AccuPro 6000-TS™

Operator's Manual

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1 Introduction

The AccuPro 6000-TS is a single/dual-channel digital scale indicator and measurement system designed to provide accurate and reliable weight measurement and control. It combines a color, touchscreen display with a dedicated control board that manages all user connections for ease of setup and use.

Through its intuitive touchscreen interface, users can monitor weight, configure outputs, view alarms, and access system information. Features such as setpoint control, mA output signal, Modbus capabilities, and alarm logging make the AccuPro 6000-TS a complete solution for process monitoring and automation.

Designed with accuracy, durability, and simplicity in mind, the AccuPro 6000-TS delivers dependable performance for a wide range of industrial weighing applications.

1.1 Scope

This operator's manual describes the specifications, assembly, and operation of the AccuPro 6000-TS.

1.2 Acronyms and Abbreviations

- ***AWG*** American Wire Gauge
- ***CH*** Channel
- ***N.O*** Normally Open
- ***N.C*** Normally Closed
- ***COM*** Common
- ***SPDT*** Single Pole Double Throw
- ***AC*** Alternating Current
- ***DC*** Direct Current
- ***V*** Volts
- ***A*** Amps
- ***mA*** Milliamps
- ***W*** Watts
- ***PLC*** Programmable Logic Controller

1.3 Definitions

- **Channel (Ch):** A measurement input that processes signals from a connected scale base. Each system can operate with one or two channels.
- **Gross Weight:** Total weight (real weight) on the scale base. Determined by Net Weight + Tare Weight.
- **Net Weight:** Weight of material without the presence of a tank or container. Determined by Gross Weight - Tare Weight.
- **Tare:** A user-adjustable amount of weight subtracted from the Gross Weight to display the actual weight of material without the presence of a tank or container.
- **Control Board:** The main board inside the enclosure that contains all user connections and circuitry.
- **Indicator:** The complete AccuPro 6000-TS controller including display, hardware, and enclosure.
- **Scale Base:** The physical platform containing load cell(s) used for weighing material. One base typically corresponds to one channel.
- **Base Input Signal:** The millivolt (mV) signal generated by the load cell(s) in the scale base.
- **Weight Setpoint:** A user-defined Net Weight value that when reached (low/high) will trigger a corresponding relay.
- **PLC:** The main processing device of the AccuPro 6000-TS. Contains the display and is mounted on the door of the enclosure.

2 Indicator Specifications

Indicator	
Main Power	Supply Voltage: 100-250VAC, 50/60 Hz Wattage: 12W (maximum) Fuse: 0.2A (5x20mm, slow-blow)
24VDC Power Supply	Wattage: 10W
5VDC Power Supply (Excitation)	Wattage: 2W
Operational Temperature	0 °C to 60 °C (32 °F to 140 °F)
Operational Altitude	2000 meters (maximum)
Operational Relative Humidity	20% to 90% non-condensing
Enclosure	Size: 8 x 8 x 4 Inches (LxWxD) with hinged cover Weight: 4 lbs. (approx. maximum) Material: Opaque Polycarbonate, UL Listed Type 4X NEMA Location Recommendation: The enclosure should not be in an area with extreme weather conditions or heavy amounts of liquid soaking. If operating the system indoors, it is recommended to mount the enclosure in an area that protects against chemical splashes and wash-down areas, while still being easily accessible. If operating the system outdoors, it is recommended that a covering be used to protect the indicator from the elements.
Channels	Supports single or dual-channel configuration. Each channel is independently controlled and operated.

Measurement	Display Range: 6 digits (maximum). 5 integer / 1 decimal point (user selectable) Max Display Weight: 1.1-1.5x Max Gross Weight Units: User-defined units of pounds, kilograms, gallons, and liters. Weight Stabilization: User-defined (low/medium/high). Bar Graph: Graphical display of values. Performance: 0.1% to 0.25% full scale accuracy.
Display	Size: 4.3" Resolution: 480 x 272 pixels Color: 65k Brightness: 350 nits
Alarm Buzzer (Available Factory Option)	Internal: audible buzzer, 3.4 kHz, 78 dB (maximum) External: Support for a user-supplied alarm. An external buzzer relay is available. Switching capacity of 2A (maximum) @ 120VAC or 60VDC. Inductive loads are not recommended.
Controls	Control Type: touchscreen

2.1 Load Cell Excitation Specifications

Load Cell Excitation	
Load Cells	Supports up to (4) 350-ohm load cells in parallel
Excitation Voltage	5VDC

2.2 mA Output Specifications

4-20 mA Output	
Signal	Type: scale (self-powered) or loop (externally-powered 8-30VDC) Type selection: jumper selector found in top right corner of control board Connection: spring clamp terminal block Max Load: 500 Ohms
Configuration	Output Scale: user-adjustable mA output based on Net Weight. The mA signal will scale accordingly based on the configuration.

2.3 Setpoint Specifications

Setpoints (Available Factory Option)	
Available Setpoints	Weight Setpoints: 2 or 4 per channel External Buzzer: 1 per system Alarm Active Relay: 1 per system Weight Setpoint Active: 1 per system Max Net Weight Active: 1 per system
Contact Configuration	Normally Open (NO), Common (C), Normally Closed (NC)
Maximum Switching Capacity	2A max at 120VAC or 60VDC

2.4 Modbus Specifications

Modbus (Available Factory Option)	
Communication	Protocol: Modbus TCP Ethernet, Modbus RTU RS232, or Modbus RTU RS485 Type: Slave
Ch 1 Modbus Address Map (Read Only)	Net Weight: HR: 43500 Gross Weight: HR: 43501 Net Weight Percentage: HR: 43502 Gross Weight Percentage: HR: 43503 Display Unit: HR: 43504 Tare Weight: HR: 43505 Alarm Active: C: 06500 Weight Setpoint Active: C: 06501
Ch 2 Modbus Address Map (Read Only)	Net Weight: HR: 43506 Gross Weight: HR: 43507 Net Weight Percentage: HR: 43508 Gross Weight Percentage: HR: 43509 Display Unit: HR: 43510 Tare Weight: HR: 43511 Alarm Active: C: 06500 Weight Setpoint Active: C: 06501
Modbus TCP Network Configuration	IP Address: User defined Net Mask: User defined Gateway: User defined
Modbus RS232 or RS485 Network Configuration	Slave ID: User defined Baud Rate: 9600

Figure 1: ***Modbus Ports***

The Modbus communication ports are located on the back of the PLC mounted on the enclosure door. The MJ1/2 port is used for Modbus RTU RS232/RS485. The LAN port is used for Modbus TCP. A standard Ethernet cable with an RJ45 connector is used for Modbus TCP, see Figure 2 for MJ1/2 port wiring when using RS232/RS485.

Note: Modbus communication is available only when a Modbus option is enabled from factory.

MJ1 & MJ2 PINS		
PIN	**SIGNAL**	**DIRECTION**
8	TXD (MJ1)	OUT
7	RXD (MJ1)	IN
6	0V	COMMON
5	+5V @ 60mA	OUT
4	RTS (MJ1)	OUT
3	CTS (MJ1)	IN
2	RX-/TX-/- (MJ2)	IN/OUT
1	RX+/TX+/+ (MJ2)	IN/OUT

Figure 2: ***Modbus RS232/RS485 Port MJ1/2 Wiring***

MJ1 is used for RS232, MJ2 is used for RS485. When using RS232 ensure TXD and RXD pins are crossed to the receiving device.

Note: Modbus communication is available only when a Modbus option is enabled from factory.

2.5 Enclosure Dimensions

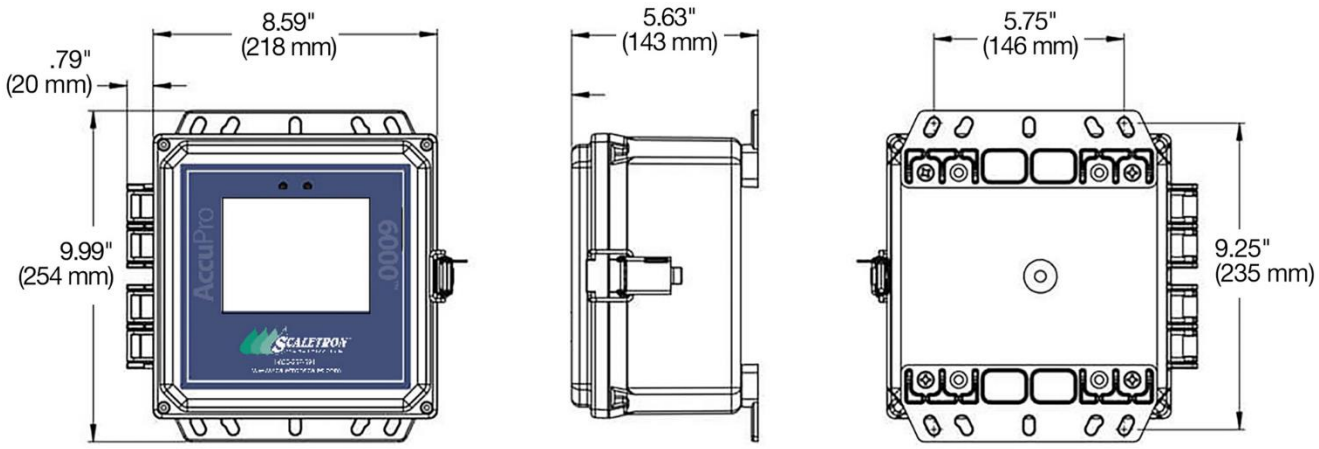

Figure 3: ***Enclosure Dimensions***

Figure 4: ***Indicator Front View***

2.6 Control Board

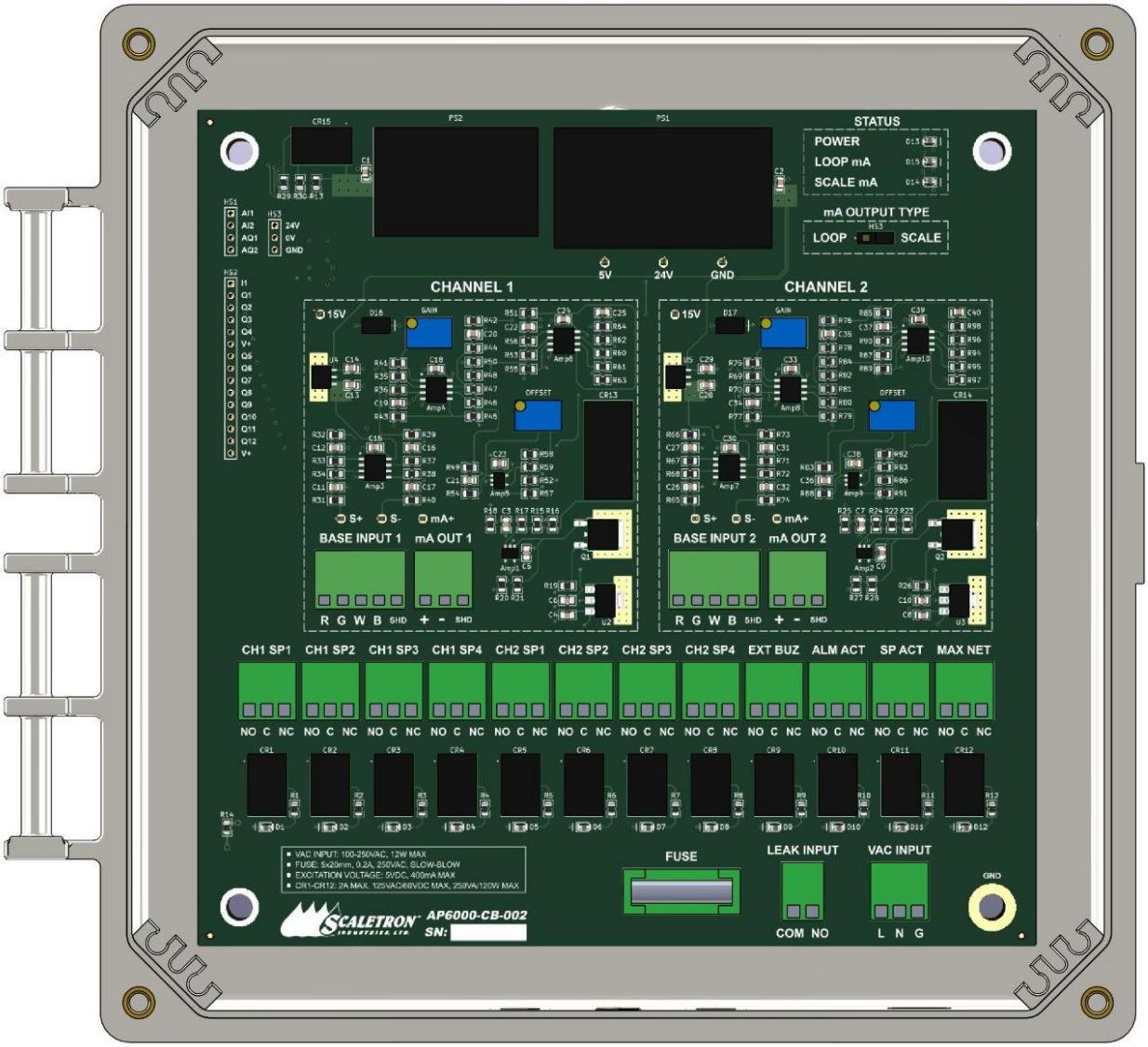

Figure 5: ***Control Board***

The control board is mounted inside the enclosure and contains all user connection terminal blocks, setpoint relays, the power input fuse, mA Output Type jumper selector, and the system status LEDs (Power, Loop mA Active, Scale mA Active).

Note: The control board shown above includes all available factory options. Actual control board layout may vary depending on the factory options selected at the time of order.

3 System Installation

Failure to operate this equipment as instructed may result in equipment damage or personal injury. Damage caused by operation outside the procedures and safety requirements described in this manual is not covered under warranty. It is imperative that users read and understand the instructions in this manual before operating the equipment. The indicator is fully tested and calibrated to its corresponding Scale Base at the factory to ensure proper operation. Scaletron Industries takes great care to verify that all equipment meets factory specifications before shipment. If a problem occurs, disconnect all accessories and peripheral devices from the equipment to help isolate the issue. It is recommended that users familiarize themselves with the setup and operation procedures described in this manual prior to use. All safety precautions must be followed for safe operation.

The enclosure is shipped with a factory-installed power cord which utilizes a liquid-tight fitting. Do not modify nor restrict the ability to disconnect the power cord from an outlet. All other user connections to the enclosure must be made in the field per specific needs. Take time to identify the optimal location for all additional fittings or conduit. Be careful when drilling holes to avoid any damage to internal components or cabling. All drilled holes must be sealed to prevent both liquids and gases from penetrating the enclosure and damaging the electronics. Avoid using fittings that do not provide a tight seal. It is recommended that all fittings be liquid-tight and NEMA 4X rated. If there is a gap or opening in the enclosure's wall that isn't sealed by the connector design, use a silicon caulk to seal the opening and eliminate exposure. The indicator is intended to be mounted to a wall using the four holes in the corner flanges of the enclosure. It should be mounted at operational level and away from the floor. Though the enclosure is NEMA 4X rated, it is not designed to withstand wash-down procedures nor chemical contact beyond accidental exposure. Avoid direct contact with chemicals or regular soaking of water as it may cause substantial damage to the electronics. Any damage resulting from non-adherence to these requirements will not be considered for warranty repair.

3.1 User Connections and Wiring

Before working on any wiring, power the system off and follow proper anti-static precautions. When wiring, touch only the user connection terminal blocks and avoid other components on the control board. Use 16–24 AWG wire for all user connections and, if shielded cable is used, connect the shield to the SHD terminal. Make sure every wire is landed on the correct terminal block location, then give each wire a light tug to verify it is secure. Before restoring power, inspect all terminations to ensure there are no loose strands or exposed conductors.

Step 1: Connect Scale Base Cable ***(ensure scale base and indicator serial numbers match each other before connecting)***
Select the correct channel terminal block:

- Channel 1: "BASE INPUT 1" ***(if cable has blue heat shrink tubing, connect to Ch 1)***
- Channel 2: "BASE INPUT 2" ***(if cable has yellow heat shrink tubing, connect to Ch 2)***

Then connect each scale base cable wire to its labeled terminal:

- Red: "R" (Excitation +)
- Green: "G" (Signal +)
- White: "W" (Signal –)
- Black: "B" (Excitation –)
- Violet: "SHD" (Shield)

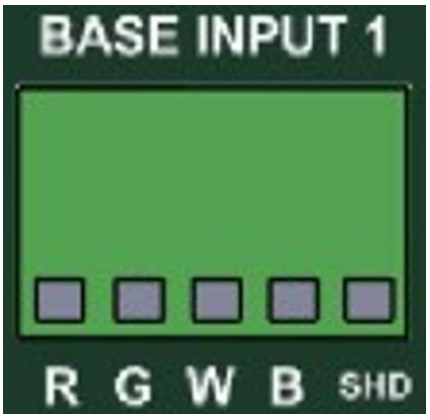

Figure 6: ***Base Input Terminal Block***

Step 2: Connect mA Output Wiring
Select the correct channel terminal block:

- Channel 1: "mA OUT 1"
- Channel 2: "mA OUT 2"

Then wire according to the selected output type:

- **Scale (self-powered mA signal)**

- Connect the measurement device's + input to the "+" terminal
- Connect the measurement device's –/COM input to the "–" terminal
- Shield (optional): "SHD"

- **Loop (external 8-30VDC loop powered mA signal)**

- Connect +VDC from the external supply to the "+" terminal (loop mA current is measured in series with +VDC)
- Connect –VDC from the external supply to the "–" terminal
- Shield (optional): "SHD"

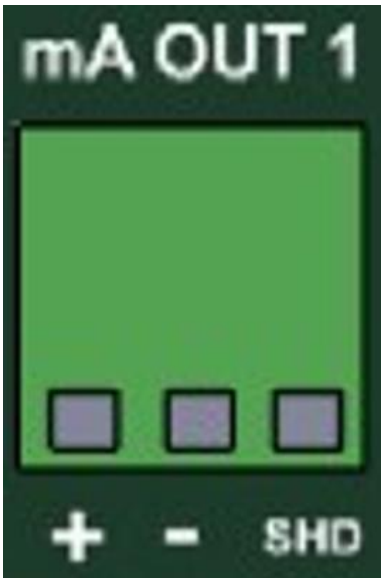

Figure 7: mA Output Terminal Block

Step 3: Connect Setpoint Relay Wiring
If setpoint relays are present, connect to the appropriate terminal blocks. Possible locations include:

- "CH1 SP1-4"
- "CH2 SP1-4"
- "EXT BUZ"
- "ALM ACT"
- "SP ACT"
- "MAX NET"

Each relay terminal block provides the following terminal connections:

- "NO" (Normally Open)
- "C" (Common)
- "NC" (Normally Closed)

Relay rating: 2A max at 120VAC or 60VDC

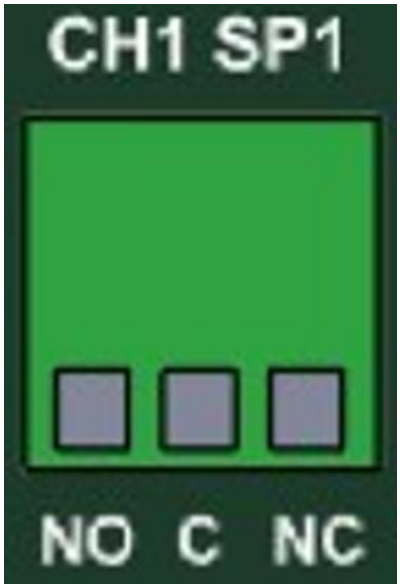

*Figure 8: **Setpoint Terminal Block***

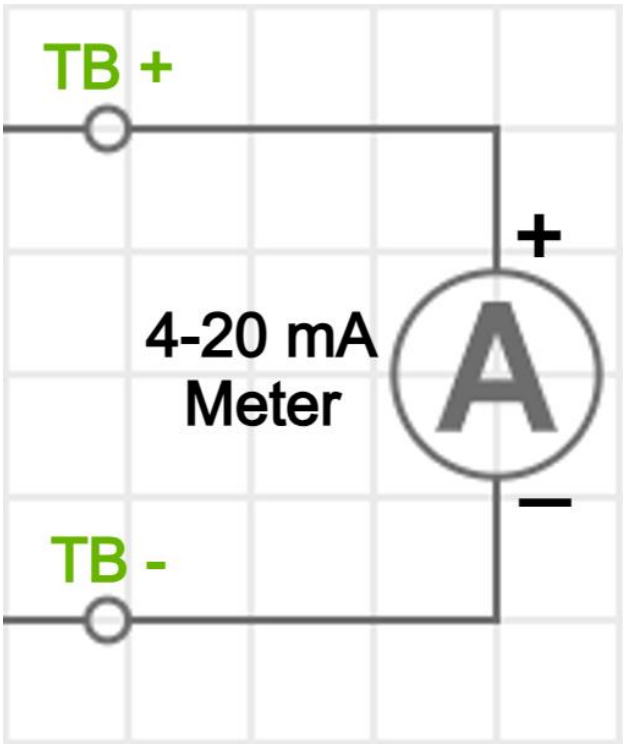

Figure 9: Scale (Self-Powered) 4-20 mA Output Wiring Diagram

When mA Output Type selector is in Scale mode, the indicator outputs a self-powered 4-20 mA signal based on Net Weight.

