

# Junction Boxes

## EL210—Excitation Trim Junction Box



Part # 21162 ..... EL210  
Suggested List Price \$235.00

### APPLICATIONS:

- Floor Scales
- Tank, hopper or vehicle scales
- Summing 2, 3 or 4 cells with trim capability

### STANDARD FEATURES:

- NEMA 4X Fiberglass-Reinforced Polyester (FRP) enclosure
- Strain relief cable fittings

### Number of cells:

- 2 to 4 single cells
- 4 to 8 load cells parallel connected
- Expansion port

### ACCESSORIES:

29846 ..... EL210 manual ..... Suggested List Price \$5.00  
23123 ..... Circuit board only .... Suggested List Price \$180.00

## EL211A—Signal Trim Junction Box



Part # 23133 ..... EL211A  
Suggested List Price \$245.00

### APPLICATIONS:

- Floor Scales
- Tank, hopper or vehicle scales
- Can be used with gated power supplies
- Corner and/or section trim applications

### STANDARD FEATURES:

- NEMA 4X Fiberglass-Reinforced Polyester (FRP) enclosure
- Strain relief cable fittings

### Number of cells:

- 2 or 4 single cells (even number of cells only)
- 4 or 8 load cells parallel connected
- Any unused channels require modification
- Expansion port

### ACCESSORIES:

29848 ..... EL211A manual ..... Suggested List Price \$5.00  
23124 ..... Circuit board only .... Suggested List Price \$190.00

## EL304A—Signal Trim Junction Box



Part # 21169 ..... EL304A  
Suggested List Price \$235.00

### APPLICATIONS:

- Livestock scales
- Vehicle and railroad track scales
- Corner and/or section trim applications

### STANDARD FEATURES:

- NEMA 4X Fiberglass-Reinforced Polyester (FRP) enclosure
- Strain relief cable fittings
- Individual cell signal disconnect switches

### Number of cells:

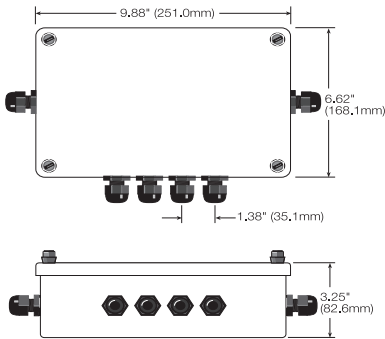
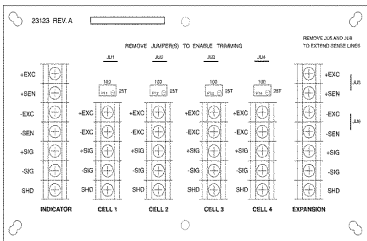
- 2 or 4 single cells (even number of cells only)
- Expansion port

### ACCESSORIES:

16937 ..... EL304A manual ..... Suggested List Price \$5.00  
21301 ..... Circuit board only .... Suggested List Price \$180.00

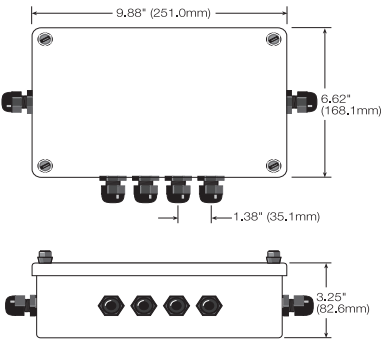
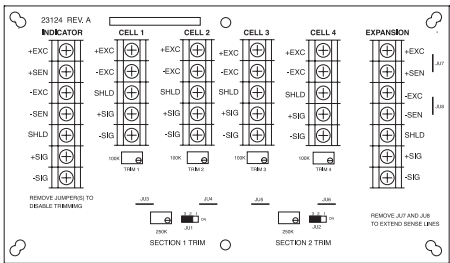
EL210

- Cable Fittings: (4) nylon 0.079"-0.314"/2.0mm-8.0mm cable strain reliefs  
(2) nylon 0.236"-0.472"/6.0mm-12.0mm cable strain reliefs
- Connectors: #6 SEMS screw type, accepts spade lugs, tinned leads or bare wires up to #12 AWG
- Trimming: Individual cell, excitation trim. Three ranges: no trim, 0-37 ohms or 0-100 ohms
- Potentiometers: 100 ohms, 25-turn cermet
- Enclosure: Fiberglass-Reinforced Polyester (FRP), NEMA 4X, 40 PSI washdown
- Circuit Board: 8" x 4.625"/203.2mm x 117.5mm with anti-fungal coating



