



AccuPro 7000-TS™

Operator's Manual

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1 Introduction

The AccuPro 7000-TS™ is a weight and volume measurement system offering up to 4-channel support. Its real-time measurement allows for precise monitoring during the process of filling or emptying a chemical substance container. The indicator is designed to be an all-in-one process controller containing features such as feed rate controls, a batch control function, on screen data logging and remote data logging, remote connectivity, and a status check menu consisting of current and data log monitoring capabilities.

1.1 Scope

This operator manual describes the specifications, assembly, and operation for the control panel portion of the AccuPro 7000-TS™ Measurement System.

1.2 Acronyms and Abbreviations

- **PLC** Programmable Logic Controller
- **HMI** Human Machine Interface
- **LCA** Load Cell Amplifier
- **PSU** Power Supply
- **AWG** American Wire Gauge
- **CH** Channel
- **N/O** Normally Open
- **N/C** Normally Closed
- **COM** Common
- **SPDT** Single Pole Double Throw
- **SCADA** Supervisory Control and Data Acquisition
- **AC** Alternating Current
- **DC** Direct Current
- **V** Volts
- **A** Amps
- **mA** Milliamps
- **W** Watts

1.3 Definitions

- **Channel:** a base that can be monitored by the system
- **Gross Weight:** defined as the total weight (real weight) on the scale base. Determined by net weight plus (+) tare weight
- **Measurement System:** describes a complete AccuPro 7000-TS™
- **Net Weight:** the actual weight of material without the presence of a tank or container. Determined by gross weight minus (-) tare weight
- **Scale-Base:** the physical platform where material is weighed and where the load cell(s) is/are located
- **Weight Setpoint:** a user-defined net weight value that when reached (low/high) will trigger a corresponding relay
- **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

2 Hardware and Specifications

System	
Main Power	<u>Supply Voltage:</u> 120/240 VAC +/- 10%, 50/60 Hz <u>Wattage:</u> 35 W (maximum) <u>Fuse:</u> 1.0A (1 1/4" x 1/4", type slow-blow) Connector: Sealed
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	<u>Nominal Size:</u> 10 x 8 x 6 Inches (Height, Width, Depth) with hinged cover <u>Weight:</u> 6 lbs. (approx. maximum) <u>Material:</u> Opaque Polycarbonate, UL Listed Type 4X NEMA <u>Location Recommendation:</u> 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.
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Channels	Supports single (1), dual (2), triple (3), or quadruple (4) channel operation. Each channel is independently controlled and operated.
Measurement	<u>Display Range:</u> 6 digits (maximum). 5 integer / 1 decimal point (user selectable) <u>Working Capacity:</u> determined, in part, by factory limits and scale base specifications. Reference scale base documentation. <u>Units:</u> user-defined units of pounds, kilograms, gallons, and liters. <u>Averaging:</u> user-defined weight averaging. <u>Bar Graph:</u> graphical display of net weight. <u>Performance:</u> 0.1% to 0.25% full scale accuracy.
Display	<u>Size:</u> 3.5" <u>Resolution:</u> 320 x 240 pixels <u>Color:</u> 16-bit (65k) <u>Brightness:</u> 640 nits
Alarms	<u>Internal:</u> audible buzzer, 3.4 kHz, 78 dB (maximum) <u>External:</u> Support for a user-supplied alarm. An alarm relay is available with SPDT contact configuration (NO-COM-NC). Switching capacity of 3A (maximum) @ 250 VAC or 30 VDC. Inductive loads are not recommended.
Controls	<u>Control Type:</u> touchscreen

2.1 mA Output Specifications

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

2.2 Relay Specifications

Relays	
Relay Count (User Selectable)	<u>Weight Setpoints:</u> 2 or 4 relays per channel <u>External Buzzer Relay:</u> 1 <u>Alarm Active Relay:</u> 1 <u>Batch Active Relay:</u> 1 <u>Batch Complete Relay:</u> 1
Contact Configuration	Normally Open (NO), Common (COM), Normally Closed (NC)
Maximum Switching Capacity	250VAC/2A, 30VDC/2A
Relay Configuration Options	<u>Trigger Alarm:</u> When weight setpoint setting “trigger alarm” is active, a weight setpoint will trigger an alarm when active

2.3 Modbus Specifications

Modbus	
Communication	<u>Protocol:</u> Modbus TCP Ethernet, Modbus RTU RS232, or Modbus RTU RS485 <u>Type:</u> Slave
Ports	<u>Location:</u> Modbus TCP (LAN1) and Modbus RS232/485 (MJ1/2) located in PLC, left side of inside door panel
Ch 1 Modbus Address Map	<u>Net Weight:</u> HR: 414000 <u>Gross Weight:</u> HR: 414002 <u>Net Weight Percentage:</u> HR 414004 (outputs 0-100) <u>Gross Weight Percentage:</u> HR: 414006 (outputs 0-100) <u>Display Unit:</u> HR: 414008 <u>Tare:</u> HR: 414010 <u>Error Active:</u> C: 6500 <u>Alarm Active:</u> C: 6501 <u>Weight Setpoint (s) Active:</u> C:6502
Ch 2 Modbus Address Map	<u>Net Weight:</u> HR: 414012 <u>Gross Weight:</u> HR: 414014 <u>Net Weight Percentage:</u> HR 414016 (outputs 0-100) <u>Gross Weight Percentage:</u> HR: 414018 (outputs 0-100) <u>Display Unit:</u> HR: 414020 <u>Tare:</u> HR: 414022 <u>Error Active:</u> C: 6503 <u>Alarm Active:</u> C: 6504 <u>Weight Setpoint (s) Active:</u> C:6505
Ch 3 Modbus Address Map	<u>Net Weight:</u> HR: 414024 <u>Gross Weight:</u> HR: 414026 <u>Net Weight Percentage:</u> HR 414028 (outputs 0-100)

	<u>Gross Weight Percentage:</u> HR: 414030 (outputs 0-100) <u>Display Unit:</u> HR: 414032 <u>Tare:</u> HR: 414034 <u>Error Active:</u> C: 6506 <u>Alarm Active:</u> C: 6507 <u>Weight Setpoint (s) Active:</u> C:6508
Ch 4 Modbus Address Map	<u>Net Weight:</u> HR: 414036 <u>Gross Weight:</u> HR: 414038 <u>Net Weight Percentage:</u> HR 414040 (outputs 0-100) <u>Gross Weight Percentage:</u> HR: 414042 (outputs 0-100) <u>Display Unit:</u> HR: 414044 <u>Tare:</u> HR: 414046 <u>Error Active:</u> C: 6509 <u>Alarm Active:</u> C: 6510 <u>Weight Setpoint (s) Active:</u> C:6511
Modbus TCP Network Configuration	<u>IP Address:</u> User defined <u>Net Mask:</u> User defined <u>Gateway:</u> User defined
Modbus RS232 or RS485 Network Configuration	<u>Baud Rate:</u> 9600



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 1: 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.

