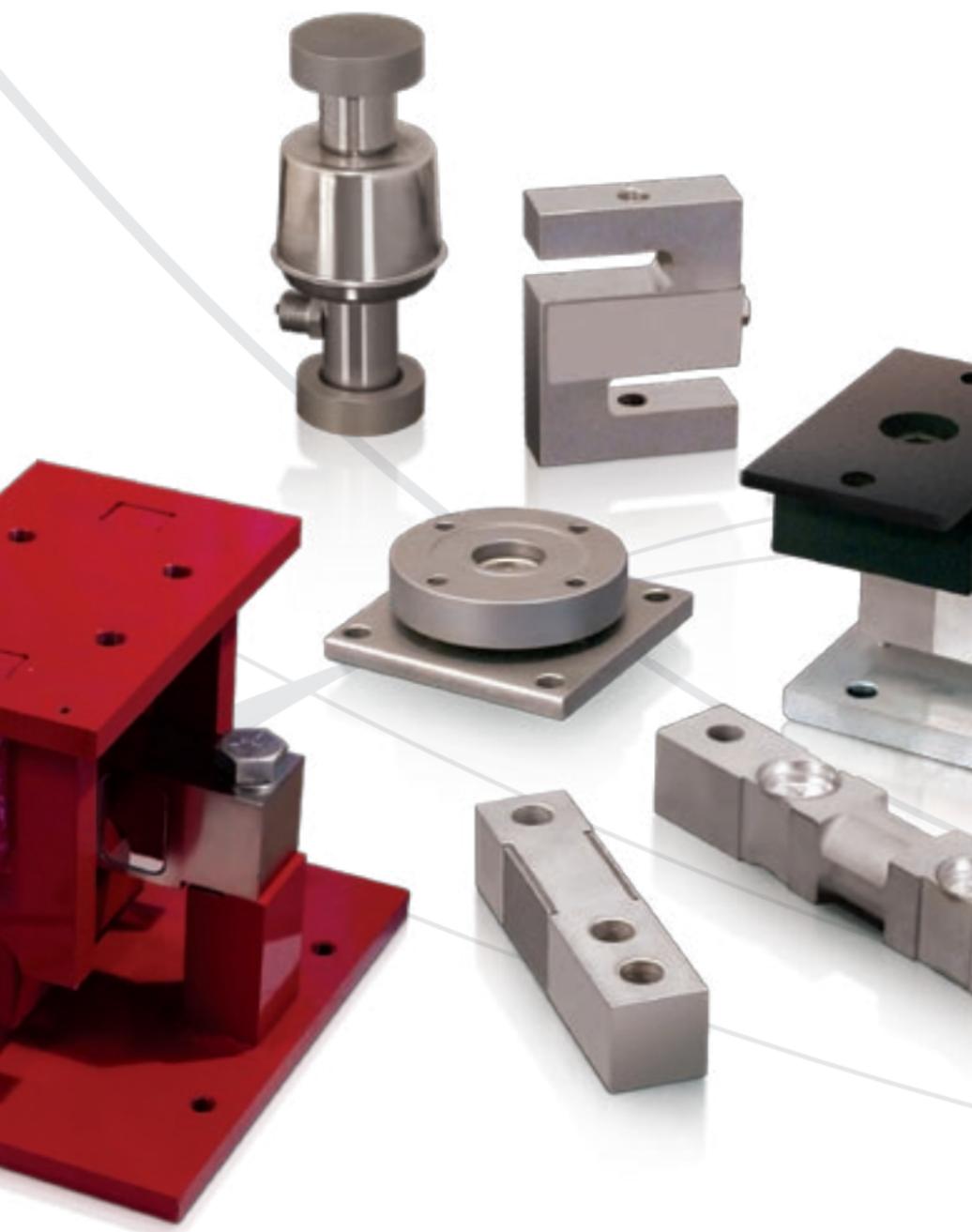


# Load Cell and Weigh Module Selection Guide



**RICE LAKE**<sup>®</sup>  
WEIGHING SYSTEMS

To be the best by every measure<sup>®</sup>

At Rice Lake our goal is to be the best by every measure. When all else is equal, three things will make your experience with us distinctly different. Service. Selection. Speed.