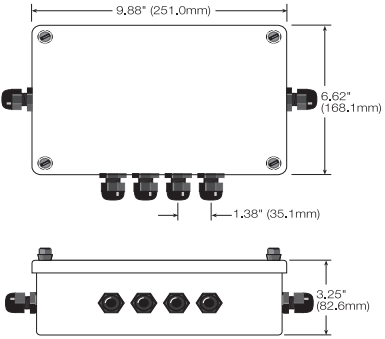
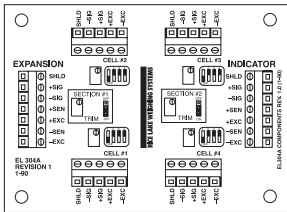
EL211A

- Cable Fittings: (4) nylon 0.079"-0.314"/2.0mm-8.0mm cable strain reliefs  
(2) nylon 0.236"-0.472"/6.0mm-12.0mm cable strain reliefs
- Connectors: #6 SEMS screw type, accepts spade lugs, tinned leads or bare wires up to #12 AWG
- Trimming: Individual cell, signal trim, 2.7K ohms isolation resistors with a 2.7K ohms limiting resistor
- Potentiometers: 100K ohms, 25-turn cermet
- Enclosure: Fiberglass-Reinforced Polyester (FRP), NEMA 4X, 40 PSI washdown
- Circuit Board: 8" x 4.625"/203.2mm x 117.5mm with antifungal coating



EL304A

- Cable Fittings: (4) nylon 0.079"-0.236"/ 2.0mm-6.0mm cable strain reliefs  
(2) nylon 0.236"-0.354"/6.0mm-9.0mm cable strain reliefs
- Connectors: Electrovert 0.197"/5.0mm miniature screw terminals. Maximum wire size #14 AWG
- Trimming: Individual cell & section, signal trim, 2.5K ohms isolation resistors, switch selectable limiting resistors
- Potentiometers: 100K ohms, 25-turn cermet
- Enclosure: Fiberglass-Reinforced Polyester (FRP), NEMA 4X, 40 PSI washdown
- Circuit Board: 5.5" x 4"/139.7mm x 101.6mm



Junction Boxes

# Junction Boxes

## EL604STA–Signal Trim Junction Box



Part # 23127 ..... EL604STA  
Suggested List Price \$220.00

### APPLICATIONS:

- Floor Scales
- Limited space installations

### STANDARD FEATURES:

- Stainless Steel, NEMA 4X enclosure
- Strain relief cable fittings
- High stability non-zero interactive trim

### Number of cells:

- 2 to 4 single cells
- Any unused channels require modification

### ACCESSORIES:

29978 ..... EL604STA manual ..... Suggested List Price \$5.00  
23126 ..... Circuit board only .... Suggested List Price \$140.00

## EL604ETA–Excitation Trim Junction Box



Part # 23129 ..... EL604ETA  
Suggested List Price \$220.00

### APPLICATIONS:

- Floor Scales
- Limited space installations
- Summing 2, 3 or 4 cells with trim capability

### STANDARD FEATURES:

- Stainless Steel, NEMA 4X enclosure
- Strain relief cable fittings

### Number of cells:

- 2 to 4 single cells

### ACCESSORIES:

29980 ..... EL604ETA manual ..... Suggested List Price \$5.00  
23128 ..... Circuit board only .... Suggested List Price \$140.00

## JB 808S–Signal Trim Junction Box



Part # 21170 ..... JB 808S  
Suggested List Price \$395.00

The JB 808S Signal Trim Junction Box can be used with up to eight load cells. Load cell output can be trimmed individually, and/or in pairs by altering the jumpers to "section trim" position. The electronics are protected by a Fiberglass-Reinforced Polyester enclosure meeting NEMA 4X standards. Designed for hosedown use, the enclosure will withstand 40 PSI water pressure, but is not submersible.

