

Overhead Weighing

Safety Guide



RICE LAKE[®]
WEIGHING SYSTEMS

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Are Your Customers Thinking About Safety?

With today's prevalence of overhead cranes in industrial markets, transporting materials has never been more convenient. However, with this convenience comes additional safety threats through increased potential for improper crane use. Common causes of crane accidents include caught-load, slack line, overload/underload and structural fatigue. Accidents can result in loss of life, crippling fines and ruined businesses. With Rice Lake's brand of trusted overhead weighing solutions from Measurement Systems International (MSI), federal OSHA and local regulatory requirements are exceeded to ensure compliance and safety standards.

By utilizing weighing equipment either as an accessory or integrated into a crane, accidents can be significantly reduced or prevented. Overhead weighing solutions provide real-time measurement of operational load as well as immediate feedback to operators and safety systems that prevent or limit unsafe conditions.

MSI provides two system solutions, below-the-hook and integrated weighing, to ensure overhead weighing remains as safe as possible.



Below-the-Hook Weighing Solutions

Below-the-hook weighing solutions offer an added convenience of weighing in process—eliminating additional stops in shipping and receiving, in-process material handling, metals and manufacturing. These solutions quickly provide operators lifted load weights with optimal balance capabilities. Use a dynamometer or crane scale in monorail hoists, rail mounted and semi gantries, and with jib, tower, whirley, container and loader cranes.

MSI-7300 Dyna-Link 2

Dynamometers for light-duty, straight-lift weighing measure both vertical and horizontal tension in static weighing applications. The MSI-7300 Dyna-Link 2 is the industry's most advanced digital tension dynamometer. To suit a variety of capacity requirements, the Dyna-Link 2 is constructed of high-grade aircraft-quality aluminum or 4340 steel with gasket sealing.

MSI-3460

The MSI-3460 with ScaleCore provides industry leading weighing features plus much more. Long range viewing is enhanced with a larger 1.5 inch (38 millimeter) ultra-bright LED digital display and resolution settings of up to 10,000 divisions for precise 0.1 percent loading accuracy. Product operating time is extended to over 80 hours with a single six-volt rechargeable battery. The MSI-3460 has been upgraded to NEMA Type 4/IP65 levels and maintains minimum 200 percent safe and 500 percent ultimate load ratings.



MSI-7300
Dyna-Link 2



MSI-3460



Below-the-Hook Weighing Solutions

MSI-4260



MSI-4260

Below-the-hook crane scales can be used in medium- to heavy-duty applications to prevent overloads and alert the operator to potentially unsafe conditions. The MSI-4260 crane scale is built for heavy-duty dynamic weighing, includes a 5:1 safety factor, and exceeds OSHA, ANSI and ASME safety requirements. The MSI-4260 can be paired with advanced process controllers and RF solutions to offer complete industry solutions that easily integrate into existing setups.

MSI-4260 IS



MSI-4260 IS

For medium- to heavy-capacity and duty-cycle needs, the MSI-4260 IS intrinsically safe crane scale meets or exceeds all industrial safety requirements, including OSHA, ANSI and ASME. This crane scale has a five-digit LED display with programmable brightness control for visibility in every lighting condition. The enclosure is made of a NEMA Type 4, IP66 marine grade 356 alloy anodized aluminum.

MSI-4260M
Industrial



MSI-4260M Industrial

The MSI-4260M Port-a-Weigh crane scale has an established reputation as the industry standard in overhead weighing for medium- to heavy-capacity needs. The MSI-4260M captures weight with $\pm 0.1\%$ accuracy through its full range of capacity, from 500 to 100,000 pounds. Common applications include general warehouse, shipping and receiving, bulk materials, pulp and paper, steel and other metals.



MSI-4260M Marine

The MSI-4260M’s NEMA Type 4, IP66/67 aluminum enclosure stands up to moisture in marine and washdown environments. Sensitive electronic components are sealed off and well-protected, including the MSI-4260M’s sleek and vibrant LCD display. Featuring programmable brightness control, the display ensures operators have access to the weight data they need. Able to capture weight with $\pm 0.1\%$ accuracy, the NTEP Certified MSI-4260M features a 500% Ultimate Safety Factor to minimize the risk of accidents from overloading.