Our roots are planted firmly in the principles of quality and customer service. Through three generations of family ownership these ideals remain unchanged. Only Rice Lake has the world's largest selection of load cells and mounts AND the experts to guide you to the right one. Rice Lake Weighing Systems is an international leader in the manufacture and distribution of weight-related products and process-control equipment. We know load cells.

This brochure is a condensed version of Rice Lake's full load cell and weigh module product offering. The entire selection can be found through our website and annually published Load Cell Guide—one of the most utilized resources in the weighing industry complete with dimensional drawings, technical specifications, wiring codes and load ratings. To obtain Rice Lake's Load Cell Guide, contact our literature coordinator at 800-472-6703, or download a PDF version from our website, [www.ricelake.com](http://www.ricelake.com).

## **Rice Lake Contact Information:**

### **To place an order:**

Toll Free USA:  
**800-472-6703**

24-hour Fax:  
**715-234-6967**

Telephone:  
**715-234-9171**

Email:  
**[orderdesk@ricelake.com](mailto:orderdesk@ricelake.com)**

Toll Free Canada/Mexico:  
**800-321-6703**

Internet:  
**[www.ricelake.com](http://www.ricelake.com)**  
**[m.ricelake.com](http://m.ricelake.com)**

### **Technical Support:**

Technical Support:  
**800-472-6703**

Service, Repairs,  
Warranty:  
**800-472-6703**  
**[service.rlws@ricelake.com](mailto:service.rlws@ricelake.com)**

Canada & Mexico  
Technical Support:  
**800-321-6703**

Customer Assistance and Service Department hours  
Weekdays: 6:30 AM to 6:30 PM (Central Time)  
Saturday: 8:00 AM to 12:00 PM (Central Time)  
Customer service available in English, Spanish, and French

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# Selecting Load Cells & Weigh Modules

## How to be Confident You're Installing The Best

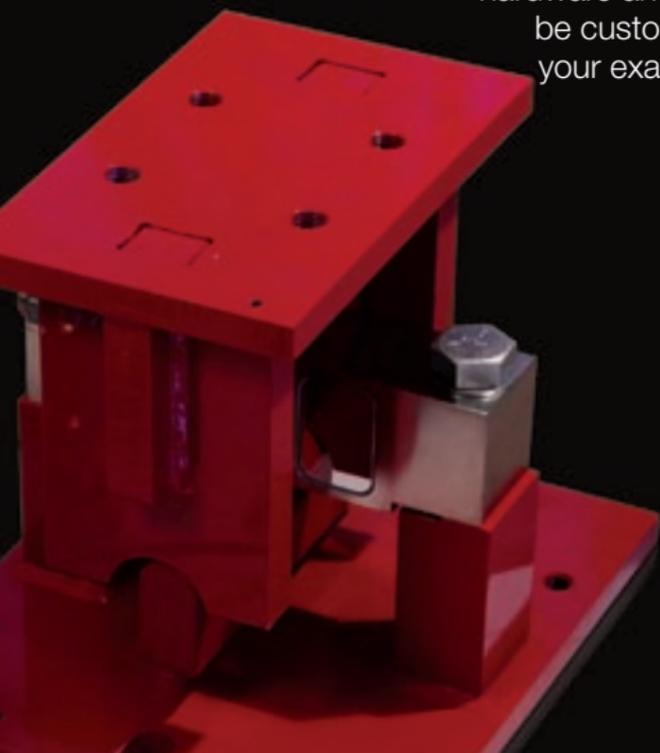
Low-quality, poorly constructed weigh modules and load cells often result in expensive repairs and replacements, costly downtime, and dissatisfied customers. So how do you avoid this? More importantly, what should you look for in a load cell or weighing assembly?

