ScaleCore Connect

ScaleCore PC Software

Software Manual



ScaleCore Connect works with all ScaleCore based MSI products



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

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1.0 Introduction

ScaleCore Connect can be used to program and configure all MSI ScaleCore based products.

This application provides a complete solution for ScaleCore family product configuration and setup.

ScaleCore Connect allows complete backup, copy and restore of a scale configuration including calibration.



Manuals and additional resources are available from the Rice Lake Weighing Systems website at www.ricelake.com Warranty information can be found on the website at www.ricelake.com/warranties

1.1 Installation

This section provides an overview of ScaleCore Connect software installation.

1.1.1 System Requirements

Specifications subject to change without notice.

Typical

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Windows® Operating System

Display: 800 x 600 or greater

Built-in serial port or USB to serial port adapter

FTDI chip set required (Tripp-Lite USB/Serial Adapter (PN 153603) recommended)

JAVA JRE 1.7 or newer

To download and install JAVA JRE: https://java.com/en/download/manual.jsp



1.1.2 Install Program

To install ScaleCore Connect:

- Open the Rice Lake website and navigate to the MSI software page.
- Download the ScaleCore Connect software to the computer.
- 3. Extract the ScaleCore Connect folder.
- 4. Open the folder and double click on **ScaleCoreConnect XX-XX.exe**.



Note Folder structure must be kept intact. Application will not work without the companion folder.

- 5. A security warning may display, press **Run** to continue.
- 6. ScaleCore Connect will automatically connect to any connected ScaleCore device.
 - If a device was not connected to the PC before launching the application, connect device and press

 Auto Connect to establish the connection for configuration/setup of the device.



Figure 1-1. ScaleCore Connect Main Display

1.1.3 Connect Product to Computer

ScaleCore Connect supports interfacing to MSI ScaleCore products from serial (RS-232).

The connection depends on the available interfaces of the particular ScaleCore product being used. Refer to the specific device manual for more details on the interface capabilities.



This section provides an overview of ScaleCore Connect software configuration.

This section is a guide for setting up the product being read by the ScaleCore Connect program.

Prior to making changes to a product profile it is recommended to save a backup (Section 3.4.2 on page 22).

At anytime during set up, press | Cancel | to return to previous page without saving.

2.1 Connected Devices

Displays currently connected devices that are connected and powered on.

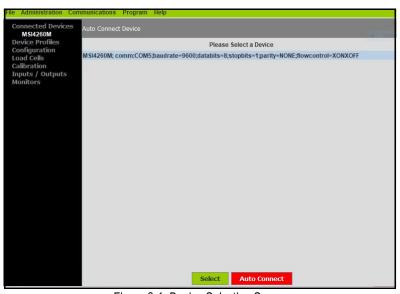


Figure 2-1. Device Selection Screen

. Press Auto Connect
. Connected devices display.



Figure 2-2. Connected Devices

2. Select the device to configure and press select

2.2 Device Profiles

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Displays the available device profiles. See Section 3.5 on page 23 for the advanced setup of the device profiles.



Figure 2-3. Device Profiles



2.3 Configuration

Displays connected devices. Select an available device to view and configure settings.



Figure 2-4. Configuration Display

2.3.1 Product Info

Displays product information.



Do not change these settings without consulting Rice Lake Weighing Systems or a local dealer.

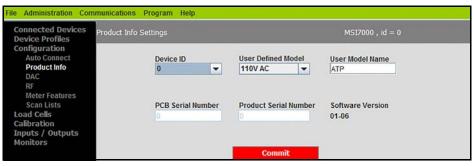


Figure 2-5. Product Info Settings

- 1. Select Configuration.
- 2. Select Product Info.
- 3. Enter the following parameters:

Parameter	Description
Device ID	Number given to the current product (selections: 1–255)
User Defined Model	Power source of current product (Figure 2-6)
User Model Name	Enter a name for the product
PCB Serial Number	Serial number for the PCB board, read only
Product Serial Number	Serial number of displayed product, read only
Software Version	Displays the version of software currently installed, read only

Table 2-1. Product Info Settings Parameters

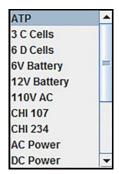


Figure 2-6. User Defined Model Selections

Press <u>Commit</u> to save. New settings will not take affect until power is cycled on the product.



