

# Overhead Weighing

Safety Guide



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

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[www.ricelake.com/msi](http://www.ricelake.com/msi)

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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 come additional safety threats through improper crane use and maintenance. 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 the 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 steps 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 a 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. The MSI-7300 Dyna-Link 2 is the industry's most advanced digital tension dynamometer. Constructed of high-grade, aircraft-quality aluminum with an anodized finish and gasket sealing, the Dyna-Link 2 is built to address caught-load or slack-line issues that may cause unsafe conditions.

### 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. These solutions can be paired with advanced process controllers and RF solutions to offer complete industry solutions that easily integrate into existing setups.

### 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-4260



MSI-3460



Clevis Load Pin Sensor



Shear Web Load Cell



TranSend



## 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, the system must have a load indicator to provide operators with load indication and control.

### 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.

### 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, an audible alarm, and can function as a smart junction box.





## 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-8000HD 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

MSI-8004HD features the same rugged versatility as the MSI-8000HD with a larger, more vibrant LED display. With the option to view in the display in either red/green or blue LEDs, the MSI-8004HD provides longer viewing distances for more diverse environments and 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 blue
- IP68 milled aluminum enclosure with easy 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-8000HD  
Indicator/RF  
Remote Display



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, 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 standsstill mode for no updates while in motion
- Mirror (reverse image) feature
- Hold displayed weight (demand input)
- RS-232, 20 mA and RS-485 communications
- Auto-sensing 115/230 VAC power supply
- IP66 enclosure with PEMs for VESA mount or side-mounting flange
- Integrated ScaleCore RF receiver

### MSI-ScaleCore™ Module

MSI-ScaleCore is a highly integrated weight-processing unit with 24 bit A/D conversion. It allows complete backup, copy and restore of a scale configuration, including calibration.

MSI-ScaleCore Family of Products Includes:

- MSI-7300 Dyna-Link 2
- MSI-3460 Challenger 3
- MSI-4260 Port-A-Weigh
- MSI-8000/MSI-8000HD/MSI-8004HD Indicator/RF Remote Display
- Helicopter Load Weighing Systems

### MSI-ScaleConnect™ App

Collect data, create combination scales and control Bluetooth® or Wi-Fi equipped ScaleCore devices in one app. MSI-ScaleConnect app is available for Android™ devices.

Standard Features:

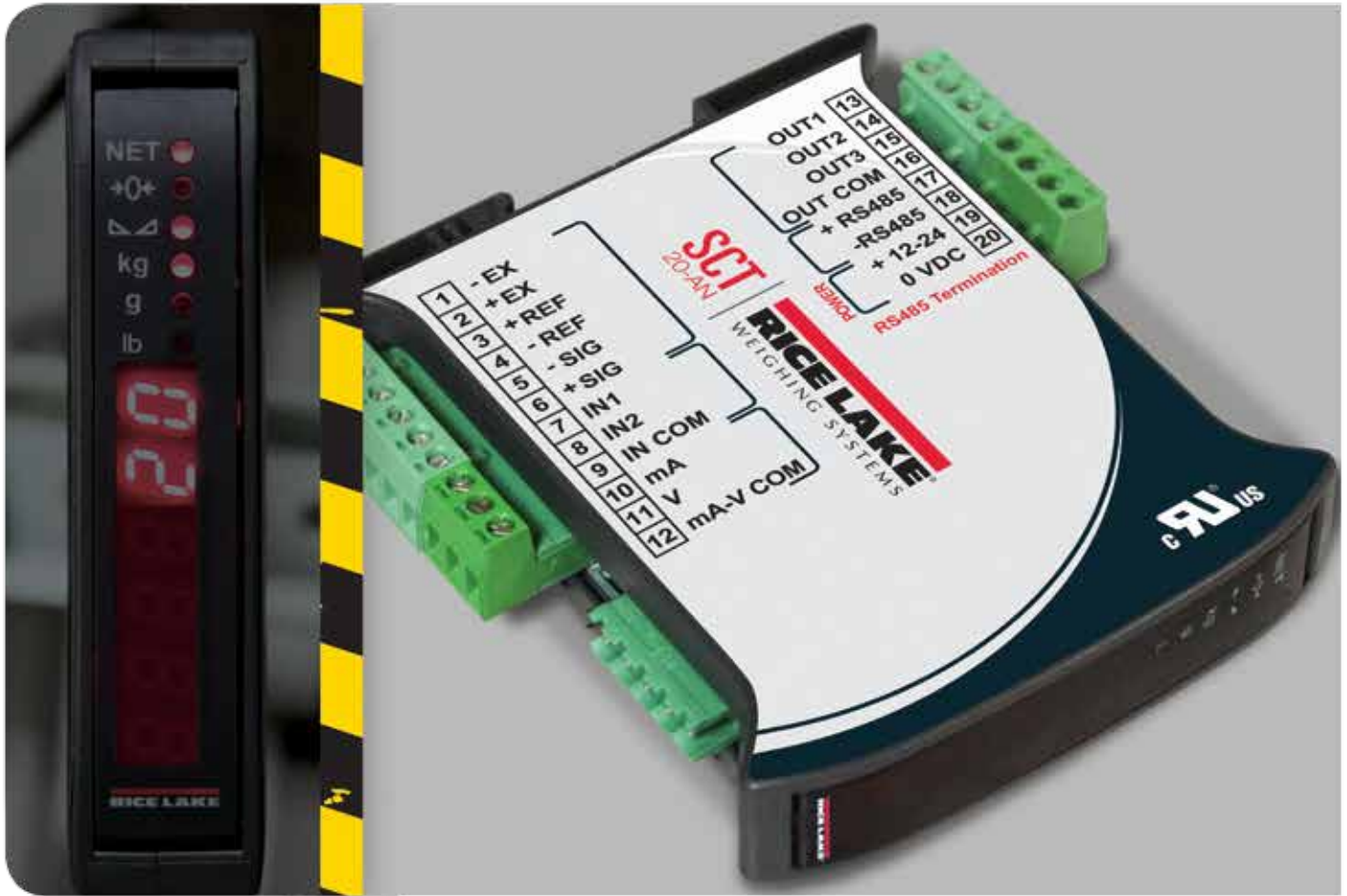
- Manage ScaleCore devices in one interface
- View individual device details, including setpoints and scale status
- Configure and calibrate all ScaleCore devices from a single source



LaserLight2 Remote Display



MSI-ScaleCore™ Module and MSI-ScaleConnect™ App



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
- Bit swapping selection for little endian and big endian format
- Two digital inputs, three digital outputs
- One serial port, RS-232 simplex and RS-485 connection
- CD manual

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