MSI-4260 IS

Port-A-Weigh Intrinsically Safe Crane Scale

Technical Manual

RICE LAKE®
WEIGHING SYSTEMS

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PN 173845 Rev D

All information contained within this publication is, to the best of our knowledge, complete and accurate at the time of publication. Rice Lake Weighing Systems reserves the right to make changes to the technology, features, specifications and design of the equipment without notice.

The most current version of this publication, software, firmware and all other product updates can be found on our website:

www.ricelake.com

Revision History

This section tracks and describes manual revisions for awareness of major updates.

Revision	Date	Description
D	April 4, 2025	Established revision history; • Updates to new ScaleCore firmware 2.x4

Table i. Revision Letter History

Contents

Rice Lake continually offers web-based video training on a growing selection of product-related topics at no cost. Visit www.ricelake.com/webinars

1.0 Introduction

This manual provides information on installation, calibration, configuration and operation of the MSI-4260 IS. The installer should be familiar with the National Electric Code and RP 12.6 (*Recommended Practice*) requirements for installation of equipment in hazardous areas (NEC Article 504, *Intrinsically Safe Systems*) published through the Instrument Society of America.

Refer to the Conditions of Use in Hazardous Locations document, PN 184530, for intrinsic safety certification and classification, specific conditions of use and system limitations and restrictions for the MSI-4260 IS.

Manuals are available from Rice Lake Weighing Systems at **www.ricelake.com/manuals**

Warranty information is available at **www.ricelake.com/warranties**

1.1 Features

- FM Approved
- Automatic power off
- Automatic sleep mode
- Precise high resolution (2,500 division standard and up to 10,000 possible) 24 bit A/D conversion
- Five 1.2" (30.5 mm) LED digits for clear weight readings from a distance
- Selectable for kg/lb unless prohibited by Legal for Trade regulations
- Automatic or manual weight totalization
- High speed Peak mode
- Eight setpoints
- Two service counters

1.2 FCC Compliance

United States

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canada

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Class A prescites dans le Règlement sur le brouillage radioélectrique edicté par le ministère des Communications du Canada.

1.3 Disposal

Product Disposal

The product must be brought to appropriate separate waste collection centers at the end of its life cycle.

Proper separate collection to recycle the product helps prevent possible negative effects on the environment and to health, and promotes the recycling of the materials. Users who dispose of the product illegally shall face administrative sanctions as provided by law.

Battery Disposal

Dispose of batteries at appropriate waste collection centers at the end of their life cycle in accordance with local laws and regulations. Batteries and rechargeable batteries may contain harmful substances that should not be disposed of in household waste. Batteries may contain harmful substances including but not limited to: cadmium (Cd), lithium (Li), mercury (Hg) or lead (Pb). Users who dispose of batteries illegally shall face administrative sanctions as provided by law.

WARNING: Risk of fire and explosion. Do not burn, crush, disassemble or short-circuit lithium batteries.

1.4 Safety

Safety Definitions:

DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. Includes hazards that are exposed when guards are removed.

WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death. Includes hazards that are exposed when guards are removed.

CAUTION: Indicates a potentially hazardous situation that, if not avoided, could result in minor or moderate injury.

IMPORTANT: Indicates information about procedures that, if not observed, could result in damage to equipment or corruption to and loss of data.

General Safety

Do not operate or work on this equipment unless this manual has been read and all instructions are understood. Failure to follow the instructions or heed the warnings could result in injury or death. Contact any Rice Lake Weighing Systems dealer for replacement manuals.

WARNING

Failure to heed could result in serious injury or death.

Do not operate or work on this equipment before reading and understanding the intrinsic safety information in the Conditions of Use in Hazardous Locations document, PN 184530.

Do not allow minors (children) or inexperienced persons to operate this unit.

Do not stand near the load being lifted as it is a potential falling hazard. Keep a safe distance.

Do not use for purposes other than weight taking or dynamic load monitoring.

Do not use any load bearing component that is worn beyond 5% of the original dimension.

Do not use the scale if any of the components of the load train are cracked, deformed or show signs of fatigue.

Do not exceed the rated load limit of the scale, rigging elements or the lifting structure.

Do not allow multi-point contact with the hook, shackle or lifting eye of the scale.

Do not allow high torque on the scale unless it is specifically designed for high torque.

Do not make alterations or modifications to the scale or associated load bearing devices.

Do not use improperly rated or sized shackles. Use only Rice Lake Weighing Systems recommended shackles.

Do not remove or obscure warning labels.

For guidelines on the safe rigging and loading of overhead scales and dynamometers, read the MSI Crane Scale Safety and Periodic Maintenance Manual (available at www.ricelake.com).

Keep hands, feet and loose clothing away from moving parts.

There are no user serviceable parts within the MSI-4260 IS. Any repairs must be performed by qualified service personnel only.

Removing the Warranty and Liability label compromises the FM Intrinsic Safety certification.

The MSI-4260 IS Port-A-Weigh scale has a safe mechanical overload of 200% and an ultimate overload of 500%. Overloads greater than 500% could result in structural failure and dropped loads. Dropped loads could cause serious personal injury or death.

1.5 Display

The buttons and display of the MSI-4260 IS front panel are described below.

Figure 1-1. MSI-4260 IS Front Panel

1.5.1 Keypad Functions

The functions of the push buttons vary based on the current MSI-4260 IS mode.

Key		Weigh Mode	Setup Menu Navigation	Numeric Entry
POWER	Power Key	Turns the MSI-4260 IS On and Off	Exits setup without saving changes; CAnCEL displays momentarily and unit enters ***Weigh*** mode	Enters decimal point to the left of the blinking digit
ZERO	Zero Key	Zeros out residual weight on the scale	Saves and drops back one menu level; At the root menu level the Zero key stores the changes and returns to Weigh mode StorE displays briefly	Steps back one digit to change or correct the digit to the left
TARE	Tare Key	Removes the weight of containers, trucks or carriers and places the scale in the Net Weigh mode	Functions as the Enter/Select key	Confirms blinking digit and move to the digit to the right
USER	User Key	Programmable to user selectable functions (Section 4.2 on page 21); This key is defaulted to the Test function	Functions as the Scroll key	Cycles blinking digit through numbers 0-9

Table 1-1. Key Functions

Example of numeric entry: Enter 2500 kg on a 5000 kg capacity scale.

- Press USER two times for the leftmost blinking digit, press TARE to save that digit selection.
- Press USER five times for the next blinking digit, press TARE to save that digit selection.
- Press USER to save that digit selection.
- Press USER to save the next digit selection. 2500 displays.

1.5.2 Annunciators and LEDs

Figure 1-2. Front Pane

Annunciator	Description
→0←	Center of Zero — Indicates that the scale is zeroed and the weight is within 1/4d of zero
	Stable — Indicates that the weight has settled within the motion window (usually ±1d); When this symbol is off, the scale will not zero, tare or totalize
BT	Low Battery — Displays when 10% of battery life remains; LED blinks indicating automatic shutdown will occur
	SET POINTS — Eight user programmable setpoints for early overload warnings; Blue LED = Setpoint 1, Green LED = Setpoint 2, Red LED = Setpoint 3
TTL	Total — Blue LED indicates the total weight displays for five seconds or less
NET	Net — Indicates the scale is in Net mode; Tare weight has been subtracted from the gross weight
PK	Peak — Indicates the scale is in peak hold mode
kg	kg — Red LED indicates weight display is in kilograms
lb	lb — Red LED indicates weight display is in pounds
x1K	X1000 — Blue LED is used in conjunction with the TOTAL LED, allowing weight accumulation beyond the 5-digit display capacity
	Acknowledge — Green LED is used to provide feedback to the operator that incoming remote commands have been received
88888	The main display digits include five, 1.2" (30.5 mm) brightness LED load display

Table 1-2. Annunciators and LEDs

WARNING: Wear appropriate hearing protection when any audible alarm is active. Not wearing appropriate hearing protection may result in hearing loss.

2.0 Installation

The MSI-4260 IS features a heavy duty, cast aluminum enclosure. It installs easily by hanging it on a crane using properly sized shackles.