Wiring:

- Connect the measurement device's + input to the "+" location on the "mA OUT" terminal block
- Connect the measurement device's – input to the "–" location on the "mA OUT" terminal block
- Shield (optional) → "SHD" location on the "mA OUT" terminal block

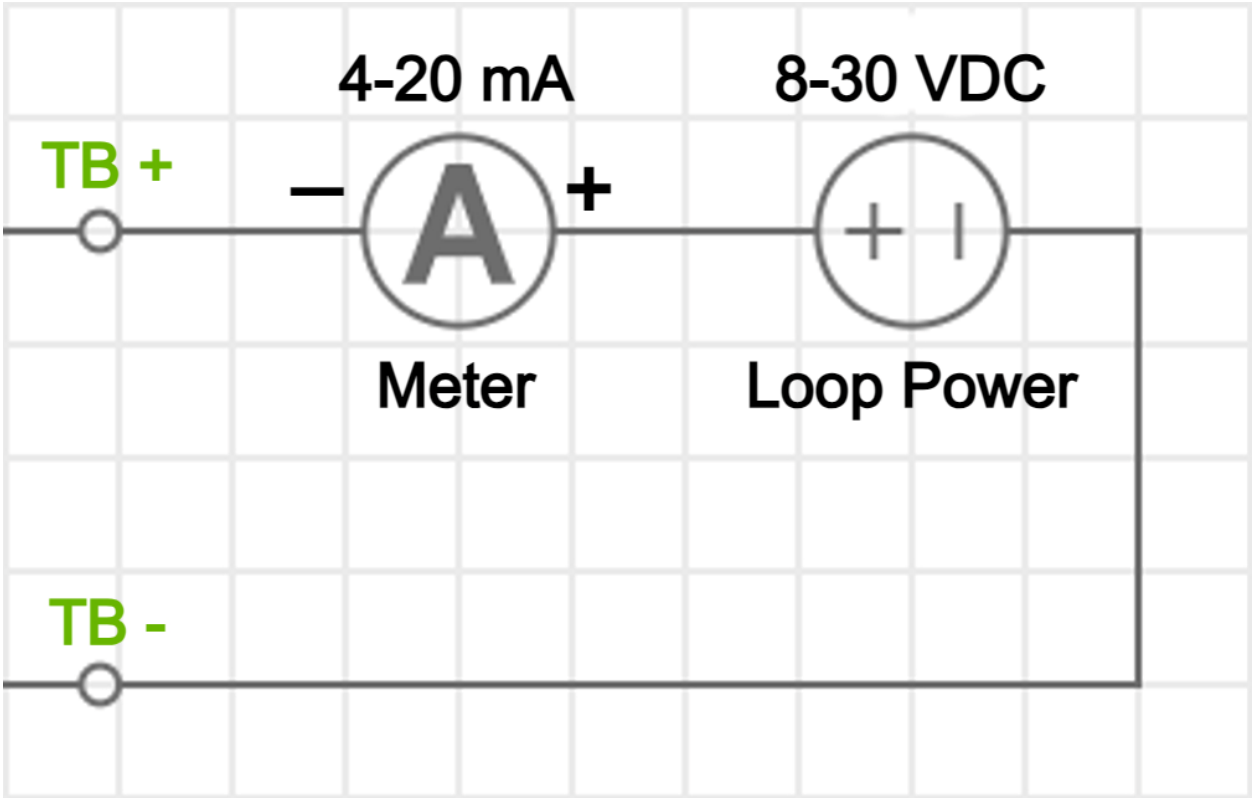

Figure 10: ***Loop (Externally-Powered) 4-20 mA Output Wiring Diagram***

When mA Output Type selector is in Loop mode, the indicator outputs an externally-powered 4-20 mA signal based on Net Weight.

Wiring:

- Connect +VDC from the external supply (mA current is measured in series with the external loop supply) to the "+" location on the "mA OUT" terminal block
- Connect –VDC from the external supply to the "–" location on the "mA OUT" terminal block
- Shield (optional) → "SHD" location on the "mA OUT" terminal block

4 System Operation

The AccuPro 6000-TS Touchscreen Scale Indicator is designed for use with Scaletron's complete line of cylinder, ton-cylinder, drum, tank, platform, IBC tote, and spill-containment scale bases. Featuring a color touchscreen interface, the indicator allows for simple and straightforward operation and an easy to view weight display. The unit supports single or dual-channel operation and provides real-time measurements with typical accuracy of ±0.1% to ±0.25% of full-scale capacity. Weight may be displayed in pounds, kilograms, gallons, or liters. The indicator includes a standard 4-20 mA output for remote Net Weight monitoring. To select Scale or Loop 4-20 mA output type, configure the jumper selector found in the top right corner of the control board when power is off. For more advanced process control, factory options such as Weight Setpoints, Modbus communication, Audible Alarm, and control relays may be added. The system may be used for filling, monitoring, or general loading applications.

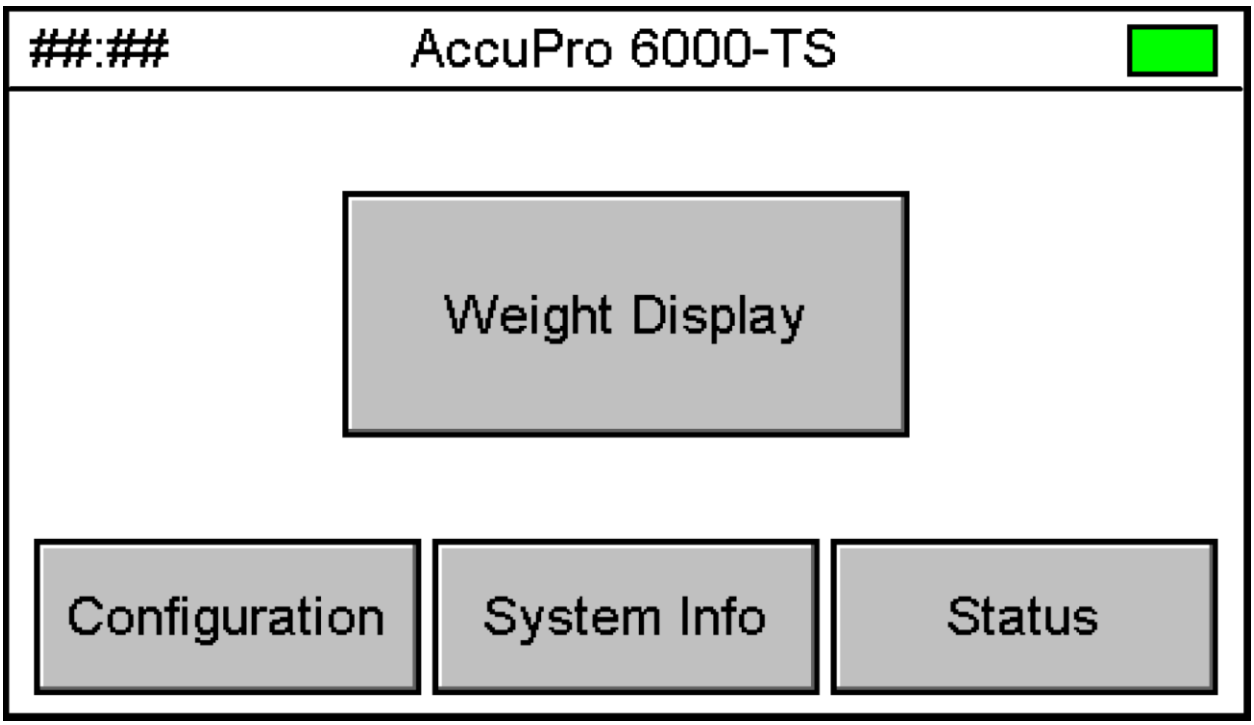

Figure 11: ***Home Screen***

From the Home screen, the user can access the Weight Display, go to Configuration, System Info, and Status menus.

4.1 Available Factory Options

The indicator can be configured with the following factory options:

- 2 Channel Indicator
  - Enables dual channel indicator operation
- 2 or 4 Weight Setpoints per Channel
  - Enables weight setpoints functionality
- Alarm Active Relay
  - Activates a control relay when an alarm is active
- Max Net Weight Relay
  - Activates a control relay when a channel reaches max Net Weight
- Weight Setpoint (s) Active Relay
  - Activates a control relay when a weight setpoint is active
- Audible Alarm
  - Activates the internal alarm buzzer and a control relay when an alarm is active
- Modbus TCP or Modbus RS232 or Modbus RS485
  - Enables support for Modbus communication
- Remote Mounting
  - Includes Cantex box with terminal strip that mounts near scale
- Longer Cable
  - Connect scale to indicator at remote location

4.2 Weight Display

The Weight Display screens are accessed by pressing the Weight Display button on the Home screen. If the indicator is configured from factory with two channels, the user may view each channel independently or view both channels simultaneously.

While in any weight display, the user can toggle between Basic and Detailed views. The Basic view presents a simple, large font Net Weight display, while the Detailed view provides additional weight display information.

From any weight display, the user can access tare adjustment or unit selection by pressing the Unit or Tare buttons.

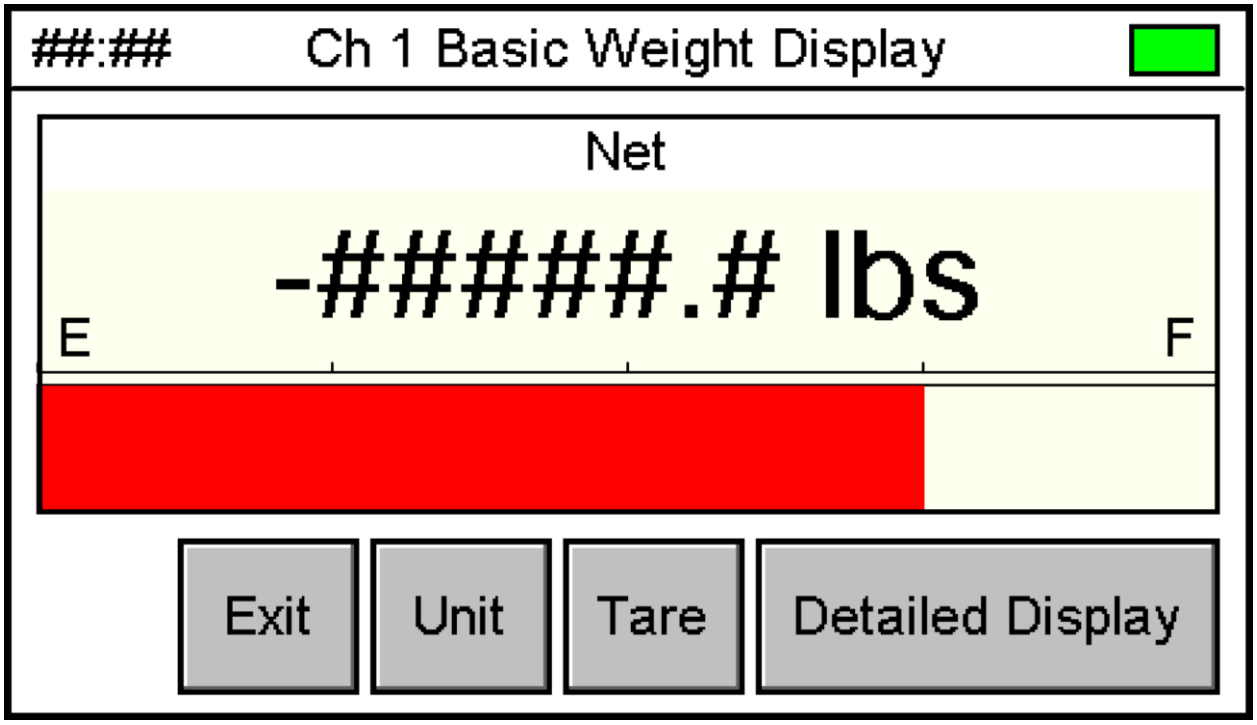

Figure 12: Ch 1 or Ch 2 Basic Weight Display Screen

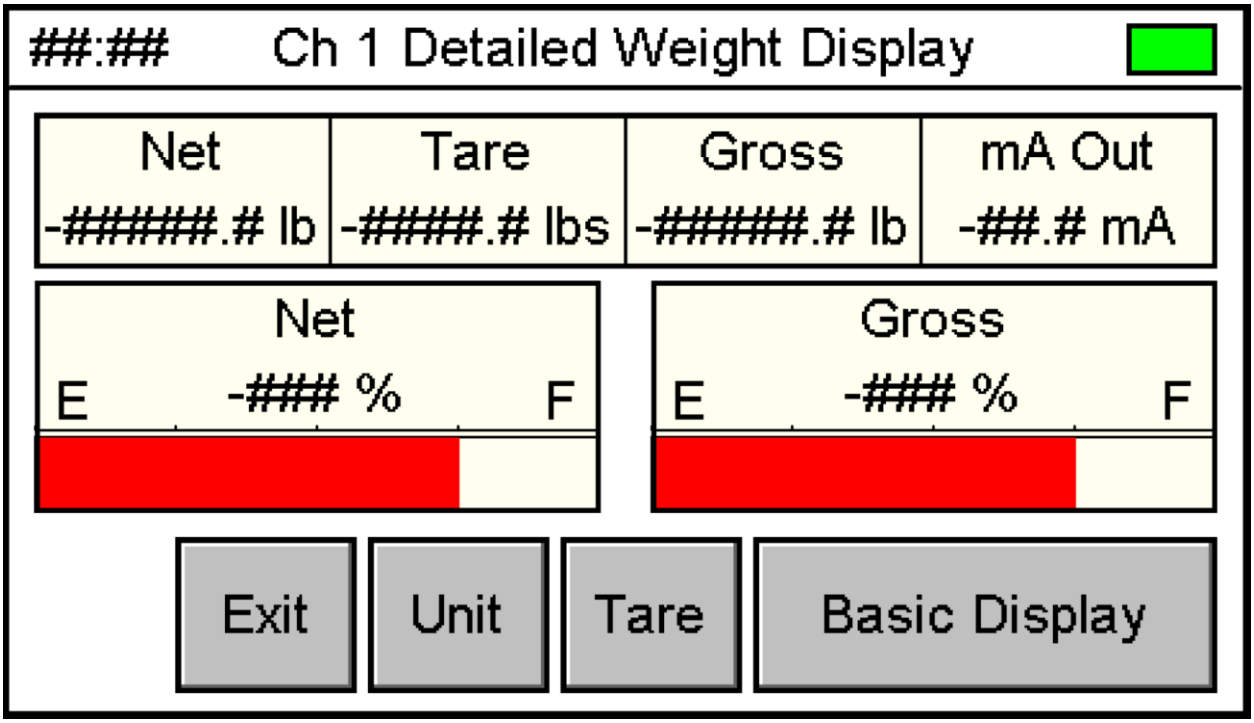

Figure 13: ***Ch 1 or Ch 2 Detailed Weight Display Screen***

The Ch 1 or Ch 2 Detailed Weight Display screen allows users to view Net Weight, Tare Weight, Gross Weight, mA Output Signal, Net Percent, Net Bar Graph, Gross Percent, and Gross Bar Graph.

Note: If Weight Setpoints were enabled at the factory, the Gross Percent and Gross Bar Graph displays are replaced with Weight Setpoint indicators.

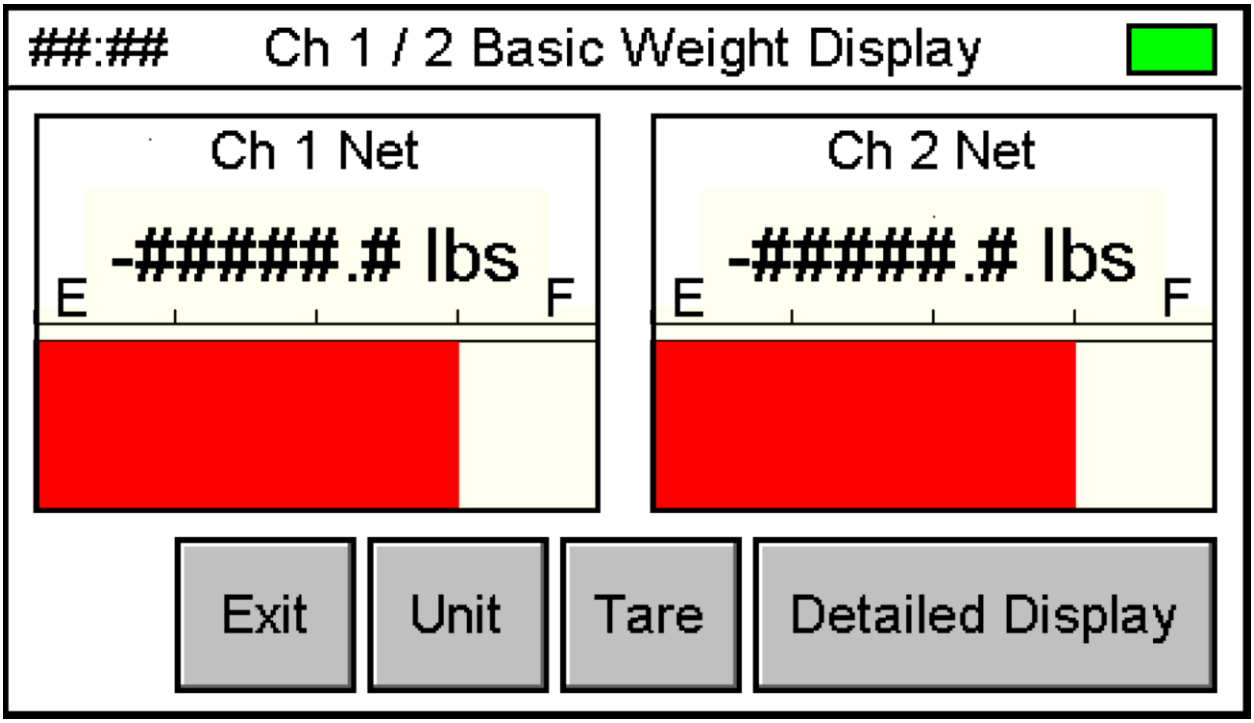

Figure 14: ***Ch 1 / 2 Basic Weight Display Screen***

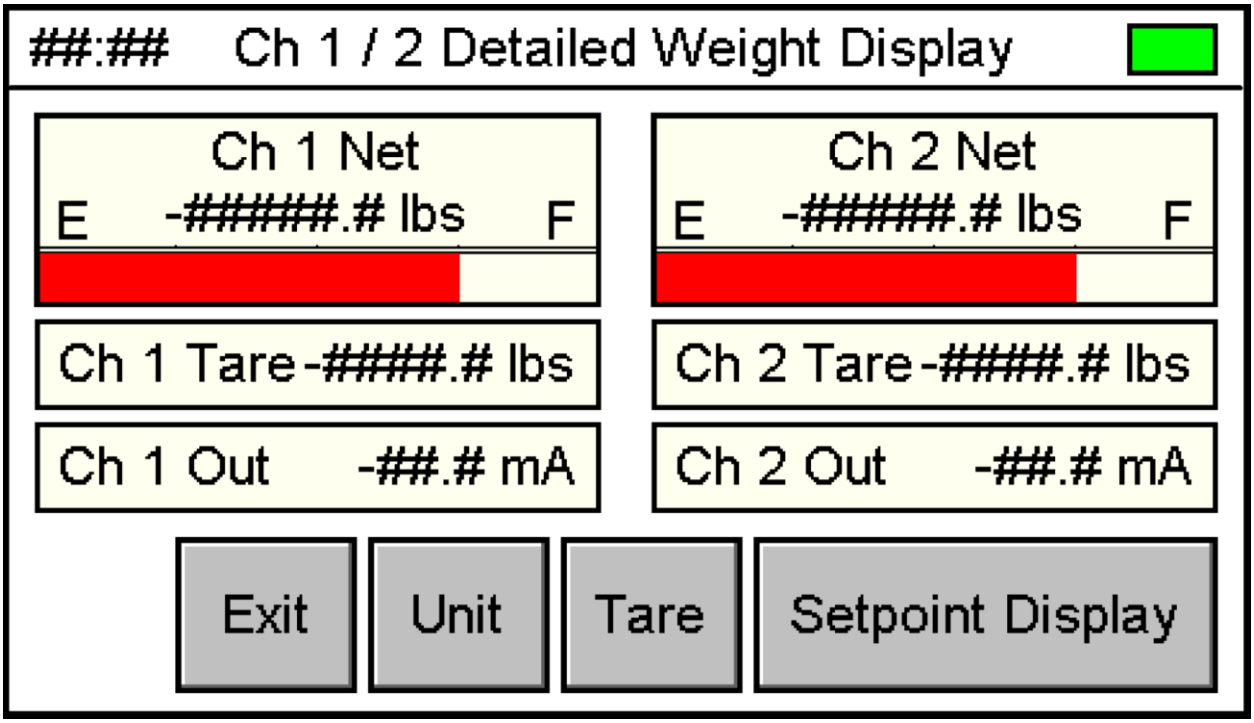

Figure 15: ***Ch 1 / 2 Detailed Weight Display Screen***

The Ch 1 / 2 Detailed Weight Display screen allows users to view Net Weight, Net Bar Graph, Tare Weight, and mA Output Signal for each channel.