3 System Hardware

The AccuPro 7000-TS uses a control board which contains all user connections for scale bases, mA outputs, and setpoints.

Note: Control board shown unpopulated. Actual control board will contain green spring loaded terminal blocks for user connections.

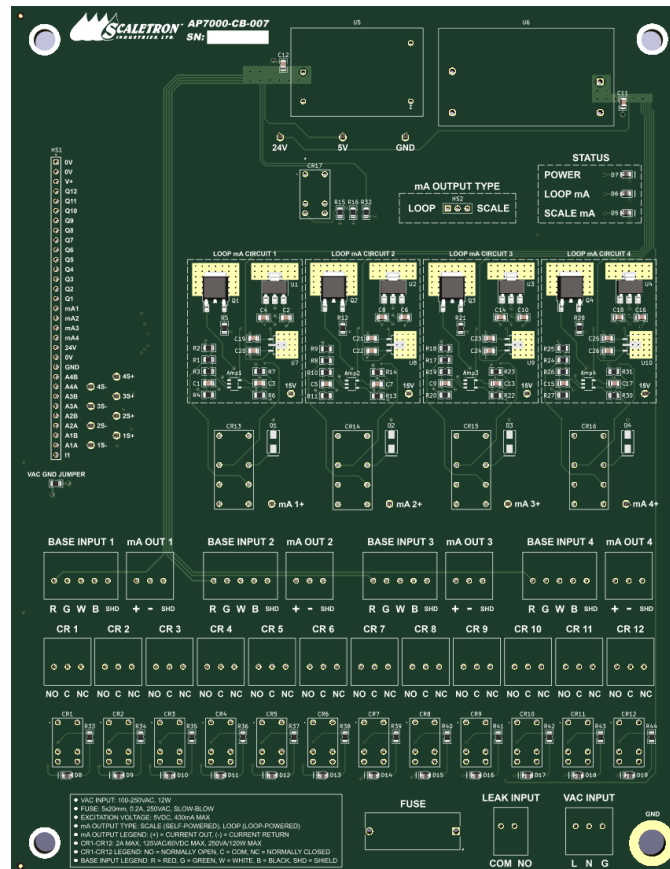


Figure 2: Control Board

Contains all user connections and power input.

It is imperative that you read the instructions in this manual. The Control-Panel is fully tested and programmed to the corresponding Scale-Base at the factory. If you experience a problem with this equipment, please disconnect all accessories to this equipment to isolate the problem. Scaletron has taken great care to be sure the equipment is fully functional within factory specifications before it leaves our facility. It is best to familiarize yourself with this manual for set-up and operation procedures before you begin using this equipment. All safety precautions need to be observed for its safe operation. Failure to operate this equipment as instructed can result in damage to the equipment and can possibly cause injury. Damage caused to equipment due to improper operation will not be considered for warranty coverage.

3.1 Factory Configuration

Before you begin, please notice the configuration sheet that is supplied with this manual. The sheet lists the factory-programmed parameters for the AccuPro 7000-TS™ based on ordering information. If there is a need to change any parameters, please reference this manual for options and instructions on how to proceed. Both the settings and calibration menus must be properly set for correct operation. Please record any configuration changes made before contacting customer assistance for technical help.

3.2 Control Panel Preparation and Mounting

The Control Panel 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 Control Panel must be made in the field per specific needs. With power to the Control Panel OFF, access its interior by following the procedure described in section titled Servicing the Control Panel. 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 gasses 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 4X NEMA 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 Control Panel 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 4X NEMA 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.

3.3 User Connections and Wiring

Be sure to disconnect power to the control-panel before making any wiring connections. In addition, anti-static precautions must be followed whenever accessing the control-panel's interior electronics or else permanent damage may result.

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" (*multi channel: if cable has blue heat shrink tubing, connect to Ch 1*)
- Channel 2: "BASE INPUT 2" (*multi channel: if cable has yellow heat shrink tubing, connect to Ch 2*)
- Channel 3: "BASE INPUT 3" (*multi channel: if cable has red heat shrink tubing, connect to Ch 1*)
- Channel 4: "BASE INPUT 4" (*multi channel: if cable has black heat shrink tubing, connect to Ch 4*)

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)

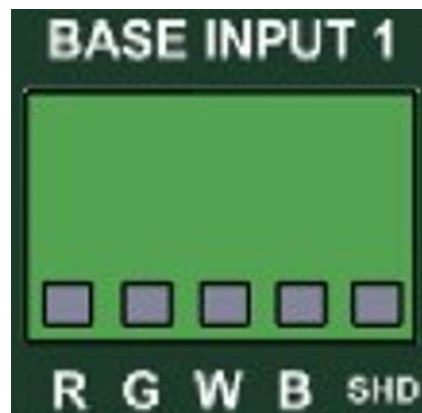


Figure 3: Base Input Terminal Block

Step 2: Connect mA Output Wiring

Select the correct channel terminal block:

- Channel 1: “mA OUT 1”
- Channel 2: “mA OUT 2”
- Channel 3: “mA OUT 3”
- Channel 4: “mA OUT 4”

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 4: mA Output Terminal Block

Step 3: Connect Setpoint Relay Wiring

If setpoint relays are present, connect to the appropriate terminal blocks. Possible locations include CR 1-12. 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