WARNING: Refer to the Crane Scale Safety and Periodic Maintenance Manual for safe loading and rigging guidelines when installing the MSI-4260 IS.

Regular maintenance inspections of the lifting system should be performed to ensure safety.
Pay attention for signs of stress on any element in the load train.

Use the appropriate interface hardware for the capacity of the scale.

- If the interface hardware does not fit properly, Rice Lake Weighing Systems can supply the MSI-4260 IS with oversize lifting eyes or shackle interfaces
- If the crane hook is too large to fit in the lifting eye with single point interface then install the scale using adaptive rigging
- If multiple attachments are needed, use a shackle or ring to attach the multiple lines to keep a single point attachment to the scale

IMPORTANT: Using an oversize shackle or hook to interface with the MSI-4260 IS can cause off center loading and stress points that reduce the life of the lifting eye or hook.

Single point attachments are necessary to ensure the safety and accuracy of the scale system.

2.1 Unpacking

Immediately after unpacking the MSI-4260 IS from the shipping container, visually inspect the product to ensure all components are included and undamaged. If parts were damaged in shipment, notify Rice Lake Weighing Systems and the shipper immediately. If the MSI-4260 IS must be returned, it must be properly packed with sufficient packing materials.

Whenever possible, use the original carton when shipping the unit back. It is good practice to retain the shipping container for future shipping or transporting of the unit.

2.2 Battery Pack

The MSI-4260 IS is powered by a 12 V Sealed Lead Acid (SLA) rechargeable battery.
This battery will operate for up to 80 hours (depending on LED brightness setting) before requiring recharging.
Charging time for a completely discharged battery is up to 12 hours. A spare battery pack is recommended to keep the MSI-4260 IS in continuous operation due to an extended battery charge time.

WARNING: Only the Rice Lake Weighing System approved Intrinsically Safe Battery can be used with the MSI-4260 IS. This battery is incompatible with non-Intrinsically Safe MSI products. Refer to the Conditions of Use in Hazardous Locations (PN 184530) for intrinsic safety information on the battery.

IMPORTANT: To obtain maximum service life from the batteries they should be stored between -4°F and 122°F (-20°C and +50°C). Stored batteries should be recharged every three months. The battery is fully charged when the status indicator on the battery charger is flashing.

2.2.1 Battery Life

The battery life of the MSI-4260 IS depends on several factors:

- LED display brightness and number of segments lit
- RF activity
- Battery age
- SLA battery condition

The MSI-4260 IS includes the following power saving features:

- Automatic Power Off mode — Senses no activity after the set amount of minutes and turns the scale off
- Automatic Sleep mode — Dims the display after a set amount of minutes of no scale activity

The MSI-4260 IS automatically turns off when the SLA battery drops to approximately 10.5V. Recharge the battery when this happens, SLA batteries benefit from frequent recharging and can be recharged when it still has available life.
Due to the maintenance discharge imposed on the battery by the MSI-4260 IS electronics, do not store the MSI-4260 IS with the battery inside. Remove the battery if it will not be used for more than two weeks.

IMPORTANT: Leaving a discharged battery in the scale, which has a maintenance battery drain, can result in a deep discharged battery which will shorten its service life.

NOTE: If the scale is in continuous use, a fully charged spare battery is recommended. Replace the drained battery as close as possible to the low battery warning.

SLA batteries that have not been deep discharged should withstand 500 to 1500 charging cycles.

Low battery warning annunciator indicates about two to four hours of use before MSI-4260 IS powers off.

If the MSI-4260 IS is not going to be used again soon, remove SLA battery to prevent deep discharge while unit is in storage.

Recycle the battery at an authorized recycling center when the average life drops to 20 hours or less.

2.2.2 Battery Charger

The MSI-4260 IS is shipped with a battery charger designed to charge and maintain the battery. Exact charging time will depend on the degree of discharge of the battery. A battery removed when the low battery warning first appears should take about eight hours to fully charge.

DANGER: Charger is for indoor use only and should not be used in wet locations.

NOTE: When the battery is new, it might take significantly longer for the initial charge. It is recommended to charge a new battery for 24 hours. It might take several charge/discharge cycles before full capacity is reached. Deep discharged batteries will also take significantly longer to charge.

WARNING: The battery charger is not certified for use in hazardous environments. The battery must be removed and charged in a non-hazardous area. Refer to the Conditions of Use in Hazardous Locations document (PN 184530) for intrinsic safety information.

Charge Procedure

Use the following steps to charge a battery.

1. Remove the battery from the MSI-4260 IS (Figure 2-2 on page 14).
2. In a safe environment, plug the polarized connector into the jacks on the battery.
3. Connect the charger assembly to an AC power supply (86-260 VAC).

NOTE: Unless the battery charger is first connected to the battery before plugging it into an AC power supply, the battery charger will be stuck in float mode and will not charge the battery. This will not cause any damage to either the charger or the battery. The charger will work properly if it is disconnected from the AC power and then plugged into the AC power again after waiting for 30 seconds.

4. The charge status light should turn ***RED*** indicating bulk charging.
5. Charge until the status light turns ***GREEN***. This indicates the charger is in top off mode. The battery has sufficient charge for use, but continuing to charge until the status light turns ***BLUE*** will ensure that the battery has a full charge.
6. The charger and battery are in float charge mode when the charge indicator turns ***BLUE***.

When the charge cycle is complete, the battery can be left on the charger until it is needed. The charger keeps a maintenance float charge on the battery to ensure the best possible operation times.

IMPORTANT: For maximum service life from batteries, the manufacturer suggests recharging after each 20 hours of use. Continuous deep discharging reduces maximum battery life cycle estimated at 2000 cycles.

Charge Annunciators

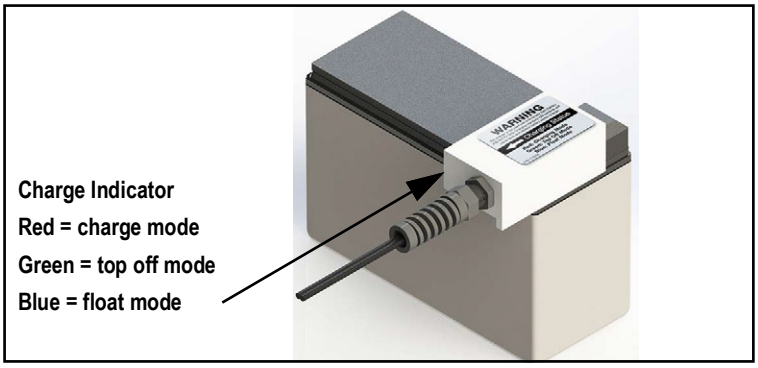


Figure 2-1. Battery Charger Connected to Battery

The battery charger is a universal input type that is a three-stage float charger that can be left on the battery indefinitely. It is rated for 100-240 VAC, 50-60 Hz. It has a tricolor LED to indicate the charging state.

- Red – Charge mode
- Green – Top off mode
- Blue – Float (fully charged) mode

If the status light remains green when the battery is first plugged in, the battery may be defective.

2.2.3 Battery Replacement

1. Turn the MSI-4260 IS off.
2. Hold the battery cover and release the latches.
3. Slowly lower the cover while holding the battery in place.
4. Remove the battery by pulling straight back.
5. Charge the spent battery in a safe area.
6. Install a fully charged battery by plugging it in to the exposed battery jacks.
7. Close the battery cover.
8. Reset the latches. Make sure the latches are completely latched and the cover is firmly in place.

Figure 2-2. Remove Battery

IMPORTANT: Periodically, inspect the battery latches for fit. Adjust the screw latch by rotating the catch on its threads to maintain a tight seat on the battery O-ring.

CAUTION: The 12 V Sealed Lead Acid battery can be a dangerous falling hazard. When opening the battery hatch, be sure to hold the battery to prevent it from falling. These batteries contain lead and should be recycled when it has reached its end of life.

Only an Intrinsically Safe Battery can be used with the MSI-4260 IS. This battery is incompatible with non-Intrinsically Safe MSI product. The intrinsically safe battery pack can be removed in the protected area, but must be charged in a safe environment.

