and a testament to the extreme durability of our hydraulic load cells.