ScaleCore Connect provides controls for DAC (Digital to Analog) output functions in ScaleCore products. Can be used for the output modes found in Figure 2-10 on page 6.

Controls include calibration and manual control.

- Select Configuration.
- 2. Select DAC.

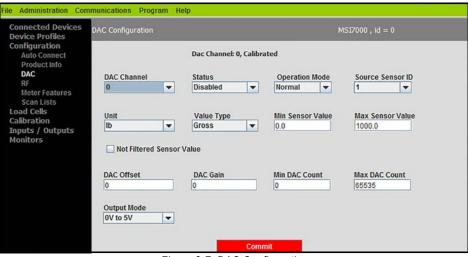


Figure 2-7. DAC Configuration

3. Enter the following parameters:

Parameter	Description
DAC Channel	Select the channel to be used
Status	Select Disabled (default) or Enabled
Operation Mode	Select Normal (default) or Manual
Source Sensor ID	Select a number 1–16
Unit	Select unit to be used (Figure 2-8 on page 6)
Value Type	Select value type to be used (Figure 2-9 on page 6)
Min Sensor Value	Enter min sensor value acceptable
Max Sensor Value	Enter max sensor value acceptable
Not Filtered Sensor Value	Check box is applicable
DAC Offset	Current calibration value
DAC Gain	Current calibration value
DAC Count	Current calibration value
Min DAC Count	Enter min DAC Count acceptable
Max DAC Count	Enter max DAC Count acceptable
Output Mode	Select output mode to be used (Figure 2-10 on page 6)

Table 2-2. DAC Configuration Parameters





Figure 2-8. Unit Selection

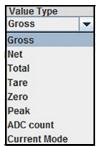


Figure 2-9. Value Type Selections

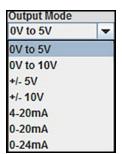


Figure 2-10. Output Mode Selections

4. Press **Commit** to save.

2.3.3 RF Configuration (RF)

Allows the setup of RF cards available in the products connected.



See the individual MSI ScaleCore product manuals for proper RF setting configurations.



Figure 2-11. RF Configuration

- 1. Select Configuration.
- 2. Select RF.
- 3. Enter the following parameters:

Parameter	Description
Status	Select Enabled (default) or Disabled
Channel	Select a channel from 12–23
Network ID	Enter a number from 0–65534 for an ID
Device Type	Select XBee or Other (for all other cards installed)
Power Level	Select a level from 0–4
Always On	Select Enabled (default) or Disabled

Table 2-3. RF Configuration Parameters

Press Commit to save. Power cycle the product to apply changes.



2.3.4 Meter Features

- 1. Select Configuration.
- Select Meter Features.

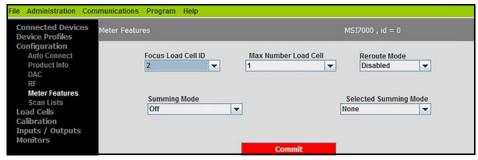


Figure 2-12. Meter Features Settings

Enter the following parameters:

Parameter	Description
Focus Load Cell ID	Select a number from 1–5
Max Number Load Cell	Select a number from 1–4
Reroute Mode	Select Enabled or Disabled (default)
Summing Mode	Select a combination to add loads (Figure 2-13)
Selected Summing Mode	Select an option if further definition is needed for summing (Figure 2-14)

Table 2-4. Meter Feature Settings Parameters

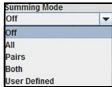


Figure 2-13. Summing Mode Selections

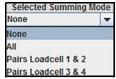


Figure 2-14. Selected Summing Mode Selections

4. Press **Commit** to save.



2.3.5 Scan Lists

Automatically scan all available serial ports for any attached ScaleCore devices.

- 1. Select Configuration.
- 2. Select Scan Lists.