2.3 Servicing from existing MSI-4260 IS

The entire scale must be shipped back to Rice Lake Weighing Systems for repair. Please contact a local dealer or Rice Lake Weighing Systems to obtain a return material authorization (RMA). There are no user serviceable parts within the MSI-4260 IS. All repairs are to be performed by qualified service personnel only. Removing the warranty and liability label compromises the FM rating.

3.0 Operation

The following sections describe the basic operation of the MSI-4260 IS.

3.1 Power

The power key turns the MSI-4260 IS power on. While in Weigh mode, it also turns the power off.

Press POWER to turn on the power. The following sequence displays:

1. All LED segments light at full brightness as a display test.
2. SoFt displays, followed by the software version number.
3. StAnd followed by the weighing standard.
4. bAtt displays, followed by the battery voltage.
5. d.tESt displays, followed by the display counting from 00000 to 99999.
6. C-CAL displays, followed by the C-CAL value.
7. MSI-4260 IS enters Weigh mode.

While in Weigh mode, press POWER to turn off the power.

IMPORTANT: The scale has a maintenance battery drain. Always remove the battery if the scale will be off for an extended period of time. Leaving a discharged battery in the scale can result in a deep discharged battery which will shorten its service life.

3.2 Zero

The zero key sets the zero reading of the scale.

Press ZERO to remove small deviations in zero when the scale is unloaded. For zeroing (taring) package or pallet weights, see Section 3.3. The zero key can be used in ***GROSS*** or ***NET*** mode.

NOTE: The backup memory in the unit stores the zero reading and retains it even if the power fails.

Zeroing while in NET mode will zero the GROSS weight causing the display to show a negative tare value.

The scale must be stable within the stable window.

The unit will only zero if ◣ ◢ is on and there has been no activity for two seconds. If a motion ceases within the motion window in that time, the scale will zero.

The scale will accept a zero setting over the full range of the scale (NTEP and other Legal for Trade models may have a limited zero range).

Zero settings above 4% of full scale will subtract from the overall capacity of the unit.

Example: If 100 lb on a 1,000 lb scale is zeroed, the overall capacity of the scale will reduce to 900 lb, plus the allowed over-range amount.

3.3 Tare

Tare is used to zero out a known weight, such as a packing container or pallet, and display a ***NET*** weight. The ***TARE*** function is defined as a ***Tare-In*** or ***Tare-Out*** operation.

To tare the scale:

1. Hang the empty container from the scale.
2. Press TARE to enter a tare value. The MSI-4260 IS stores the current weight as a tare value and subtracts the value of the container from the ***GROSS*** weight. 0 displays and the Weigh mode changes to ***NET***.
3. Add the product to the packing container. The ***NET*** weight displays.

NOTE: To set a new tare, the existing tare must first be cleared. The MSI-4260 IS will not set a new tare over an old tare.

3.3.1 View Tare

To view the ***GROSS*** weight without clearing the tare value:

1. Program USER to the ***NET/GROSS*** function (Section 4.2 on page 21).
2. Press USER to toggle between ***NET*** and ***GROSS*** values. This will only work if a tare value has been established.

NOTE: The backup memory in the MSI-4260 IS stores the Tare reading and can restore it even if power fails.

Only positive GROSS weight readings can be tared. The STABLE annunciator must be on, indicating weight reading is stable. Setting or changing the tare has no effect on the GROSS zero setting. Taring will reduce the apparent over range of the scale. The RF Remote Control has NET/GROSS permanently available.

Example: Taring a 100 lb container on a 1,000 lb scale, the scale will overload at a NET weight of 900 lb (1,000-100) plus any additional allowed overload (usually 4% or 9d).

3.3.2 Clear Tare

To clear a saved tare value, press TARE. The ***GROSS*** weight displays.

NOTE: Only positive gross weight readings can be tared.

The ◣ ◢ must be off indicating weight reading is stable.

Setting or changing the tare has no effect on the gross zero setting.

Taring will reduce the apparent over-range of the scale.

The scale stores the tare value in non-volatile memory and is restored when power is cycled.

Example: Taring a 100 lb container on a 1000 lb scale, the scale will overload at a net weight of 900 lb (1000-100) plus any additional allowed overload (usually ~4% or 9d).

3.4 Function Key

The USER key can be programmed in the setup menu (Section 4.2 on page 21) to one of the following functions. Some functions require additional programming in the setup menu to work correctly.

3.4.1 Test

When the USER key is programmed to tESt (Section 4.2 on page 21), pressing the key prompts the scale to scroll through the following sequence and returns to Weigh mode:

1. All LED lights display momentarily at once.
2. SoFt displays, followed by the software version number.
3. StAnd followed by the weighing standard
4. bAtt displays, followed by the battery voltage.
5. d.tESt displays, followed by the display counting from 00000 to 99999.
6. C-CAL displays, followed by the C-CAL value.

NOTE: Other internal tests are performed and if any test fails, an error code displays. See Section 6.0 on page 35 for information on the troubleshooting guide.

Automatic Scroll Test

- Press USER to start the test

The unit automatically scrolls through the test sequence and returns to Weigh mode

Single Step Test Mode

To stop the automatic scroll of the test procedure, begin the automatic scroll test and press USER again within two seconds to enable a single step test mode.

1. Press USER to scroll through the available test functions.
2. Press TARE to start or display the individual tests.
3. Press ZERO to exit individual tests.
4. Press ZERO to exit from the test function.

3.4.2 Total

When the USER key is programmed to totAL (Section 4.2 on page 21), pressing the key prompts the scale to perform the total function that has been be set in the setup menu. That can be, OFF, ttLOn, A.LoAd, A.LASt, or A.HIGH. For more information on these parameters and setup see Section 4.7 on page 24. If nothing has been set, nothing will happen when USER is pressed.

- Press USER to start the complete the total function

NOTE: The Total mode must be programmed from the Setup menus before the USER key will function.

3.4.3 View Total

When the USER key is programmed to u-ttL (Section 4.2 on page 21), pressing the key prompts the scale to display total weight followed by the number of samples that have been saved.

1. Press USER to display the total weight.
2. With the Total weight displayed, press ZERO to clear.

3.4.4 Net / Gross

When the USER key is programmed to nEtGr (Section 4.2 on page 21), pressing the key prompts the scale to switch the display between ***NET*** and ***GROSS*** modes. This will only work if a tare value has been established.

- Press USER to toggle between NET and GROSS modes

NET weight is defined as ***GROSS*** weight minus a tare weight.

The operator can switch back to ***GROSS*** from ***NET*** without clearing the tare value. Only clearing or setting a new tare will change the tare value held before switching into ***GROSS*** mode.

NOTE: OIML Legal for Trade units only: The NET/GROSS key is a temporary action only. The GROSS weight displays for two seconds and then the display returns to the NET mode. The only way to return to permanent GROSS readings is to clear the tare (Section 3.3.2 on page 17).

3.4.5 Peak Hold

When the USER key is programmed to P-HLd (Section 4.2 on page 21), pressing the key clears and re-enbles the scale to only update the display when a higher weight reading is established. The peak hold function uses a high-speed mode of the A/D converter allowing it to capture transient weights at a far higher rate than typical scales.

Peak hold is cleared and re-enabled with the USER, that has been set to P-HLd.

Peak hold is not available on NTEP or OIML Legal for Trade certified scales.

3.4.6 Units

When the USER key is programmed to Un it (Section 4.2 on page 21), pressing the key changes the displayed units.

- Press USER to toggle display between available units

NOTE: Unit switching is not available on OIML certified Legal-for-Trade scales.

3.4.7 High Resolution Test Mode

When the USER key is programmed to hi rES (Section 4.2 on page 21), pressing the key prompts the scale to toggle between normal Weigh mode and High Resolution Test mode. High Resolution Test mode displays weight at x10 resolution. While in High Resolution Test mode, all of the annunciators flash to indicate that the weight display is not set to the approved legal-for-trade resolution.

- Press USER to toggle between normal and x10 resolution display

In some cases, the displayed weight in high resolution test mode will require six digits to fully display. In these cases, only the five least significant digits will be displayed. The full weight can be displayed in normal resolution by pressing the function button.

Ex: 1000.02 kg displays as 000.02 kg.