### APPLICATIONS:

- Truck and railroad scales
- Summing 2, 4, 6 or 8 cells with individual and section trimming capability

### STANDARD FEATURES:

- NEMA 4X Fiberglass-Reinforced Polyester (FRP) enclosure
- Strain relief cable fittings
- Section and individual cell trim capability
- Includes 6 filling plugs for unused fittings
- Fungal-resistant coating
- Large enclosure for plenty of working room
- Mounting hardware included

### Number of cells:

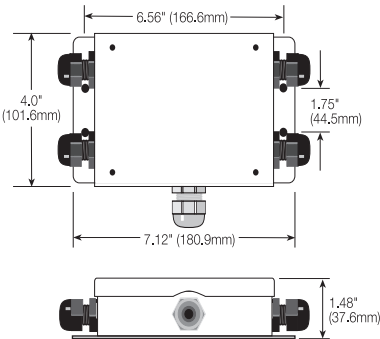
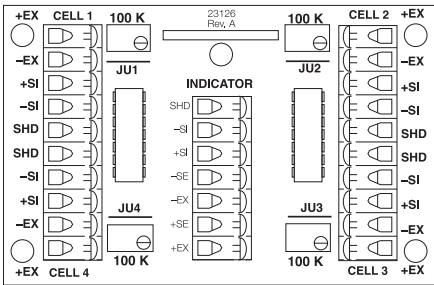
- 2, 4, 6 or 8 single load cells (even number of cells only)
- Any unused channels require modification

### ACCESSORIES:

16939 ..... JB 808S manual ..... Suggested List Price \$5.00  
21306 ..... Circuit board only .... Suggested List Price \$345.00

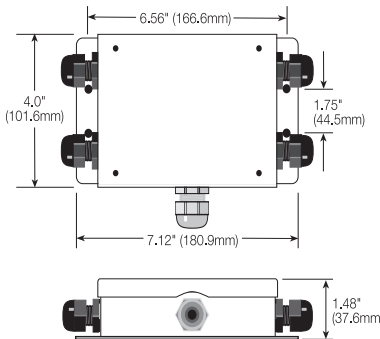
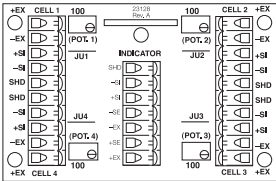
EL604STA

- Cable Fittings: (4) nylon 0.079"-0.314"/2.0mm-8.0mm cable strain reliefs  
(1) nylon 0.236"-0.472"/6.0mm-12.0mm cable strain reliefs
- Connectors: WAGO 256-4XX, Maximum wire size #14 AWG
- Trimming: Individual cell, signal trim, 2.7K ohms isolation resistors with a 2.7K limiting resistor
- Potentiometers: 100K ohms, 25-turn cermet
- Enclosure: Stainless Steel NEMA 4X, 40 PSI washdown
- Circuit Board: 3.8" x 2.3"/96.5mm x 58.4mm with antifungal coating



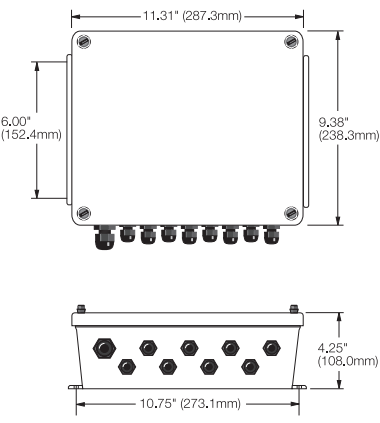
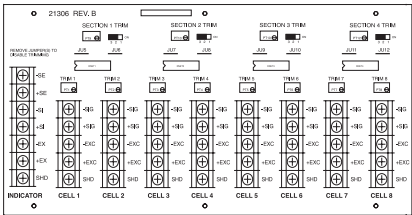
EL604ETA

- Cable Fittings: (4) nylon 0.079"-0.314"/2.0mm-8.0mm cable strain reliefs  
(1) nylon 0.236"-0.472"/6.0mm-12.0mm cable strain reliefs
- Connectors: WAGO 256-4XX, Maximum wire size #14 AWG
- Trimming: Individual cell, excitation trim.
- Potentiometers: 100 ohms, 25-turn cermet
- Enclosure: Stainless Steel NEMA 4X, 40 PSI washdown
- Circuit Board: 3.8" x 2.3"/96.5mm x 58.4mm with antifungal coating