Figure 2-15. Sensor Scan List Settings

3. Enter the following parameters:

Parameter	Description
Scan List Number	Select a scan list number
Remote Device ID	Select a remote device ID number
Source Sensor ID	Select a source sensor ID number

Table 2-5. Sensor Scan List Settings Parameters

4. Press **Commit** to save.



2.4 Load Cells

Allows load cells parameters to be set to for each load cell connected to the connected device.

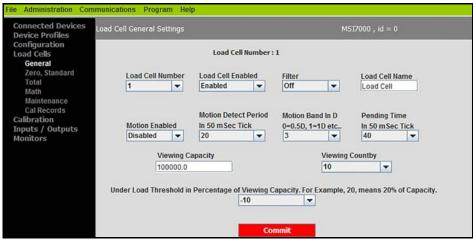


Figure 2-16. Load Cell General Settings

- 1. Select Load Cells.
- 2. Select General.
- 3. Enter the following parameters:

Parameter	Description
Load Cell Number	Select a load cell number 1–5
Load Cell Enabled	Select Enabled (default) or Disabled
Filter	Set filtering to Off, Low, Medium or High
Load Cell Name	Enter a name to identify the load cell
Motion Enabled	Select Enabled or Disabled (default)
Motion Detect Period (50 ms)	Select a number from 1–255
Motion Band (D, 0=0.5D, 1=1D etc.)	Select a number from 1–255
Viewing Capacity	Enter a capacity
Viewing Countby	Select 0.0001–5000
Under Load Threshold	Select a number from -100–90 (in percentage of capacity)

Table 2-6. Load Cell General Settings Parameters

4. Press **Commit** to save.



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2.4.1 Zero Standard

- 1. Select Load Cells.
- Select Zero, Standard.

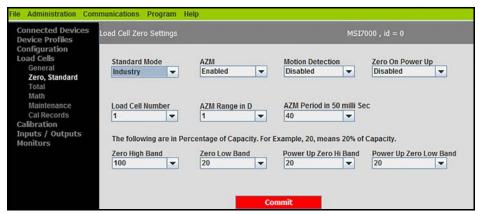


Figure 2-17. Load Cell Zero Settings

3. Select values for the following parameters:

Parameter	Description
Standard Mode	Select Industry, NTEP, OIML or One Unit
AZM	Select Disabled or Enabled
Motion Detection	Select Disabled or Enabled
Zero On Power Up	Select Disabled or Enabled
Load Cell Number	Select the load cell number from 1–4
AZM Range in D	Select a number from the AZM range (0–255)
AZM Period (50 ms)	Select a number from the AZM period (20–255)
Zero High Band	Select the zero high band number from 1–100 (in percentage of capacity)
Zero Low Band	Select the zero low band number from 1–20 (in percentage of capacity)
Power Up Zero Hi Band	Select the power up zero hi band number from 1–25 (in percentage of capacity)
Power Up Zero Low Band	Select the power up zero low band number from 1–20 (in percentage of capacity)

Table 2-7. Load Cell Zero Settings Parameters

4. Press Commit to save.



2.4.2 Total

- 1. Select Load Cells.
- 2. Select Total.

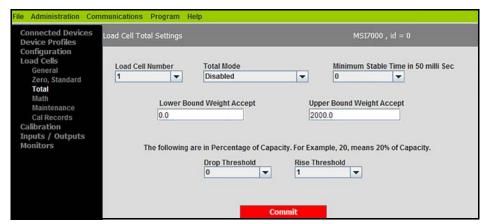


Figure 2-18. Load Cell Total Settings

3. Enter the following parameters:

Parameter	Description
Load Cell Number	Select the load cell number from 1–5
Total Mode	Select the type of total mode for the connected product (Figure 2-19)
Minimum Stable Time (ms)	Select the minimum stable time from 0–255
Lower Bound Weight Accept	Enter the lower bound weight
Upper Bound Weight Accept	Enter the upper bound weight
Drop Threshold	Select the drop threshold number from 0–100 (in percentage of capacity)
Rise Threshold	Select the rise threshold number from 0–100 (in percentage of capacity)

Table 2-8. Load Cell Total Settings Parameters

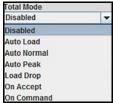


Figure 2-19. Total Mode Selections

4. Press **Commit** to save. New settings will not take affect until power is cycled on the product.



2.4.3 Math

- 1. Select Load Cells.
- 2. Select Math.