NOTE: High resolution test mode is for scale service and diagnostic use only.

Increasing the scale display resolution beyond the calibrated value does not increase scale accuracy.

High resolution test mode is not available in HB-44 and R-76 standards.

4.0 Setup

The Setup menu enables configuration of the MSI-4260 IS. This section details settings and parameters that are configured in the Setup menu. For navigation and numeric entry information, see Section 1.5.1 on page 10.

4.1 Setup Menu

To enter into the MSI-4260 IS ***Setup*** menu, press POWER and USER simultaneously.

Parameters	Choices	Description
FUnc	OFF	Function User Key 1 – User definable key that can be programmed to one of several functions
		Function User Key 2 – Not Available
	tESt	Test Display – Section 3.4.1 on page 17
	totAL	Total – Section 3.4.2 on page 18
	u-ttL	View Total – Section 3.4.3 on page 18
	nEtGr	Net/Gross – Section 3.4.4 on page 18
	P-HLd	Peak Hold – See Section 3.4.5 on page 19; Function not available or non-functional in OIML R76 or NTEP HB44 modes
	Unit	Units – See Section 3.4.6 on page 19; Function not available or non-functional in OIML R76 & 1Unit modes
	HIrES	High Resolution – x10 display resolution; All annunciators blink; For testing and maintenance use only; Function not available in OIML R76 or NTEP HB44 modes; Does not increase scale resolution or accuracy – Section 3.4.7 on page 19
A-OFF	OFF 15 30 45 60	Auto Off Time – Prolongs battery life of scale by turning power off after the set time (in minutes) that the scale is not in use (Section 4.3 on page 21)
SLEEP	OFF 5 15 30	Sleep – Time (in minutes) before unit enters the sleep mode (Section 4.4 on page 21)
dISPL	LO-1 LO-2 HI-1 HI-2 Auto	LED Display Intensity – Used to set the display brightness (Section 4.5 on page 22)
StPt 1-3	OFF GrEAt LESS	Setpoints 1-3 – Used for warnings or process control (Section 4.6 on page 23)
totAL	OFF ttLOn A.LoAd A.LASt A.HIGH	Total Mode – Accumulation of multiple weighments (Section 4.7 on page 24)
FILtr	OFF LO HI-1	Weight Filter – Allows the scale to adjust to situations where there may be movement (Section 4.8 on page 25)
Unit	Lb KG	Weight Units – Toggle units between pounds and kilograms; Function not available or non-functional in OIML R76 & 1Unit modes (Section 4.9 on page 25)
b.LIFE	StAnd LonG	Battery Life – Sets the options for standard or extended battery life (Section 4.10 on page 25)

Table 4-1. Setup Menu Parameter Descriptions

4.2 Set Function Key

The MSI-4260 IS has one user definable key USER on the front panel, that can be programmed to one of several functions. The additional function key is available on the RF remote control being used.

NOTE: If a function key does not work, it is probably because the MSI-4260 IS is not set up to support the key. For example, if the Function Key is set for* TOTAL*, the TOTAL mode must also be set up in the Setup menu.

To set the function key use the following steps:

1. Press and hold USER and POWER. FUnC displays.
2. Press TARE. The current user key function displays.
3. Press USER to scroll through the available functions.
4. Press TARE when the desired function displays. A-oFF displays.
5. Press ZERO. StorE displays, the unit exits setup and stores the settings.

NOTE: Press* POWER *at any time to cancel the procedure.

4.3 Auto-Off

The ***Auto-Off*** feature prolongs the battery life by automatically powering off the unit if no buttons are pressed and there is no change in the load exceeding 10 d for the time period, in minutes, set by the user. When a button is pressed or the detected load is in motion exceeding 10 d, the time limit is reset.

When disabled, the unit will only turn off by pressing POWER, or if the battery dies. To set the ***Auto-Off*** function:

1. Press and hold USER and POWER. FUnC displays.
2. Press USER to scroll to A-oFF.
3. Press TARE. The current auto off time displays.
4. Press USER to scroll through the available times.
5. Press TARE when the desired time displays. SLEEP displays.
6. Press ZERO to exit setup and store the settings.

NOTE: Press* POWER *at any time to cancel the procedure.

4.4 Sleep

The sleep parameter reduces power consumption by automatically turning off the display during periods of inactivity. While in the sleep mode, the green acknowledge annunciator will blink at a one second rate to indicate the unit is in sleep mode. To wake up the unit, either a button must be pushed (front panel or RF remote) or the weight must change by 5 d or more.

NOTE: Sleep must be set to less time than the Auto-Off timer.

1. Press and hold USER and POWER. FUnC 1 displays.
2. Press the USER to scroll to the SLEEP function.
3. Press TARE. The current SLEEP time displays.
4. Press the USER to scroll through the available times.
5. Press TARE when the desired time displays. diSPL displays.
6. Press ZERO to exit setup and store the settings.

NOTE: Press POWER at any time to cancel the procedure.

4.5 Display Brightness

The ***Display*** setup menu is used to set the display brightness. There are four fixed brightness settings and one automatic light sensing brightness setting.

Auto setting automatically detects the ambient light and adjusts the brightness of the display accordingly.

There are four fixed brightness settings, ***LO-1***, ***LO-2***, ***HI-1*** and ***HI-2***. Lower brightness settings increase battery life.

1. Press and hold USER and POWER. FUnC 1 displays.
2. Press the USER to scroll to the diSPL.
3. Press TARE. The current setting displays.
4. Press the USER to scroll through the available settings.

NOTE: The display brightness changes when each setting displays.

5. Press TARE when the desired setting displays. CoLor displays.
6. Press ZERO to exit setup and store the settings.

NOTE: Press POWER at any time to cancel the procedure.

4.6 Setpoints

The MSI-4260 IS supports three setpoints. Common uses of set points are for warnings or process control. It comes standard with LED outputs for a triggered set point.

Figure 4-1. Setpoint LED's

The MSI-4260 IS has an audible output option that is triggered by Setpoint 1. Contact Rice Lake Weighing Systems for other setpoint output options.

Setpoint	Description
Setpoint Mode	
GrEAt	Indicates the setpoint will trigger when the weight exceeds a set value
LESS	Indicates the setpoint will trigger when the weight is less than a set value
Setpoint Weight Type	
nEtgr	responds to net or gross weight
Gross	responds to gross weight regardless of the display
totAL	responds to the totaled weight
t-cnt	responds to the total count (number of samples)
LFcnt	responds to the number of times the weight has exceeded 25% of capacity

Table 4-2. Available Setpoint Settings

To set the setpoint:

1. Press and hold USER and POWER. FUnC 1 displays.
2. Press USER to scroll to the desired setpoint (StPt 1 - 8).
3. Press TARE. The current StPt mode displays.
4. Press USER to scroll to the setpoint mode desired.
5. Press TARE. The current StPt weight type displays.
6. Press USER to scroll to the desired weight type.
7. Press TARE. The current setpoint weight value displays.
8. Press USER. The first digit will blink.
9. Press USER to scroll to the desired number.
10. Press TARE. The second digit blinks.
11. Repeat Step 8 – Step 10 until the desired value displays.

NOTE: To enter a decimal point, press POWER while the digit is blinking. To correct a digit, press ZERO to step back.

12. Press TARE. The value will stop blinking and the next setup menu item displays.
13. Repeat Step 2 – Step 12 to set all the setpoints to be used.
14. Press ZERO to exit setup and store the settings.

NOTE: Press POWER at any time to cancel the procedure.

4.7 Total

Total function is used to accumulate multiple weighments so that gross and net readings can be added into the same total number. There are four modes of totalizing: one manual mode and three auto modes.

The manual total mode and three auto total modes all require that the weight on the scale return below 0.5% (relative to full scale) of ***GROSS ZERO*** or ***NET ZERO*** before the next weighment can be added. Applied weight must be ≥1% of full scale above ***GROSS ZERO*** or ***NET ZERO*** before it can be totaled.

Manual Total Mode

The manual mode requires the **TOTAL** key be pressed with the weight on the scale. The weight will be added to the previously accumulated value. This assures that a weight on the scale is only added to the total once.