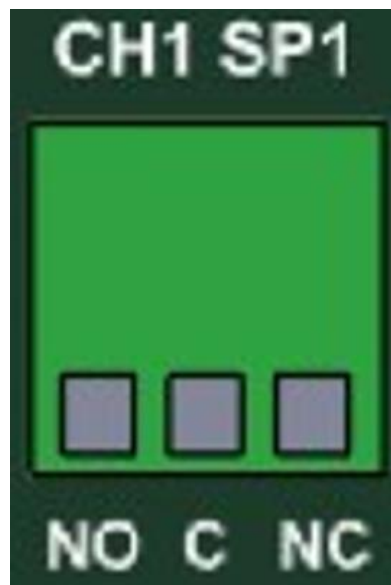


Figure 5: Setpoint Terminal Block

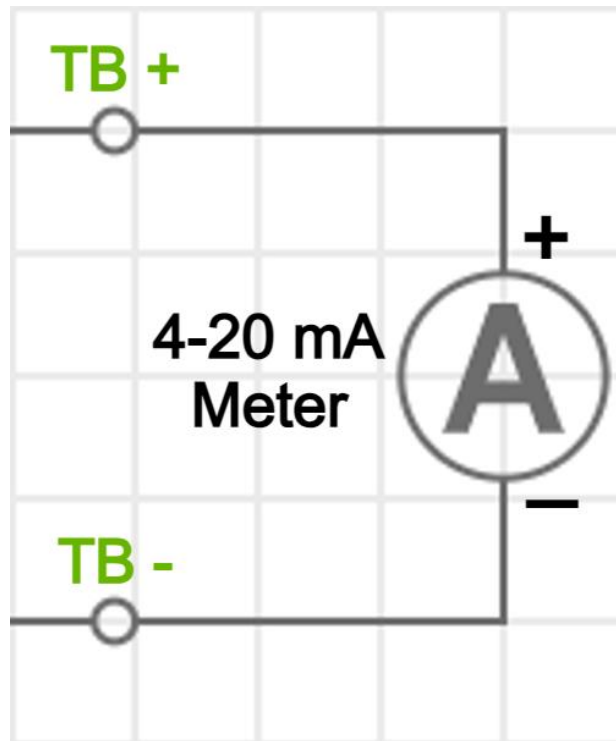


Figure 6: Scale (Self-Powered) 4-20 mA Output Wiring Diagram

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

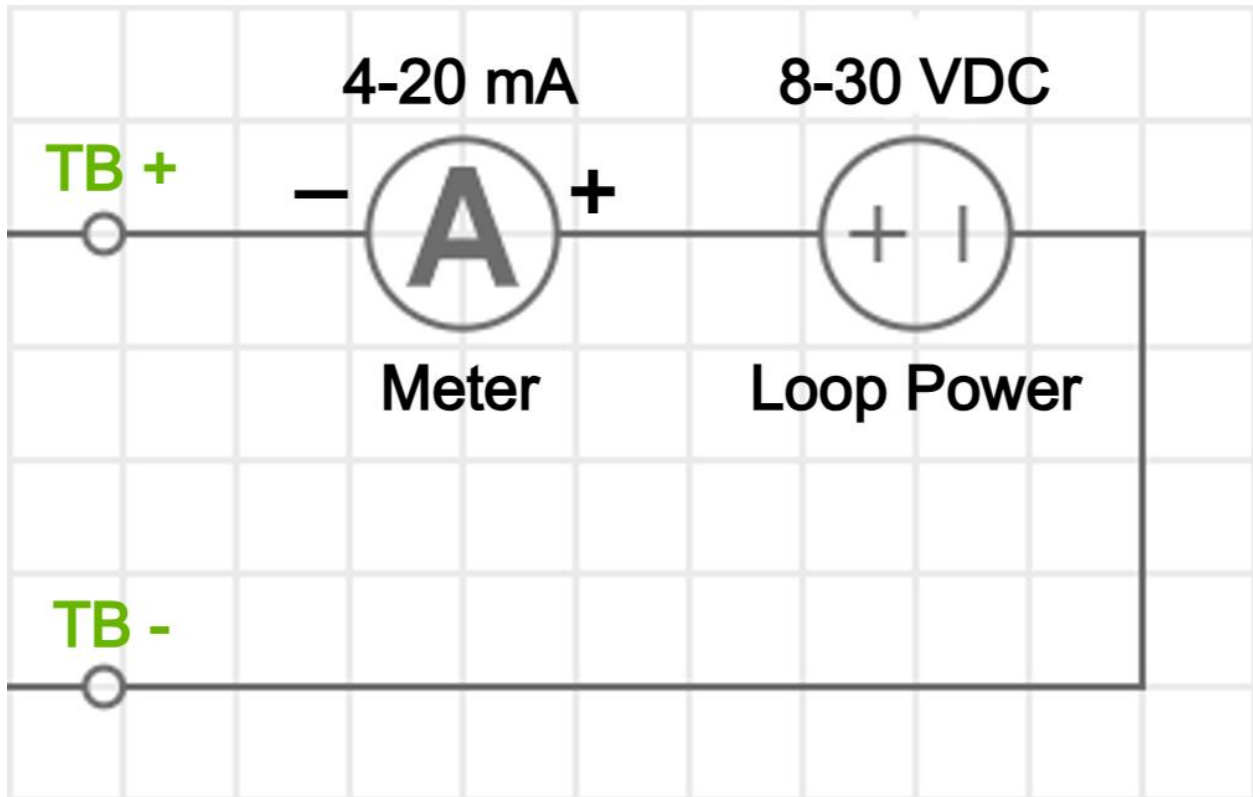


Figure 7: Loop (Externally-Powered) 4-20 mA Output Wiring Diagram

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 7000-TS allows the user to monitor and data log chemicals by weight or volume in pounds, kilograms, gallons, or liters. The user is also able to monitor feed rate and operate a batch control function. The indicator can display net weight value, net weight graph, gross weight value, gross weight graph, 4-20mA out signal, tare value, and weight setpoints depending on the display selected. The user can view weight displays, adjust tare value, configure settings, view settings and calibration, check status of indicator, view indicator information, and load factory restore point. System operation varies based on how the indicator is configured. The user will be prompted to select channel when entering a channel-specific screen or configuration menu while the second channel is enabled.