Selection involves factors such as working environment and loading conditions. Based on these and other design specifications, Rice Lake Weighing Systems' experienced engineering and design staff has created the most comprehensive line of weigh modules available. Most companies concentrate on one or two types of mounts. We offer over 20 different mount styles, including the industry's only waterproof-guaranteed modules. Coupled with our outstanding selection of load cells manufactured to the highest quality standards, our mounts come complete with everything you need to get started and the unbeatable service support to help you get it done.

## Complete Mounting Kits

Complete mounting kits are available with our weigh modules, simplifying the selection and installation processes. Each kit comes with a detailed installation manual and an analog junction box with cable assembly, eliminating the need to order separate parts.

All standard weigh module kits include the required load cell(s), junction box, mounting hardware and cable, but can be customized to meet your exact needs.





## **Custom Load Cell and Mount Specialists**

Rice Lake Weighing Systems offers the most comprehensive selection of load cells, mounts and sensors available. We also understand that you may have unique requirements for custom-built products. If you don't see what you need in our catalog, call us to take advantage of the many special services Rice Lake Weighing Systems has to offer:

- Customized load cells and mounts
- Special coatings – SURVIVOR® coating for use in hazardous chemical environments
- Customized cable lengths
- Special cable – Teflon® load cell cable for harsh environments

*\*Teflon is a registered trademark of E.I. DuPont.*

# Selecting Load Cells & Weigh Modules (cont.)

## Quality Manufacturing

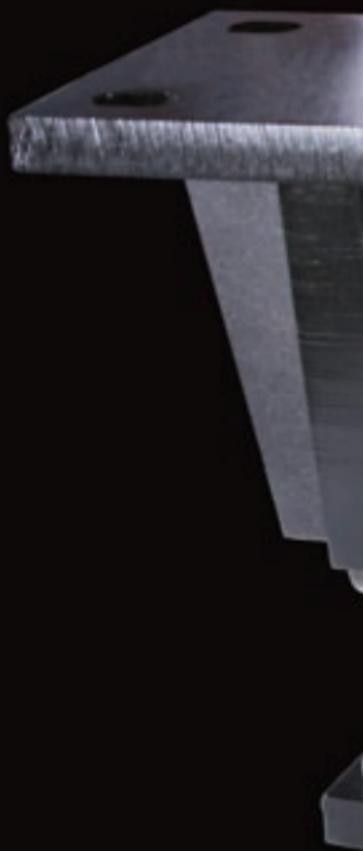
Rice Lake Weighing Systems' state-of-the-art 240,000 square foot manufacturing facility includes several machining centers, allowing us to offer the highest quality at competitive prices. Our mounting assemblies are available with the best load cells in the world, including Rice Lake, Vishay Celtron, Vishay BLH, HBM, Flintec, Interface, Vishay RTI, Vishay Sensortronics, and Vishay Tedeo-Huntleigh.

We are ISO 9001 registered, consistently providing the highest quality in the industry. Our quality assurance program includes comprehensive documentation and control processes. These guidelines evaluate how products are manufactured, warehoused, sold, and shipped to customers. The result is consistent product quality.

## Choosing the Correct Weigh Module

The wide variety of weigh modules we manufacture and distribute may leave you wondering what the differences are between certain models and, most importantly, which modules are best suited for your needs. We've broken down our weigh module selection into three application categories. Most operations can be classified into one of these:

- Suspended Weighing
- Vessel Weighing
- Truck Scale Weighing





# Suspended Weighing

Suspended weigh modules support load cells that are hung vertically and measure through tension, such as in suspended hoppers. Available in stainless or mild steel.

## **ITCM Series (Isolated Tension Cell Modules)**

Featuring a clevis and rod-end ball-joint assembly, the ITCM mount is half the overall length of traditional S-Beam tension mounts. This unique design consistently corrects loading alignment, even in difficult applications. The load cell is completely isolated from stray currents using Teflon®-lined rod ends and a grounding strap which provides an alternative path to ground. Use in single- or multiple-module configurations. The ITCM Series includes capacities from 100 to 20,000lbs (45.4 to 9071.9kg), the stainless ITCM SS from 100 to 5,000lbs (45.4 to 2268.0kg), and the stainless welded-seal ITCM HE from 500 to 5,000lbs (226.8 to 2268.0kg). Most capacities are NTEP approved.