JB 808S

- Cable Fittings: (8) nylon 0.375"/9.5mm NPT cable strain reliefs for cable dimension range: 0.079" to 0.314"/2.0mm to 8.0mm  
(1) nylon 0.5"/12.7mm NPT cable strain reliefs for cable dimension range: 0.236" to 0.472"/6.0mm to 12.0mm
- Connectors: #6 SEMS screw type, accepts spade lugs, tinned leads or bare wires up to #12 AWG
- Trimming: Individual cell, signal trim; sections, signal trim 2.7K isolation resistors with 2.7K limiting resistor
- Potentiometers: 100K ohms, 25-turn cermet
- Enclosure: Fiberglass-Reinforced Polyester (FRP), NEMA 4X, 40 PSI washdown
- Circuit Board: 9.0" x 4.7"/228.6mm x 119.4mm with antifungal coating



# Junction Boxes

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## JB1010 - Signal/Excitation Trim Junction Box with Transient Protection



Part # 36231 ..... JB1010  
Suggested List Price \$525.00

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### APPLICATIONS:

- Tank, truck, railroad, hopper and floor scales
- Universal field replacement of existing boxes
- Paralleling load cells
- Expansion of existing scales

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### STANDARD FEATURES:

- NEMA 4X Fiberglass-Reinforced Polyester (FRP) enclosure
- Load cell transient protection
- Signal or excitation trim
- Front panel mounting
- Strain relief cable fittings

### Number of cells:

- 1 through 10
- Trims odd numbers of cells without modification

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### ACCESSORIES:

36329 ..... JB1010 manual ..... Suggested List Price \$25.00  
36351 ..... Circuit board only .... Suggested List Price \$390.00

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## EL504 - Signal Trim Junction Box



Part # 21165 ..... EL504  
Suggested List Price \$295.00

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### APPLICATIONS:

- Truck scales
- Floor scales
- Limited space installations

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### STANDARD FEATURES:

- Stainless Steel, NEMA 4X enclosure
- Strain relief cable fittings
- Removable connectors for easy wiring

### Number of cells:

- 2 to 4 single cells
- Any unused channels require modification

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### ACCESSORIES:

21296 ..... Circuit board only ..... Suggested List Price \$240.00

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## EL168 - 1 Cell Junction Box



Part # 21161 ..... EL168  
Suggested List Price \$45.00

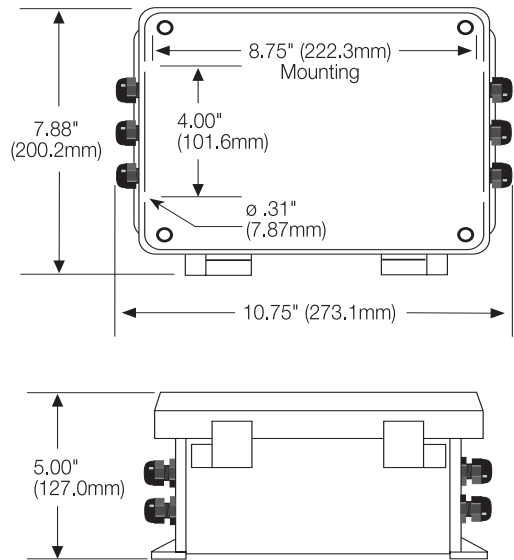
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### APPLICATIONS:

- Ideal for splicing or extending load cell cable
- Nonmetallic NEMA 4X enclosure with separate input and output cable fittings
- No soldering, compression or swagged fittings are required

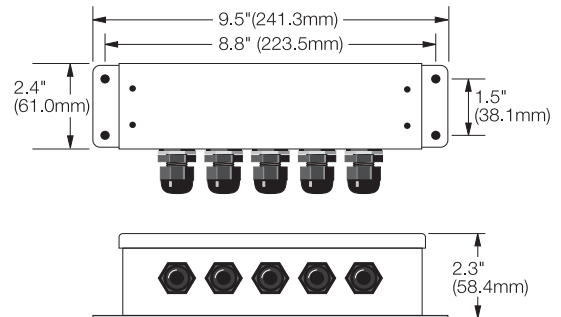
## JB1010

<b>Cable Fittings:</b>	(12) nylon 0.375"/9.5mm NPT 0.157"-0.314"/ 3.99mm - 7.98mm
<b>Connectors:</b>	Wago® screwless; pluggable and screw type are also available
<b>Trimming:</b>	Selectable; signal trim with 1K ohm or 2.5K ohms isolation, section trim, excitation trim (plus, minus or both), individual and excitation, or none
<b>Potentiometers:</b>	100K ohms, 22-turn cermet
<b>Enclosure:</b>	Fiberglass-Reinforced Polyester (FRP), NEMA 4X
<b>Circuit Board:</b>	6.75" x 4.75"/171.5mm x 120.7mm with antifungal coating