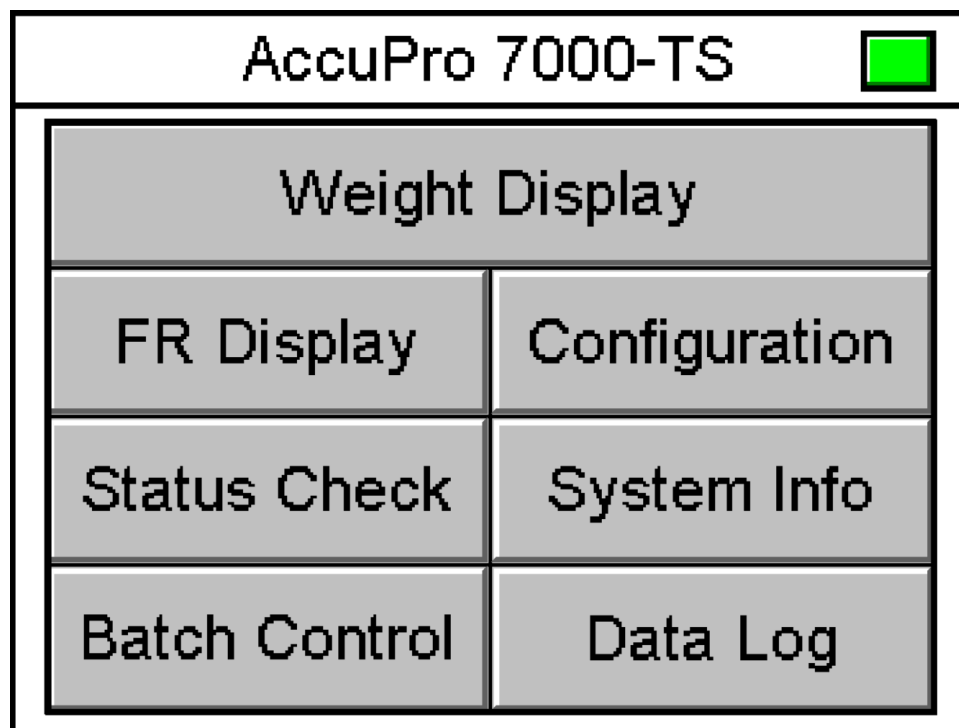


Figure 8: Home Screen

4.1 Weight Display

The user can access the display screens by pressing the “Wt Display” button on the home screen. The user can view each channel independently or all channels simultaneously. While in any display, the user can toggle between different views by pressing the "Next" or “Prev” button on any display. While in any display, the user can access tare adjustment by pressing the "Tare" button. While in any display, the user can select the display unit by pressing the "Unit" button.

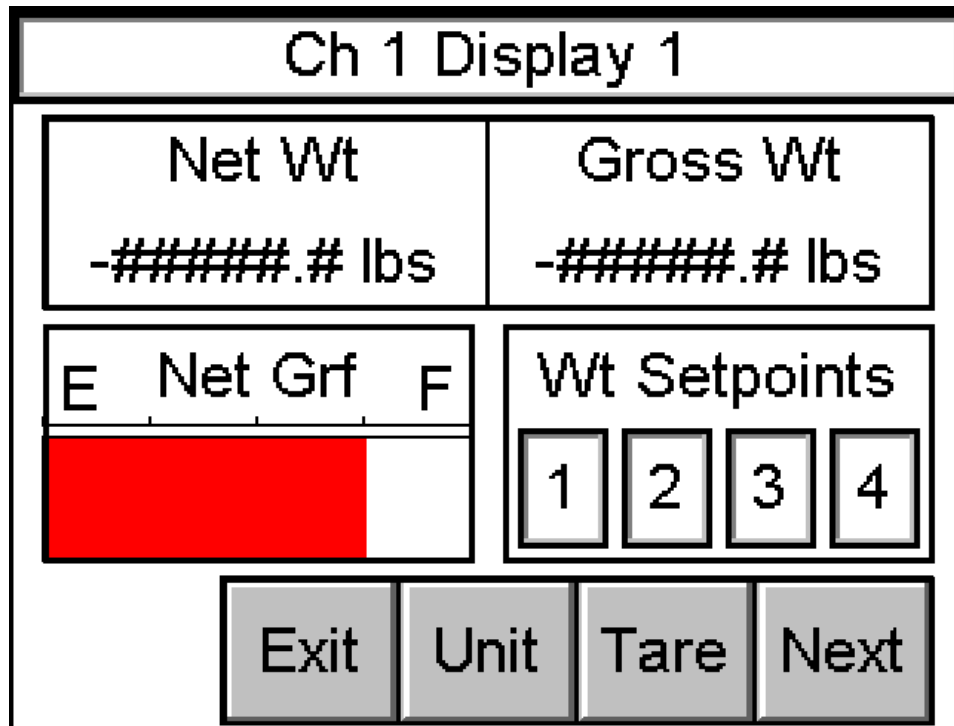


Figure 9: Channel 1 Weight Display

Displays net weight, gross weight, net weight graph, and weight setpoints

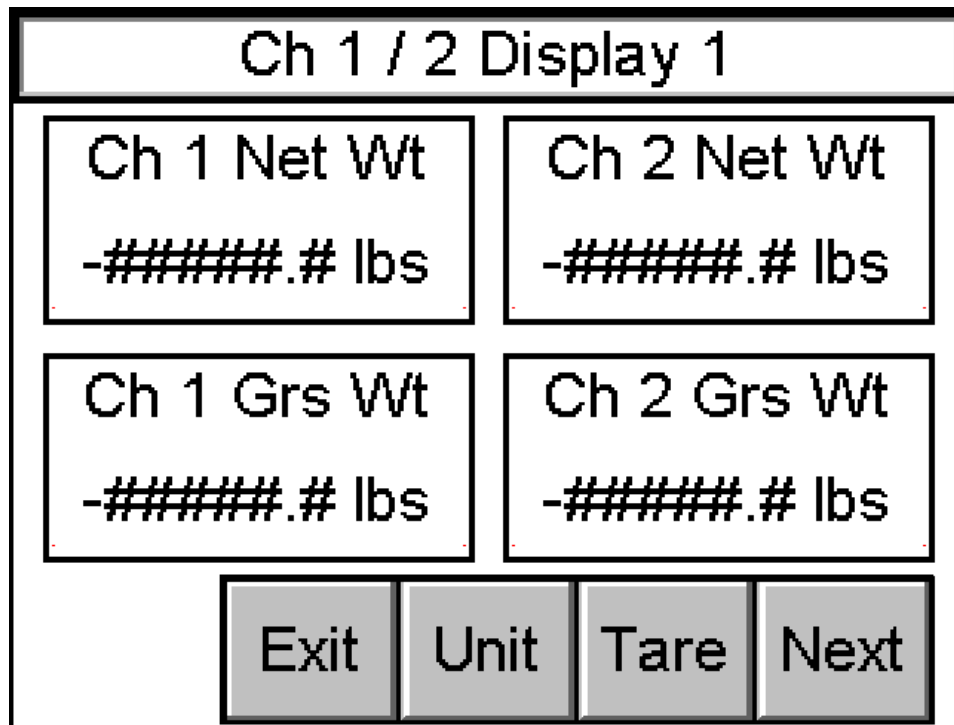


Figure 10: *Channel 1 / 2 Weight Display*

Displays Ch 1 net weight, Ch 1 gross weight, Ch 2 net weight, and Ch 2 gross weight