MSI-6360 Trans-Weigh

Capturing weight with $\pm 0.1\%$ accuracy, the MSI-6360 is ideal for use in demanding industrial and high-temperature applications. This crane scale offers Legal for Trade configurations in capacities up to 70,000 pounds. A non-Legal for Trade configuration is also available in capacities up to 100,000 pounds. With ScaleCore technology, the MSI-6360 can be remotely controlled and monitored from virtually anywhere.

MSI-9600HT

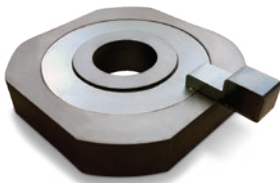
The MSI-9600HT has a unique configuration designed for heavy-capacity coil handling or similar applications reaching capacities of 100 tons. Meeting or exceeding all industrial safety requirements, the MSI-9600HT features a 200% Safe and 500% Ultimate Safety Factor, minimizing overloading accidents. The enclosure, made with IP66 marine grade alloy anodized aluminum, features a rear-battery casting with snap-closure—keeping everything weathertight.



MSI-4260M
Marine

MSI-6360

MSI-9600HT

Clevis Load Pin
SensorShear Web
Load Cell

Integrated Weighing Solutions

Most bridge, monorail, jib, gantry and straddle crane safety systems employ an integrated load sensing system. An integrated load sensor is designed to be permanently installed and integrated where load is consistently applied relative to the actual load the crane is handling, generally with sheave pin, load link and compression designs. Because of their integrated design, these solutions feature no loss of head height. In addition to the sensor, these systems will have a load indicator providing operators with load indication and controls.

Clevis Load Pin Sensor

A key component for MSI's integrated overhead weighing solutions is the Clevis Load Pin Sensor. Typically designed and manufactured specifically to each integrated solution, the MSI load pin ensures the most efficient and accurate performance for each specific installation. MSI load pins utilize only internally mounted strain gauges for complete protection from the outside environment.

Shear Web Load Cell

MSI's Shear Web Load Cell can be custom-fit for use with existing equipment. The load cell can be interfaced with a wireless RF transmitter to communicate load data with a digital weight indicator or handheld remote display. Reliable and durable, the shear web load cell is IP67 rated, zinc plated and constructed with 4340 alloy steel.



MSI Clamp-On Load Cell

The MSI Clamp-on Load Cell is a durable solution for measuring wire rope tension, providing dependable overload detection and prevention for overhead cranes and hoists. Available in 3/8-1/2 inch and 9/16-3/4 inch envelopes to accommodate most common wire ropes, the MSI Clamp-on installs quickly and easily to the wire rope dead end.

MSI Tension-Link

The MSI Tension Link integrates between a crane block and lifting equipment to provide force measurement for lifted items. The MSI Tension Link features a 7:1 safety factor for compliance with industrial and military safety requirements.

TranSend™

TranSend is a wireless load cell interface that transforms the signal of one or more load cells and transmits the data wirelessly to a receiving unit. TranSend is fully compatible with a broad range of receiving devices including MSI-8000, MSI-8000HD, any other digital weight indicator, PC, PLC or other industrial device. Multi-channel devices offer up to three optional relay contacts and an audible alarm, and can function as a smart junction box.



Clamp-On Load Cell



Tension-Link



TranSend



Digital Weight Indicators and Process Controllers

For real-time data and event-based response and logging, digital weight indicators, process controllers and signal conditioning transmitters easily integrate with overhead solutions. These devices can trigger relays for external alarms, warning lights and emergency stops. Integration with PLCs and data logging systems provide load tracking while in operation as well as prompt indications of improper use. RF remote displays provide complete scale interaction while allowing operators to maintain a safe distance from lifted loads and equipment.

MSI-8000 RF
Remote Display



MSI-8000HD
Indicator/RF
Remote Display



MSI-8000 RF Remote Display

The MSI-8000 features a heavy-duty NEMA 4/IP65 enclosure, making it ideal for use in nearly any operating environment. The MSI-8000 features a large, six-digit, one-inch LCD display for improved visibility, and a user-friendly keypad for simple configuration and operation. Just one MSI-8000 communicates wirelessly with up to four compatible MSI devices.