# Vessel Weighing

Available in either stainless or painted mild steel, Rice Lake carries a variety of models and configurations for weighing tanks, vessels and other fixed containers.

## **EZ Mount 1 Series**

Utilizing a unique self-checking sliding-pin design, the EZ Mount 1 allows for thermal expansion and contraction and controlled scale-deck movement with minimal friction. FM approved load cells make this module ideal for intrinsically safe, explosion-proof, and medium- to heavy-capacity tank and hopper functions. Available in stainless steel and hermetically sealed variations as well as an NTEP approved mild steel design. Single-module capacities from 5,000 to 150,000 lbs (2268.0 to 68,040 kg).

## **RL1600 Series**

The RL1600 is a low-profile, bolt-in-place model for mounting directly to a tank without additional mounting plates or load buttons. Self-checking movement tolerates thermal expansion and contraction and provides lift-off protection. For medium- to heavy-capacity tanks, bins, hoppers and general dry ingredient and bulk material management. Choose the cast-iron model in capacities from 1,000 to 25,000 lbs (453.6 to 11,340 kg), or mild and stainless variations from 1,000 to 75,000 lbs (453.6 to 34,019.5 kg).

## **RL9000 TWM**

The low-profile RL9000 TWM maximizes space and offers an all-in-one package to minimize installation time. This module delivers accurate readings even while off level as much as 3 degrees. Self-centering in all directions with 100% uplift protection that provides extreme durability. Standard welded seal protects to IP67 rating. All stainless steel construction in capacities of 1,000 to 100,000 lbs (453.6 to 45,359.4 kg). Capacities from 150K to 450K (68,040 to 204,120 kg) built with painted mild steel base.





# Vessel Weighing (cont.)

## **SURVIVOR® RL1700 HE**

This all stainless steel, weldless self-checking design guarantees reliable, waterproof performance with a hermetically sealed IP66/68 stainless steel load cell, perfect for the light- to medium-capacity needs of today's industrial food processors. Adjustable jacking/shipping bolts easily secure the top mounting plate away from the load cell to make installation and service fast and simple. Available in single-mount capacities from 11.0 to 11,023.1 lbs (5 to 5,000 kg).

## **RL1800 Series**

Combining self-checking and multidirectional movement capabilities, the RL1800 tolerates platform and tank movement in all directions. The center-pivoted, tension-loading design incorporates spherical washers for self-centering. Load is suspended on a high-strength bolt instead of the traditional wire rope, providing added durability. The RL1800 is available in plated mild steel and stainless steel in capacities from 250 to 10,000 lbs (113.4 to 4535.9 kg). NTEP approved in most capacities.

## **RL1900 Series**

The stainless steel RL1900 Series Weigh Module Kit utilizes several Rice Lake Weighing Systems components to provide an unmatched level of performance in tank and hopper weighing applications. The RL1900 Kit is ideally suited for tank, hopper and bin weighing operations with medium-range capacities. Each module combines multidirectional movement and self-checking capabilities. The welded-seal stainless steel load cell withstands corrosive washdown environments. NTEP approved from 1,000 to 10,000 lbs (453.6 to 4535.9 kg).





# Vessel Weighing (cont.)

## MVS Truck/Track/Horizontal-Tank Module

Built to withstand the most punishing environments, MVS mounts use center-loaded double-ended shear beam load cells to eliminate the need for costly check rods. The result is a pendulum effect that removes binding, protects the load cell from damaging side loads, and automatically returns the scale to dead center. The mild steel MVS is easy to install and promises high performance and long life. NTEP approved in capacities from 10,000 to 125,000 lbs (4536 to 56,700 kg).