Note: Weight display shown with 2 channels

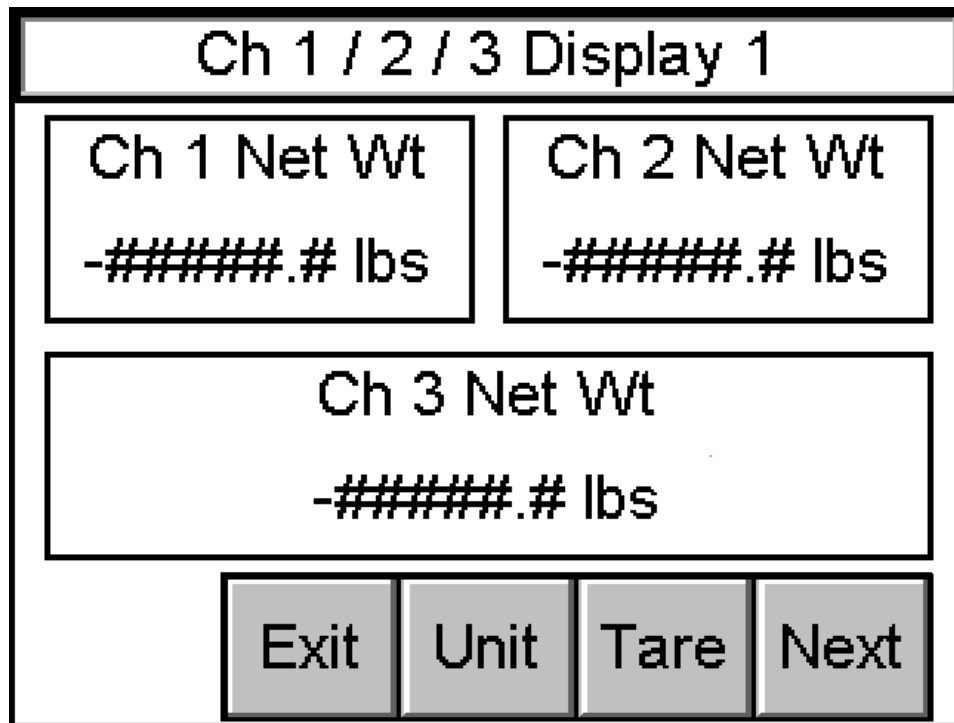


Figure 11: Channel 1 / 2 / 3 Weight Display

Displays Ch 1 net weight, Ch 2 net weight, and Ch 3 net weight

Note: Weight display shown with 3 channels

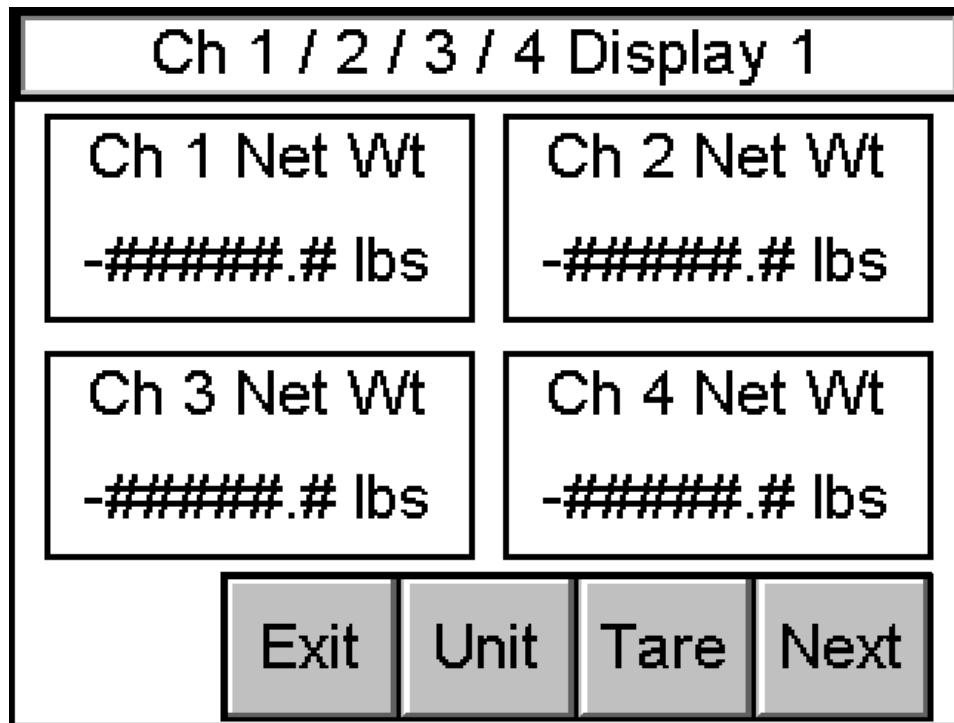


Figure 12: *Channel 1 / 2 / 3 / 4 Weight Display*

Displays Ch 1 net weight, Ch 2 net weight, Ch 3 net weight, and Ch 4 net weight

Note: Weight display shown with 4 channels

4.2 Feed Rate Display

The user can access the display screens by pressing the “FR Display” button on the home screen. The user can reset all feed rate functions by pressing “Reset”. The user can pause all feed rate functions by pressing “Pause”. The user can select the display unit by pressing “Unit”. Daily usage is the amount of lost weight in the operational time. When loading a new tank, pause the feed rate to prevent errors. The average operational time feed rate is also shown.

Ch 1 Feed Rate Display			
Net Weight -#####.# lbs		Daily Usage -#####.# lbs	
Average FR -##### lbs/hr		4-20 mA Out -##.# mA	
Reset	Pause	Unit	Exit

Figure 13: Channel 1 Feed Rate Display

Displays net weight, daily usage, average feed rate, and 4-20 mA output.