The **USER** key under the ***MANUAL TOTAL*** mode functions in this manner:

- If weight is greater than 1% of capacity and has not been totaled – Pushing the **USER** key will add the current weight to the TOTAL weight. The displayed weight blinks to indicate the weight was accepted. The TOTAL annunciator lights and the Total weight displays for five seconds and then the number of samples displays for two seconds.
- If current Weight has been totaled – Pushing the **USER** key displays the Total weight for five seconds (View Total) without changing the Total value. The TOTAL annunciator will light during the TOTAL weight display. After five seconds of Total Weight display, the number of samples displays for two seconds.
- If weight is less than 1% of capacity – The **USER** key functions as View Total only and functions as View Total until the 1% threshold is exceeded to allow the next addition to the total value.

Auto Total Modes

The **USER** key under the ***AUTO TOTAL*** mode functions as Auto Total On / Auto Total Off.

The Auto mode has three variations which are programmed in the Setup menu:

- **A. LoAd – AutoLoad** ensures any settled load above the Rise above threshold will be automatically totaled. The scale must fall below the Drop below threshold before the next total is allowed.
- **A. LASt – AutoLast** mode takes the last settled weight to auto total with. The total occurs only once the scale goes below the threshold. This allows the load to be adjusted without a total occurring. Once the load is removed, the scale uses the last settled reading for total.
- **A. HIGH – AutoHigh** uses the highest settled reading. This is useful for loads that can't be removed all at once.

NOTE: Total mode will not function while the scale is in motion, make sure ◣ ◢ is on. If the system fails to achieve stable readings, increase the filter setting or increase the size of the scale division (d) in the Init Cal procedure.

NOTE: If 1K is illuminated, read the total as the displayed value multiplied by 1000.

Set Total Mode

1. If the unit is turned off, press and hold 

then press 

   If the unit is on, press 

and 

simultaneously. FUnc 1 displays.

2. Using the 

, scroll to totAL.

3. Press 

. The currently saved total mode displays.

4. Press 

to scroll through the choices.

5. With choice displayed, press 

to select. FILtr displays.

6. Press 

to save and exit to weighing mode or press 

to continue to another setup menu item.

4.8 Filter Setup

Changing the filter settings allows the scale to adjust to situations where there is a lot a movement in the structure. If the reading is not stable, it can often be improved by increasing the filter setting. Settling time will be longer as the filter setting is increased. However, the MSI-4260 IS employs algorithms that speed up large weight changes while still controlling vibration even with high filter settings.

Use the following steps to set up filtering.

1. If the unit is turned off, press and hold USER then press POWER

   If the unit is on, press USER and POWER simultaneously. FUnc 1 displays.
2. Using the USER, scroll to FILtEr.
3. Press TARE. The currently saved total mode displays.
4. Press USER to scroll through the choices.
5. With choice displayed, press TARE to select. Unit displays.
6. Press ZERO to save and exit to weighing mode or press USER to continue to another setup menu item.

4.9 Unit

1. Press and hold USER and POWER. FUnc 1 displays.

   If the unit is on, press USER and POWER simultaneously. FUnc 1 displays
2. Press USER to scroll to Un it.
3. Press TARE to enter Un it.
4. Press USER to toggle between lb and kg.
5. With the desired choice displayed, press TARE to select.
6. Press ZERO to save and exit to weighing mode.

4.10 Battery Life

1. If the unit is turned off, press and hold USER then press POWER

   If the unit is on, press USER and POWER simultaneously. FUnc 1 displays.
2. Using the USER, scroll to b. L IFE.
3. Press TARE. The currently saved total mode displays.
4. Press USER to toggle between the choices.
5. With choice displayed, press TARE to select. FUnC 1 displays.
6. Press ZERO to save and exit to weighing mode or press USER to continue to another setup menu item.

5.0 Calibration

The MSI-4260 IS is calibrated using standard weights. The weight used to calibrate, must be at least 15% of full capacity in order to achieve rated accuracy. For example, use at least a 750 kg test weight to calibrate a 5000 kg capacity scale. Although a single span point is usually adequate for rated accuracy, the MSI-4260 IS supports Multi-Point calibration with up to four span points plus zero.

There are three kinds of calibration:

- **Standard Calibration** – Used for maintenance and routine calibration. (Section 5.2 on page 27)
- **Initial Calibration** – Used to set up both the capacity and resolution (d) of the scale. It differs from Standard Calibration only in the initial steps. The initial calibration is performed after a calibration reset which completely erases the calibration and setup memory. (Section 5.3 on page 28)
- **C-Cal** – Calculated Constant Calibration. Used when test weights are not available. To use C-Cal, a previously generated C-Cal number must be known. (Section 5.5 on page 30)

5.1 Calibration Switch Access

Use the following steps to access the calibration switch on the MSI-4260 IS if calibrating the unit using either the standard calibration or the C-Cal calibration.

1. Remove the hex seal screw from the MSI-4260 IS.

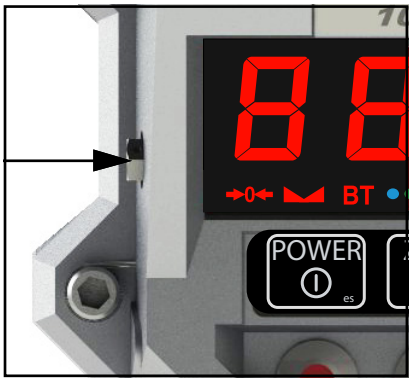


Figure 5-1. Calibration Switch Seal Screw

2. Using a small screwdriver, press the Cal switch located behind the hex seal screw. CAL displays.

5.2 Standard Calibration

Use the following steps to calibrate the MSI-4260 IS using the standard calibration procedure.

1. Press Cal switch to initiate Calibration. (Section 5.1 on page 26)
2. Press TARE, UnLd displays.
3. Press TARE when the scale becomes motionless, a blinking 0 displays. If the scale is in range PASS displays, then LoAd 1 displays.
4. Load the scale with a test weight.

   NOTE: For a single span point calibration, a test weight of more than 15% of capacity or more is recommended

5. Press . The current capacity flashes on the display.

   NOTE: If loading the scale with the capacity weight, skip to Step 8.

6. Press to enter the value of the test weight. The far left digit blinks indicating a number should be entered.
7. Press to scroll the numbers and to enter each digit as in Section 1.5.1 on page 10.
8. Press to save the weight entry. If the cal value is within limits, PASS displays briefly then LoAd2.

   NOTE: Display displays LoAd3 and LoAd4 after the second and third cal values have been entered. After the fourth cal value has been entered, CAL' d displays. Continue to .

9. If additional cal points are needed, press and repeat steps Step 4 through Step 8 for each additional cal point.
10. When all cal points have been recorded, press . CAL' d displays to indicate that the calibration was successful.
11. Press C-CAL briefly displays followed by the C-Cal number.
12. Press to store the calibration. SEtUP displays.
13. Press to exit the calibration menu. Scale returns to Weigh mode.
14. Replace the hex seal screw that was removed in Section 5.1 on page 26.

5.3 Initial Calibration

Use this procedure only if the capacity and count-by (d) needs to be modified. The initial steps of the initial calibration will totally erase user setup as well as any previous calibration.

Use the following steps to calibrate the MSI-4260 IS using the initial calibration procedure.

1. Turn the MSI-4260 IS off.
2. Remove the hex seal screw using the steps in Section 5.1 on page 26.
3. Press the ***Cal*** switch and the ***Power*** switch on the unit simultaneously. rESEt displays.
4. Press TARE to reset the calibration constants. SurEP displays.
5. Press TARE to confirm. CAL displays.
6. Press TARE to start the configuration. Un it displays.
7. Press TARE to choose unit.
8. Press USER to toggle between lb and kg.
9. Press TARE to confirm unit. CAP displays.
10. Press TARE to set scale capacity. Initial value of 10000 displays.

NOTE: 10000 is the initial default value. Capacity should be set no higher than the load cell rated capacity.