## EL504

<b>Cable Fittings:</b>	(5) nylon 0.187"-0.312"/4.7mm-7.9mm cable strain reliefs
<b>Connectors:</b>	Electrovert 0.197"/5.0mm miniature two piece connectors. Maximum wire size #14 AWG, connectors are removable for easy wiring.
<b>Trimming:</b>	Individual cell, signal trim, 2.5K ohms isolation resistors with a 10K limiting resistor
<b>Potentiometers:</b>	100K ohms, 25-turn cermet
<b>Enclosure:</b>	Stainless Steel NEMA 4X, 40 PSI washdown
<b>Circuit Board:</b>	6.5" x 1.5"/165.1mm x 38.1mm with antifungal coating



## EL168

<b>Dimensions:</b>	3.75" W x 3.75" H x 3" D/95.3mm W x 95.3mm H x 76.2mm D
<b>Mounting Centers:</b>	3.75" x 2.31"/95.2mm x 58.7mm
<b>Cable Fittings:</b>	Nylon waterproof strain-relief type
<b>Cable Diameter:</b>	0.079"-0.315"/2.0mm-8.0mm
<b>Terminal Block:</b>	Rated 300 V/15A; 7-position, screw terminal can each accommodate up to #16 AWG

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**USA: 800-472-6703 • Canada/Mexico: 800-321-6703 • International: 715-234-9171**

Prices & Specifications subject to change without notice

# Additional Accessories

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## TP75-DC Transient Protection



Part # 33185 ..... TP75  
Suggested List Price \$195.00

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### APPLICATIONS:

- Protects load cells and indicators from voltage transients
- Tank, bin, hopper and reactor weighing
- Truck and railroad track scales
- Suitable for outdoor use

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### STANDARD FEATURES:

- Avalanche diode design
- Full 6-wire with shield protection
- NEMA 4X enclosure
- Unlimited number of load cells wired in parallel; up to 8 wired in series
- Terminal lugs provided

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### ACCESSORIES:

31164 ..... Circuit board only ... Suggested List Price \$159.00

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## UJB3T6 - DC Transient Protection



Part # 21134 ..... UJB3T6  
Suggested List Price \$250.00

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### APPLICATIONS:

- Protects load cells from voltage transients
- Compatible with signals down to 1 $\mu$ Vgrad
- Installations exposed to significant transients
- Protects serial communication lines

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### STANDARD FEATURES:

- Factory serviceable
- Full 6-wire with shield protection
- Terminal strip interface
- Up to 8 parallel or summed load cells
- 50 Kbaud maximum transmission frequency
- Up to 6 serial data lines can also be protected

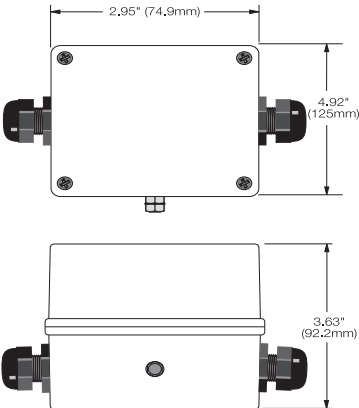
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### ACCESSORIES:

21135 ..... Circuit board only ..... Suggested List Price \$190.00

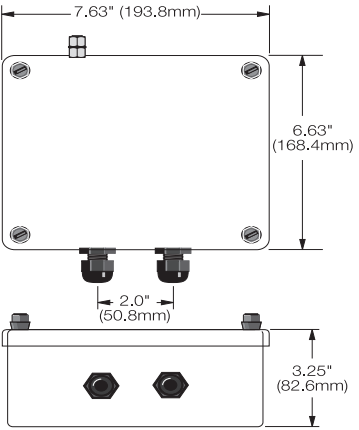
TP75

- Protection Type: Six channel series type with separate shield
- Excitation Voltage: 22.8 VDC Maximum
- Response Time: 5 nanoseconds
- Peak Surge Currents: 100 amps
- Series Resistance: 0.0 ohms
- Series Inductance: 0.0 μh
- Grounding: 10 AWG wire or larger (not provided)
- Cable Fitting: (2) nylon strain relief for 0.187"-0.312" (4.7mm-7.9mm) diameter cable
- Enclosure: Impact-resistant polycarbonate, NEMA 4X, maximum 40 psi washdown
- Operating Temperature: -4°F to 185°F/ -20°C to 85°C
- Circuit Board: 2.22" x 2.22"/56.4mm x 56.4mm
- Dimensions: 4.38" W x 3.15" H x 3.38" D/111.1mm W x 80mm H x 85.9mm D