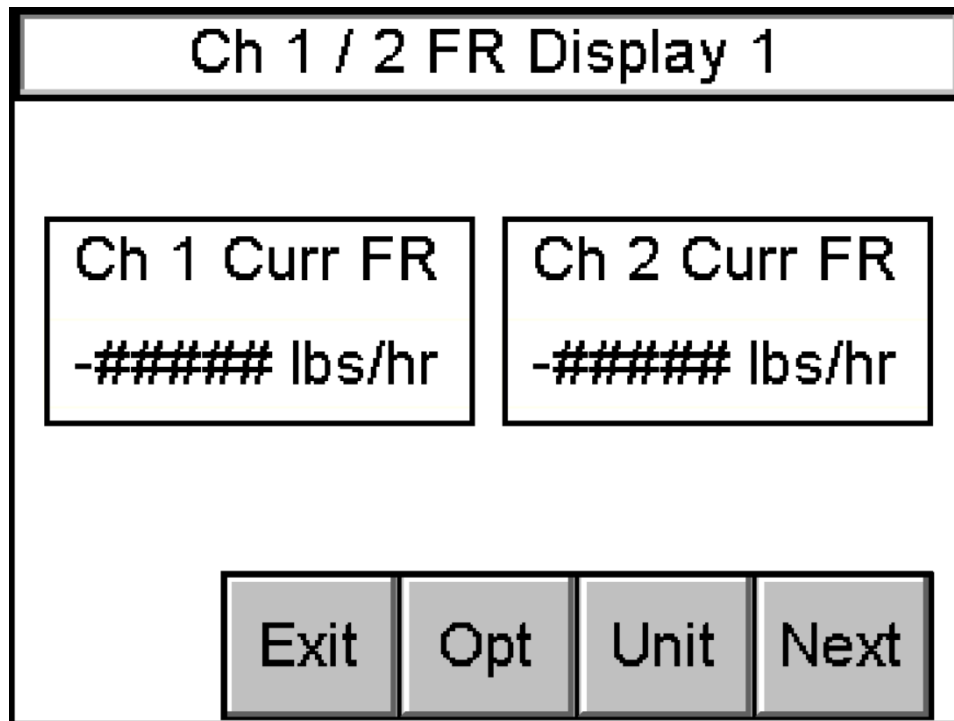


Figure 14: Channel 1 / 2 Feed Rate Display

Displays Ch 1 current feed rate and Ch 2 current feed rate

Ch 1 / 2 / 3 FR Display 1			
Ch 1 Curr FR		Ch 2 Curr FR	
-##### lbs/hr		-##### lbs/hr	
Ch 3 Curr FR			
-##### lbs/hr			
Exit	Opt	Unit	Next

Figure 15: Channel 1 / 2 / 3 Feed Rate Display

Displays Ch 1 current feed rate, Ch 2 current feed rate, and Ch 3 current feed rate

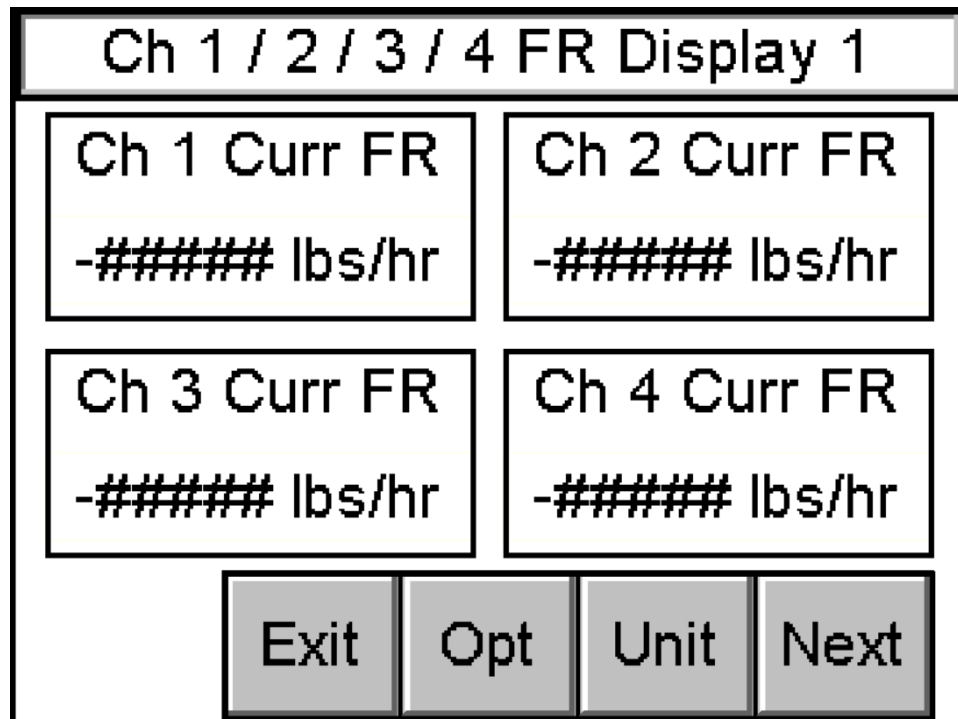


Figure 16: Channel 1 / 2 / 3 / 4 Feed Rate Display

Displays Ch 1 current feed rate, Ch 2 current feed rate, Ch 3 current feed rate, and Ch 4 current feed rate

4.3 Data Log Display

The user can access the data log displays by pressing the “Data Log” button on the home screen. The user can view hourly net weight, daily net weight, hourly feed rate, and daily feed rate. The daily data log displays use a time range of 8 hours. If the user has the max feed rate alarm disabled, the feed rate data logs will not update, and a notification will appear on their screens. On screen data log displays will be reset when the indicator is turned off. The Y-axis on the net weight displays is set by the max net weight. The Y-axis on the feed rate displays is set by the max feed rate.