11. Press USER to change the capacity. the first digit on the display blinks.
12. Press USER to scroll the numbers and TARE to enter each digit as in Section 1.5.1 on page 10.
13. Press TARE to store the capacity value. d displays.
14. Press TARE to choose scale divisions.
15. Press USER to scroll through the recommended scale divisions.
16. Press TARE to select scale division. UnLd displays.
17. Calibrate the MSI-4260 IS as in Section 5.2 on page 27 beginning with Step 2.

5.4 Guidelines for Capacity and Resolution

Capacity and resolution are set in the initial calibration of the MSI-4260 IS.

5.4.1 Capacity

Setting capacity is determined primarily by the capability of the load cell.

NOTE: Never set the capacity of the scale higher than the rating of the load cell.

It is acceptable to set lower capacities to better match the crane the MSI-4260 IS is used on. For example, if the hoist is rated for 9000 lb, use an MSI-4260 IS with 10,000 lb capacity and reset the capacity to 9000 lb so that the scale will indicate overload at 9000 lb instead of 10000 lb. De-rating as much as 50% of the capacity is usually acceptable, but the scale may be less stable if the 'd' is decreased.

Due to kg to lb conversions, the capacity of all MSI-4260 IS systems is rated approximately 20% higher than the rated capacity in pounds. This is to allow the kg capacity to be exactly 1/2 the number of the pound capacity.

5.4.2 Resolution

Due to Legal-for-Trade requirements and general scale design criteria, the weight must be stable for certain features to work:

- ZERO – Weight must be stable to be zeroed
- TARE – Weight must be stable to be tared
- TOTAL – Weight must be stable to be added to the total registers

If the MSI-4260 IS does not become stable under standard operation, it is recommended that the resolution be reduced and/or filtering increased. Some improvement in stability can be achieved by increasing the filtering (Section 4.8 on page 25). Resolution is reduced by increasing the "d" value during initial calibration (Section 5.3 on page 28). Rice Lake Weighing Systems recommends that the resolution is kept in the 1:2000 to 1:3000 range. Never program the resolution greater than needed.

The third way to increase stability is to increase the ***Motion Window***. The MSI-4260 IS defaults to ±1d as a motion window. It can be changed at Rice Lake Weighing Systems to a higher value if desired. Often ±3d is chosen for bridge cranes as they tend to have a lot of bounce to them. This of course carries an accuracy penalty adding ±3 d to the total accuracy of the scale if the zero or tare operation happens to capture the weight in a valley or peak.

NOTE: Motion Window can only be changed by Rice Lake Weighing Systems.

5.5 C-Cal Calibration

When adequate test weights are not available, the MSI-4260 IS can be calibrated using a programmed constant calibration number which is referred to as C-Cal. To perform C-Cal, a C-Cal number must be known from a previous calibration. MSI supplies replacement load cells for the MSI-4260 IS with the C-Cal value stamped on the serial number label. When a calibration is performed with test weights, a new C-Cal is generated. C-Cal can be used when the electronics are replaced to get an approximate calibration that may be suitable for non L-F-T applications.

IMPORTANT: The C-Cal number must be known prior to starting this procedure. For a MSI-4260 IS with its original load cell, MSI prints this number on the calibration record, the serial number tag and on the calibration log found inside the battery compartment.

C-Calibration can be done if the electronics are replaced or a new load cell is installed. C-Cal reduces the absolute accuracy of the system and is intended for non-critical use only. Legal-for-Trade installations require that the MSI-4260 IS is calibrated using test weights. If a system was originally multi-point calibrated, the C-CAL calibration will erase the additional span points, as C-Cal is only a two point calibration (zero and span at 10% of capacity).

Use the following steps to perform a C-Cal calibration.

1. Remove the hex seal screw from the MSI-4260 IS and enter the calibration menu using the steps from Section 5.1 on page 26.
2. Press USER to scroll to the C-Cal menu selection. C-CAL displays.
3. Press TARE to start the C-Cal procedure. UnLd displays.
4. Remove all weight from hook.
5. Press TARE to set the zero calibration point. A flashing 0 displays.
6. If the zero is in range, PASS displays, folowed by CCALP
7. Press TARE to confirm.
8. Press USER to enter the C-Cal value. The first digit on the display blinks.
9. Press USER to scroll the numbers and TARE to enter each digit as in Section 1.5.1 on page 10.
10. Press TARE to save the C-Cal value. SSAP displays, followed by dLAC.
11. Press ZERO to exit C-Cal setup menu.
12. Press ZERO again to store the calibration and return to the scale operation. EroES displays.

5.6 Calibration Setup Menu

Remove the hex seal screw from the MSI-4260 IS and enter the calibration menu using the steps from Section 5.1 on page 26.

The Calibration Setup menu contains two additional items beyond Calibration:

- Standard menu
- Auto Zero Maintenance menu (AUtoO).

In addition, more menus will appear that are transferred from the main setup menu when Legal-for-Trade settings are used.

Selection	Description
Industrial (indUS)	This is the most common setting for the MSI-4260 IS; With the Industrial standard, you have full range zero, access to units switching, filters, and peak hold
Handbook 44 (Hb-44)	Sets the scale to enable only approved features per the NTEP HB-44 rules and regulations; Access is denied to Peak Hold, and the zero range may be limited; The Filter menu is moved to the Cal Setup menu, so filters are only accessible through the Cal Seal
R-76 (r-76)	Sets the scale to enable only approved features per OIML R-76; Only kg weight units are available; The zero range is limited to 4% (-1 to +3% relative to Calibrate zero); Net/Gross function is temporary; Once Net weight is established, pushing an F key set for Net/Gross will cause a maximum 5 second display of the Gross weight; You must clear the Tare to display Gross weight constantly; Other metrological aspects are changed to meet R-76 requirements; Only stable weights may be printed; Negative weight display is limited to -20d
One Unit (1Un it)	The one unit Standard is exactly the same as Industrial, except units switching is inhibited; This is useful for Metric only countries; Another use of the One Unit standard is to allow the scale to be calibrated in units other than lb or kg, since conversions are eliminated; Contact MSI for more information on the Standards settings

Table 5-1. Standard Menu Selections

Use the following steps to set up a Legal-for-Trade standard settings.

1. Remove the hex seal screw from the MSI-4260 IS using the steps from Section 5.1 on page 26 and CAL displays.
2. Press USER. SEtUP displays.
3. Press TARE to enter the Cal setup menu.
4. Press TARE to enter the standard menu. The current standard setting displays.
5. Press USER to scroll to the desired standard. 1 Un it displays.
6. Press TARE to set the standard. AUtoCAL or the next item in the CAL setup menu displays.
7. Press ZERO twice to exit setup and store all changes. StorE displays.

5.7 Auto Zero Maintenance

The MSI-4260 IS employs an auto-zeroing maintenance mechanism to adjust the zero reading to the center-of-zero (COZ). COZ is defined as the weight reading is within 1/4 'd' of zero. AZM continuously adjusts zero to maintain COZ.
It is recommended that AZM is on to maintain the highest accuracy. However, there are circumstances when it should be turned off. This can happen when minor variations of weight occur while picking up scale attachments and the variations fall within the AZM capture window. The AZM capture window (usually 1 'd') and capture time (usually eight seconds) can be adjusted by MSI to meet custom requirements. The settings of AZM are dictated in Legal-for-Trade standards and cannot be adjusted.

Use the following steps to set up the auto zero maintenance.

1. Remove the hex seal screw from the MSI-4260 IS using the steps from Section 5.1 on page 26 and CAL displays.
2. Press USER. SETUP displays.
3. Press TARE to enter the Cal setup menu. STAnd displays.
4. Press USER to scroll to the Auto0 menu. AUtoO displays.
5. Press TARE to enter the Auto Zero menu. The current setting (blinking) displays.
6. Press USER to scroll between the on or off key.
7. Press TARE to set the auto zero. STAnd displays.
8. Press ZERO twice to exit setup and store all changes. StorE displays.

5.8 Filter

Changing the filter settings allows the scale to adjust to situations where there is a lot a movement in the structure. If the reading is not stable, it can often be improved by increasing the filter setting. Settling time will be longer as the filter setting is increased. However, the MSI-3460C employs algorithms that speed up large weight changes while still controlling vibration even with high filter settings. Selections are OFF, LO and HI-1.