UJB3T6

- Protection Type: Six channel series type with separate shield
- Excitation Voltage: 20V AC/DC Maximum
- Clamping Voltage: 75V AC/DC
- Clamping Time: 75 VDC Stages <100 nanoseconds typical
- Peak Surge Currents: 75 VDC Stage - 5000 amperes
- Maximum Serial Transmission Rate: 50 Kbaud
- Series resistance: 0.219 ohms typical
- Series inductance: 110μh typical
- Grounding: Through a 1/4 lug to a 20'6.1m insulated #10 AWG ground wire provided
- Cable Fitting: (2) nylon strain relief for 0.079"-0.236"/2.0mm-6.0mm diameter cable
- Enclosure: Fiberglass-Reinforced Polyester (FRP), NEMA 4X, maximum 40 PSI washdown
- Operating Temperature: 14°F to 104°F/-10°C to 40°C
- Circuit Board: 6.75" x 4.75"/171.5mm x 120.7mm with antifungal coating



Junction Boxes







Notes:

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# Special Requirement Order Form

While we currently offer the most comprehensive selection of standard load cells and sensors available, we also understand that unique opportunities for custom applications and products exists. We have extensive experience working with our customers to develop products for special applications. Just fill out the form below, and fax it to our team of seasoned professionals who will evaluate the design and manufacturing process. You will be contacted immediately with the results of our research.

Customer Number: \_\_\_\_\_ Estimated Annual Requirement \_\_\_\_\_

Customer Name: \_\_\_\_\_ Date Required: \_\_\_\_\_

Contact: \_\_\_\_\_

## Type of Product: (Circle one)



S-Type



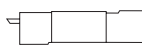
Shear Beam



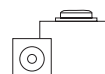
Cantilever  
Bending Beam



Double Ended  
Beam



Single Point



Canister



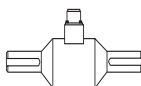
Low Profile  
Sensor



Load Pin



Load Link



Torque Cell



Pressure Transducer



Strain  
Gauge



Spring

Describe the application: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

### Are there any load cell or system certifications necessary?

NTEP \_\_\_\_\_ FM \_\_\_\_\_

OIML \_\_\_\_\_ UL \_\_\_\_\_

CE \_\_\_\_\_ USDA \_\_\_\_\_

### What are the ideal dimensions for this product?

Height \_\_\_\_\_

Width \_\_\_\_\_

Length \_\_\_\_\_

### What are the specification requirements?

Full Scale Output: \_\_\_\_\_ mV/V

Bridge Resistance: \_\_\_\_\_ ohms, nominal

Nonlinearity: \_\_\_\_\_ % Full Scale

Hysteresis: \_\_\_\_\_ % Full Scale

Insulation Resistance: \_\_\_\_\_ megohms

Cable Length: \_\_\_\_\_ ft

Connector Type: \_\_\_\_\_

Operating Temperature Range: \_\_\_\_\_

Are there any other requirements? \_\_\_\_\_

Do you have a target cost for the product? \_\_\_\_\_

Material: Stainless \_\_\_\_\_

Mild Steel \_\_\_\_\_

Aluminum \_\_\_\_\_

Other \_\_\_\_\_

Sealing Type: Hermetic: \_\_\_\_\_

Welded: \_\_\_\_\_

Environmental: \_\_\_\_\_

Other: \_\_\_\_\_

Fax: 715-234-6967

Attention: Load Cell Business Unit

**RICE LAKE WEIGHING SYSTEMS**

Industrial Solutions on a Global Scale®

# Load Cell Mounting Hardware Safety Guidelines

Install only load cell mounting hardware and assemblies that have been specifically designed for use in tank, hopper or hanging scale applications. Often, the use of an inferior-grade product results in component failure, which risks equipment damage and personal injury. These simple suggestions are provided to help minimize your exposure to vessel scale installation hazards.

## 1. Estimating Gross Load

To select the correct load cell or load cell hardware for a given application, it is necessary to know the total weight on the scale—including the net weight of product, the tare weight of the vessel, and the weight of the platform, tank, or hopper, as appropriate.