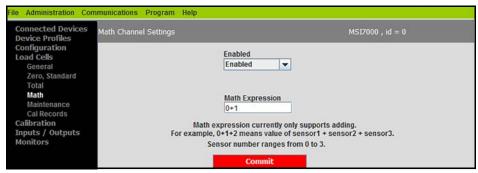


Figure 2-20. Math Channel Settings

3. Enter the following parameters:

Parameter	Description
Enabled	Select Enabled or Disabled
Math Expression	Enter math expression

Table 2-9. Math Channel Settings Parameters

4. Press **Commit** to save.



2.4.4 Maintenance

See Section 3.6 on page 23 for the advanced setup of the maintenance settings.



Do not change these settings without consulting Rice Lake Weighing Systems or a local dealer.

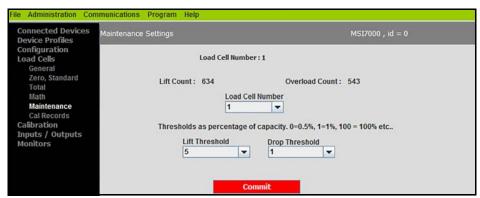


Figure 2-21. Maintenance Settings

2.4.5 Calibration Records

- 1. Select Load Cells then select Cal Records.
- 2. Select Load Cell Number and the recorded calibration settings for selected load cell displays.

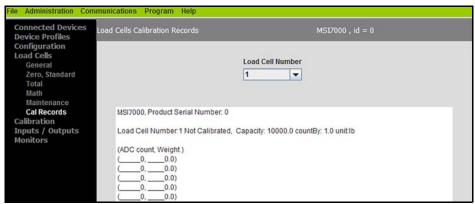


Figure 2-22. Load Cells Calibration Records

2.5 Calibration

A visual interface for performing the available types of load cell calibration to ensure the ScaleCore product is accurate. The available methods of calibration are:

Parameter	Description	
Full Cal Load Cell	Enter scale unit, capacity and countby	
Re-Cal Load Cell	Uses current scale unit, capacity and countby	
Full C-Cal Load Cell	Enter scale unit, capacity and countby; Allows calibration using a Constant Calibration (C-Cal) number without the requirement of test weights	
Re-C-Cal Load Cell Uses current scale unit, capacity and countby; Allows a calibration using a C-Cal number without the requirement of test weights		
Multi Load Cell	Use when calibrating multiple load cells, select all load cells to be calibrated and perform Section 2.5.1 on page 15	

Table 2-10. Setpoints Configuration Parameters



2.5.1 Full Calibration

- Select Calibration.
- 2. Select Full Cal Load Cell.

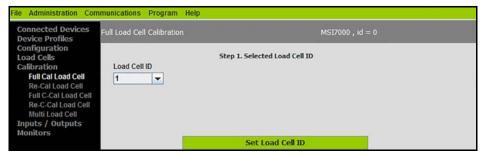


Figure 2-23. Select Load Cell ID

- 3. Select the Load Cell ID number from 1–4 then press Set Load Cell ID
- 4. Set the Unit and Capacity parameters then press Set Unit And Capacity



Press Cancel

to end current calibration and restore the previous calibration.

- 5. Select the desired **Countby** parameter then press **Set Selected Countby**
- Ensure there is no weight on the load cell then press Unload Test Weight
- 7. Enter the test weight value then press Set Test Weight #X
- 8. Press Finish. The constant cal number is displayed, document the number for use later if needed.
- 9. Repeat steps above for each load cell to be calibrated.



The calibration table may be configured. Configuration should only be done by Rice Lake Weighing Systems or a trained calibration technician.

Modifications applied to the calibration table may invalidate the calibration (Figure 2-24).