1. Enter ***Configuration*** mode (Section 5.1 on page 26). CAL displays.
2. Press USER to scroll to SETUP.
3. Press TARE. STAnd displays.
4. Press USER to scroll to FILtr.
5. Press TARE. The current setting displays.
6. Press USER to scroll to desired setting.
7. When desired value is displayed, press TARE. STAnd displays.
8. Press ZERO twice to save settings. StorE displays briefly and exits setup.

5.9 Gravity Compensation

Gravity Compensation allows for calibrating in one geographic location for use in a different geographic location. Gravity can be set to OFF, ON, or Factor.

Parameter		Choices	Description
OFF			Gravity compensation disabled
On	--		Calculates Gravity compensation using the origin and destination latitudes and elevations
	LAtOr	0-90	Latitude of Origin - Original latitude (to nearest degree) for gravity compensation; 47 (default)
	ELEOr	-9999-9999	Elevation of Origin - Original elevation (in meters) for gravity compensation; 10 (default)
	LAtdt	0-90	Latitude of Destination - Destination latitude (to nearest degree) for gravity compensation; 47 (default)
	ELEdt	-9999-9999	Elevation of Destination - Destination elevation (in meters) for gravity compensation; 10 (default)
FACtOr	--		Calculates gravity compensation using origin and destination gravity factors
	FAcOr	9.00000-9.99999	Gravity of Origin - Original gravity factor (in m/s²) for gravity compensation; 9.8080 (default)
	FAcdt	9.00000-9.99999	Gravity of Destination - Destination gravity factor (in m/s²) for gravity compensation; 9.8080 (default)

Table 5-2. Gravity Compensation Parameters

NOTE: To find the local gravity, enter the latitude and elevation into the International Gravity Formula. Listed are links to websites that can be used to determine local latitude and elevation. Please note these website addresses are provided for reference only and may change.

Map Coordinates uses Google maps to find latitude and elevation: www.mapcoordinates.net/

Once local latitude and altitude have been determined, use the following link to calculate local gravity http://www.sensorsone.com/local-gravity-calculator/

IMPORTANT: The gravity correction function has not been evaluated by an approvals agency, therefore it is up to the authorized scale dealer to ensure the device is accurate at the intended point of use.

5.9.1 Compensation by Latitudes and Elevations

1. Enter ***Configuration*** mode (Section 5.1 on page 26). CAL displays.
2. Press USER to scroll to SEtUP.
3. Press TARE. StAnd displays.
4. Press USER to scroll to GrACo.
5. Press TARE. The current setting displays.
6. Press USER to scroll to On.
7. Press TARE. LAtOr displays.
8. Press USER to enter latitude of origin.
9. Press TARE. ELEOr displays.
10. Press USER to enter elevation of origin.
11. Press TARE. LAtdt displays.
12. Press USER to enter latitude of destination.

13. Press TARE. ELEdt displays.
14. Press USER to enter elevation of destination.
15. Press TARE to accept elevation of destination.
16. Press ZERO twice to save settings. StorE displays briefly and exits setup.

5.9.2 Compensation by Gravity Factor

1. Enter ***Configuration*** mode (Section 5.1 on page 26). CAL displays.
2. Press USER to scroll to SEtUP.
3. Press TARE. StAnd displays.
4. Press USER to scroll to GrACo.
5. Press TARE. The current setting displays.
6. Press USER to scroll to FACtOr.
7. Press TARE. FAcOr displays.
8. Press USER to enter original gravity factor.
9. Press TARE. FAcdt displays.
10. Press USER to enter destination gravity factor.
11. When desired value is displayed, press TARE.
12. Press ZERO twice to save settings. StorE displays briefly and exits setup.

6.0 Troubleshooting/Maintenance

Problem	Possible Cause	Solution
The display is blank when the **POWER** button is depressed	Discharged battery	Recharge the battery; Allow at least four hours charge
	Defective battery	Replace the battery
	Corroded battery or battery contacts	Clean the battery contacts
	Defective switch or circuit board	Requires authorized service
The display does not function properly, the front panel button does not function normally or the scale will not turn off	Improperly updated software	Reinstall the software
	Faulty circuit board	Requires authorized service
	Loose connectors	Requires authorized service
The scale does not respond to weight changes	Out of calibration	Calibrate the unit
	Faulty load cell	Replace the load cell
	Load cell connector	Check the connector and wires
The display over ranges below 100% capacity	Tared weight is added to load to determine overload point	Return to gross Weigh mode
	Zero requires adjustment	Rezero the scale
	Too much weight has been zeroed	Rezero the scale
The display drifts	AZM (Auto0) is turned off	Turn AZM on
	Rapid temperature changes such as moving the scale from indoors to outdoors	Wait until the scale temperature has stabilized
	Bad load cell	Check load cell and load cell wiring
The displayed weight shows a large error	Scale not zeroed before load is lifted	Zero the scale with no load attached
	lb/kg units causing confusion	Select the proper units
	Requires recalibration	Recalibrate the unit
	Damaged load cell	Check load cell and load cell wiring
The display reading is not stable	Excessive vibration in crane system	Increase filtering or increase ‘d’ in Cal
	Excessive side loading	Improve load train symmetry
	Load cell faulty	Check the load cell connections
The display toggles between *Error* and *LoAd*	Weight exceeds capacity	Reduce weight immediately
	Calibration Faulty	Recalibrate
	Faulty load cell or wiring	Check load cell and load cell wiring
The display toggles between *Error* and *UnLd*	Weight in below the zero range	If the scale is in compression, remove the source
	Calibration faulty	Recalibrate
	Faulty load cell or wiring	Check the load cell connections
The display toggles between *Error* and *A2dLo*	A/D is saturated negative	Check the load cell and load cell wiring
Display toggles between *Error* and *bUtton*	A key is stuck or is being held down	Check switches for damage
		Ensure that a remote is not transmitting continuously
Lo bAtt is blinking	The battery is low	Recharge the battery
Unit turns on, then immediately turns off	The battery is low	Recharge the battery
Weight will not zero	The system not stable	The stable annunciator must turn on for Zero to function; Increase the filtering for more stability
		Increase the filtering for more stability
	Zero is out of range	Legal-for-Trade units have limited zero range; Reduce the weight or use Tare instead
The weight will not Zero, Tare or Total	The system is not stable	Wait for Stable annunciator to turn on, or if in a mechanically noisy crane, increase the filtering or increase the size of the scale increment ‘‘d’. It is also possible to increase the motion window; Contact MSI if you have a problem getting the MSI-4260 IS to zero, tare, or total due to stability issues
Setpoint lights blink	Setpoint enabled and trigger point reached	Disable set points if they are not needed
Manual total does not work	A Function key is not set to “Total”	Set up Func1 or Func2 for “Total”
	The weight must be stable	Increase filtering for more stability
Auto Total does not work	The weight must be stable	Wait for the stable annunciator to turn on, or Increase filtering for more stability
	Weight thresholds not reached	Must exceed 1% of capacity for autototal to work; Must drop below 0.5% of capacity for additional weighments to register

Table 6-1. Troubleshooting

6.1 Service Counters

IMPORTANT: Only a Rice Lake Weighing Systems factory representative can reset the service counters, as these are an important safety warning feature. A thorough load train inspection is necessary to ensure product safety.

Service Counters are important safety warning features and can only be reset at the factory by certified Rice Lake personnel.

As part of the reset process, the service technician will perform a thorough load train inspection to ensure user safety and confirm that the product is ready to be returned for regular service.

See the Crane Scale Safety and Periodic Maintenance Manual (PN 153105) for proper loading techniques to improve the safety and longevity of your MSI Overhead Weighing Product. Download the Crane Scale Safety and Periodic Maintenance Manual (PN 153105) at www.ricelake.com.

The MSI-4260 IS maintains two service counters for safety.

- The first one counts the number of times the scale has been overloaded
- The second counter counts lifts above 25% of capacity

These counters serve to warn the user to inspect the load train after a number of overloads, also when there is a chance of fatigue failure. The power up routine will be interrupted when the lift counter exceeds 16383 lifts or the overload counter exceeds 1023 overloads. If the screen displays LFCnt when unit is powered on:

1. Press TARE to display the 25% lift counter.
2. Press TARE again to see the overload lift counter.
3. Press ZERO to acknowledge the warning and return to standard scale operation.