MSI-8000HD Handheld Indicator/RF Remote Display

MSI-8000HD is a heavy-duty, reputable handheld indicator and RF remote display. The full waterproof construction resists most elements making it especially resilient. The MSI-8000HD is fully compatible with all MSI-ScaleCore crane scales and dynamometers.



MSI-8004HD Indicator/RF Remote Display

The MSI-8004HD has all of the heavy-duty versatility of the MSI-8000HD with the added benefit of extreme high visibility in indoor and outdoor applications. The MSI-8004HD features 1.5-inch-high characters on its LED display. The red/green display can be configured to change color based on weight and setpoint conditions, making the MSI-8004HD a natural fit for safety-critical industrial applications.

MSI-8000HD/MSI-8004HD Standard Features:

- (MSI-8000HD) 6-digit 1.0 in (26.4 mm) high-visibility LCD screen
- (MSI-8004HD) 6-digit 1.5-in (38 mm) LED extreme-visibility screen in red, green and orange
- IP65 (MSI-8004HD) and IP68 (MSI-8000HD) milled aluminum enclosures with each mounting in operator cab or restricted space
- Membrane keypad for remote control functionality and user definable function keys
- Up to 8 position relays for single point interface to lights, alarms and safety systems
- Wireless connectivity to ScaleCore™ enabled systems and peripherals via serial RF or Wi-Fi
- MSI-8004HD features two-modem capability

MSI-8004HD
Indicator/RF
Remote Display





920i Digital Weight Indicator



920i® Digital Weight Indicator

Standard Features:

- (W x H) 4.6 in x 3.4 in, 320 x 240 pixel backlit LCD graphical display
- 60 configurable operator prompts and 10 programmable display screens
- Display up to 4 scale channels per screen with Legal for Trade information
- 5 softkeys with 10 user-defined, 14 preset functions per screen
- 100 setpoints, 30 configurable setpoint types, 32 scale accumulators
- Four communication ports and two slots for option cards
- 64K user onboard NV RAM and user programmable 1024K flash memory
- Reflash memory to upgrade firmware
- Power for 16, 350 ohm load cells per A/D board

1280 Enterprise Series Programmable Weight Indicator



1280 Enterprise™ Series Programmable Weight Indicator

Standard Features:

- (W x H) 800 x 480 pixel, 7-in graphical color display with 5-wire resistive touchscreen
- 3 enclosure types: universal, panel mount, wall mount
- 22 softkeys with 10 user-defined, and keypad for scale operations, numeric entry, navigation
- On-screen keyboard available during entry mode or use an external keyboard
- Multi-language operation and text entry
- 100 setpoints, 18 configurable setpoint types
- More than 150 built-in programming functions
- iRite™ software compatibility and built-in web server for remote access
- Up to 8 scales supporting 4 scale types
- Multi-range/Interval weighing functions
- 8 digital I/O for control and pulse count
- RS-232, RS-485, USB, Ethernet TCP/IP, Wi-Fi Direct®, Bluetooth®



LaserLight2 Remote Display

Standard Features:

- 6 high-intensity red digits (double-row discrete LED)
- Non-glare contrast filtered lens and adjustable daylight/night intensity
- Auto Learn mode of communication protocols
- Software selectable standstill mode for no updates while in motion
- Mirror (reverse image) feature
- Holy displayed weight (demand input)
- RS-232, 20mA and RS-485 communications
- Auto-sensing 115/230 VAC power supply
- IP66 enclosure with PEMs for VESA mount of side-mounting flange
- Integrated ScaleCore RF receiver