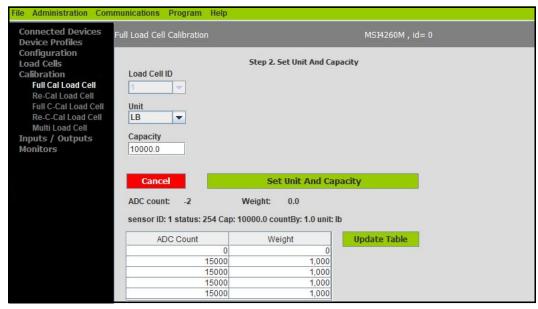


Figure 2-24. Select Load Cell ID



2.5.2 Re-Calibration

- 1. Select Calibration, then Re-Cal Load Cell.
- 2. Select the Load Cell ID number from 1–4.
- 3. Press Set Load Cell ID
- 4. Ensure there is no weight on the load cell, then press Unload Test Weight
- 5. Enter the test weight value, then press Set Test Weight #X.
- 6. Press Finish. The constant calibration number is displayed, document the number for use later if needed.
- 7. Repeat steps above for each load cell to be re-calibrated.

2.5.3 Full Constant Calibration

- Select Calibration, then Full C-Cal Load Cell.
- 2. Press Set Load Cell ID
- 3. Set the Unit and Capacity parameters.
- 4. Press Set Unit And Capacity
- 5. Select the desired Countby parameter then press Set Selected Countby
- Ensure there is no weight on the load cell then press Unload Test Weight
- 7. Enter the constant calibration number then press Set Constant Cal #

2.5.4 Constant Re-Calibration

- 1. Select Calibration then select Re-C-Cal Load Cell.
- 2. Press Set Load Cell ID
- 3. Ensure there is no weight on the load cell then press Unload Test Weight
- Enter the constant calibration number then press
 Set Constant Cal #



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2.6 Inputs / Outputs

2.6.1 Setpoints

Provides a trip point for load values.

- Select Inputs / Outputs.
- Select Setpoints.

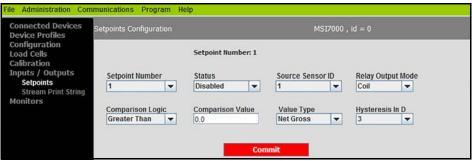


Figure 2-25. Setpoints Configuration

Enter the following parameters:

Parameter	Description
Setpoint Number	Select the setpoint number from 1–3
Status	Select Disabled or Enabled
Source Sensor ID	Select the source sensor ID number from 1–5
Relay Output Mode	Select Coil or Latch
Comparison Logic	Select Undefined, Greater Than or Less Than
Comparison Value	Enter the comparison value
Value Type	Select the value type parameter
Hysteresis in D	Select the hysteresis in D number from 0–99

Table 2-11. Setpoints Configuration Parameters

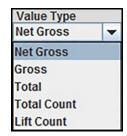
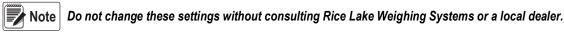


Figure 2-26. Value Type Selections

4. Press **Commit** to save.

2.6.2 Stream Print String

See Section 3.7 on page 24 for the advanced setup of the stream print string settings.



2.7 Monitors

Select the view to be used for viewing the data from the product.

2.7.1 Terminal

Streams the data in a print format.

2.7.2 Meter

Displays a meter view for viewing and troubleshooting.



Advanced Setup 3.0

This section is a guide for the advanced setup of the product being read by the ScaleCore Connect program.

The following setup instructions are for dealers or service technicians only. Please contact Rice Lake Weigh Systems or a local dealer for assistance before proceeding.

Prior to making changes to a product profile it is recommended to save a backup (Section 3.4.2 on page 22).

At anytime during set up, press Cancel to return to previous page without saving.

3.1 File Menu

Used to open an existing profile or exit the program.



Figure 3-1. File Menu Selections

3.1.1 Open Profile

Profiles can be exported and saved, then imported into a different product. To open a previously saved profile:

- Select File then select Open Profile.
- 2. Navigate to where the profile is stored.
- 3. Select the file and press Open A valid profile file then displays on the left panel, under Device Profile.
- Select the intended profile from the left panel. Application displays all information as if it was that device.