NOTE: The power up warning message will not appear again for another 16383 lifts (or 1023 overloads).

Access the Service Counters

Use the following steps to access the service counters.

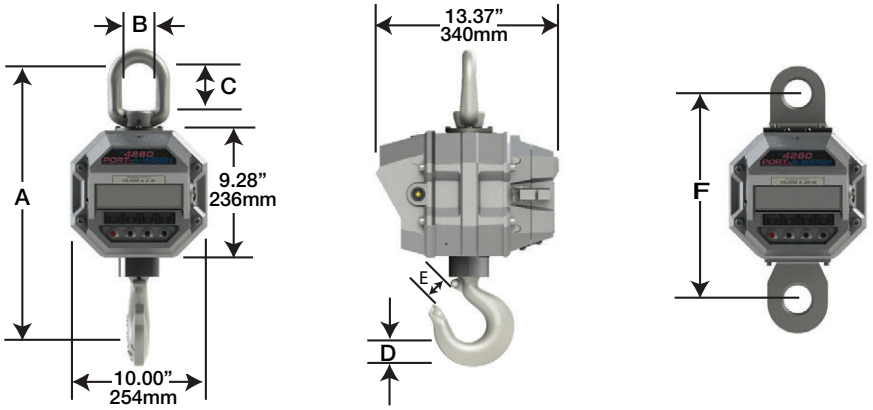
1. Program a user function key to be tESt (Section 4.2 on page 21).
2. Press USER.
3. Press TARE. The display flashes
   - LFCnt (for Lift Counter) followed by the number of times the weight has exceeded 25% of capacity
   - OLCnt (for Overload Counter) followed by the number of times the weight has exceeded capacity
   - C-CAL followed by the C-Cal value

   Then the display returns to the ***Weigh*** mode.

   To stop the scrolling and step through them slowly proceed to Step 4.
4. Press USER immediately after TARE is pressed.
5. Press USER to scroll through counters.
6. Press TARE to enter the counter, the value displays.
7. Press ZERO to return to Weigh mode.

NOTE: After service counters are viewed a few times, the automatic warning stops, but counters continue to monitor lifts.

6.2 MSI-4260 IS Port-A-Weigh Dimensions



Capacity	Resolution**	A*	B*	C*	D*	E*	F	Hook	Eye Nut or Shackle	Safety Factor	Shipping Wt
500 lb 250 kg	0.2 lb 0.1 kg	18.3 in 465 mm	2.25 in 57.1 mm	3.06 in 77.7 mm	1.44 in 37.0 mm	1.41 in 36.0 mm	– –	5 ton alloy swivel	CR# 7 eyenut	>5 >5	53 lb 24 kg
2,000 lb 1,000 kg	1 lb 0.5 kg	18.3 in 465 mm	2.25 in 57.1 mm	3.06 in 77.7 mm	1.44 in 37.0 mm	1.41 in 36.0 mm	– –	5 ton alloy swivel	CR# 7 eyenut	>5 >5	53 lb 24 kg
5,000 lb 2,500 kg	1 lb 0.5 kg	20.5 in 521 mm	2.50 in 64.0 mm	3.50 in 89.0 mm	1.81 in 46.0 mm	1.69 in 42.9 mm	– –	7 ton alloy swivel	CR#8 eyenut	>5 >5	62 lb 28 kg
10,000 lb 5,000 kg	2 lb 1 kg	20.5 in 521 mm	2.50 in 64.0 mm	3.50 in 89.0 mm	1.81 in 46.0 mm	1.69 in 42.9 mm	– –	7 ton alloy swivel	CR# 8 eyenut	>5 >5	62 lb 28 kg
20,000 lb 10,000 kg	5 lb 2 kg	28.5 in 724 mm	4.00 in 101.6 mm	6.25 in 159 mm	2.62 in 66.5 mm	2.41 in 61.2 mm	– –	15 ton alloy swivel	CR# 11 eyenut	>7 >6.5	105 lb 47 kg
30,000 lb 15,000 kg	10 lb 5 kg	30.0 in 762 mm	4.00 in 101.6 mm	6.25 in 159 mm	3.00 in 76.2 mm	3.19 in 81.0 mm	– –	22 ton alloy swivel	CR# 11 eyenut	>5 >5	125 lb 55 kg
50,000 lb 25,000 kg	10 lb 5 kg	41.0 in 1041 mm	5.00 in 127 mm	6.00 in 152 mm	3.62 in 92.0 mm	3.63 in 92.0 mm	15.0 in 381 mm	30 ton alloy swivel	CR25 ton shackle# 2130	>5 4.9	235 lb 106 kg
70,000 lb 35,000 kg	20 lb 10 kg	43.2 in 1097 mm	5.00 in 127	6.00 in 152 mm	4.56 in 116 mm	3.75 in 95.0 mm	15.0 in 381 mm	37 ton alloy swivel	CR40 ton alloy shackle# 2140	4.75 4.3	270 lb 121 kg
100,000 lb 50,000 kg	20 lb 10 kg	52.1 in 1324 mm	5.75 in 146 mm	6.65 in 169 mm	5.06 in 129 mm	4.25 in 108 mm	16.25 in 413 mm	45 ton alloy swivel	CR55 ton alloy shackle# 2140	4.5 4	420 lb 189 kg
Alternate Hooks for 100,000 lb								60 ton alloy swivel	CR55 ton alloy shackle# 2140	5 4.5	510 lb 231 kg
								75 ton alloy swivel	CR55 ton alloy shackle# 2140	5 4.5	630 lb 286 kg

CR = Crosby or equivalent.

* These dimensions also apply to 50/70/100000 lb. units with hook and shackle.

** Resolution subject to change for NIST and OIML approved units.

Figure 6-1. MSI-4260 IS Product Dimensions

7.0 Specifications

Accuracy
± (0.1% +1 d) of applied load

Resolution
3,000 to 5,000 d standard (up to 10,000 d available)

Enclosure
NEMA Type 4, IP66 marine grade 356 alloy anodized cast aluminum

Intrinsic Safety
Refer to the Conditions of Use in Hazardous Locations document for Certification and Classification details of all FM Listings

US Listings
FM16US0156X
Canadian Listings
FM16CA0092X
ATEX Listings
FM18ATEX0052X
FM21UKEX0104X

Lifting Eye, Shackle and Hook
Crosby® or equal with 360° thrust-bearing swivel hook

Design Overload
200% Safe / 500% Ultimate (except where noted)

Functions
Power, Zero, Tare, Mode F1 (Programmable)

Display
Five-digit, 1.2" (30mm) LED with programmable brightness control

Displayable Units
Pounds or kilograms selectable

Annunciators
COZ, Net, Gross, Total, Peak, Low Battery, lb/kg, Motion, Setpoints

Power
12 V rechargeable battery
115/230 VAC approved battery charger is included

Operating Time
Up to 80 hours between charging with typical use

Operating Temperature
Legal-for-Trade: 14°F to 104°F (-10°C to 40°C)

Auto-Off Mode
Select for 15, 30, 45 minutes, 1 hour or Off

Auto Sleep Mode
Power down during non-use and power up with weight change or any key press

Service Counters
Counts number of lifts over percentage of capacity and lifts over capacity

Calibration
Digital

Filtering
OFF, LO, HI-1, HI-2 selectable

Warranty
One-year limited warranty

Certifications and Approvals
CoC Number: 19-122
Accuracy Class III n_{max}: 500–2000 lb
Accuracy Class III L n_{max}: 5000–70000 lb

FM 16US0156X
FM 16CA0092X
Refer to the Conditions of Use in Hazardous Locations document for Certification and Classification details.

FM 18ATEX0052X
FM 21UKEX0104X
Refer to the Conditions of Use in Hazardous Locations document for Certification and Classification details.

Measurement Canada
AM-6198: 500 to 5,000 lb
AM-6249: 10,000 to 20,000 lb

RICE LAKE®
WEIGHING SYSTEMS

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