

6 Solutions to Enhance Your Vehicle Scale Offering

1 Environmental Protection

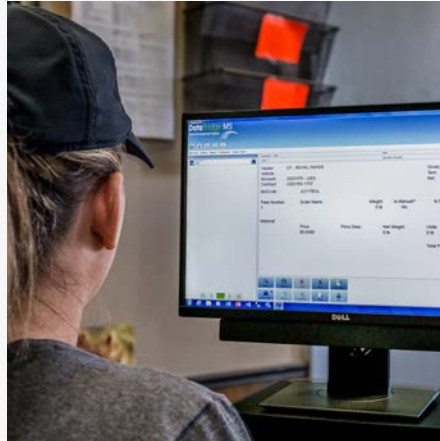
2 Special Applications

3 Truck and Rail Scale Upgrades

4 Weigh-in-Motion Systems

5 Total System Enhancement

6 Condition Monitoring



Broad Portfolio and Vast Experience Simplifying Project Execution

Vehicle scale projects can be overwhelming, from managing the site layout to what the traffic flow will be and which of the many equipment options will be the best fit for an operation. Luckily our team of experts has the experience and know-how to assist with even the most complex projects, and we are accustomed to partnering with EPCs to ensure end-customer satisfaction.

This case study collection provides a small sample of the solutions that we deliver to end customers every day and details how we help you to simplify your job. Happy reading, and get inspired!

► www.mt.com/vehicle



“ Working with the experts at METTLER TOLEDO saved me time and resources ”

Project Manager

5 Reasons

to partner with METTLER TOLEDO for your vehicle weighing projects...

1 Gain a competitive edge

The ability to offer the latest vehicle weighing technology and solutions will help to set you apart from your competition and ensure satisfied customers.



2 Minimize project hours

Our team can help with delivering audit-proof documentation and with the commissioning process, saving you time and dollars on your project.



3 Streamline installation

Expertly trained service technicians are available to support you and your customers with installation and user training to achieve day-one success.



4 Global partnership

For your global customers, it is beneficial to work with global suppliers. This allows for production standardization for facilities around the world.



5 Simplify maintenance

You can help your customers eliminate the risk of downtime with smart technology that enables condition monitoring and preventive maintenance.



Uptime Without Compromise

Keep Operating in Any Weather

Weather is not something that we can control. A scale needs to be able to stay up and running in the harshest conditions to keep your product deliveries on time. With the help of METTLER TOLEDO, the Layton Mill & Timber company was able to get their operation back on track.

Site background

This Arkansas lumber mill was a supplier of railroad ties and lumber. Although the truck scale on site was far from new, it was functional and essential to the business. The company uses the scale to determine the net weight of the logs delivered to the mill by weighing each incoming truck when fully loaded and again when empty. If the mill's scale is not working, log trucks have to go elsewhere to use a public truck scale, sometimes up to 30 miles away.

Unplanned downtime

The mill is located in a mountainous region making it prone to lightning strikes during thunderstorms. The frequent lightning in the area was constantly causing costly unplanned downtime at the truck scale. Due to the remote location, it often took more than a week to get the scale working again. During this time, some truck drivers would take their loads to other mills. After the scale was damaged twice during the span of a few weeks, the mill decided it was time for a new solution.