Note The profiles that show up grayed out are read only.

To clone the open profile see Section 3.4.3 on page 22.

3.1.2 Exit

Select to close ScaleCore Connect application.



3.2 Administration Menu

Administration allows the setup of User Privileges. Selections are Normal User Mode and Administrator Mode. The current password must be available to complete this setup.



Figure 3-2. Administration Menu Selection

Select Administration then select User Privileges.



Figure 3-3. User Privileges

- 2. Select either Normal User Mode or Administrator Mode.
- Enter the password and press Set

3.3 Communications

Communications allows the selection and configuration of the stream ports.



Figure 3-4. Communications Menu Selections

To select the stream port:

- 1. Select Communications then select Select Stream Port.
- 2. Select the port to be used from the drop down.



Figure 3-5. Select Stream Port

3. Press OK to save and return to main page.



3.3.1 Stream Port Setup

To configure communications stream ports:

- Select Communications then select Configure.
- 2. Select the port to be configured and press Configure Stream



Figure 3-6. Serial Port Setup

3. Enter the following parameters:

Parameter	Description
Baud Rate	Rate at which information is transferred through the port; Selections: 9600 (default), 19200, 38200, 57600, 115200
Hand Shake	Signals transmitted back and forth over a communications network in order to establish a valid connection between two stations; Example: A hardware handshake uses dedicated wires like request-to-send (RTS) and clear-to-send (CTS) lines in an RS-232 serial transmission; Selections: None, RTS/CTS, XON/XOFF (default)
Parity	Error detection technique that tests the integrity of digital data in the computer; Selections: None (default), ODD, EVEN
Data Bits	Number of bits used to represent one character of data; Selections: 7 data bits, 8 data bits (default)
Stop Bits	Indicates end of a character or of the whole transmission; Selections: 1 stop bit (default), 2 stop bits

Table 3-1. Serial Port Setup Parameters

- 4. Press OK to save and return to Communication Setup.
- 5. Press OK to return to main page.



3.4 Program

Program is used to program the application code, acquire a profile from a connected device or clone a profile from another connected product.

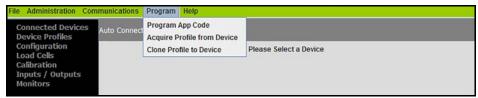


Figure 3-7. Program Menu

3.4.1 Program App Code

- 1. Select Program App Code from the Program drop down menu.
- 2. Press Go To Bootloader , application switches to the terminal mode screen and displays the bootloader menu.



Figure 3-8. Program App Code



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If the terminal mode screen displays strange characters, change the baud rate to 38400.

See Section 3.3.1 on page 20 to change the baud rate. Once the baud rate has been changed, make sure cursor is in the terminal screen and press the "R" key to refresh the terminal screen. The bootloader menu will display.

If the unit shuts off after pressing the Go To Bootloader button, press the power key to restart the unit and the bootloader menu will display on the terminal screen.

- 3. Press Send File , a file dialog box displays.
- 4. Select an app code file from the file dialog box, press open, app code file is sent to the target device.



3.4.2 Acquire Profile from Device

ScaleCore Connect will acquire the profile from an attached device.

1. Select Acquire Profile from Device from the Program drop down menu.



Figure 3-9. Acquire Profile

2. When prompted save the file to desired location.

3.4.3 Clone Profile to Device

- 1. Select Clone Profile to Device from the Program drop down menu.
- 2. Select the Profiles to clone to the Target Devices.

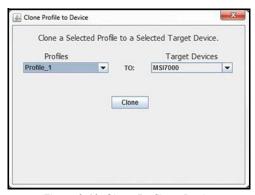


Figure 3-10. Clone Profile to Device

- 3. Press Clone .
- 4. Once profile is successfully cloned to the target device, the target device is configured based on the cloned profile info.



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A user can acquire a profile from Device A and saved it as Profile_A then select this Profile_A and clone it to Device B. Device B will now behave like Device A.