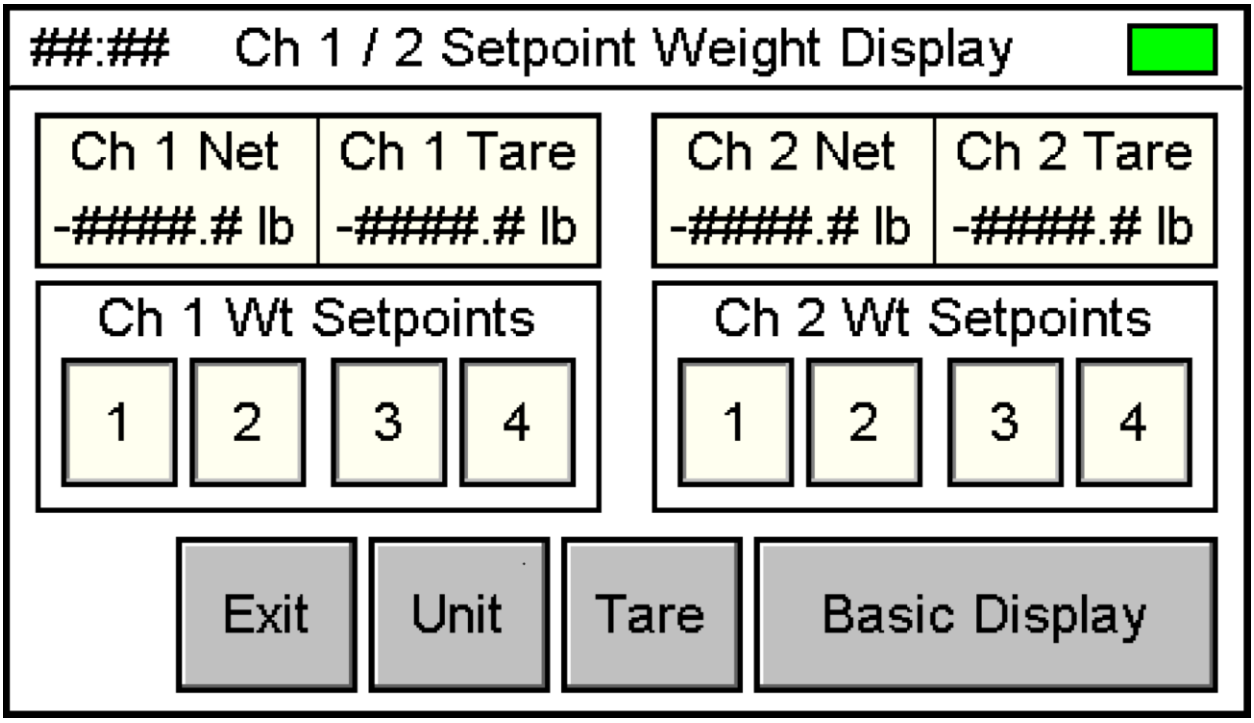

Figure 16: ***Ch 1 / 2 Setpoint Weight Display Screen***

The Ch 1 / 2 Setpoint Weight Display screen allows users to view Net Weight, Tare Weight, and Weight Setpoints for each channel.

Note: This display will only be available if Weight Setpoints are enabled from factory.

4.3 Weight Display Unit

The Weight Display Unit screen is accessed by pressing the Unit button from any Weight Display or Tare Adjustment screen. The user may select pounds, kilograms, gallons, or liters. When gallons or liters are selected, the displayed value is affected by the current specific gravity setting.

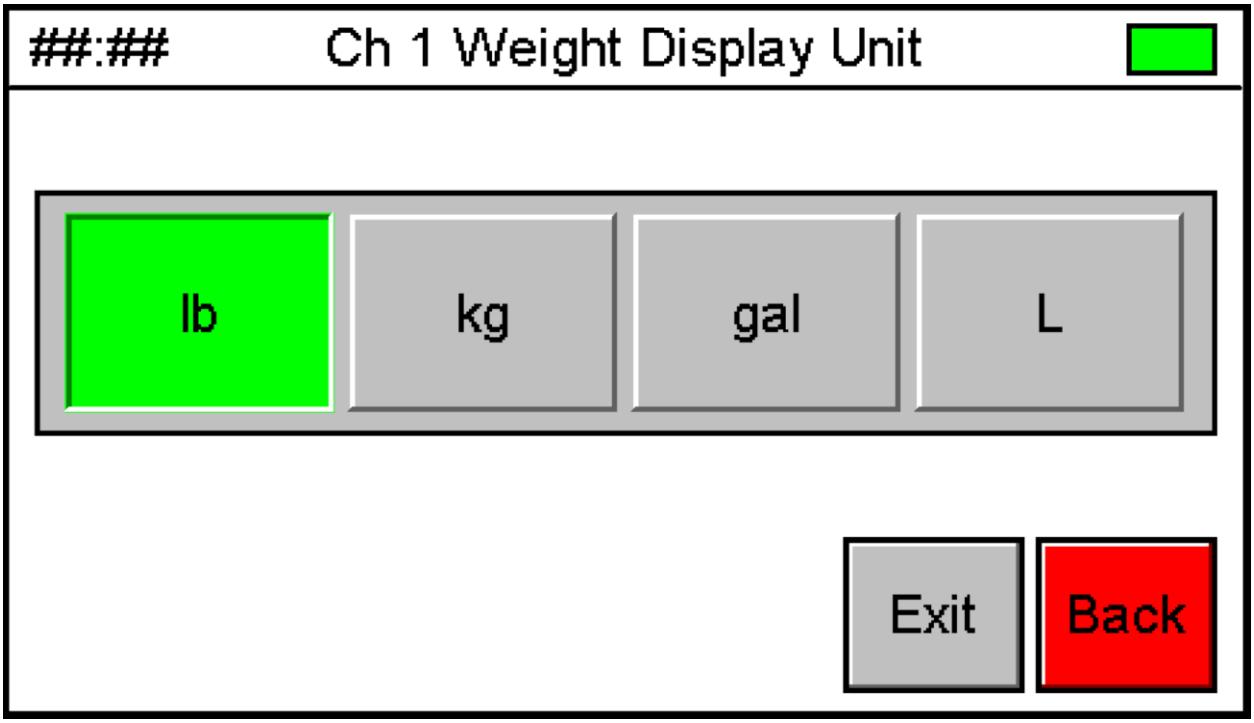

*Figure 17: **Weight Display Unit Screen***

4.4 Tare Adjustment

The Tare Adjustment screen is accessed by pressing the Tare button from any Weight Display. Tare values can be adjusted by pressing or holding the increase and decrease buttons.
The user may tare using a known tare weight by referencing the displayed Tare value, or tare using a known Net Weight by referencing the displayed Net Weight value. All weight currently on the scale base may be tared by using the Auto function, which is accessed by pressing the Auto button. All tare may be removed by using the Reset function, which is accessed by pressing the Reset button.

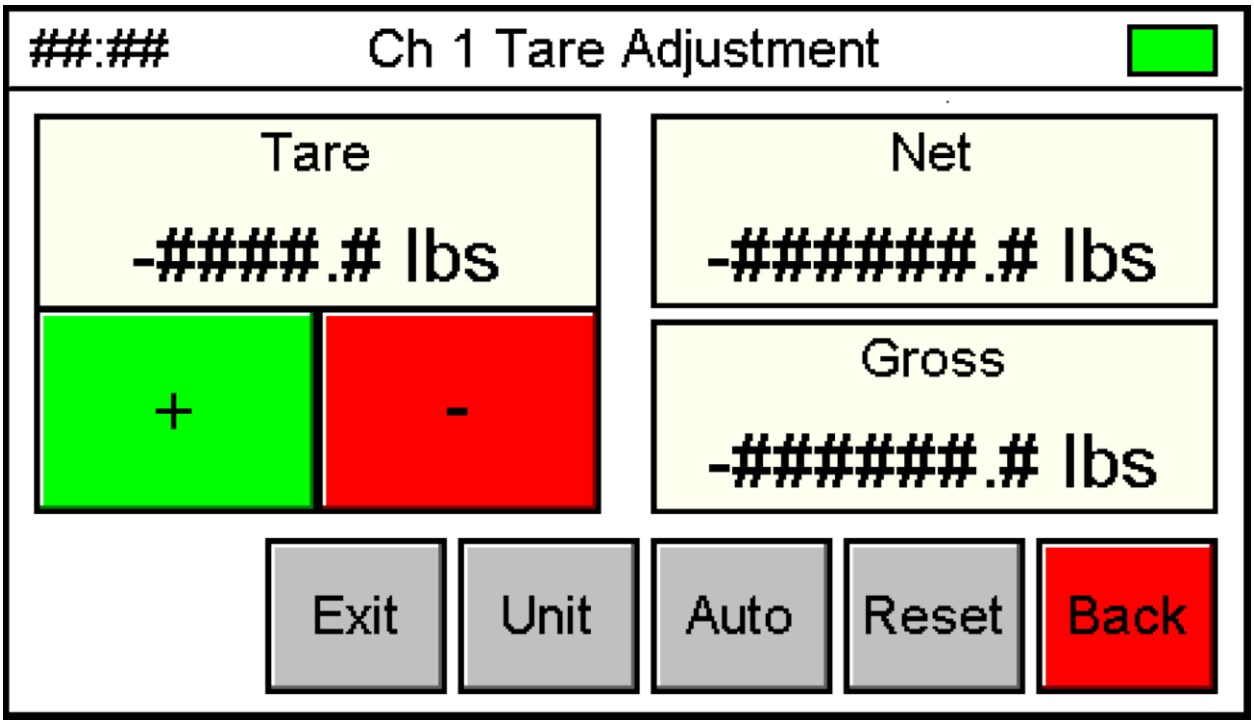

Figure 18: Tare Adjustment Screen

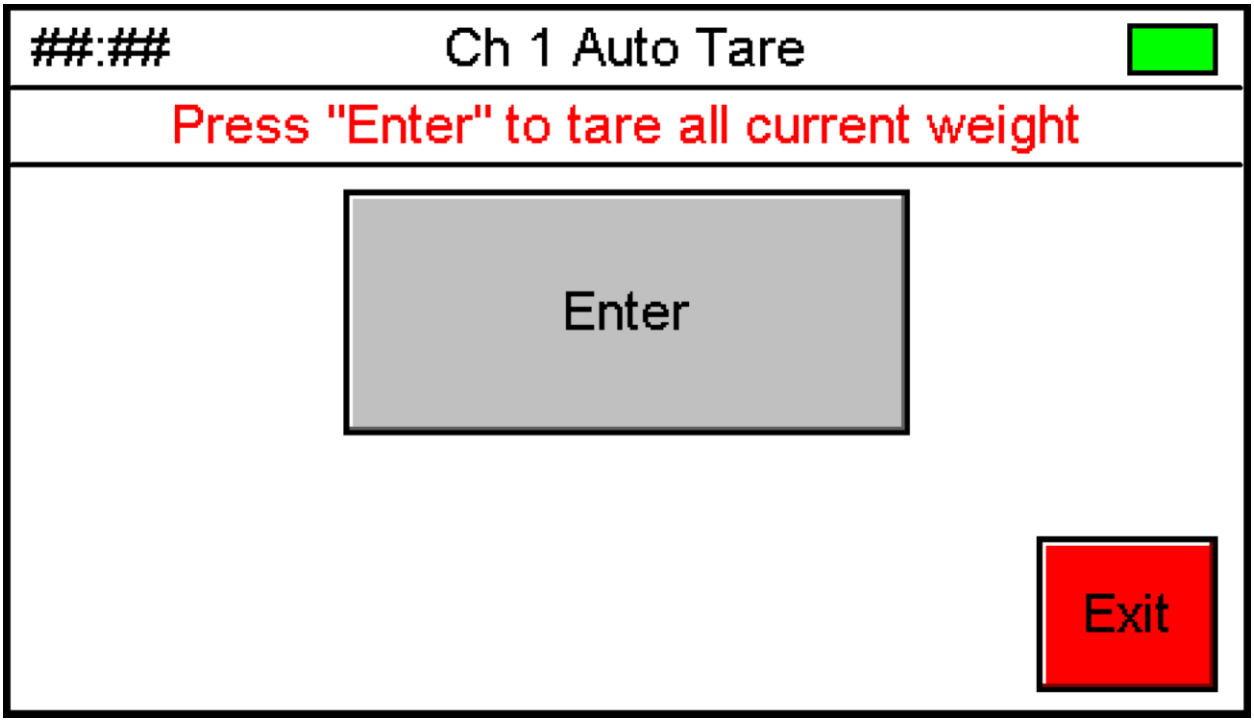

Figure 19: ***Auto Tare Screen***

The Auto Tare screen is accessed by pressing the Auto button on the Tare Adjustment screen. From this screen, the user can automatically tare all weight currently on the scale base by pressing the Enter button.

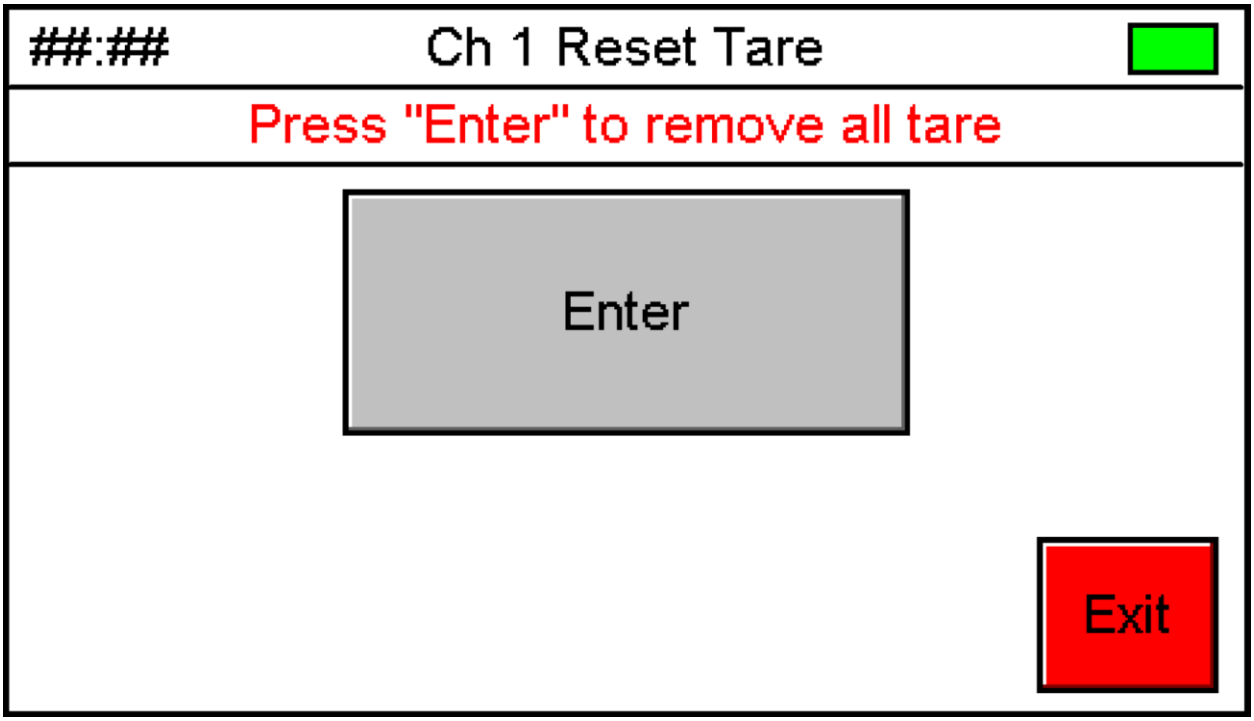

Figure 20: ***Reset Tare Screen***

The Reset Tare screen is accessed by pressing the Reset button on the Tare Adjustment screen. From this screen, the user can remove all tare weight by pressing the Enter button.

5 Configuration

The Configuration menu is accessed by pressing the Configuration button on the Home screen. From this menu, the user may access Settings and Calibration. The Settings menu contains all user-adjustable channel specific options. The Calibration menu contains the calibration procedure used to calibrate the indicator to the scale base.

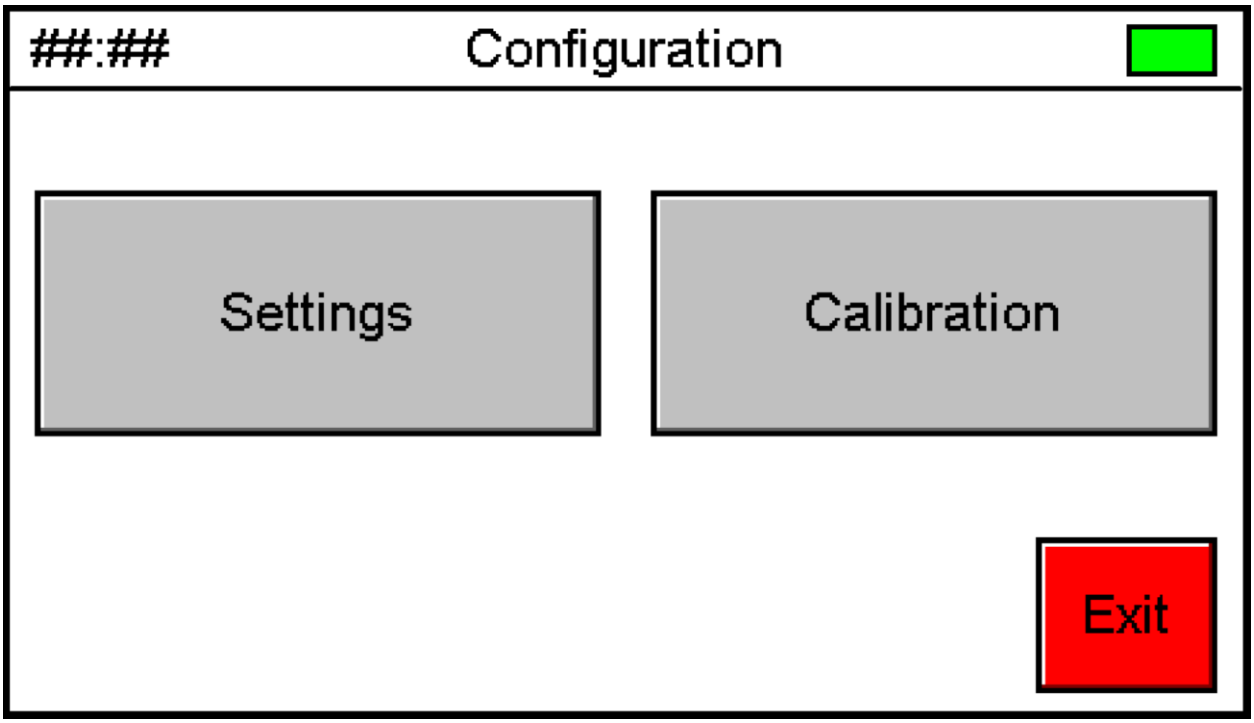

Figure 21: ***Configuration Screen***

5.1 Settings: Max Net Weight

The Max Net Weight setting controls the Net Percentage value and the Net Bar Graph on all weight displays. An alarm is triggered when the Net Weight exceeds the Max Net Weight setting. The Max Net Weight value cannot be set higher than the Max Gross Weight calibration parameter.

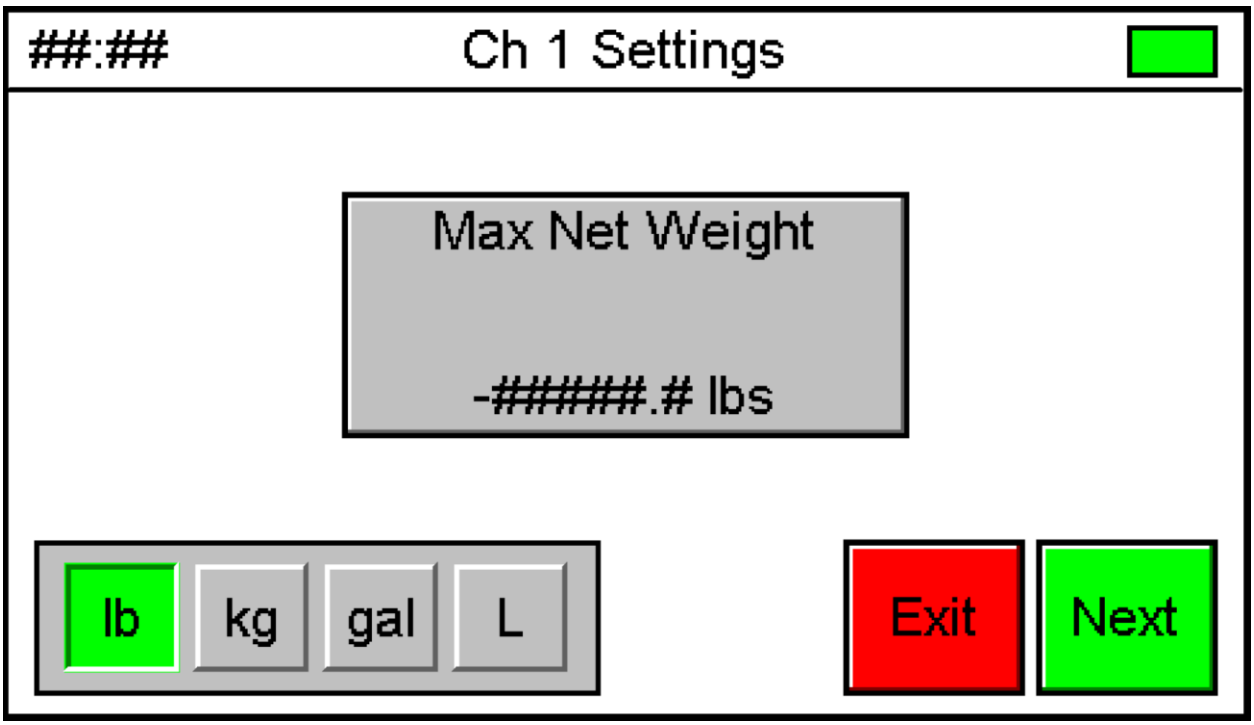

*Figure 22: **Settings: Max Net Weight Screen***

5.2 Settings: Weight Display Decimal

The Weight Display Decimal setting controls the precision of the values shown on all weight displays. When Weight Display Decimal is disabled, values are displayed as whole numbers. When enabled, one decimal place is added to all displayed values to provide a more precise weight display.

