

# Vehicle Scales



## **POWERCELL®**

### **Load Cells**

Outstanding Accuracy

Exceptional Reliability

Simplified Service

Proven Performance

**Advanced Weighing Technology**  
Your Key to Greater Profits

**METTLER TOLEDO**



# POWERCELL® Load Cells

## Protect Your Profits

POWERCELL® load cells protect your profits by ensuring that your vehicle scale weighs accurately day in and day out. This revolutionary technology cuts your operating costs by minimizing errors, reducing downtime, and simplifying service.



### Outstanding Accuracy



Weighing errors result in revenue losses that eat into your profits. Using advanced digital technology, POWERCELL® load cells deliver the weighing accuracy that your business needs for

- Accurate billing
- Inventory control
- Highway weight compliance

### Exceptional Reliability



Every minute of downtime can cost you money and customers. POWERCELL® load cells protect your vehicle scale against lightning, water damage, and other environmental forces that can affect weighing accuracy or shut down a weighing operation.

### Simplified Service



Troubleshooting an analog scale can be a slow and costly process. POWERCELL® load cells provide the predictive diagnostic tools you need to be proactive about vehicle scale maintenance. They replace time-consuming troubleshooting and parts swapping with effective prevention.

## POWERCELL® Load Cell Family

### Proven Performance for More than 25 Years

POWERCELL® load cells use advanced digital technology to deliver consistent weighing performance. Choose the load cell that meets your vehicle-weighing needs.

- POWERCELL® PDX® load cells are both accurate and reliable.
- POWERCELL® GDD® load cells provide digital accuracy at an economical price.



**POWERCELL® PDX® Load Cell**



**POWERCELL® GDD® Load Cell**

	POWERCELL® PDX® Load Cell	POWERCELL® GDD® Load Cell
<b>Capacity</b>	20t, 30t, 50t, 90t	20t, 30t, 50t
<b>Accuracy</b>	High	High
<b>Communication</b>	CAN	CAN
<b>Network</b>	No junction boxes	Junction boxes
<b>Cables</b>	Quick-connect	Integral
<b>Active Compensation</b>	Yes	Yes
<b>Diagnostics</b>	Yes	Yes
<b>Lightning Protection</b>	> 80,000 A	> 29,000 A
<b>Breach Detection</b>	Yes	No
<b>Hazardous Area</b>	Division 1, Zone 1/21 Division 2, Zone 2/22	No



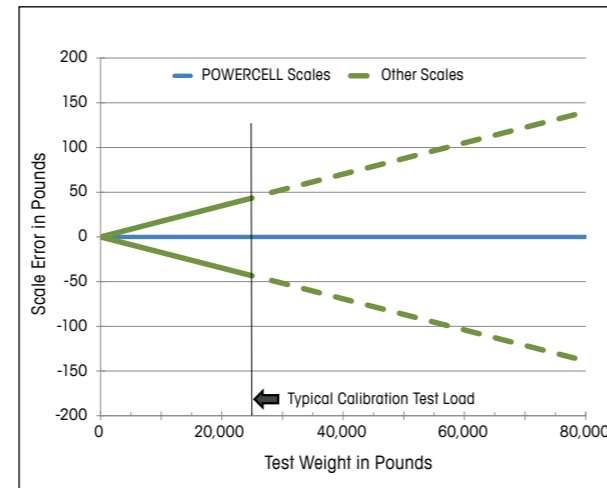
# Outstanding Accuracy Savings with Every Load

**In-field performance data shows that POWERCELL® load cells weigh more accurately than some analog load cells. If you buy and sell bulk goods by weight, increased accuracy can be crucial to your profitability. To understand the full impact of POWERCELL® accuracy, multiply analog errors by the number of vehicles you weigh in a year.**

Calibration tests from thousands of real-world truck scales show that POWERCELL load cells are more accurate than other scale technologies\*\*. What makes them more accurate?

- They are easy to calibrate to a high level of accuracy.
- They use digital compensation to maintain accuracy.

When you weigh fully loaded trucks, analog errors are even larger. The graph provided here shows how errors increased as heavier loads were applied to an actual analog truck scale while a POWERCELL® scale maintained its accuracy.



**Accuracy Comparison  
POWERCELL® vs. Analog Load Scales**

Accuracy data from actual POWERCELL® and analog scales when test weights of 10 tons and 40 tons were applied.

The following table shows the big impact that those errors can have on a business. A scale that weighs 80 pounds (40 kilograms) under the actual weight will cost you plenty. The more trucks you weigh, the more you have to lose.

<b>Cost of Product*</b>	0.075 per lb	0.15 per kg
<b>Scale Error</b>	-80 lb	-40 kg
<b>Trucks per Day</b>	100	
<b>Daily Loss*</b>	600	
<b>Annual Loss*</b>	158,400 (264 days per year)	

\*US Dollars, Euros, or other local currency.