True lightning protection

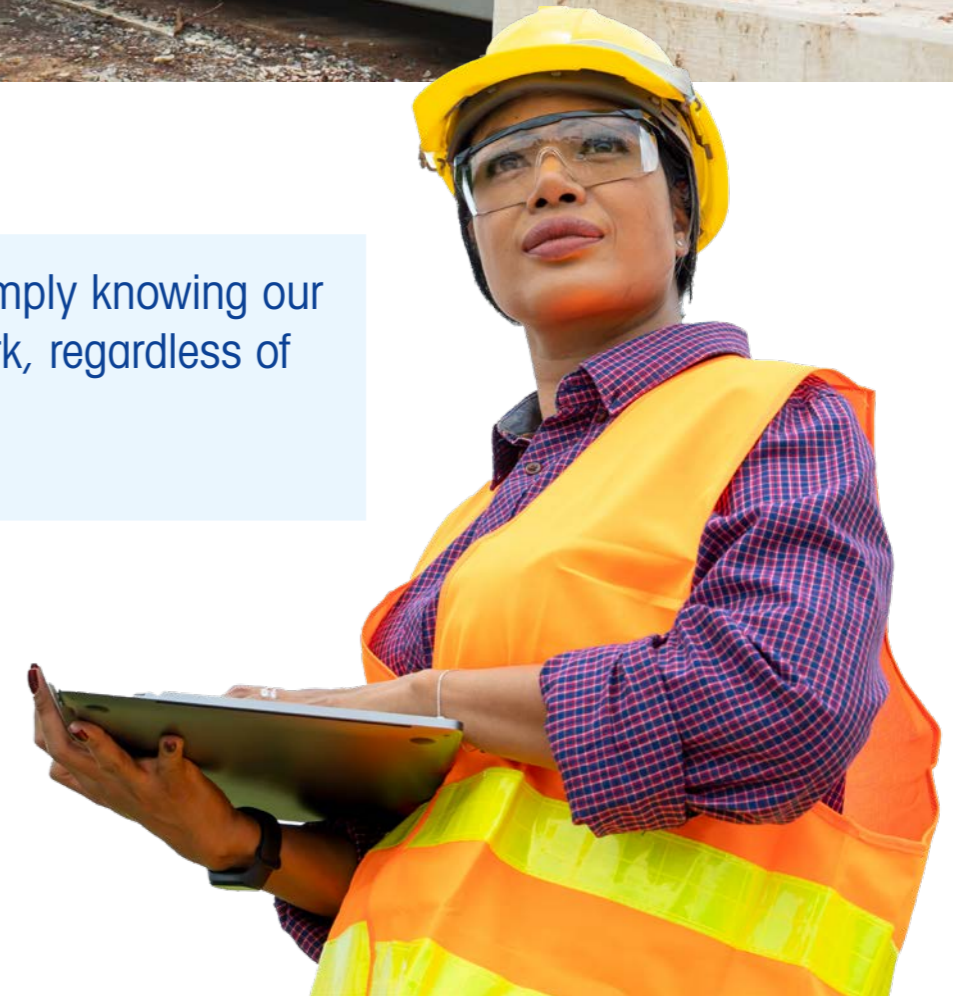
When the company learned about POWERCELL® PDX® load cell systems, it immediately recognized that its superior lightning protection could alleviate many of their weather-related headaches. StrikeShield™ technology gave them the ultimate reliability. With proper routine maintenance and the predictive diagnostics of the system, they virtually eliminated unplanned downtime. The mill also purchased a maintenance contract to help ensure the scale's continued high performance. With this new installation, the mill was able to get business back on track.

► www.mt.com/powercell



“ It's such a relief simply knowing our equipment will work, regardless of the weather. ”

Production Manager



It's more than Just Lightning Protection, it's Peace-of-Mind...

POWERCELL® PDX® load cells have been independently tested and proven to withstand strikes up to 80K amperes. Visit the link below to see a video of the testing and learn more.

► www.mt.com/LightningStrike



Engineering Focused on Results

Your Partner for Complex Deliverables

For some manufacturers, a grain dump-through scale would be considered a custom solution, but not at METTLER TOLEDO. Read on to see how an integrated grain dump improved efficiency for one company so they could fulfill their commitment as a supplier to the local ethanol facility.

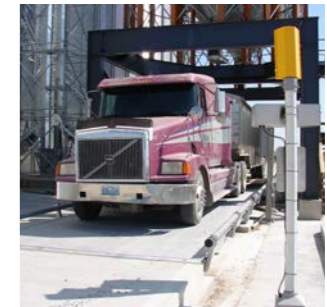
“ We are very satisfied with the new METTLER TOLEDO scale and overall support. We realized an increase in manual packaging efficiency right away. ”

Head of Production



Site background

The facility stores more than 360,000 bushels of corn at peak capacity and has the potential for expansion to over 2 million bushels. Corn from area farmers is purchased at market prices and stored for delivery to the ethanol plant. The company needed a solution that was reliable and accurate, while also helping to boost transaction efficiency.



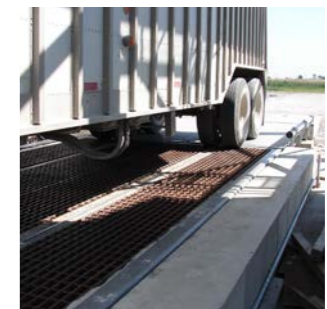
Problem solver

It was clear to the operation that METTLER TOLEDO could provide the best solution for their need and would make the project smooth and hassle-free. A steel deck dump-through truck scale was installed to handle all in and outbound transactions. The scale featured steel grating over its entire width, through which grain could be dumped into the hopper below.



Improved efficiency

With the new grain dump in place, trucks delivering corn enter the site and drive onto the scale. Next, a corn sample is analyzed and the gross weight is taken. Then, the truck driver opens the belly dump-trailer doors and corn is deposited through the scale grating into a hopper. A second weight reading is taken of the empty truck/trailer, and a weigh ticket is printed.



Complete with Outstanding Technology

POWERCELL® PDX® load cells improve accuracy and reliability. With a failure rate of less than 0.02 percent, the supplier never has to worry about the scale failing during busy season.