## 2. Safe Load

Do not exceed the safe load figures listed in Rice Lake Weighing Systems' catalog for any load cell hardware. Where shock loads are present, it may be necessary to derate these safe load figures, depending on the severity of the shock load.

## 3. Load Distribution

In multiple load cell applications, the weight must be evenly distributed between all cells.

## 4. Threaded Connections

Check that all threads of a threaded connection are in engagement. For example, an eye bolt screwed into an S-type load cell should protrude slightly on the opposite side.

## 5. Jam Nuts

All threaded connections must be locked with jam nuts against inadvertent disassembly. If a load is suspended from a single load cell, it is critical that the load cannot rotate, as this may loosen the jam nut.

## 6. Wire Rope Assemblies

With wire rope assemblies, do not twist the rope during assembly or disassembly. For example, do not remove a frozen nut from one end of a rope assembly by holding the opposite end.

## 7. Attachment Points of a Load Cell Hardware Assembly

The attachment points of a load cell hardware assembly must be aligned properly, and the assembly should be essentially vertical.

## 8. Swaying in a Suspended Vessel Scale

If there is excessive swaying in a suspended vessel scale, apply horizontal checking to reduce the amplitude.

## 9. Safety Backup

If failure of one or more load cell hardware assemblies could cause injury or damage, a safety backup (safety chains, safety rods, etc.) must be used. The assemblies should be inspected routinely for damage, excessive wear or corrosion, and replaced if necessary.

## 10. Hopper Scales: Guarding Against Contamination

With hopper scales, guard against contamination of the product being weighed as a result of the failure of the load cell or hardware assembly. For example, do not locate a wire rope assembly over a hopper scale where broken strands of wire could fall into the weighing vessel, contaminating the product being weighed.

## 11. Selecting Steel Rod or Any Other Weight-Bearing Components

Select steel rod or any other weight-bearing components so that their minimum tensile strength is at least four times the total weight carried by that component. Note that threaded rod is generally made from a low tensile-strength mild steel which should be checked for tensile strength before use in any suspended vessel scale.

# Limited Warranty

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Rice Lake Weighing Systems (RLWS) warrants that all RLWS brand load cells properly installed by a Distributor or Original Equipment Manufacturer (OEM) will operate per written specifications. All load cell products are warranted against defects in materials and workmanship for two (2) years. Products marked as “waterproof” are warranted against defects in materials and workmanship relating to moisture ingress.

RLWS warrants that the equipment sold hereunder will conform to the current written specifications authorized by RLWS. RLWS warrants the equipment against faulty workmanship and defective materials. If any equipment fails to conform to these warranties, RLWS will, at its option, repair or replace such goods returned within the warranty period subject to the following conditions:

1. Upon discovery by Buyer of such nonconformity, RLWS will be given prompt written notice with a detailed explanation of the alleged deficiencies.
2. Examination of such equipment by RLWS confirms that the nonconformity actually exists, and was not caused by accident, misuse, neglect, alteration, improper installation, improper repair or improper testing; RLWS shall be the sole judge of all alleged non-conformities.
3. Such equipment has not been modified, altered, or changed by any person other than RLWS or its duly authorized repair agents.
4. RLWS will have a reasonable time to repair or replace the defective equipment. Buyer is responsible for shipping charges both ways.
5. In no event will RLWS be responsible for travel time or on-location repairs, including assembly or disassembly of equipment, nor will RLWS be liable for the cost of any repairs made by others.

**THESE WARRANTIES EXCLUDE ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NEITHER RLWS NOR DISTRIBUTOR WILL, IN ANY EVENT, BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.**

**RLWS AND BUYER AGREE THAT RLWS SOLE AND EXCLUSIVE LIABILITY HEREUNDER IS LIMITED TO REPAIR OR REPLACEMENT OF SUCH GOODS. IN ACCEPTING THIS WARRANTY, THE BUYER WAIVES ANY AND ALL OTHER CLAIMS TO WARRANTY.**

**SHOULD THE SELLER BE OTHER THAN RLWS, THE BUYER AGREES TO LOOK ONLY TO THE SELLER FOR WARRANTY CLAIMS.**

No terms, conditions, understanding, or agreements purporting to modify the terms of this warranty shall have any legal effect unless made in writing and signed by a corporate officer of RLWS and the Buyer.

Rice Lake Weighing Systems  
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Rice Lake , Wisconsin 54868 USA

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Fax: 715-234-6967