\*\* Information based on truck scale performance data from +50,000 field service tests

## Reliable Performance in Extreme Climates

Environmental forces can be relentless. They attack a vehicle scale every day, impairing its ability to weigh accurately. POWERCELL® load cells have demonstrated the ability to stand up to the world's toughest environments, from the frozen polar regions to the scorching heat of the desert and wet conditions of the tropics.

POWERCELL® load cells use digital technology and a robust design to provide you with years of reliable use.



Antarctica



Deserts



Siberia



Tropics

## Smart Technology Cuts Service Time and Costs

POWERCELL® load cells use a smart technology that constantly monitors your vehicle scale's performance. A built-in diagnostics system gives you real-time data about the condition of each load cell:

- Weighing errors
- Overloading
- Environmental conditions
- Network health
- Load cell voltages

### Remote Diagnostics

POWERCELL® technology makes it possible to check a scale's performance from anywhere. Problems can be diagnosed and solved via web browser without the time and expense of driving long distances for an on-site inspection.



Real-time performance data



Email alerts



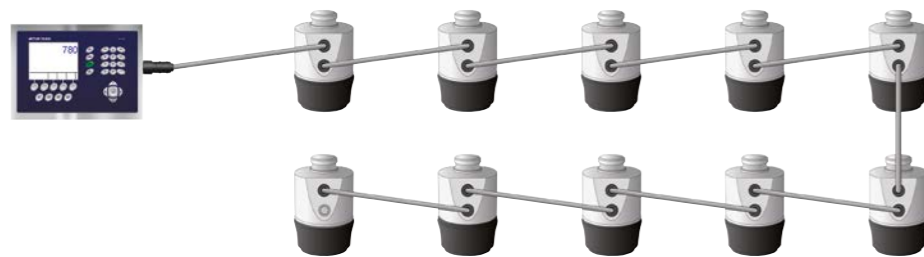
Faster and simpler service



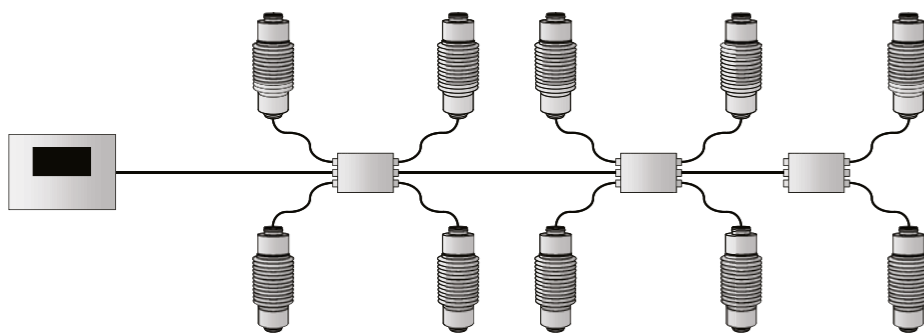
Less downtime

# Innovative Design Delivers a Clear Advantage

**POWERCELL® PDX® load cells have revolutionized vehicle weighing. With their unique design, they eliminate the weak link of most vehicle scales: the junction box. This simple improvement pays off with lower maintenance bills and less downtime.**



**POWERCELL® PDX® Digital Load Cell Network (No Junction Boxes)**  
Load cells and cables are watertight



**Conventional Load Cell Wiring (Junction Boxes Required)**

### Simplified Network

POWERCELL® PDX® load cells connect to one another in a simple network that transmits individual load cell signals to the scale terminal. Compare them with conventional analog load cells. Each group of four analog load cells is wired to a junction box, which is then wired to the next junction box in the system and so on until all load cells are connected. The bigger the scale, the bigger the tangle of boxes and cables.

Whether manufacturers call them gathering boxes, totalizers, or sectional controllers, the problem is the same. Junction boxes contain sensitive electronics and can be difficult to seal, making them susceptible to water damage. POWERCELL® PDX® load cells eliminate the problem by eliminating junction boxes.

### Active Digital Compensation

The microprocessors inside POWERCELL® PDX® load cells use proprietary algorithms to compensate for environmental forces, such as temperature changes and creep. They keep your scale weighing accurately, even when faced with the many environmental forces that decrease the accuracy of other weighing technologies.





# Environmental Protection Takes Reliability to a New Level

Your vehicle scale takes a beating. Constant exposure to environmental forces can cause conventional load cells to fail at an alarming rate. Keep maintenance costs under control with the potent environmental protection of POWERCELL® PDX® load cells.

### Lightning Protection

Lightning damage can be costly, requiring the replacement of unprotected electronic equipment. Even if a warranty covers repairs, you still face the cost of the business you lose every day that your scale is not operating.

StrikeShield™ lightning protection is designed to be the main line of defense for your entire vehicle scale: load cells, cables, and termi-

nal. As an added safeguard, each POWERCELL® PDX® load cell has its own built-in lightning protection.

Demand real proof of lightning protection. The POWERCELL® PDX® load cell meets the toughest standards for protection against lightning. METTLER TOLEDO has performed extensive testing with independent laboratories.