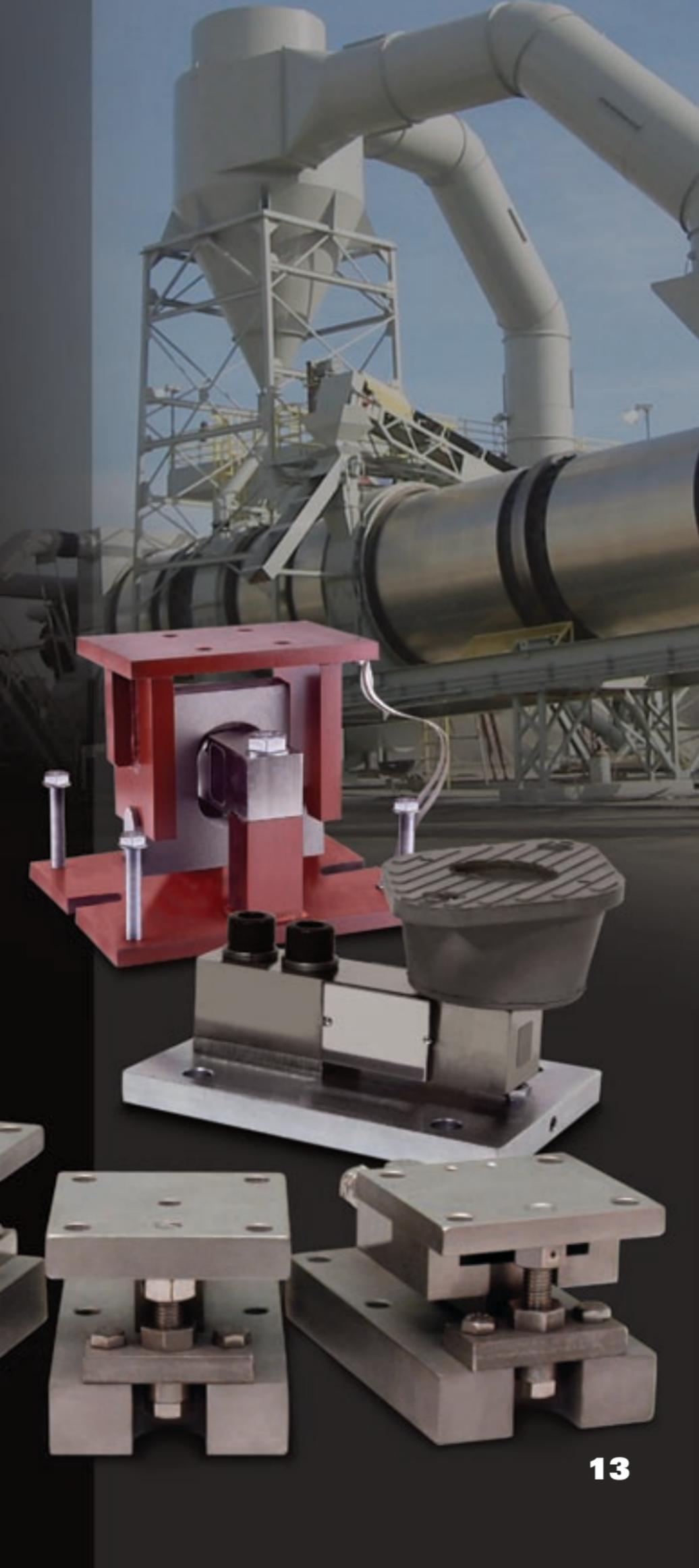
## RL50210 TA Mini Tank and Conveyor Modules

The RL50210 TA is a cost-effective solution for indoor applications with low checking requirements and moderate shock. This popular design utilizes neoprene isolation/compression mounts, allowing for minor misalignments, expansion, contraction, and shock absorption. Constructed of either stainless steel or zinc-plated mild steel. NTEP approved from 50 to 2,500 lbs (22.7 to 1134.0 kg). Overload stop provides added protection in capacities 500 lbs (226.8 kg) and up.