Example:

- Weight Display Decimal Disabled: Net 100 lbs
- Weight Display Decimal Enabled: Net 100.0 lbs

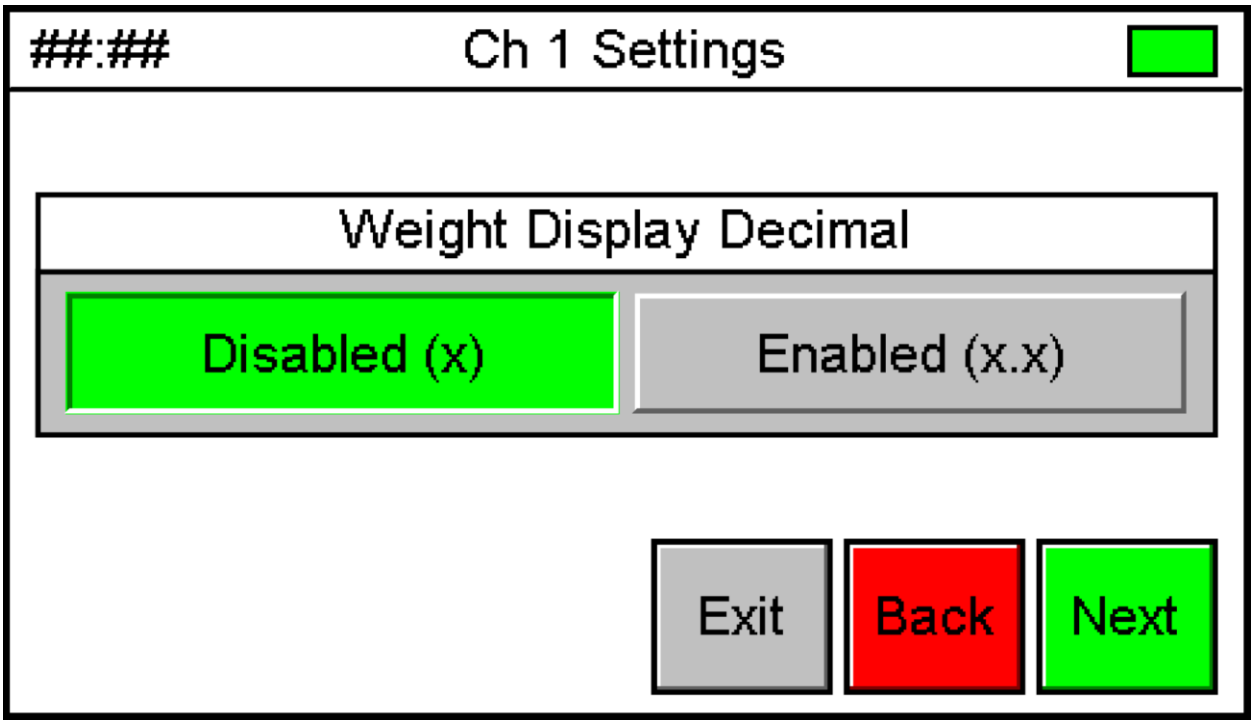

*Figure 23: **Settings: Weight Display Decimal Screen***

5.3 Settings: Weight Stability

The Weight Stabilization setting controls how quickly and steadily the weight display responds to changes. Standard provides a balanced response and is recommended for most applications. High produces the most stable display by filtering out small or rapid fluctuations, prioritizing stability over update rate. High stabilization is recommended for applications such as liquid weighing, where contents may move or slosh, or in any situation where a steady, consistent reading is preferred over rapid response.

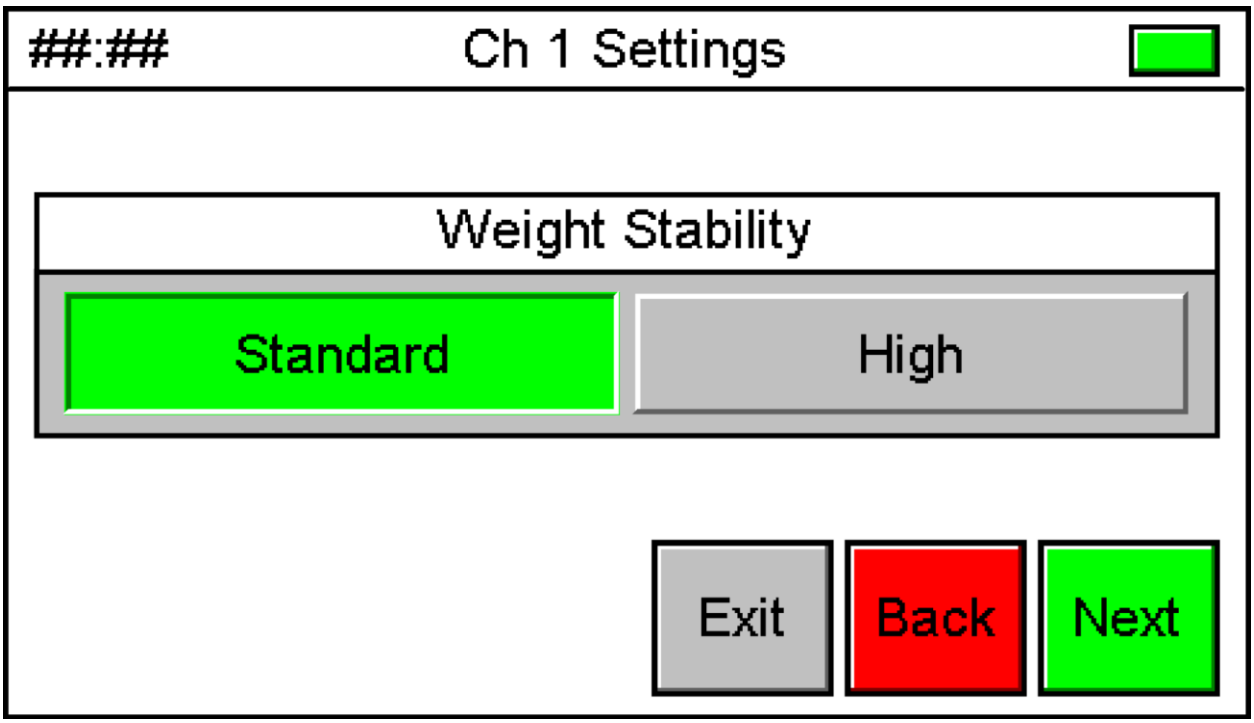

*Figure 24: **Settings: Weight Stability Screen***

5.4 Settings: Specific Gravity

The Specific Gravity setting affects volume-based weight display units such as gallons and liters. The default value is 1.000, which represents the specific gravity of water and corresponds to a weight of 8.345 lbs per gallon. Increasing the specific gravity increases the calculated weight per unit of volume, while decreasing it reduces the calculated weight per volume.

Example:

- Specific Gravity = 1.000: A weight of 100 lbs is equivalent to 12.0 gallons
- Specific Gravity = 1.500: A weight of 100 lbs is equivalent to 8.0 gallons

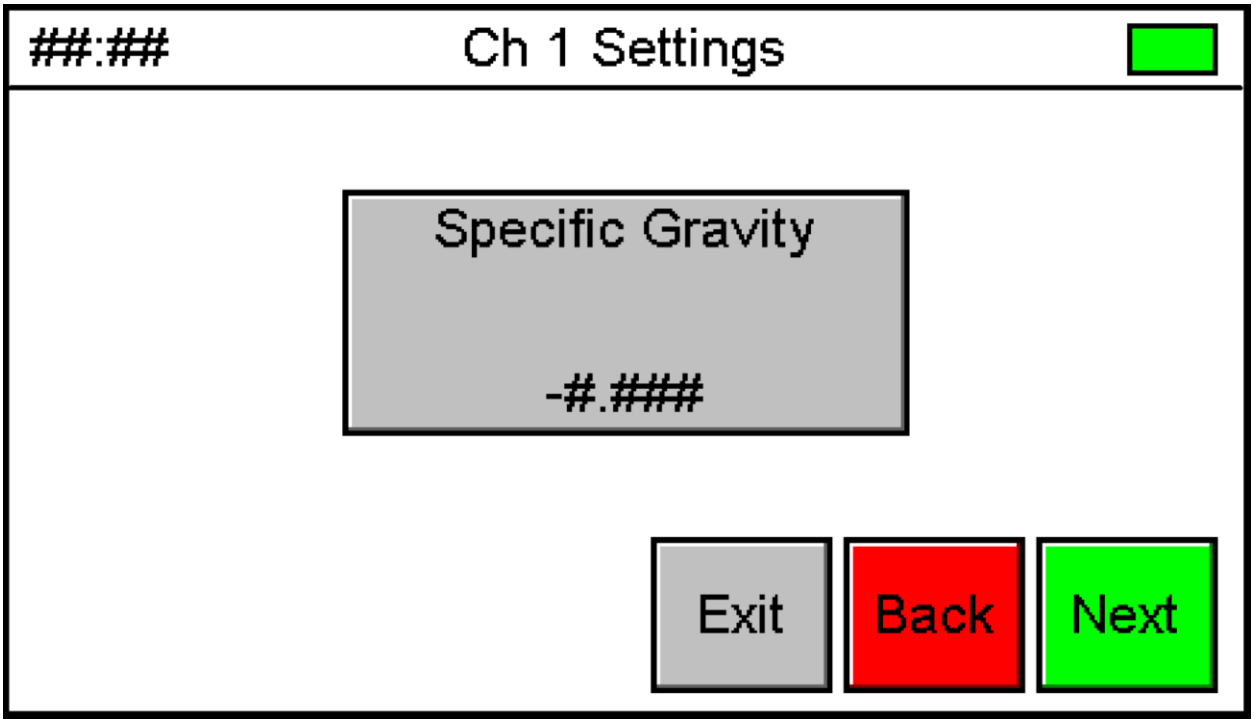

*Figure 25: **Settings: Specific Gravity Screen***

5.5 Settings: Trim Adjustment

The Trim Adjustment setting allows fine adjustment of the weight display. Adjusting trim may be necessary depending on scale base installation or temperature fluctuations.

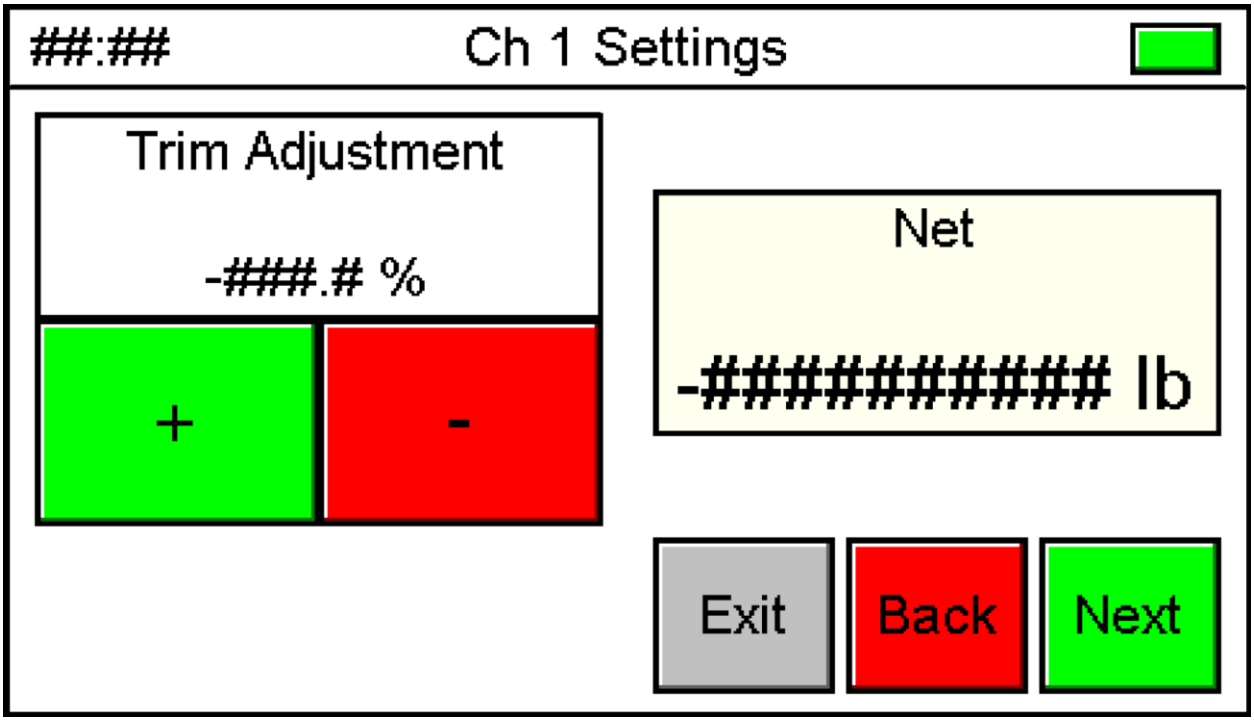

Figure 26: Settings: Trim Adjustment Screen

5.6 Settings: 4-20 mA Output

The 4-20 mA Net Wt setting controls how the indicator scales and transmits Net Weight information through the milliamp (mA) output signal. The 4 mA Net Wt value defines the Net Weight at which the indicator outputs 4 mA, and the 20 mA Net Wt value defines the Net Weight at which the indicator outputs 20 mA. Any Net Weight between these two values produces a proportional, linear output signal that may be used to remotely monitor or determine the Net Weight. The mA Output Range may be adjusted in the System Info menu to a minimum range of 10-14 mA for specific application or system integration requirements.

Example: If the 4 mA Net Wt is set to 0 lbs and the 20 mA Net Wt is set to 100 lbs, the indicator will output 8 mA when the Net Weight is 25 lbs and the mA Output Range is set to 4-20 mA.

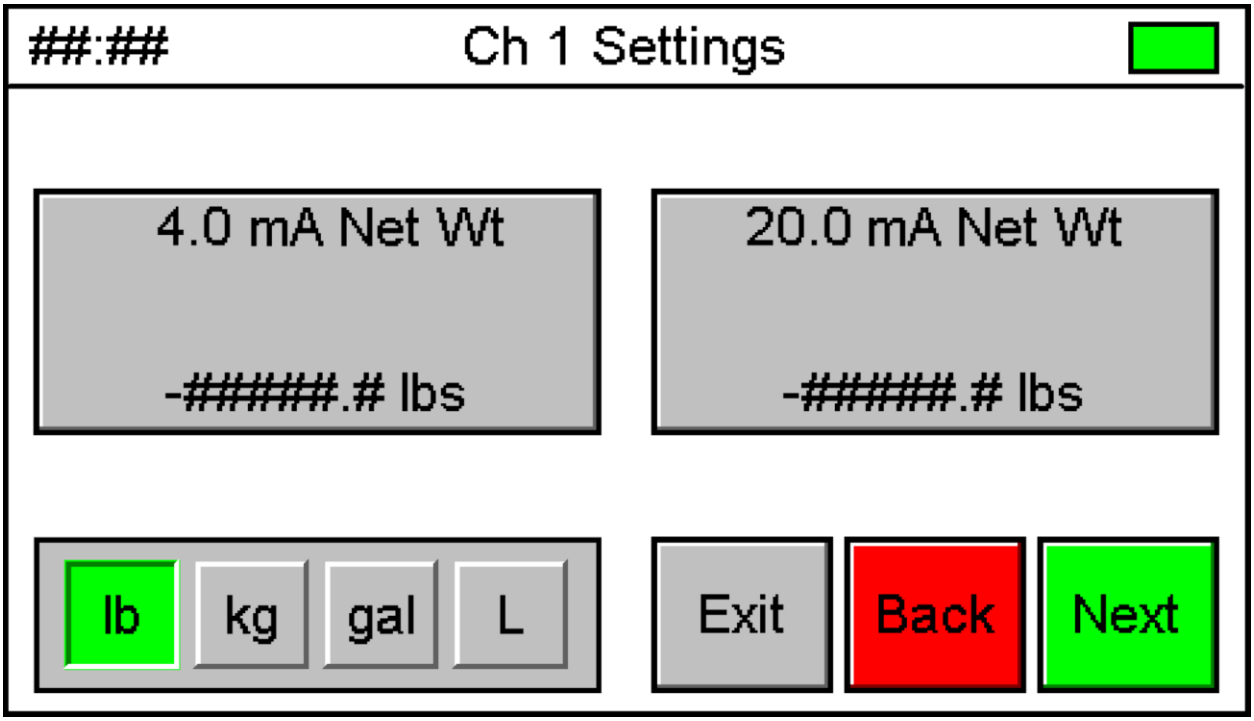

Figure 27: ***Settings: 4-20 mA Output Screen***

5.7 Settings: Weight Setpoints

The Weight Setpoint setting controls when the indicator activates an output relay based on Net Weight. A setpoint output will turn on when the Net Weight is above or below the defined setpoint value, depending on whether the High or Low trigger option is selected.
Weight Setpoints operation may be further configured in the System Info menu to operate in Latch or Alarm mode. When a setpoint is configured as Latched, it remains on once triggered until it is acknowledged by the user and the triggering condition no longer exists. When configured as an Alarm, the setpoint behaves as an alarm condition: it appears in the Alarm section of the Status Check menu, activates the alarm buzzer (if that factory option is enabled), and changes the status indicator to red while the alarm is active.

Example: If Weight Setpoint 1 is set to 50 lbs with a Low trigger, Weight Setpoint 1 triggers when the Net Weight is below 50 lbs.

Note: Weight Setpoints are only available if factory option is enabled.

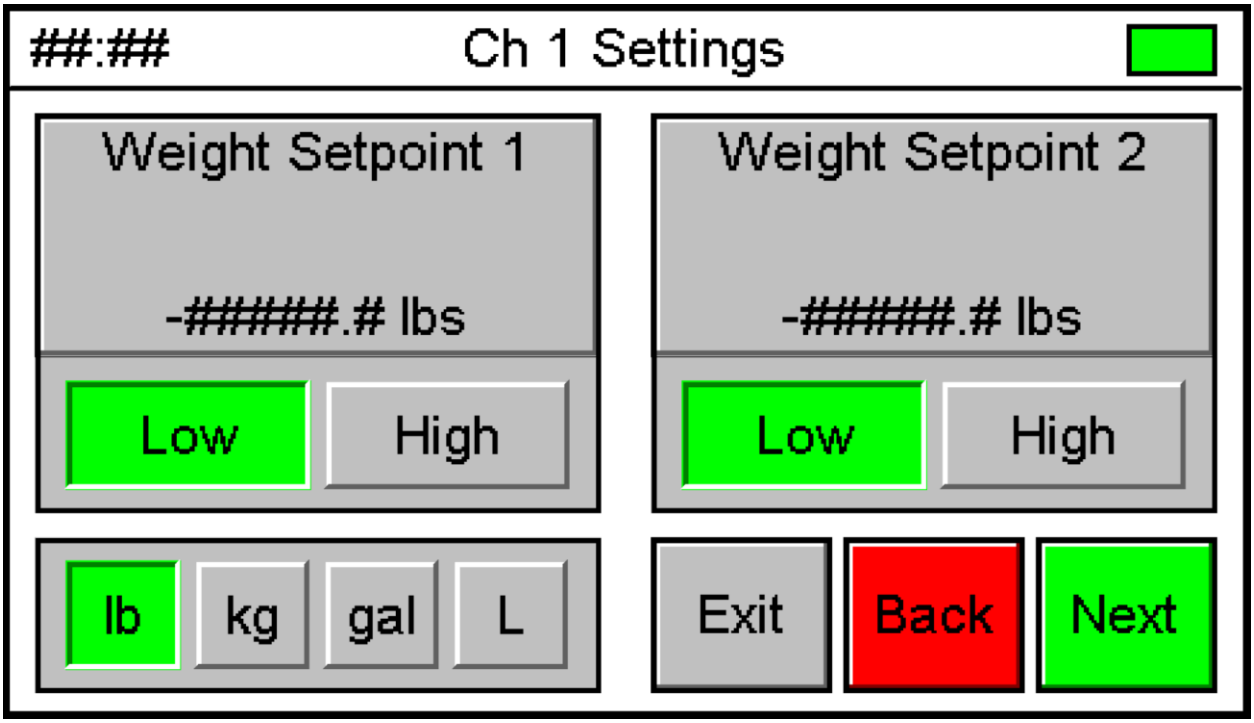

*Figure 28: **Settings: Weight Setpoints Screen***

5.8 Calibration

All indicators are factory calibrated prior to shipment. The Calibration procedure is password protected. For recalibration or technical support, contact Scaletron Industries.
The Calibration procedure allows the user to calibrate each channel of the indicator to its corresponding scale base so that the correct weight is displayed. Calibration data can be viewed by pressing the Calibration button on the Configuration screen, and the procedure can be started by pressing the Set Calibration button.