LaserLight2
Remote Display

MSI-ScaleCore™ Webserver

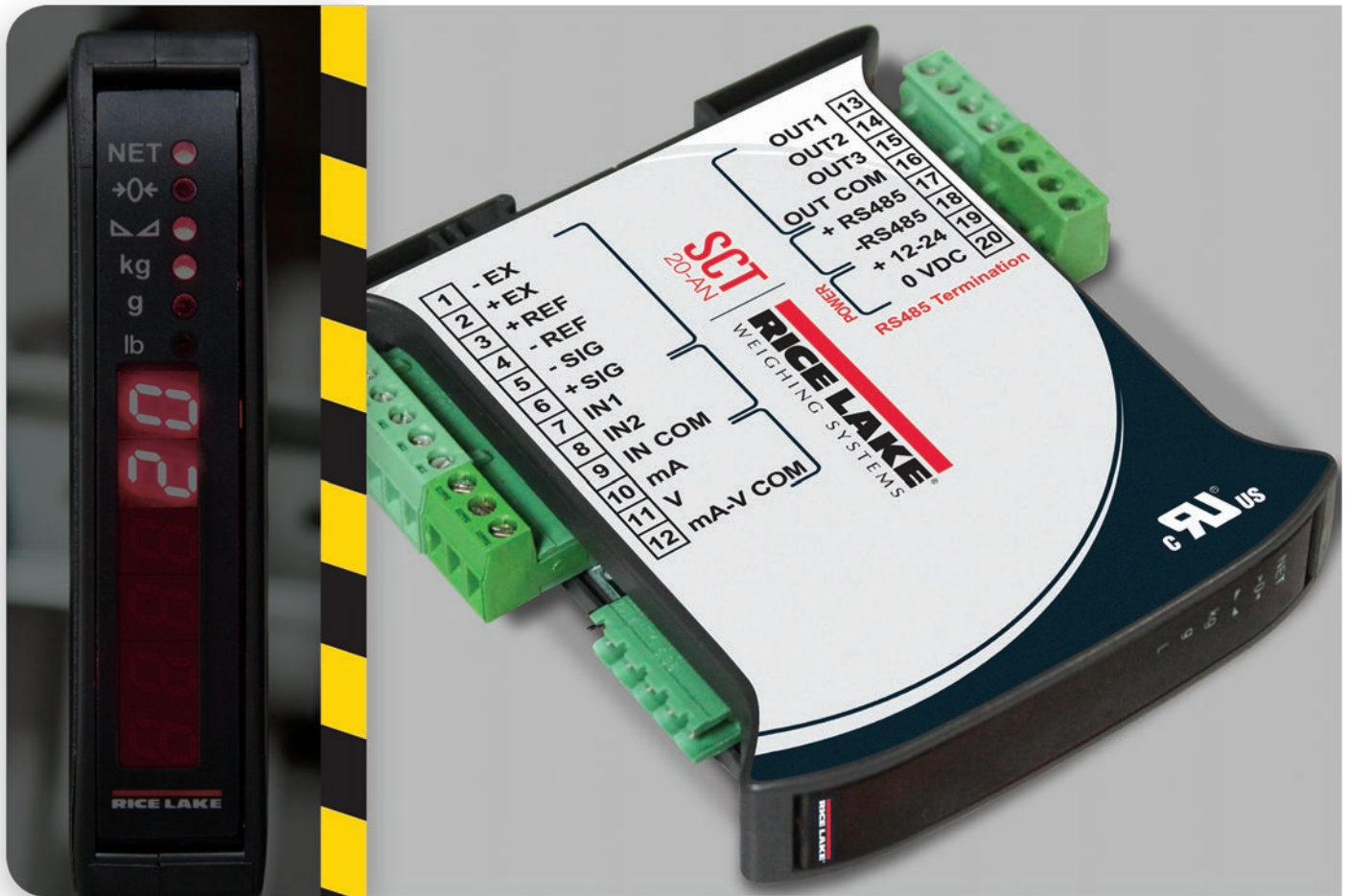
Display and control multiple ScaleCore based scales, indicators, remote displays and receivers through network connected devices using a web browser, including cell phones, tablets and PCs.

Standard Features:

- Capable of functioning either with an existing Wi-Fi network or as its own Wi-Fi router
- Can be powered by a dedicated power input or directly through the Ethernet cable where PoE (Power over Ethernet) is supported
- RS-232 communications at up to 460 Kbps
- Scale/load cell summing
- Tiered login to limit scale functionality for different levels of users



MSI-ScaleCore™
Webserver



SCT-20 Signal Conditioning Transmitter



SCT Weight Transmitters

Standard Features:

- (W x H) 25 x 115 x 120 mm LED display
- Displays weight, configuration, calibration and error conditions
- DIN rail mounting
- Theoretical calibration, real-weight calibration and linearity calibration
- Push-button or preset tare
- Converts digital weight to analog output or optional DeviceNet™, Profibus™ or EtherNet/IP™ protocols
- Supports ASCII or MODBUS RTU protocols
- Full scale analog output with zero setting and PLC correction of analog signal
- Big swapping selection for little endian and big endian format

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