## Paramounts® Series

Choose the Paramounts design for superior accuracy in applications with expansion, contraction and vibration. By adding up to six free-sliding modules, these systems offer the free motion to eliminate side loads and the strength to keep the vessel intact. Jacking/shipping bolts prevent accidental lift-off and allow for quick installation or service to load cells. Choose the stainless steel HE and mild steel HS in capacities from 520 to 22,500 lbs (236.1 to 10,215.0 kg), or the mild steel EP from 1,125 to 22,500 lbs (510.8 to 10,215.0 kg). Many capacities are NTEP approved.





# Truck Scale Weighing

These modules are best suited for weighbridge design but meet the needs of a broad range of industrial scale applications.

## **TSA Truck Scale Assembly**

The TSA Truck Scale Assembly incorporates a “Unilink” suspension design that checks lateral movement of the assembly and allows for controlled floating of the scale deck. Together the TSA mount and double-ended shear beam load cell eliminate the need for troublesome check rods, links, expansion assemblies and other peripheral hardware. Constructed of durable cast iron and steel with a primer coating. Standard capacities from 10,000 to 75,000lbs (4536 to 34,019.4 kg), with optional NTEP-approved load cells available from 20,000 to 75,000lbs (9071.9 to 34,019.4 kg).

## **MVS Truck/Track/ Horizontal-Tank Module**

Built to withstand the most punishing environments, MVS mounts use center-loaded double-ended shear beam load cells to eliminate the need for costly check rods. The result is a pendulum effect that removes binding, protects the load cell from damaging side loads, and automatically returns the scale to dead center. The mild steel MVS is easy to install and promises high performance and long life. NTEP approved in capacities from 10,000 to 125,000lbs (4536 to 56,700 kg).

## **Translink™ Truck Scale Assembly**

The TRANSLINK parallel-link truck scale assembly permits free movement in all directions on a horizontal plane while the pendulum action of the links quickly return the scale to center. No need for costly check rods, simply install platform bumpers and forget about over-travel. This painted alloy-steel assembly is ideal for heavy-capacity weighbridges and horizontal tanks. Capacities from 25,000 to 100,000lbs (11,339.8 to 45,359.4 kg).



CE LAKE  
**SURVIVOR**  
TOUGHEST SCALES ON EARTH

# Load Cells

With the largest selection of quality load cells available in stock, nobody offers faster, more reliable service. Whether you need a replacement load cell or a load cell for a unique application, we've got a solution to fit any need. Our knowledgeable customer service representatives can answer your questions and help you select the best load cell for any application from tank and hopper weighing, to bulk material management, to mechanical scale conversions.

## **Load cells can be categorized into the following types:**

- **Single Point**

Similar to single-ended beam but designed for lighter capacity applications such as bench scales. Most commonly aluminum construction. Capacities range from 1 to 1,000 kg.

- **Double-Ended Beam**

A beam-shaped load cell secured at both ends with the load applied to the center. Construction varies depending on application. Capacities range from 1,000 to 200,000 lbs.

- **Single-Ended Beam**

A beam-shaped load cell that is secured at one end with the load applied to the opposite end. Construction varies depending on application. Capacities range from 1,000 to 20,000 lbs.

- **S-Beam**

Shaped like the letter S, most commonly used to suspend a weighing vessel with tension applied through stretching. Capacities typically range from 25 to 40,000 lbs.

- **Canister Type**

Cylindrical load cell with force applied vertically in tension or compression. Ideal for heavy-capacity and environmentally demanding applications. Capacities range from 20,000 to 500,000 lbs.





For our complete product offering and more details on the specific models shown here, please refer to Rice Lake's most recent Load Cell Guide or visit [www.ricelake.com](http://www.ricelake.com).



# Single Points

## **RLSP4**

A low-profile model popular in retail, postal, and platform scale applications. This aluminum load cell is moment compensated for guaranteed accuracy. Gauge-coating compound protects against high-humidity environments. Available from 3 to 100 kg (6.6lb to 220.5lb), with most capacities NTEP approved. Includes 1 m/3.3ft of load cell cable.