Warning: Do not adjust the Offset or Gain potentiometers on the control board. These components directly control the amplifier configuration and adjusting them will alter the system calibration.

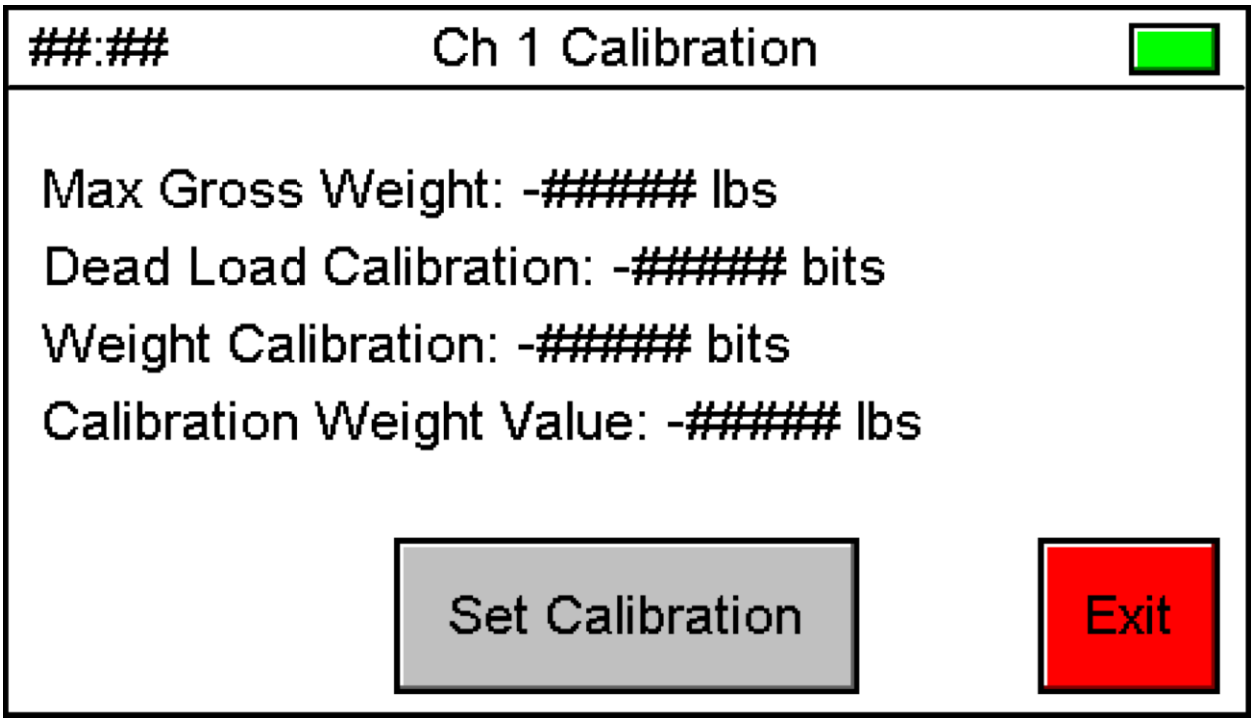

Figure 29: ***Calibration Screen***

5.9 Calibration: Max Gross Weight

The Max Gross Weight is the maximum total weight to be loaded on the scale base, including both Net and Tare Weight. The Max Gross Weight value can be entered in pounds (lbs) or kilograms (kg).

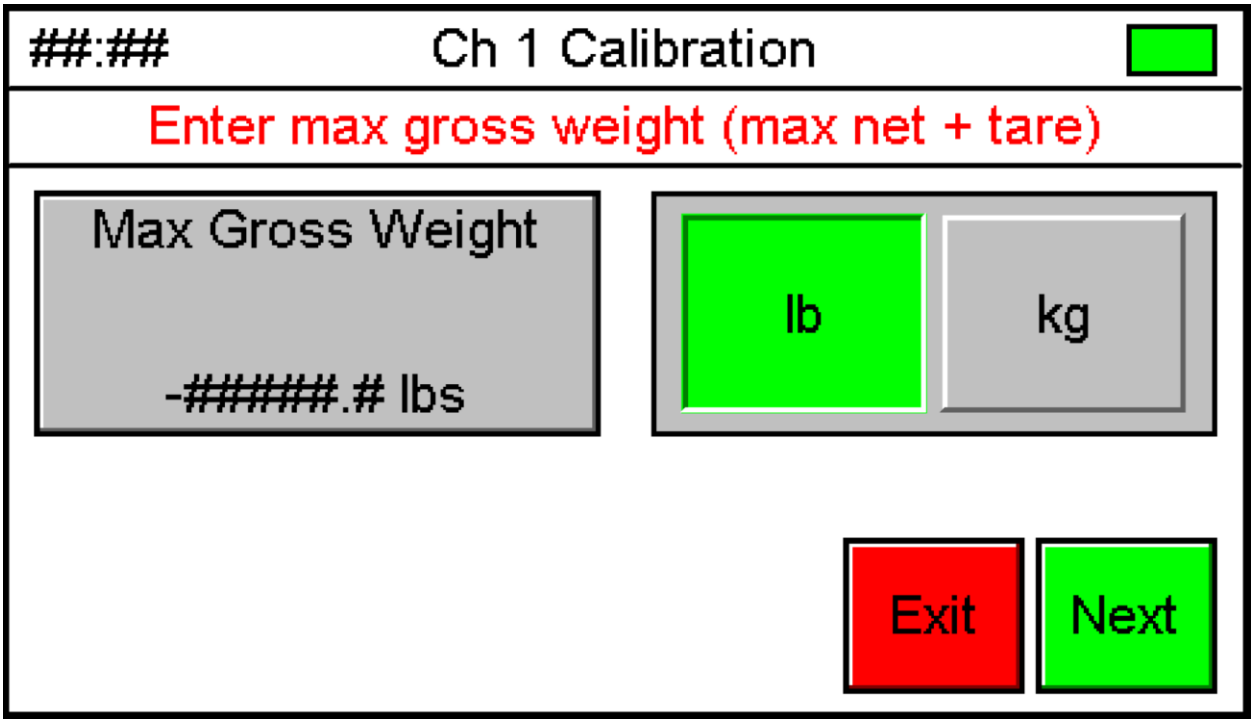

Figure 30: Calibration: Max Gross Weight Screen

5.10 Calibration: Dead Load Calibration

The Dead Load Calibration value represents the calibration sample taken with all weight removed from the scale base. This step establishes the zero point for system calibration. During this step, the user can view both the current base input signal (bits) and the current Dead Load Calibration value (bits). The ideal Dead Load Calibration value should fall within 5000-6000 bits to ensure the maximum available calibration range.

The Dead Load Cal Enter button can only be pressed when the scale base is determined to be stable. From this screen, the user may also access the Data Entry Dead Load Calibration option to manually enter the Dead Load Calibration bits without taking a live calibration sample.

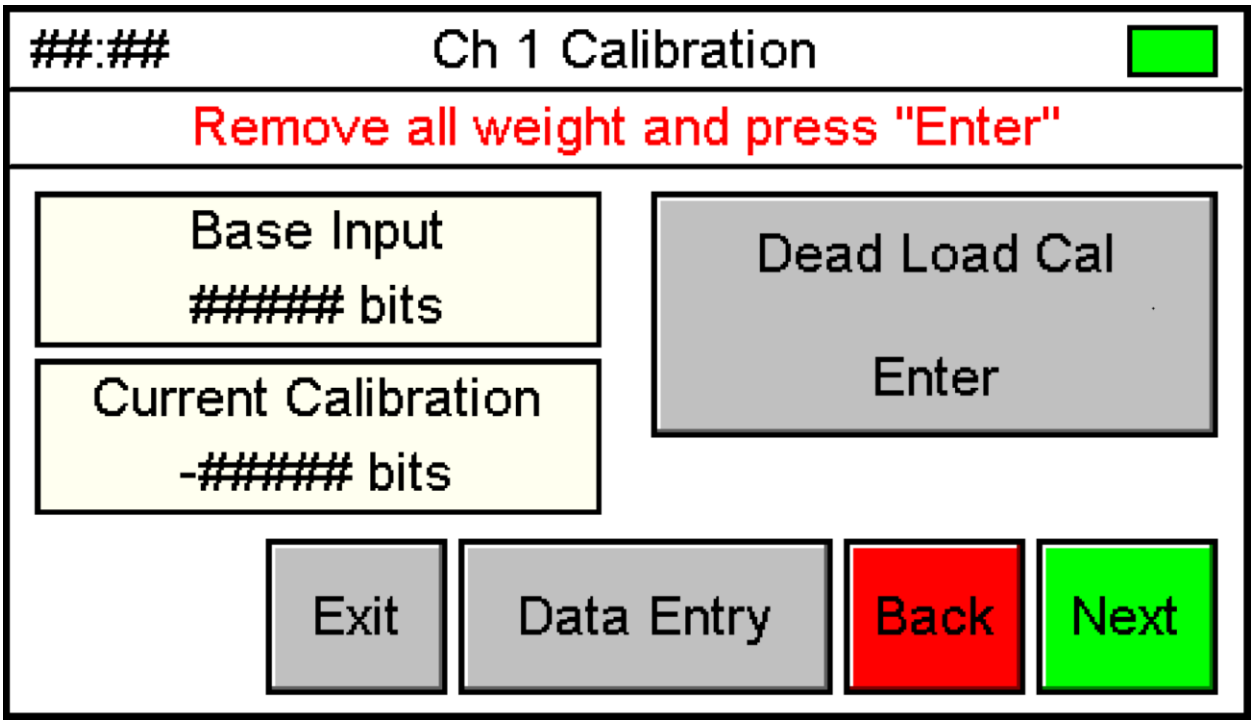

*Figure 31: **Calibration: Dead Load Calibration Sample Screen***

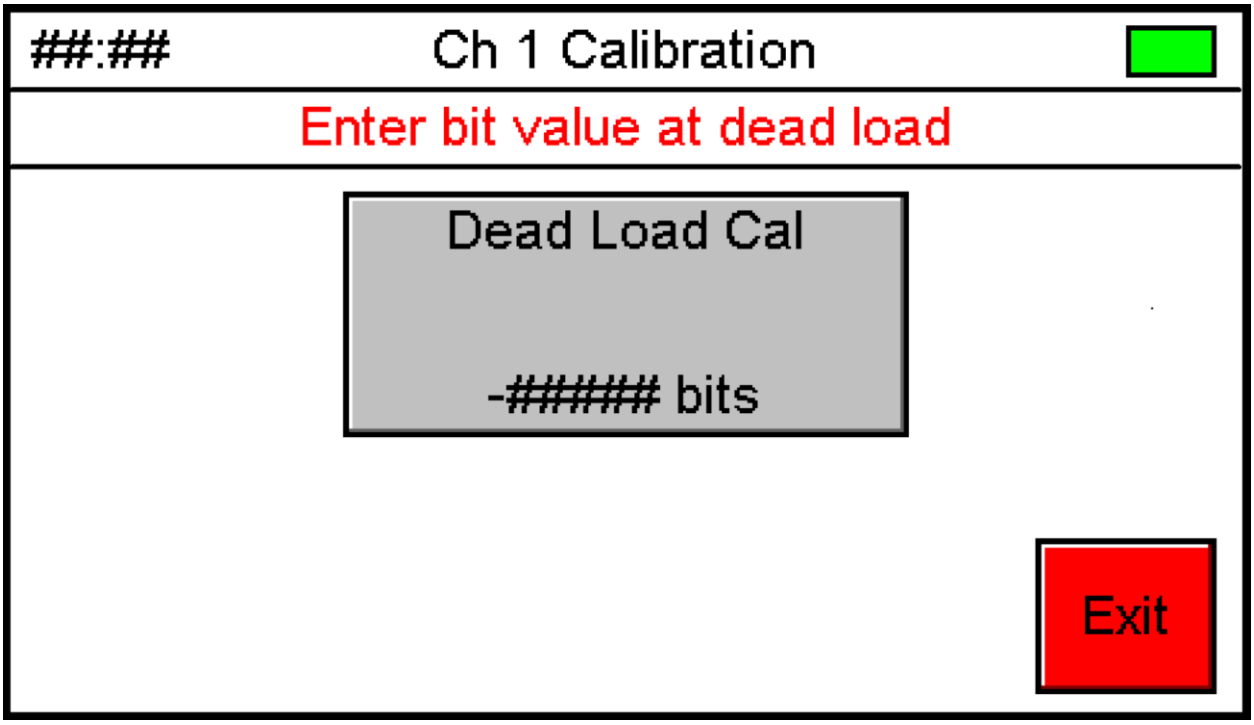

Figure 32: ***Calibration: Dead Load Calibration Data Entry Screen***

The Data Entry Dead Load Calibration option allows the user to manually enter the bit value for the dead load calibration condition instead of taking a live calibration sample. This method is used when a physical calibration sample cannot be taken, such as in remote installations, factory setups, or situations where removing all weight from the scale base is not practical. Manual entry may also be used when replacing an indicator to restore accurate scaling by re-entering previously recorded calibration data without performing a full live calibration.

When entering calibration data manually, the user must ensure that the entered dead load bit value accurately represents the base input signal with all weight removed from the scale base. Incorrect data entry may result in calibration errors or inaccurate weight readings.

5.11 Calibration: Weight Calibration

The Weight Calibration value represents the calibration sample taken with a known calibration weight applied to the scale base. This step establishes the linear span point for the indicator's calibration. During this step, the user can view both the current base input signal (bits) and the current Weight Calibration value (bits). The Weight Calibration value must be at least 1000 bits greater than the Dead Load Calibration value to ensure accurate calibration.
The Weight Calibration Enter button can only be pressed when the scale base is determined to be stable. From this screen, the user may also access the Data Entry Weight Calibration option to manually enter the weight calibration bits without taking a live calibration sample.

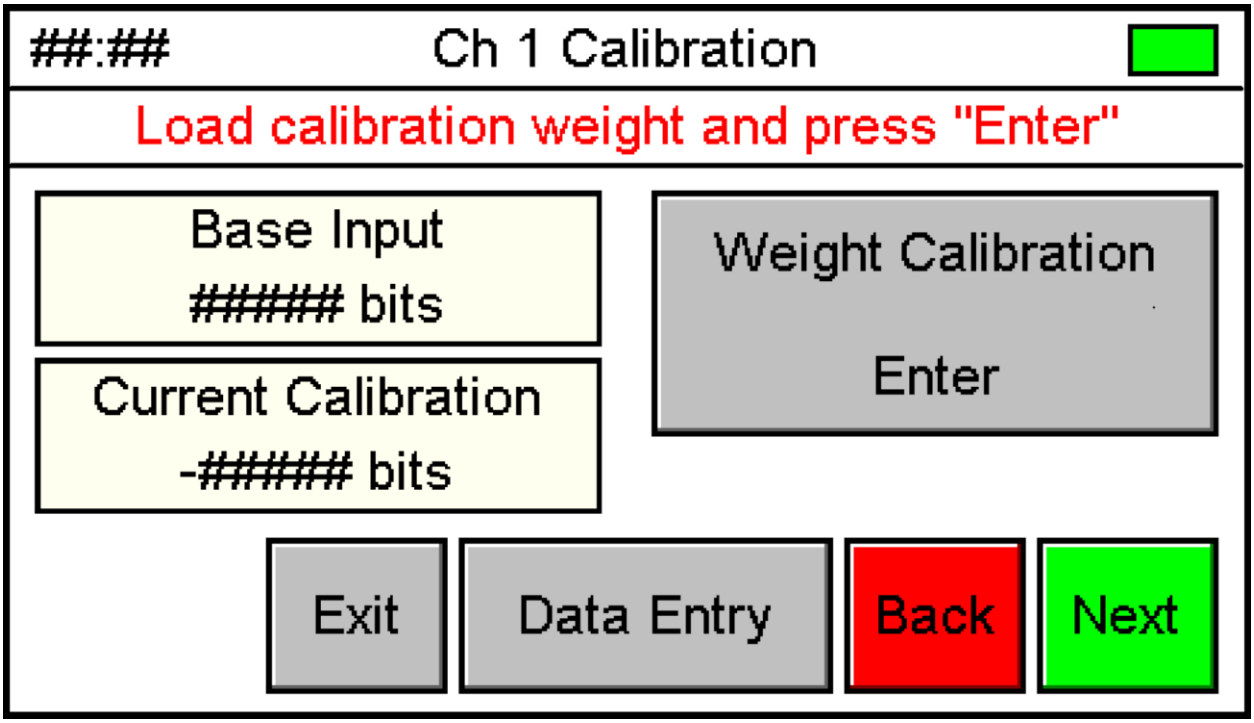

*Figure 33: **Calibration: Weight Calibration Screen***

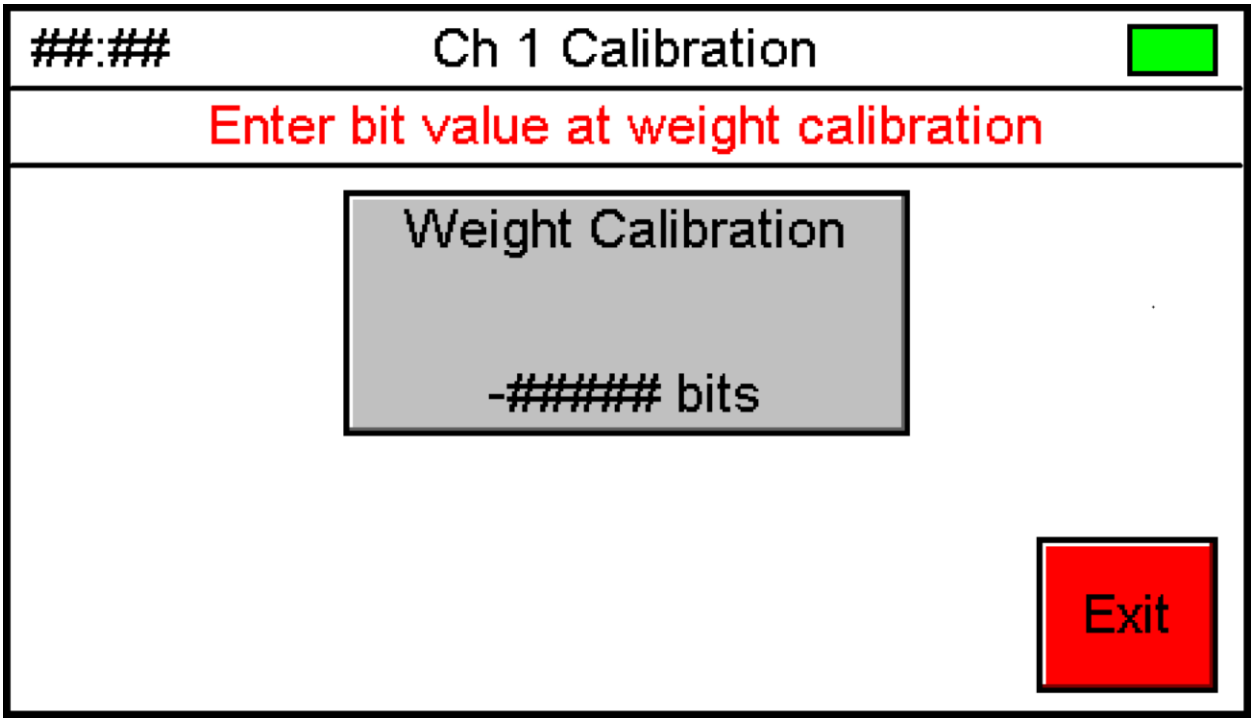

Figure 34: ***Calibration: Weight Calibration Data Entry Screen***

The Data Entry Weight Calibration option allows the user to manually enter the bit value for the weight calibration condition instead of taking a live calibration sample. This method is used when a physical calibration sample cannot be taken, such as in remote installations, factory setups, or situations where applying a known calibration weight is not practical. Manual entry may also be used when replacing an indicator to restore accurate scaling by re-entering previously recorded calibration data without performing a full live calibration.

When entering calibration data manually, the user must ensure that the entered weight calibration bit value accurately represents the base input signal when the Calibration Weight Value is on the scale base. Incorrect data entry may result in calibration errors or inaccurate weight readings.

5.12 Calibration: Calibration Weight Value

The Calibration Weight Value is the known weight, in pounds or kilograms, used during the Weight Calibration sample. This value allows the indicator to accurately scale the base input signal to the actual weight applied to the scale base.