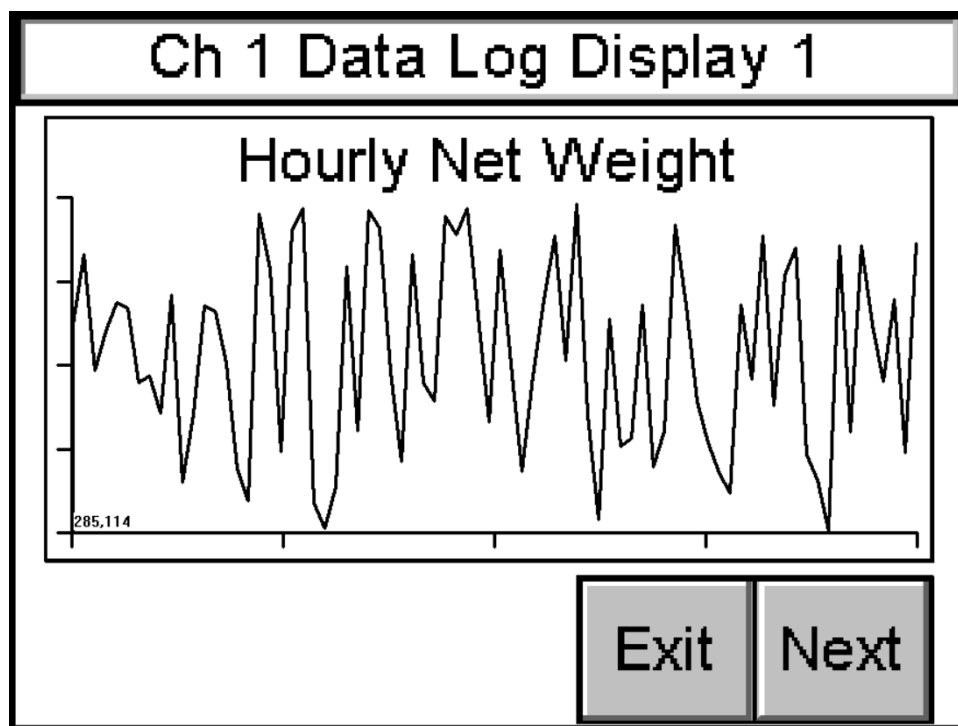


Figure 17: Channel 1 Data Log Display

4.4 Unit Selection

The user can access the unit screen by pressing the “Unit” button on any display or tare screen. When gallons or liters are selected, specific gravity will be included in conversion calculations.

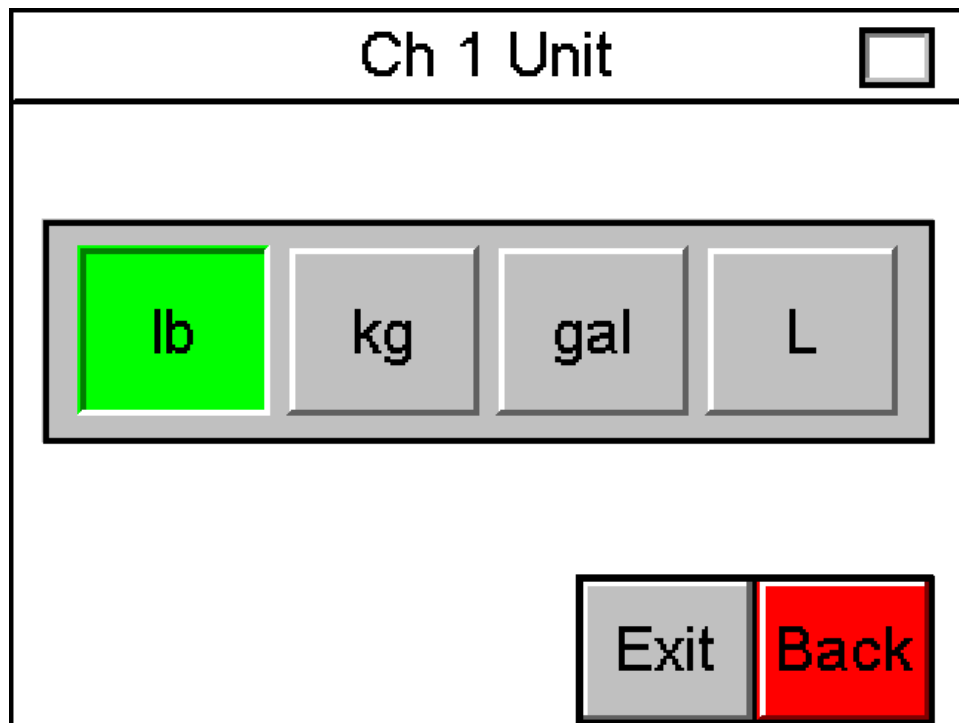


Figure 18: Unit Selection

4.5 Tare Adjustment

The user can access the tare adjustment screen by pressing the “Tare” button on any display. While in the tare adjustment screen, the user can manually adjust tare by using the add and subtract buttons. A single press will add or subtract “0.1” of the value. Holding the button will gradually increase add or subtract speed. By pressing the “Unit” button, the user can select the display and adjustment unit. By pressing the “Auto” button, the user can automatically tare all weight on the base. By pressing the “Reset” button, the user can reset the tare value to zero.

Ch 1 Tare Adjust ☐				
Tare -#####.## lbs		Net Wt -#####.## lbs		
+	-	Gross Wt -#####.## lbs		
Exit	Unit	Auto	Res	Back