## **RLPWM15HE**

This IP69K-rated, hermetically sealed, stainless steel model is NTEP approved and perfect for the stringent demands of industrial food processors and other washdown applications. Includes 10ft/3.1 m of load cell cable. Available in capacities from 10 to 100 kg (22 to 220.5lb).

## **RLPWM16**

This aluminum single-point with potted cavity is IP67 rated for excellent performance in damp environments. Meet the needs of heavier applications with a capacity range of 50 to 635 kg (110.2 to 1455.5lb). This NTEP-approved load cell includes 10ft/3.1 m of load cell cable.





# Double-Ended Beams

## RL70000 Series

A center loading double-ended beam for tank and hopper applications, this high accuracy, low-profile shear-beam design with redundant sealing is unaffected by side load forces. Complete with 30 ft/9.2 m load cell cable. Select the stainless steel RL70000 SS in capacities from 5,000 to 150,000 lbs (2268.0 to 68,038.9 kg), or the alloy steel RL70000 available NTEP approved from 5,000 to 250,000 lbs (2268.0 to 113,400 kg).

## RL75016 Series

A center loading double-ended beam for tank and hopper applications that features stainless steel construction and hermetic sealing for hostile environments. Capacities from 1000 to 25,000 lbs (453.6 to 11,339.8 kg). Complete with 25 ft/7.6 m of load cell cable. Series includes the alloy-steel RL75016, stainless steel RL75016 SS, and the stainless/welded-seal, hostile-environment RL75016 WHE.

## RL75058

This alloy steel model is nickel plated and environmentally sealed with stainless steel side plates, designed for center link loading and compatibility with Unilink or similar suspension systems up to 75,000 lbs (34,019.4 kg). NTEP approved and available in capacities from 20,000 to 125,000 lbs (9071.9 to 56,699.1 kg). Includes 35 ft/10.7 m of load cell cable.





# Single-Ended Beams

## RL35023 Series

Single-ended beams are designed for low-profile scales in a variety of process applications. Choose from the alloy steel RL35023 with a broader range of capacities (500 to 20,000 lbs / 226.8 to 9071.9 kg) or the stainless steel RL35023S. Both models are NTEP approved from 1,000 to 10,000 lbs (453.6 to 4535.9 kg). Each includes 20ft/6.1m of load cell cable.

## RL35082

This stainless steel, welded-seal design is NTEP approved for exceptional performance in food and chemical processing. Designed for single- or multiple-cell installations. The threaded load hole makes mounting easy. Capacities from 1000 to 10,000 lb (453.6 to 4535.9 kg). Integral 20ft/6.1 m cable. Available in both IP67 and fully hermetic IP66/68 versions.

## RLHBB

Stainless steel construction, hermetic sealing and a polyurethane-shielded cable help the RLHBB function flawlessly in harsh environments. Traditionally used in low-profile platforms, weighing and packing machines, electromechanical conversions and general-purpose weighing applications. OIML C4 and NTEP approved capacities from 5 to 500 kg (11.0 to 1102.3 lb). Includes 10ft/3.1 m of load cell cable.





# S-Beams

## RL20000 Series

The IP67-rated RL20000 Series is equipped to handle damp operating environments with ease and is NTEP approved in most capacities,. Each S-beam cell includes 20ft/6.1 m of load cell cable. Environmentally sealed models include the alloy-steel RL20000, stainless steel RL20000 SS, stainless steel RL20000 ST, and the alloy-steel RL20001. Also available is the stainless steel, welded-seal RL20001 HE. Capacities range from 50 to 20,000lb (22.9 to 9071.9kg) depending on model.





## **Canister Type**

### **RLCSP1**

### **Compression Canister**

This high-capacity cell is built with reliability, durability and precision in mind. Offers welded-seal, stainless steel construction for demanding vehicle-scale and process applications. NTEP approved and standard with 30ft/9.2m of load cell cable. Capacities from 25,000lb to 200,000lb (11,339.8kg to 90,718.5kg).

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