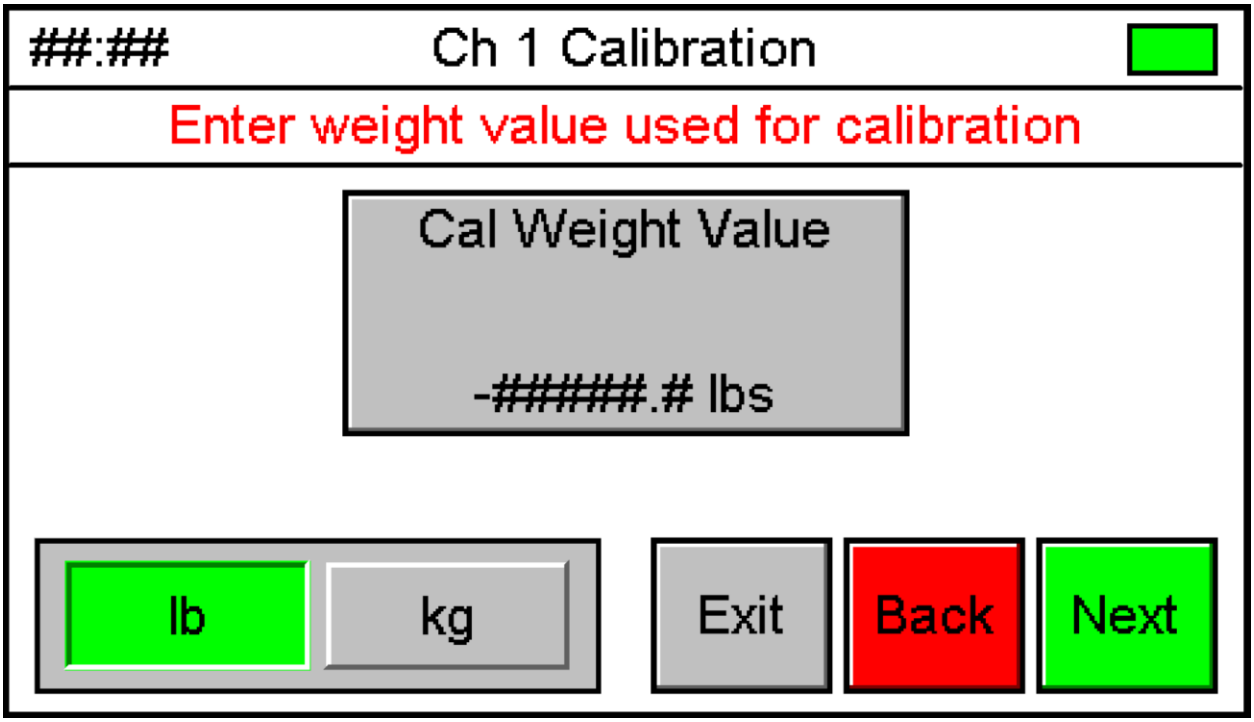

Figure 35: Calibration: Calibration Weight Value Screen

5.13 Calibration: Calibration Range Verification

The Calibration Range Verification screen is the final step of the calibration procedure. This is a view-only screen that displays the Current Max Display Weight.

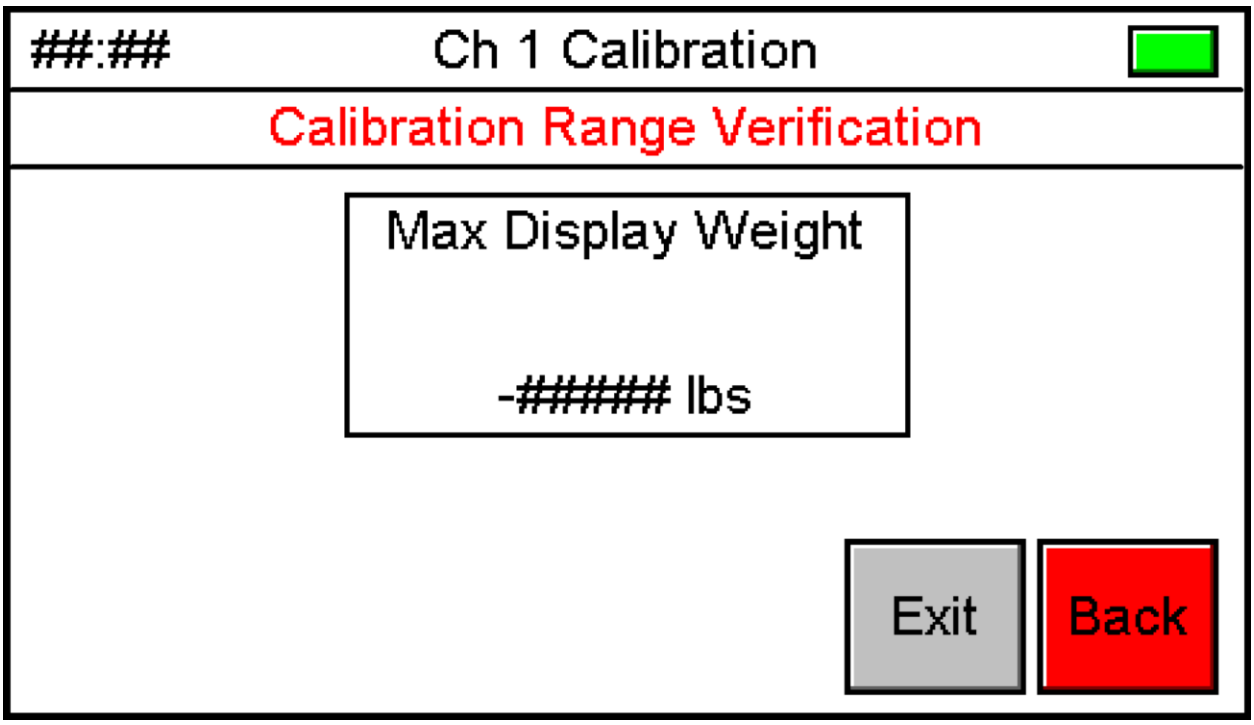

*Figure 36: **Calibration: Calibration Range Verification Screen***

6 System Info

The System Info menu is accessed by pressing System Info on the Home screen. Any configuration changes made within this menu apply to the entire system, including both channels.
From the System Info menu, the user may view indicator and manufacturer information, configure the clock, adjust weight setpoint options, view Modbus parameters, and restore factory defaults to return the indicator to its original configuration.

Note: The Modbus and Weight Setpoint Options menus are available only when those options are enabled from factory.

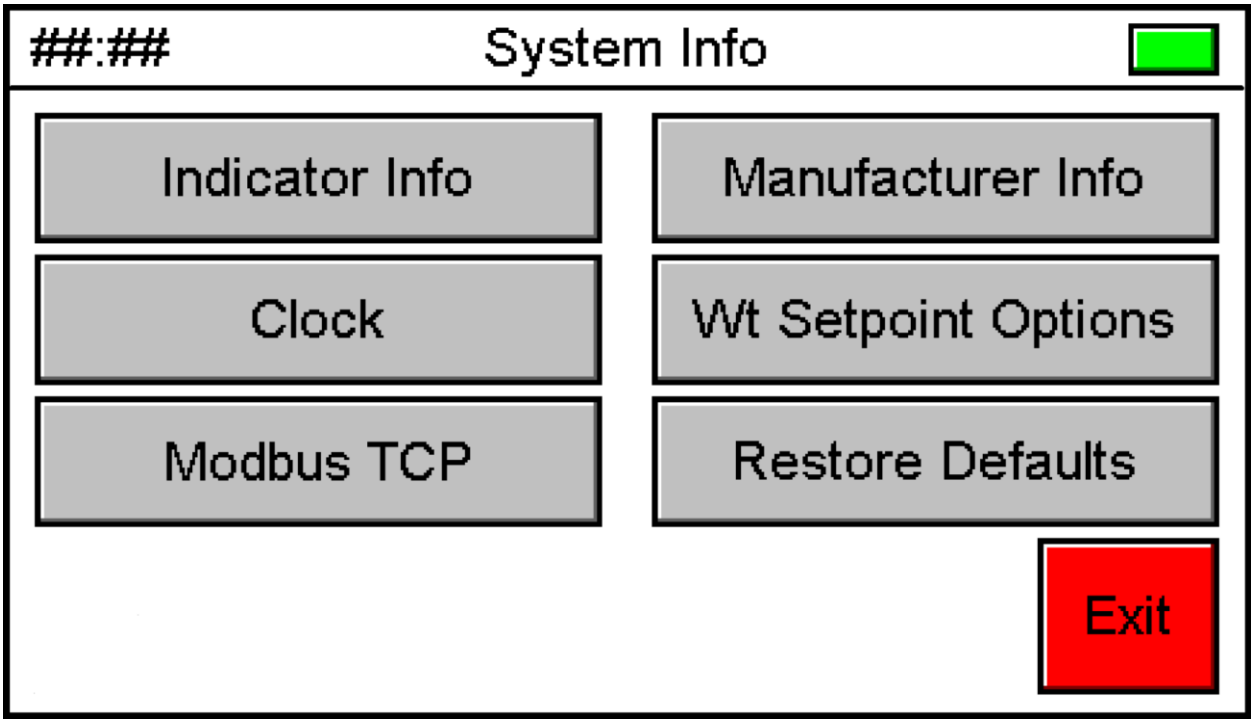

Figure 37: ***System Info Screen***

6.1 Indicator Information

The Indicator Information screen displays the indicator Software Version and Serial Number for reference.

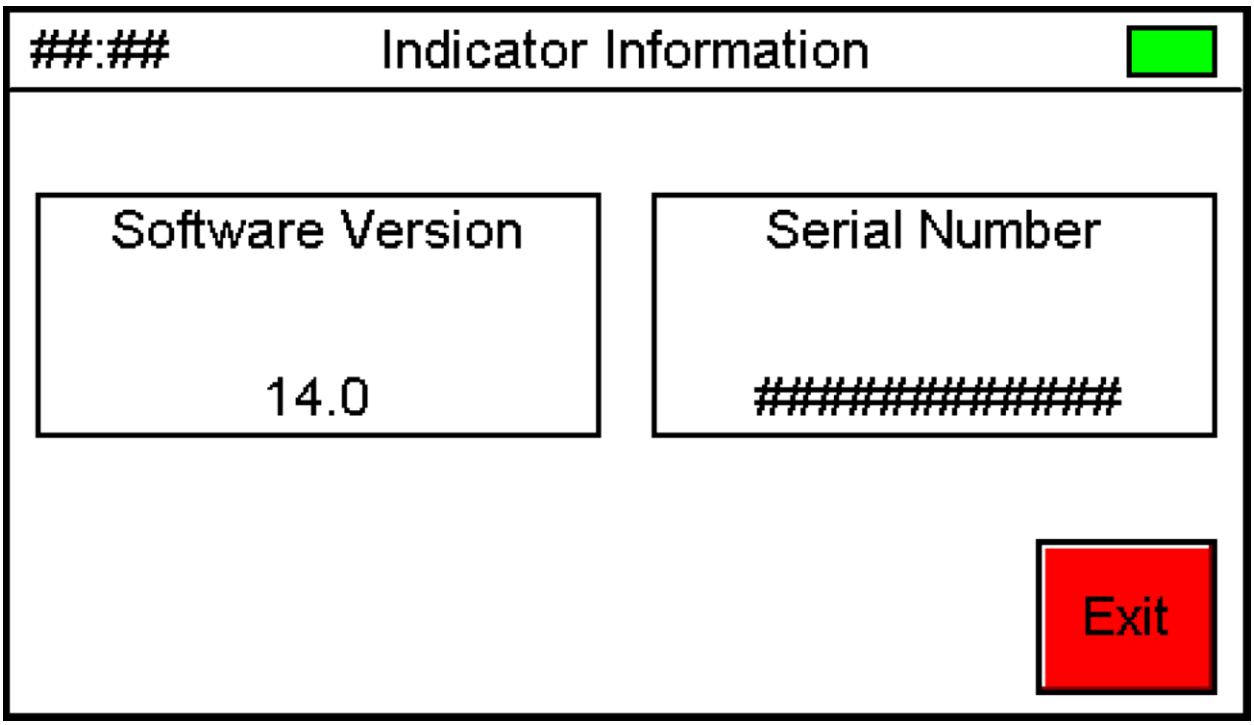

Figure 38: ***Indicator Information Screen***

6.2 Manufacturer Information

The Manufacturer Information screen displays the manufacturer's website, email, toll free phone number, international phone number, fax number, and address.

Figure 39: Manufacturer Information Screen

6.3 Clock

The system time is continuously displayed in the top left corner of every screen and is used to generate timestamps for alarms and setpoints within the Status menu.

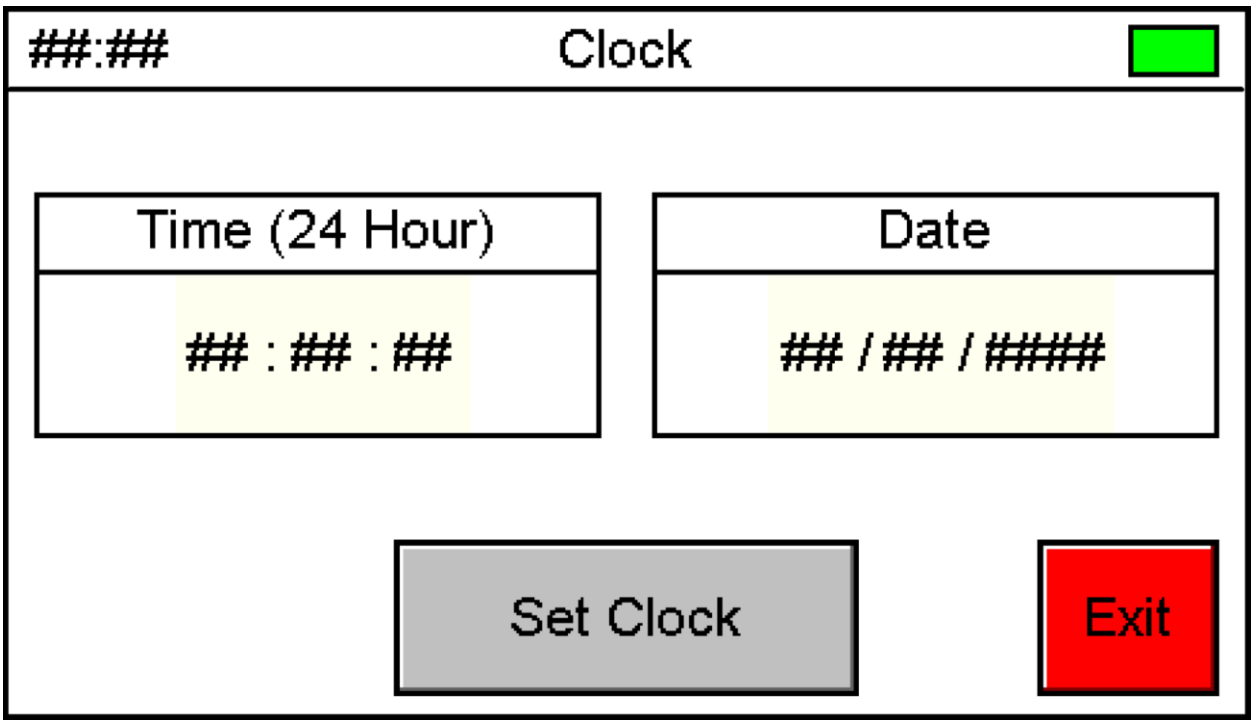

Figure 40: ***Clock Screen***

The Clock screen allows the user to view and adjust the system's internal time and date settings. The current time is displayed in 24-hour format along with the current date.

To update the time, press the Set Clock button. The user will then be taken to the Set Clock screen, where the system time and date can be adjusted as needed.

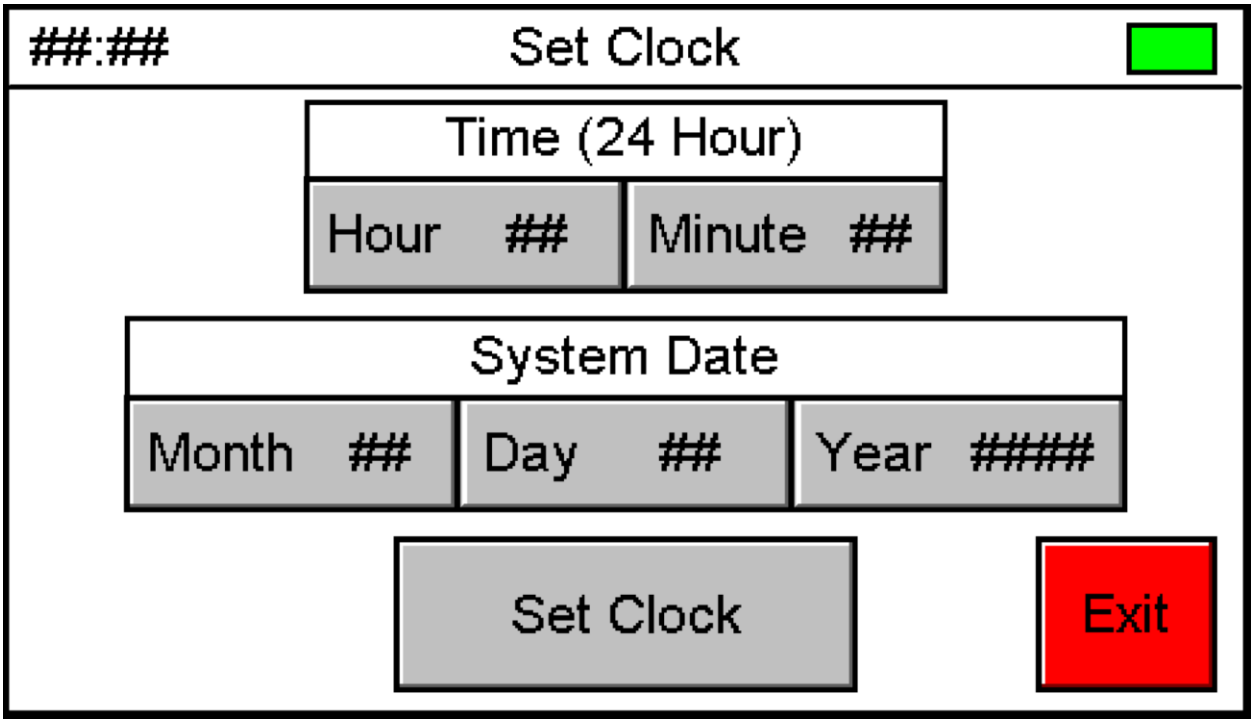

Figure 41: ***Set Clock Screen***

The user can enter the system time and date. Pressing the Set Clock button will confirm and save the new settings.

6.4 Weight Setpoint Options

The Weight Setpoint Options setting allows the user to configure how weight setpoints respond when triggered. Setpoints may be configured to operate in either Latch mode or Trigger Alarm mode.
When Latch is enabled, the setpoint output remains active once triggered until it is manually acknowledged by the user and the triggering condition is no longer present. When Trigger Alarm is enabled, the setpoint output functions as an alarm, activating the alarm buzzer (if that option is enabled from factory) and appearing in the Alarm Status screen when triggered.
These options apply to the entire system and affect both channels.

Note: The Weight Setpoint Options screen is available only when Weight Setpoints are enabled from factory.

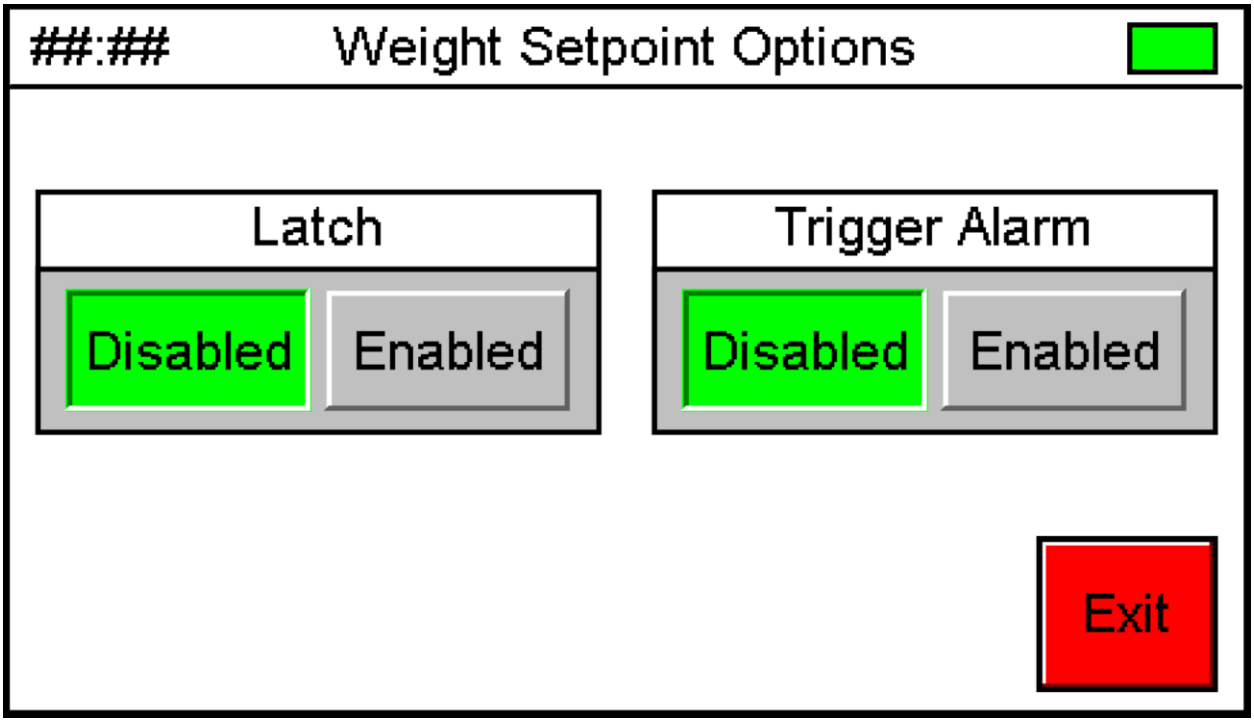

*Figure 42: **Weight Setpoint Options Screen***

6.5 Modbus

When Modbus communication is enabled, the user may remotely view key system information, including Net Weight, Gross Weight, Net Weight %, Gross Weight %, Display Unit, Tare Weight, Alarm Active indicator, and Weight Setpoint Active indicator.

Note: Modbus communication is available only when a Modbus option is enabled from factory.