POWERCELL® PDX® load cells survived lightning strikes of up to 80,000 amperes in independent laboratory tests (IEC 62305-1 standards).

### Water and Flood

Watertight cables and connectors effectively seal the entire network against moisture to IP68 standards (submersible). The connectors use the same reliable design found in military and medical applications where performance is a matter of life and death.



POWERCELL® PDX® load cells passed tests for high-pressure spraying and water submersion.

A POWERCELL® PDX® network can survive for extended periods under water. Even a damp climate can be enough to damage the sensitive electronics inside a junction box.



### Extreme Temperatures

Digital compensation maintains accuracy in all climates.



### Snow and Ice

Rubber boot protects against errors caused by built-up material.



### Rust and Corrosion

Heavy-duty stainless steel enclosure resists corrosion.



### Rodents

Stainless steel cables protect against damage from rodents.



### Radio Frequency Interference

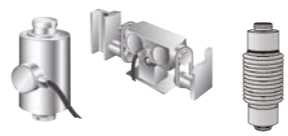


Digital signal prevents interference that causes weighing errors.



### Physical Damage

Breach-detection system alerts you if enclosure is damaged.

## POWERCELL® PDX® Load Cells outperform many other vehicle scale technologies\*

Technology	POWERCELL® PDX® Advantages
<b>Analog Load Cell</b> 	<ul style="list-style-type: none"> <li>Strong digital signal resists electrical interference</li> <li>Digital compensation maintains weighing accuracy</li> <li>Predictive diagnostics system simplifies service and reduces downtime</li> <li>Watertight cables and connectors seal out moisture</li> <li>No failure-prone junction boxes</li> </ul>
<b>Digital Junction Box or Sectional Controller</b> 	<ul style="list-style-type: none"> <li>Strong digital signal throughout the entire scale network</li> <li>No signal interference to cause weighing errors</li> <li>No analog-to-digital converter boxes or gathering cards required</li> <li>Electronics protected in hermetically sealed load cell enclosure</li> </ul>
<b>Hydraulic Load Cell System</b> 	<ul style="list-style-type: none"> <li>Simpler and less expensive installation</li> <li>No hydraulic fluid to leak and cause weighing errors</li> <li>Instant weight updates for faster vehicle processing</li> <li>Predictive diagnostics system simplifies troubleshooting</li> <li>Maintenance and repairs are quick and easy</li> </ul>

\*Information based on truck scale performance data from +50,000 field service tests

# POWERCELL® Accuracy in an Economical Package

**POWERCELL® GDD® load cells are ideal for weighing operations that require improved accuracy without the full benefits of POWERCELL® PDX® technology. They provide a balance between performance and cost.**

### Digital Accuracy

POWERCELL® GDD® load cells offer true digital weighing performance. They are easy to calibrate to a high level of accuracy. Each load cell has built-in digital compensation to maintain accuracy despite changing environmental conditions.

### Diagnostic Capabilities

A powerful diagnostics package enables you to view individual load cell outputs on the scale terminal. It provides valuable information to identify problems so that they can be solved quickly and easily.



POWERCELL® GDD® load cells use advanced digital technology to provide accurate vehicle weighing at an economical price.

## Safety and Accuracy in Hazardous Areas

POWERCELL® load cells are available for use in hazardous areas. They provide a vehicle-weighing solution that meets safety standards while delivering a high level of weighing accuracy. This technology is available for both new installations and upgrades.



### Division 1, Zone 1/21

POWERCELL® PDX® load cells are approved for Division 1, Zone 1/21 hazardous areas.

- Approved in the United States and Canada for use in hazardous areas rated Class I, II, III, Division 1, Groups C, D, E, F, G.
- ATEX and IECEx approval for use in hazardous areas rated Zones 1 and 21.

### Division 2, Zone 2/22

POWERCELL® PDX® load cells with an IND780 terminal are approved for Division 2, Zone 2/22 hazardous areas. Because no additional components are required, your installation is simple and easy to maintain.

- Approved in the United States and Canada for use in hazardous areas rated Class I, II, III, Division 2, Groups C, D, F, G.
- ATEX and IECEx approval for use in hazardous areas rated Zones 2 and 22.



# High Performance at a Lower Cost

If your existing scale is plagued by downtime and high maintenance costs, a conversion might be the answer. METTLER TOLEDO offers kits to give new life to old scales by replacing obsolete weighing systems with POWERCELL® PDX® technology.

You get a performance upgrade for much less than the cost of a new vehicle scale. Kits include load cells, mounting hardware, and scale terminal. They are available to upgrade older METTLER TOLEDO scales and to convert scales from other manufacturers.



Conversion kits make it easy to upgrade existing vehicle scales POWERCELL® PDX® load cells.

[www.mt.com/powercell](http://www.mt.com/powercell)

For more information

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Industrial Division  
Local contact: [www.mt.com/contacts](http://www.mt.com/contacts)

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Produced in a  
facility that is