3.5 Device Profiles

A device profile contains the entire settings of a device, such as load cell calibration, communication settings, setpoints, relay, print string and other settings.

3.6 Maintenance

- 1. Select Load Cells.
- 2. Select Maintenance.

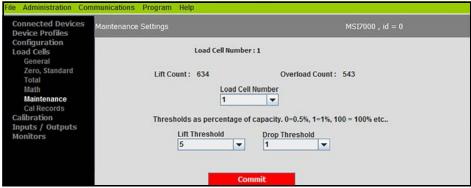


Figure 3-11. Maintenance Settings

3. Enter the following parameters:

Parameter	Description
Sensor ID	Select the sensor ID from 1–4
Lift Threshold	Select the lift threshold number from 0–100 (in percentage of capacity, 0=0.5%, 1=1%, 100=100%)
Drop Threshold	Select the drop threshold number from 0–100 (in percentage of capacity, 0=0.5%, 1=1%, 100=100%)

Table 3-2. Maintenance Settings Parameters

4. Press **commit** to save.



3.7 Stream Print String

Listeners

The Listeners feature controls the machine to machine communications interfaces.

- 1. Select Inputs / Outputs.
- Select Stream Print String.

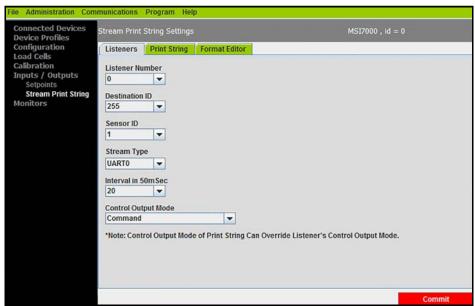


Figure 3-12. Listener Settings

- 3. Select the Listeners tab.
- 4. Enter the following parameters:

Parameter	Description
Listener Number	Select stream listener number from 0–2
Destination ID	Select the ID assigned to the stream listener from 0–255; 255 indicates broadcast ID, it is for every device that attached
Sensor ID	Select the sensor the listener will observe from 1–5
Stream Type	Select the type of this stream listener
Interval (50 ms)	Select interval value from 0–255 Example: 20 means 20x50 ms = 1 second.
Control Output Mode	Select the mode for the listener

Table 3-3. Listener Parameters

5. Press **Commit** to save.



Print String

The edit print string, allows the mode, interval and composite for a listener to be configured. The mode can be configured to print on command, on stable load, continuous, or it can be disabled. Print provides information provided by the configured print formatters in a single print.

- Select Inputs / Outputs.
- Select Stream Print String.

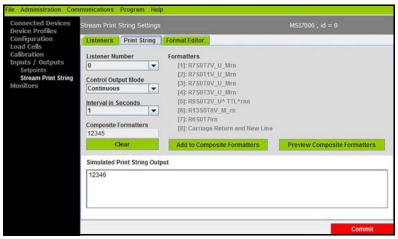


Figure 3-13. Print String Settings

- 3. Select the Print String tab.
- 4. Enter the following parameters:

Parameter	Description
Listener Number	Select stream listener number from 0–2
Control Output Mode	Select the output mode for the print string; Disabled, Command, Stable Load, Continuous
Interval in Seconds	Select the interval period on continuous output from 0-255, 0 (fastest) up to 255 seconds
Composite Formatters	Add formatters from list; preview as needed; Clear to reset selected formatters

Table 3-4. Print String Parameters

5. Press Commit to save.

Format Editor

The format editor function allows customization of the formatted print information that a ScaleCore device can produce. Custom print formatters can be generated with the help of the custom interface within the format editor.

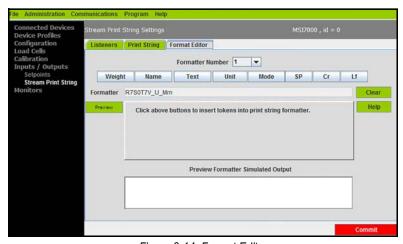


Figure 3-14. Format Editor

Use the buttons to create the string or type it into the formatter box. The maximum length for this print string is 18-characters.





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