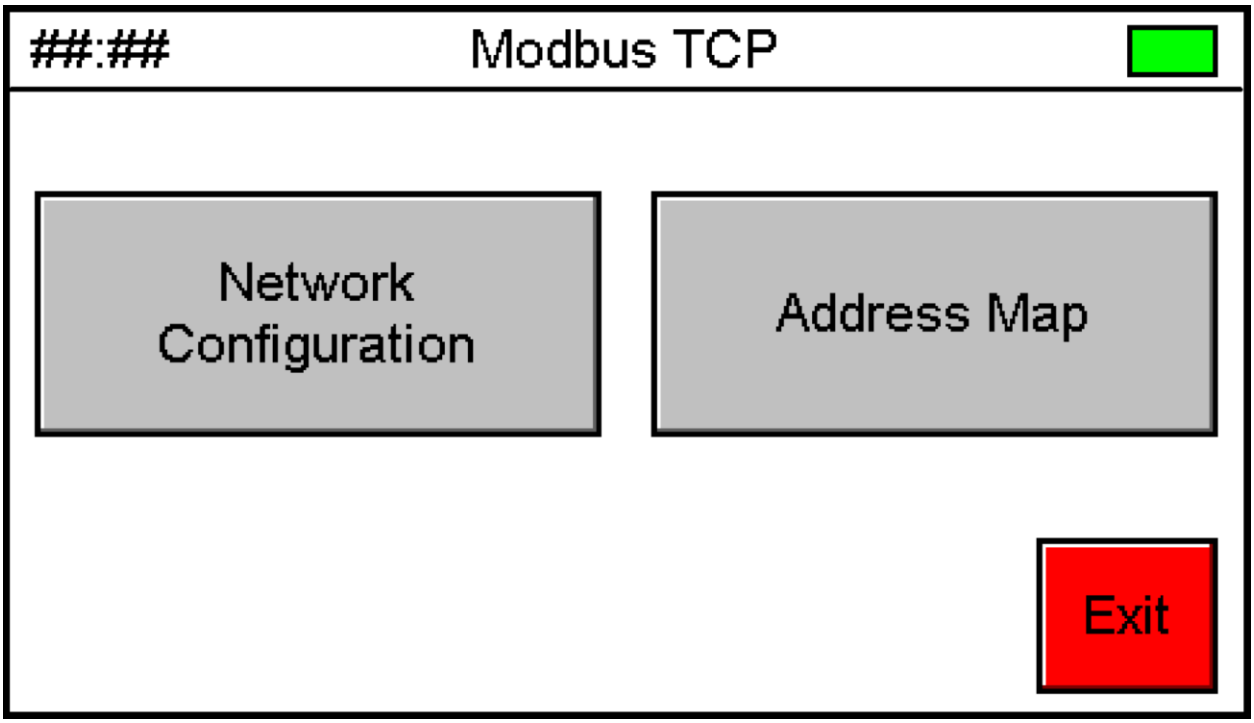

*Figure 43: **Modbus TCP Screen***

When factory option Modbus TCP is enabled, the user can access network configuration and view Modbus Address Map.

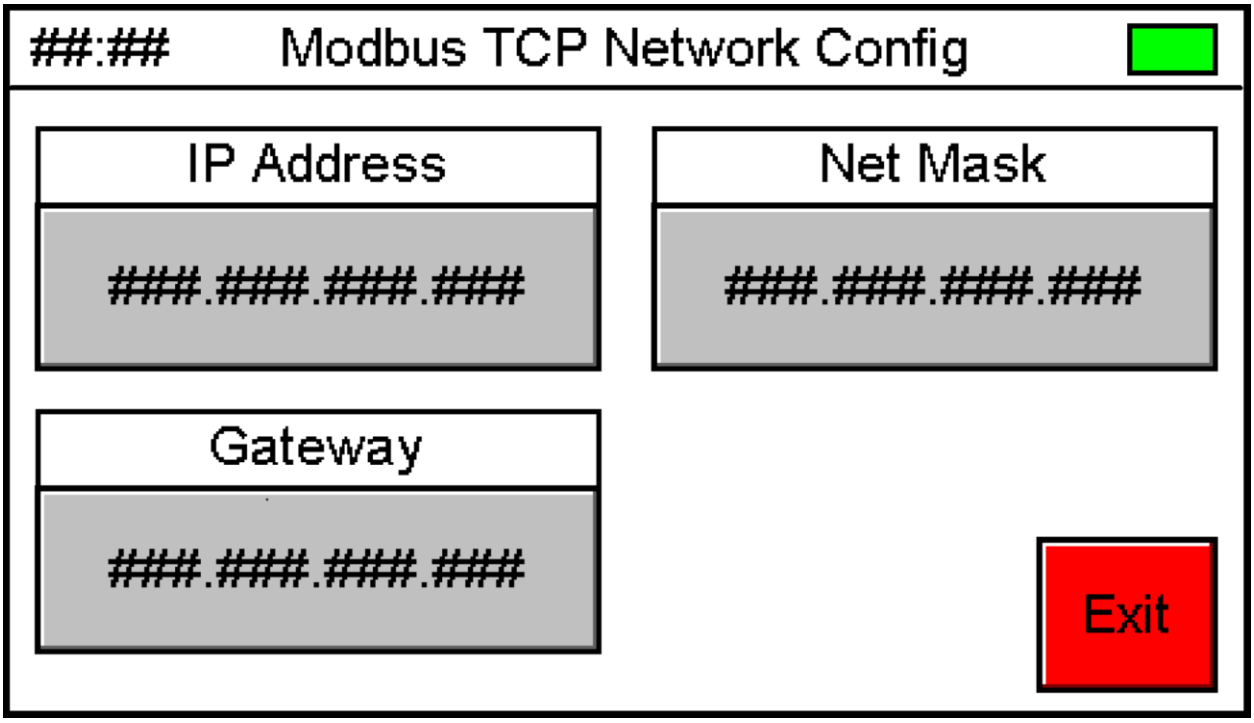

*Figure 44: **Modbus TCP Network Configuration Screen***

The Modbus TCP Network Configuration parameters allow the user to set the IP Address, Net Mask, and Gateway for the indicator. These settings define the indicator's network identity and enable communication with other devices over a TCP/IP network.

Note: These parameters are only available when the indicator is configured from factory with the Modbus TCP option.

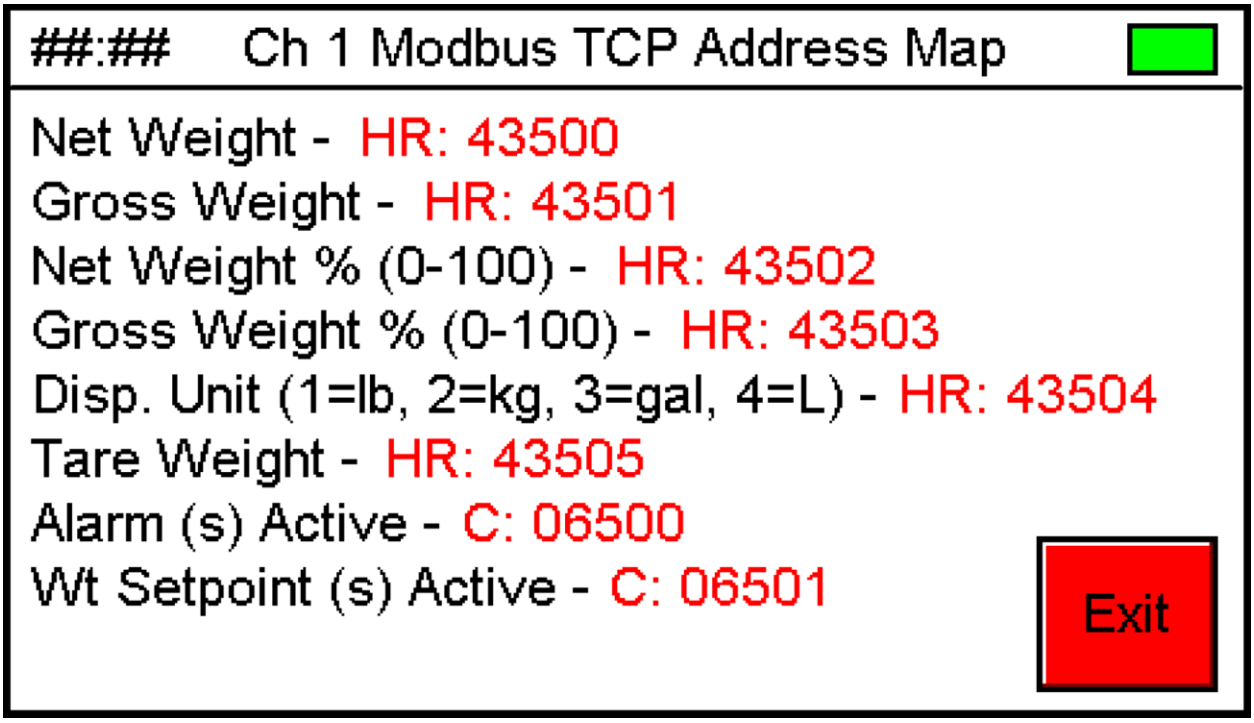

Figure 45: ***Modbus Ch 1 Address Map Screen***

Modbus Address Map is the same for any Modbus communication option. The indicator uses standard 5-digit Modbus addresses for communication.

Ch 1 Net Weight - 43500
Ch 1 Gross Weight - 43501
Ch 1 Net Weight % - 43502
Ch 1 Gross Weight % - 43503
Ch 1 Weight Display Unit - 43504
Ch 1 Tare Weight - 43505
Alarm Active - 06500
Weight Setpoint Active - 06501

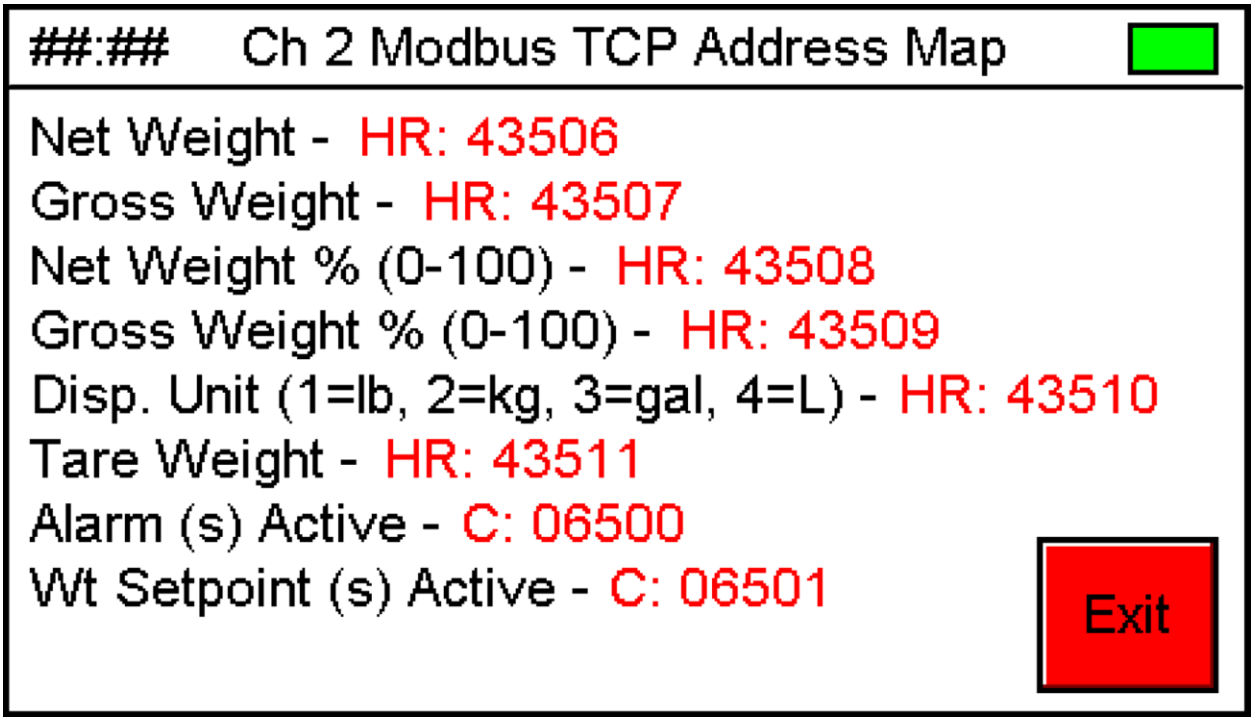

Figure 46: ***Modbus Ch 2 Address Map Screen***

Modbus Address Map is the same for any Modbus communication option. The indicator uses standard 5-digit Modbus addresses for communication.

Ch 2 Net Weight - 43506
Ch 2 Gross Weight - 43507
Ch 2 Net Weight % - 43508
Ch 2 Gross Weight % - 43509
Ch 2 Weight Display Unit - 43510
Ch 2 Tare Weight - 43511
Alarm Active - 06500
Weight Setpoint Active - 06501

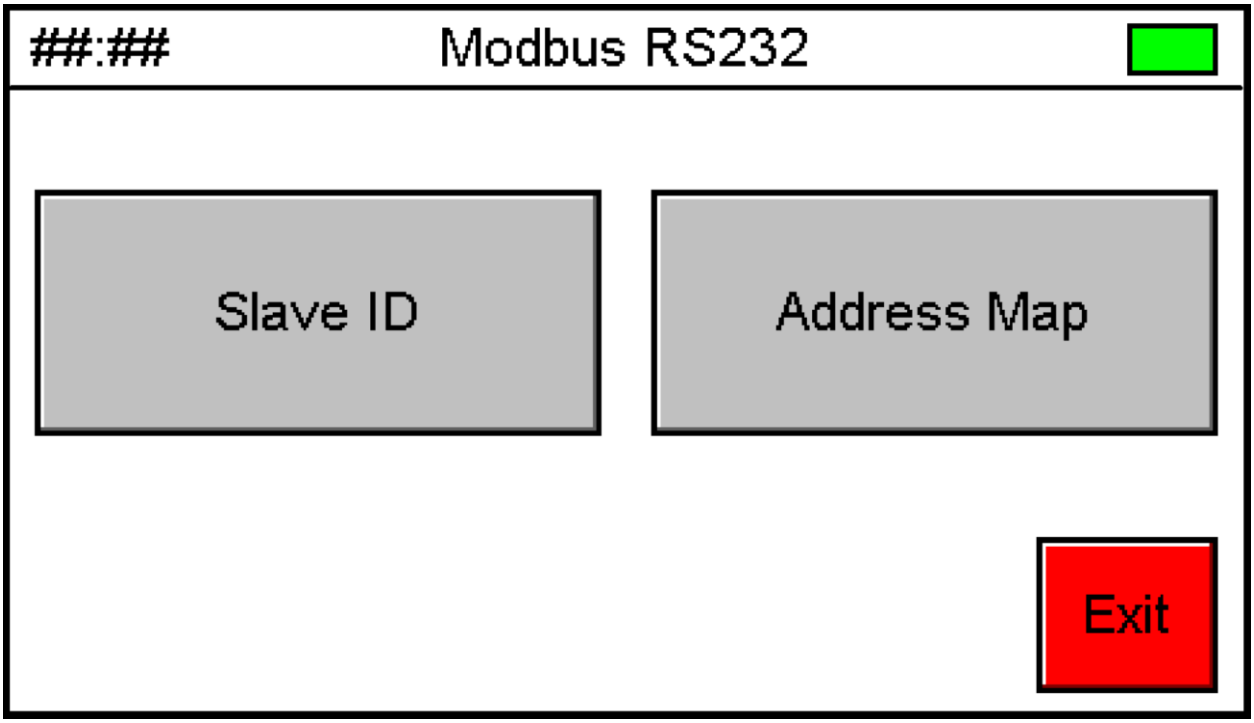

Figure 47: ***Modbus RS232 / RS485 Screen***

When factory option Modbus RS232 or RS485 is enabled, the user can access Slave ID configuration and view Modbus Address Map.

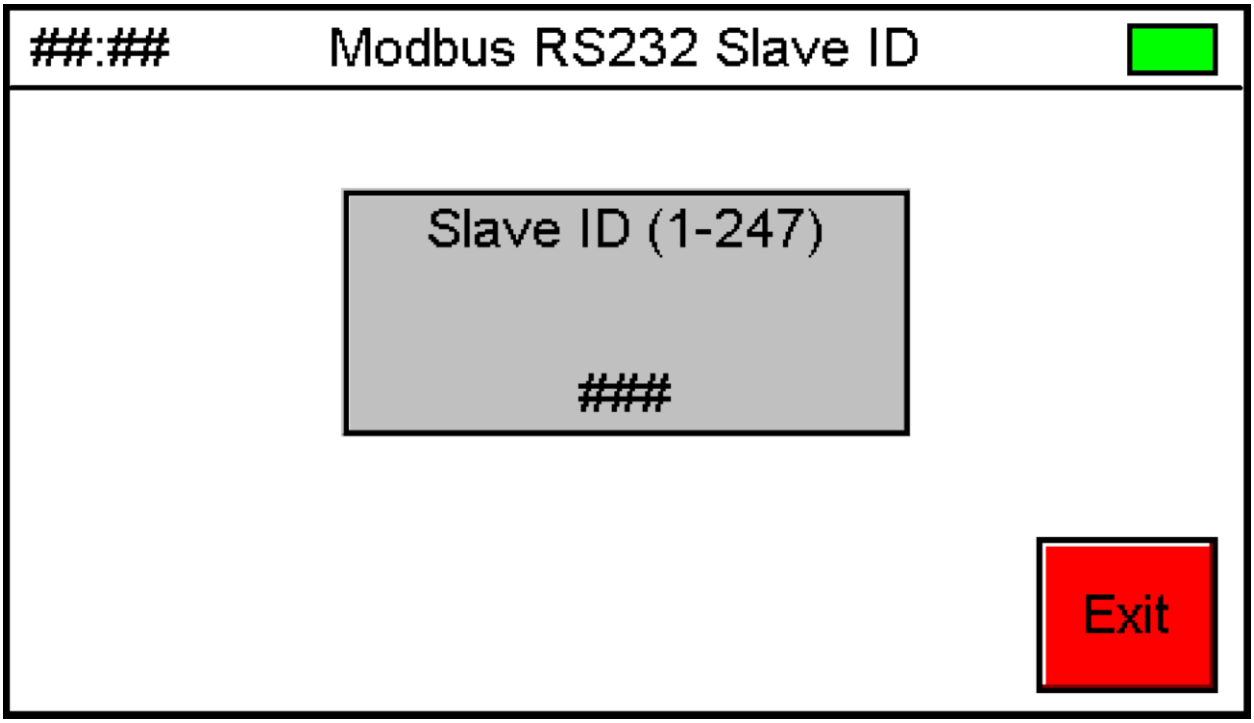

Figure 48: ***Modbus RS232 / RS485 Slave ID Screen***

The Slave ID parameter allows the user to assign a unique Slave ID address to the indicator for remote communication. The Slave ID can be set to any value between 1 and 247, enabling the indicator to integrate seamlessly into a multi-device Modbus network.

Note: This parameter is only available when the indicator is configured from factory with the Modbus RS232 or Modbus RS485 option.

6.6 Restore Factory Setup

The Restore Factory Setup option returns the indicator to its original factory configuration and calibration. Performing this action erases all user-adjusted settings and restores all parameters to their default values.

This function is intended for use when a complete system reset is required or when troubleshooting configuration issues. It is recommended that users record all current settings before performing a factory restore, as this action cannot be undone.

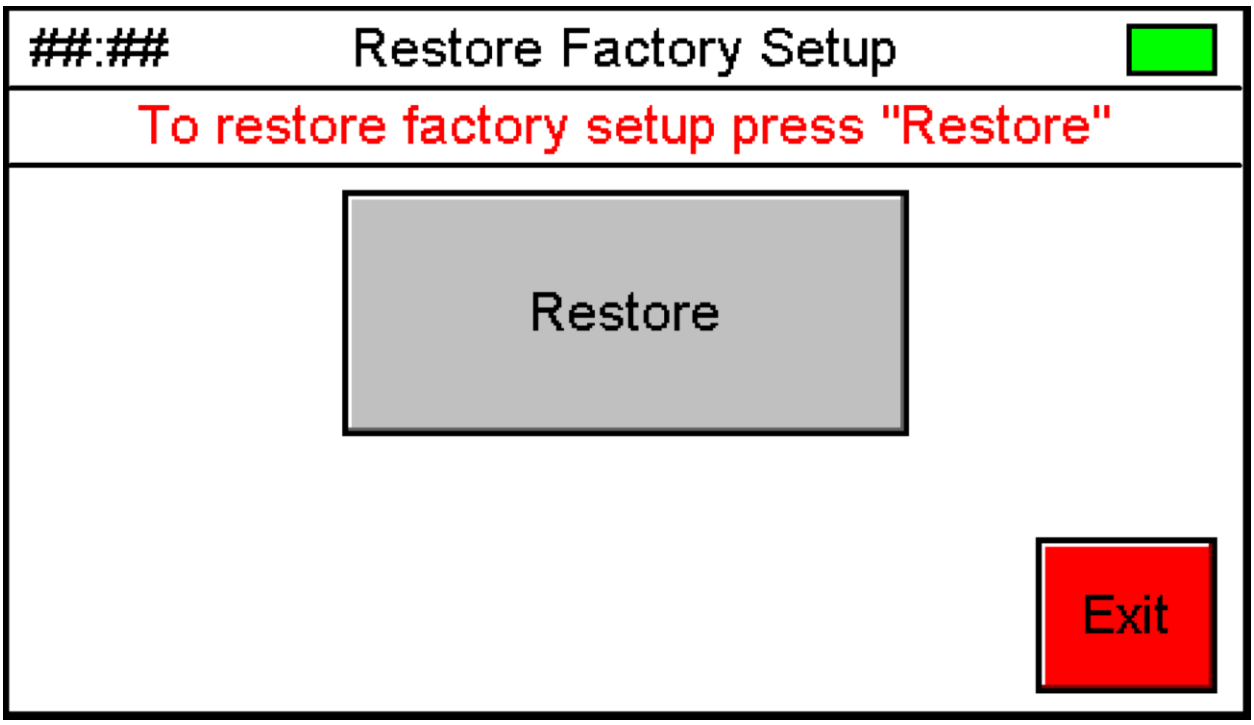

Figure 49: ***Restore Factory Setup Screen***

The user can restore the indicator to its original factory configuration and calibration by pressing the Restore button.