Additionally, by integrating DataBridge™ weight data-management software into the solution, they are now able to track inventory more closely than ever before.

The facility is now growing quickly and is well on its way to reaching its optimum capacity of 2 million bushels.

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Truck and Rail Scale Upgrades Bring New Life to Existing Assets

When reliability is a primary concern, proven equipment is a worthwhile investment. Upgrading the load cell system of an existing vehicle scale installation is a good way to prolong the useful life of the equipment, while drastically improving performance.

Site background

A large industrial chemical producer operates at numerous locations, using truck and rail tankers to transport raw materials and finished goods. Vehicle-weighing systems check for proper filling of the tankers, ensuring that accurate values are used in business transactions and inventory management. When accuracy and reliability became an issue, the company upgraded the vehicle scales at multiple sites, all with POWERCELL® PDX® technology.

Upgrade benefits

One of the production sites used a truck scale made by a different manufacturer, including an analog load-cell system with junction boxes. It seemed like every couple months the facility was calling on maintenance to come fix an issue with the scale. Needing better reliability, the customer consulted their local METTLER TOLEDO Industrial Service team. Even though the scale was not made by METTLER TOLEDO, the

team was able to upgrade the scale's weighing components by installing advanced POWERCELL PDX load cells. The customer was pleased with the result of the upgrade, noticing immediately the decrease in service-related issues and inaccuracy.

Additional opportunities

The facility manager realized that improved reliability and accuracy could be a benefit to another site, where

the old mechanical-lever rail scale was used to weigh rail tankers. With its antiquated lever technology and worn-out components, the scale was failing constantly. After the success of the two upgraded truck scales, the customer inquired about recommendations for their rail-weighing needs.

Unique solutions

The team assessed the old rail scale and determined that they could ex-

tract the large mechanical components underneath, and replace them with custom-engineered mounts for the 90-ton capacity POWERCELL PDX load cells. By simultaneously replacing the rails on the existing scale deck, the customer would get like-new performance at a fraction of the cost of a new rail scale. This combination of performance and value made the customer's decision to upgrade the rail scale an easy one.

Lasting results

The customer now enjoys the same reliability and accuracy in truck- and rail-weighing equipment across multiple sites. With advanced performance in demanding applications worldwide, POWERCELL PDX load cells continue to prove themselves every day.

► www.mt.com/upgradetopdx



“Upgrading our existing equipment was a great way to save cost, and improve performance!”

Procurement manager



The Future of Vehicle Weighing Enhance Your Portfolio with WIM

As a major North American big box retailer grew its business, its distribution centers dealt with increasing congestion at their truck scales. Each month they charted longer wait times. The logistics manager knew there had to be a better solution.

Site background

The retailer was searching for a solution to enable faster throughput of trucks at several warehouse locations. The existing solutions were static-axle scales to verify over-the-road (OTR) compliance, which required every truck to stop on the scale to be weighed out. The resulting lines caused excessive idling and reduced productivity.

Solution requirements

This retailer adheres to strict guidelines for their logistics operations to ensure legal compliance with OTR tolerances. Especially as a growing company, they work to ensure that they do not miss a shipment due to non-compliance. For this reason, they implemented static weighbridges at their distribution centers to verify that every truck met OTR requirements. The need for ev-

ery truck to stop completely to capture a weight was a headache, which is why they were thrilled to learn about a new solution from METTLER TOLEDO.

AxlePass™ Weigh-in-Motion

METTLER TOLEDO introduced the AxlePass™ weigh-in-motion solution to the logistics manager at one distribution center, explaining that this solution would allow them to capture truck axle weights without requiring trucks to come to a complete stop. This would facilitate more consistent and faster traffic flow.

Distribution center management determined this would not only help them with their productivity metrics, but it would also reduce traffic jams and emissions due to fewer idling vehicles – all while ensuring legal OTR tolerances are met. The logis-

tics manager was excited to hear about this solution and invited counterparts from several other sites to a follow-up meeting.

Far-reaching benefits

Since converting to AxlePass™ technology, the distribution centers reported significant improvements. All have reported that truck processing times are faster and that there are no lines at the scale, resulting in less idling and reduced emissions. In addition, they have continued to achieve perfect OTR compliance. Today, six AxlePass™ scales are installed at five of the retailer's distribution centers.

► www.mt.com/axlepass

AxlePass™ WIM Solution



Thinking Beyond the Scale Solutions to Boost Operational Efficiency

A scale should do more than weigh trucks. The right control system can expand a scale's capabilities to meet processing and business needs. Combining an accurate vehicle scale with advanced controls will make any weighing operation more productive and profitable.