7 Status

The Status Menu provides an overview of the system's current operating condition, including alarms, setpoints, and base input signals. From this menu, the user may select the corresponding screens to view detailed information for each category.

The Alarms screen displays all active system alarms with timestamps. The Setpoints screen allows the user to monitor and test all enabled setpoints. The Base Input Signal screen displays the raw base input signal (in bits) for each channel and indicates whether the signal is within the acceptable operating range.

The Status Menu provides a real-time overview of system conditions to support rapid identification and correction of issues. The status indicator at the top-right of every screen reflects current alarm state:

- Steady Green - No alarms are active
- Steady Yellow - Alarms are active but have been acknowledged
- Flashing Red - Alarms are active and not acknowledged

Note: Setpoints status will only be available when factory option is enabled.

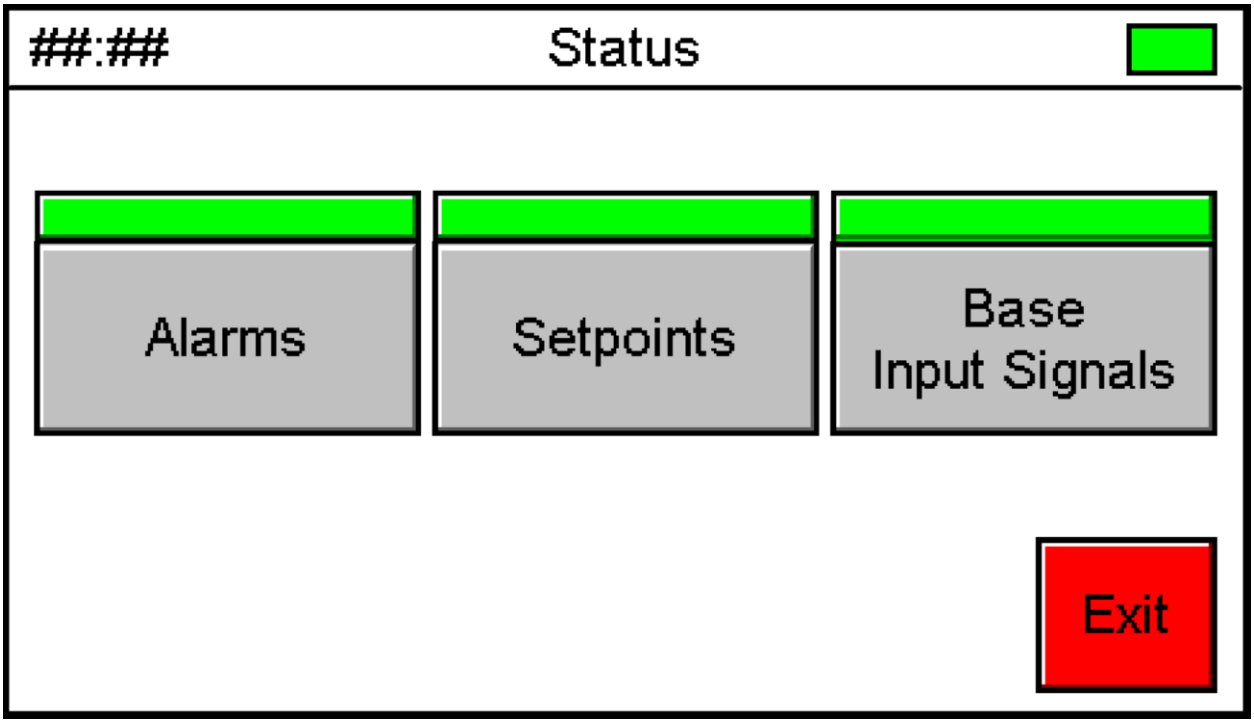

Figure 50: ***Status Screen***

7.1 Alarms

The Alarms screen displays all currently active alarms. Each active alarm is shown with a red timestamp indicating when it was triggered. If an alarm remains active but has been acknowledged, it appears in blue. The user may press Log to access the Alarm Log screen and view previously recorded alarms.

Possible alarm conditions include:

- Ch 1 / 2 Settings Not Set
- Ch 1 / 2 Calibration Not Set
- Ch 1 / 2 Improper Calibration
- Ch 1 / 2 Base Input Signal
- Ch 1 / 2 Max Net Weight
- Ch 1 / 2 Max Gross Weight
- Weight Setpoint (if enabled from factory and configured for Trigger Alarm)
- Leak Detector Input

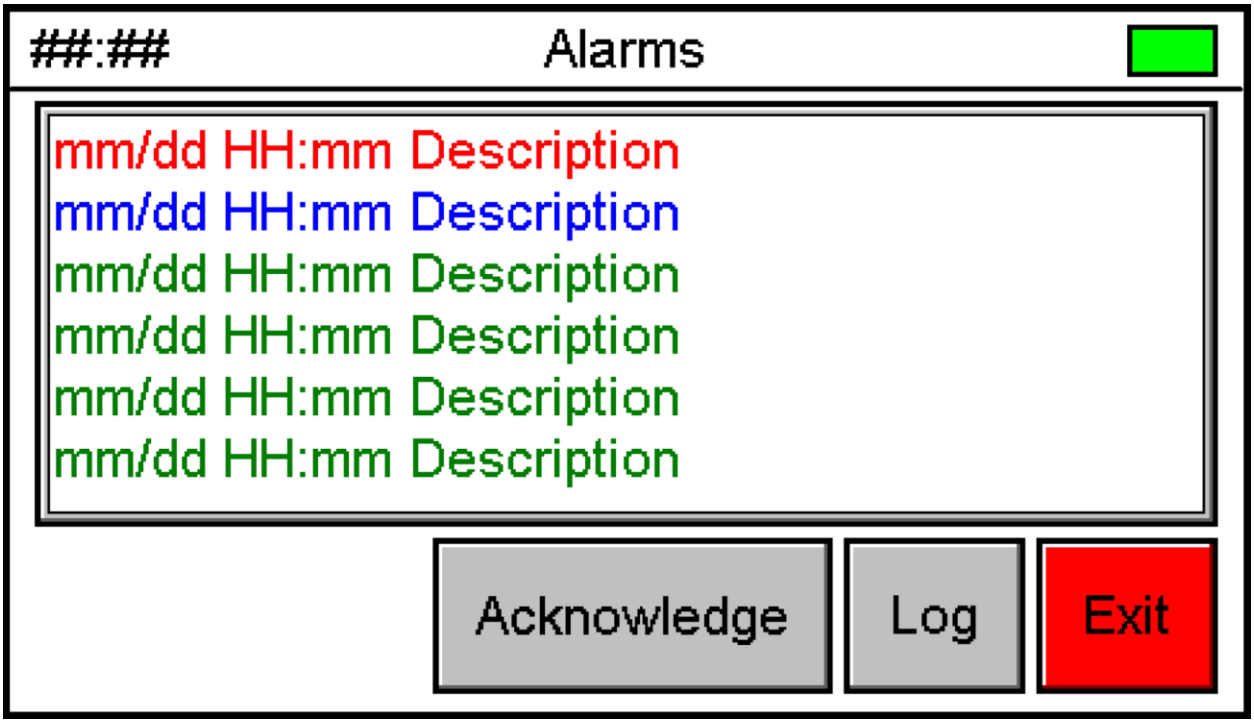

*Figure 51: **Alarms Screen***

The user can view current alarms, acknowledge alarms by pressing the Acknowledge button, or go to the Alarm Log screen by pressing the Log button.

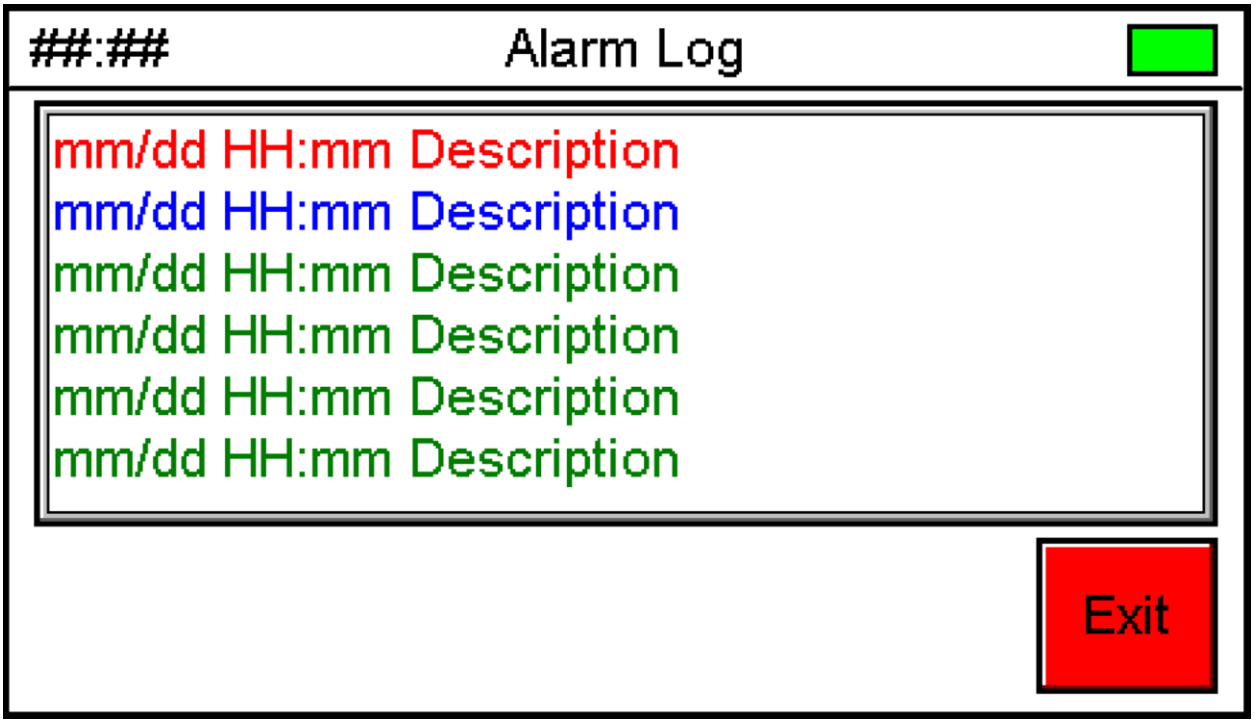

*Figure 52: **Alarm Log Screen***

The Alarm Log records a timestamp for each alarm, including when it was triggered and when it was no longer active. The Alarm Log can be cleared by pressing on the list and selecting Clr All.

7.2 Setpoints

The user can view the current status of all setpoints in the Setpoints screen. Each setpoint output may be tested by pressing its corresponding setpoint indicator. Pressing Log opens the Setpoint Log screen, where timestamps for all setpoint events can be viewed.

Each setpoint indicator displays its condition as follows:

- White - Setpoint not available (displayed as N/A)
- Grey - Setpoint not active
- Red - Setpoint active

Note: This screen is only available when the indicator is configured from factory with at least one setpoint option.

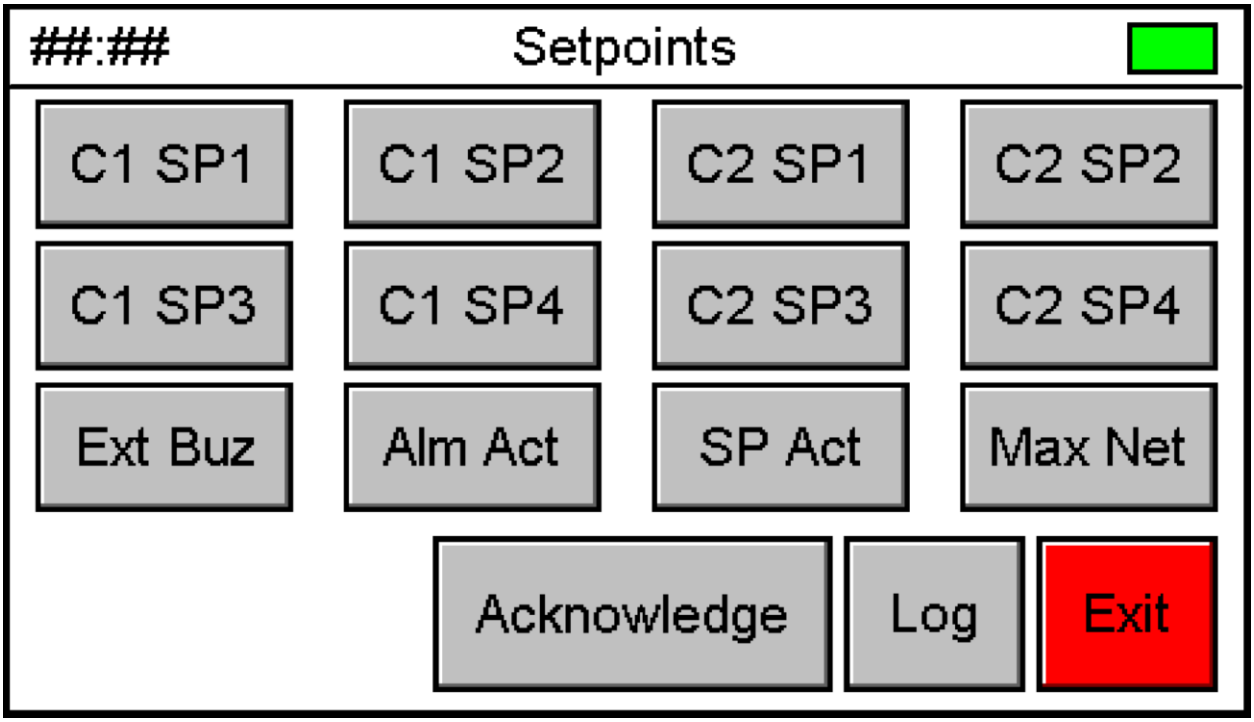

Figure 53: ***Setpoints Screen***

The user can view status of all available setpoints and can test them individually, acknowledge them (if Latch is enabled in System Info), or go to the Setpoint Log screen.

Note: The Setpoints screen shown above includes all available factory options. Actual screen layout may vary depending on the factory options selected at the time of order.

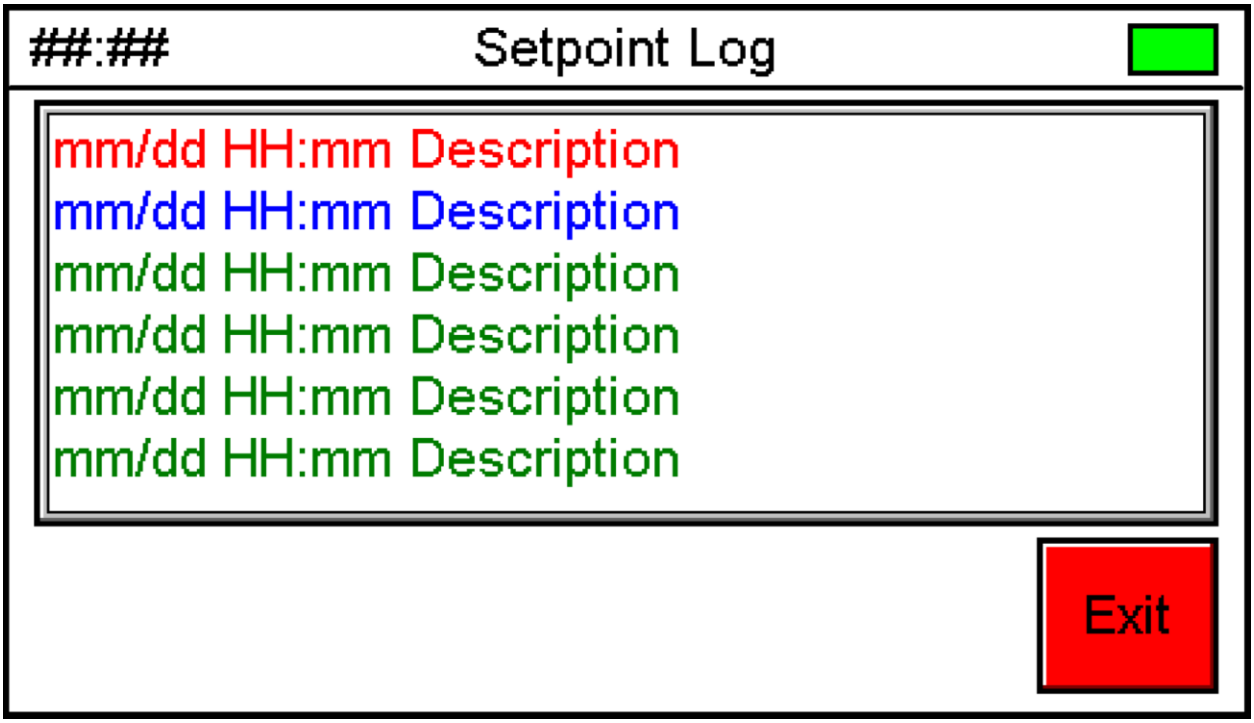

Figure 54: ***Setpoint Log Screen***

The Setpoint Log records a timestamp for each setpoint, including when it was triggered and when it was no longer active. The Setpoint Log can be cleared by pressing on the list and selecting Clr All.

7.3 Base Input Signals

The Base Input Signal screen displays the raw input signal (in bits) received from each channel. If the signal falls outside the usable range of 4000-32000 bits, the indicator displays the value in red.

A base input signal outside the usable range may indicate one or more of the following conditions:

- Scale base not connected
- Overload condition on the scale base
- Bent or damaged load cells
- Amplifier not configured properly
- Amplifier malfunction

Warning: Do not adjust the Offset or Gain potentiometers on the control board. These components directly control the amplifier configuration and adjusting them will alter the system calibration.

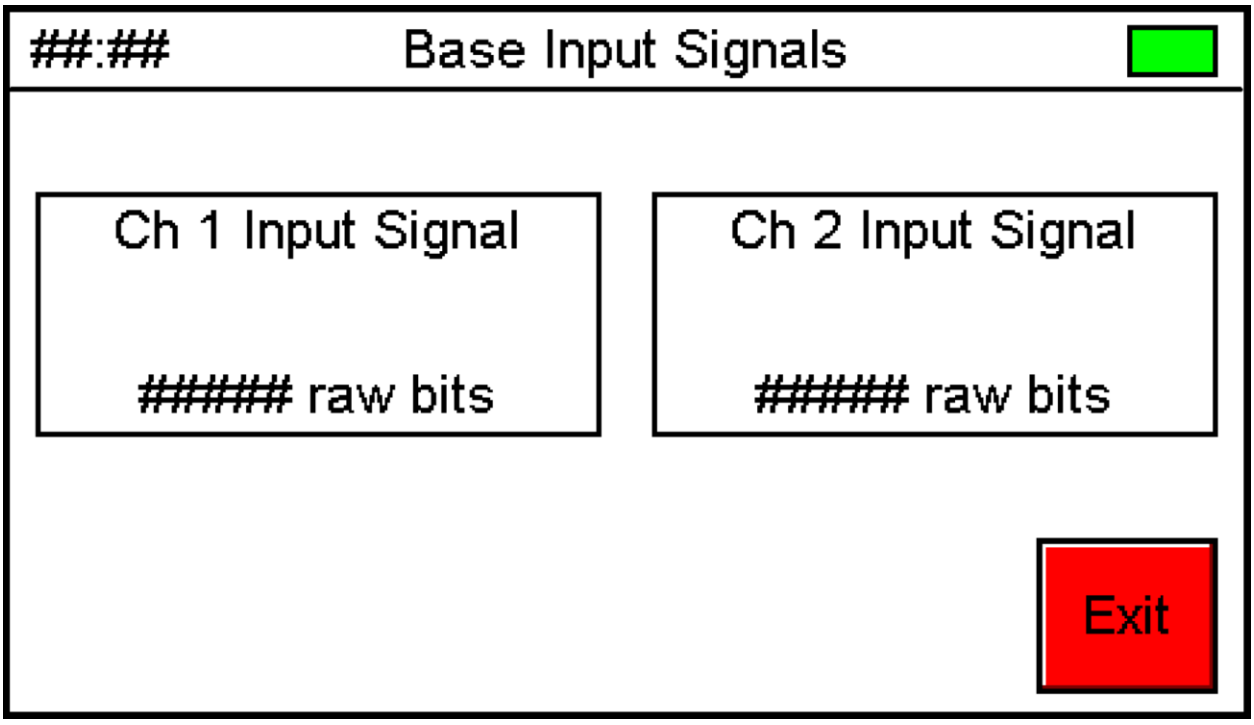

*Figure 55: **Base Input Signals Screen***