“ METTLER TOLEDO's attention to detail and consultative support helped us find a successful solution. ”

Facility Manager

Site background

An animal feed production facility located in Vietnam weighed at least 200 trucks per day on a single truck scale. The trucks were weighed on the way into the plant and again on the way out for a total of more than 400 transactions. Additionally, the operation was using a basic tracking system that required manual data entry by the scale house operator. With only one truck scale in use for inbound and outbound trucks, a bottle neck formed at the production facility.

Customer pain points

Drivers would have to wait in long lines causing frustration and inefficient site logistics. In addition, scale house operators often tried to rush transactions in order to clear out traffic faster, which led to manual errors in data entry as well as security issues on site. Overall, the customer knew the site could not continue like this and maintain its growth. Management knew it was time for a change.

Getting up to speed

Following a comprehensive site survey performed by METTLER TOLEDO, the customer first opted to install a second truck scale so they would have one dedicated to inbound trucks and one for outbound, improving processing time and congestion. Second, they automated traffic flow by installing unattended indicators as well as gates, lights and loops to help reduce driver confusion at the busy operation. And finally, they chose DataBridge™ MS software to help ensure proper transaction data management and further optimize productivity.

Significant production gains

Since making the upgrades to their operation, the company has surpassed their initial productivity improvement goals and doubled the speed of their previous setup. Additionally, with the help of DataBridge™, they have benefitted from improved visibility to better understand the speed and scope of day-to-day operations. The company is so happy with their new automated setup that they are in the process of implementing the combined solution at all of their plants across the country.

DataBridge™ – Simple Interface with Powerful Results

When it comes to automating vehicle weighing, implementing transaction management software is one of the easiest things a customer can do. DataBridge™ software is available in a variety of packages designed to fit your customers' operational needs, no matter the size of the operation.

► www.mt.com/databridge



Get Connected With Smarter Scales

Troubleshoot Faster with Condition Monitoring

Recent advances in predictive diagnostics allow business owners to be more in tune with their equipment than ever before. Service technicians are able to check on scale performance from anywhere at any time, helping to prevent costly downtime and frequent repairs.

Site background

During peak harvest season, grain facilities can see 400 or more trucks per day. Throughout this time, it is more critical than ever that truck scales operate reliably and accurately. For one grain facility, a downtime nightmare was successfully avoided thanks to the predictive diagnostics associated with their cutting-edge POWERCELL® PDX® load cell system.

Proactive alerts

The scale house attendant was responsible for managing two scales, inbound and outbound. Due to the busy flow of traffic during harvest season, a small accuracy error in the outbound scale had gone unnoticed. Luckily, both truck scales at this facility were equipped with POWERCELL® PDX® load cells with advanced predictive diagnostics, so when load cell 1 began putting out an error signal, it was then commu-

nicated through the IND780 indicator, and an alert was sent straight to the scale attendant's cell phone (a standard feature for this load cell system).

Avoiding scale downtime

With a line of truck traffic still in the queue to be weighed, the facility could not afford a full shut-down. Armed with the error alert regarding cell 1, the scale house attendant and facility operator went to check out the problem. Both recalled that this end of the scale was particularly vulnerable to debris build up. Especially

with increased traffic, they were suspicious that there may be some obstruction under this part of the scale.

Sure enough, upon looking under the scale, that is exactly what they found. Between mud, spilled grain and rainy days, the load cell had been compacted. With the help of a power washer the load cell was

cleared of debris. The scale was operating properly again, no downtime required. The farm was relieved to have such a quick fix at their disposal.

Benefits of visibility

The email alert saved the operation from costly downtime. Needless to say, if they had been operating on a traditional analog load cell sys-

tem, it could have been much worse. With the powerful combination of POWERCELL® PDX® load cells and a IND780 indicator, this facility may never have to worry about scale accuracy or downtime surprises again.

► www.mt.com/upgradetopdx



Discover the Benefits of Digital

The POWERCELL® PDX family of digital load cells can help improve your business through...

- Improved reliability
- Improved accuracy
- Improved connectivity
- No junction box
- Proven longevity

Learn more at

► www.mt.com/LightningStrike





Your Partner for Measurable Success

Documentation, Approvals and More

METTLER TOLEDO serves global customers with one of the largest networks in our industry. Our more than 7,000 sales and service specialists operate in 39 countries and have extensive experience working collaboratively with EPC projects.

This experience means we have a deep understanding of your processes and can help your team tackle tasks including:

- Application engineering and system design
- Project management
- Commissioning
- Foundation drawings
- Quality systems and certifications
- Factory acceptance tests
- And more!

Learn more at:

► www.mt.com/IND-EPC

Global Support Network METTLER TOLEDO

“Our project implementation can take place in several locations around the world. It’s important for us to work with suppliers that have a global reach to reduce project complexity.”

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Solution Training	FEED Stage	Detailed Engineering	Procurement
Quality Assurance	Construction	Commissioning	Operation

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