Figure 19: Tare Adjustment

Displays tare, net weight, and gross weight

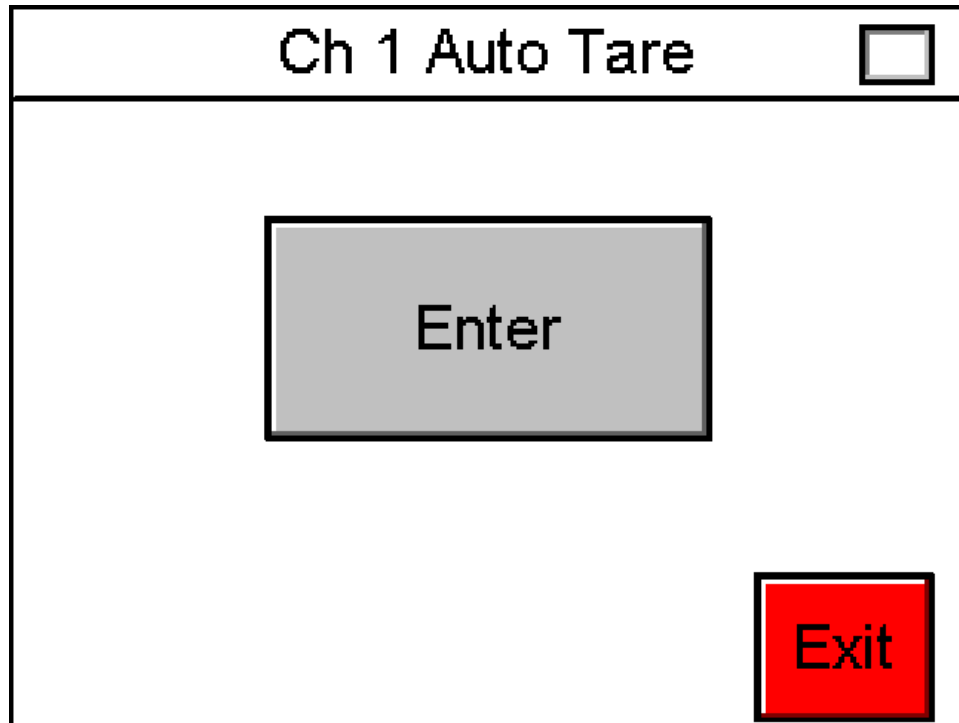


Figure 20: Auto Tare

The user can access this screen by pressing the “Auto” button on the tare adjustment screen. The user can automatically tare all the weight on the base by pressing “Auto Tare”. A confirmation screen will be shown after the user presses “Auto Tare”

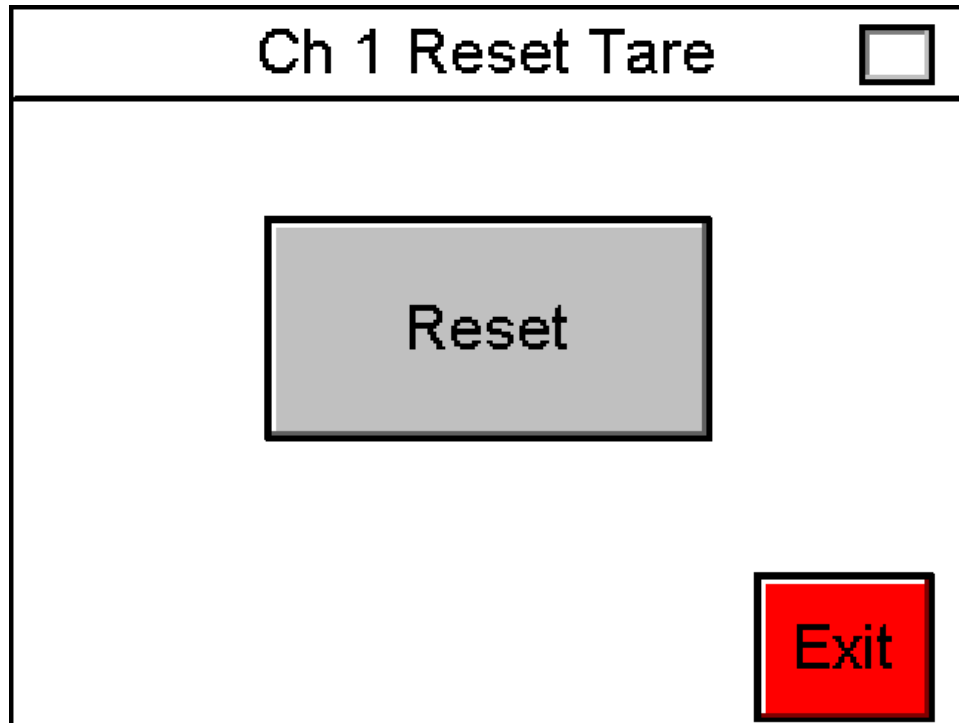


Figure 21: Reset Tare

The user can access this screen by pressing the “Reset” button on the tare adjustment screen. The user can reset the tare value by pressing “Reset Tare”. A confirmation screen will be shown after the user presses “Reset Tare”

5 System Configuration

The user can access the settings by pressing the “Settings” button on the configuration screen. The user can access the configuration screen by pressing the “Configuration” button on the home screen. The user can select decimal, weight averaging, specific gravity, max feed rate, 4-20mA output, weight setpoint trigger value and level, and weight setpoint options. (Settings vary depending on indicator configuration). The user can reset the settings by pressing the “Reset” button under the “Settings” button.

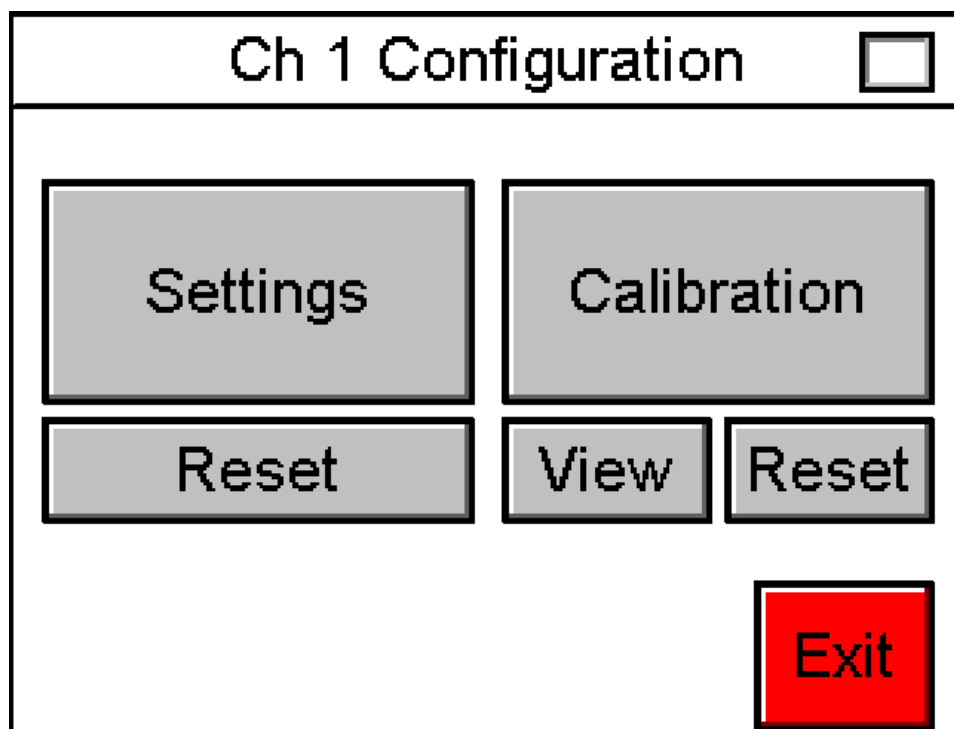
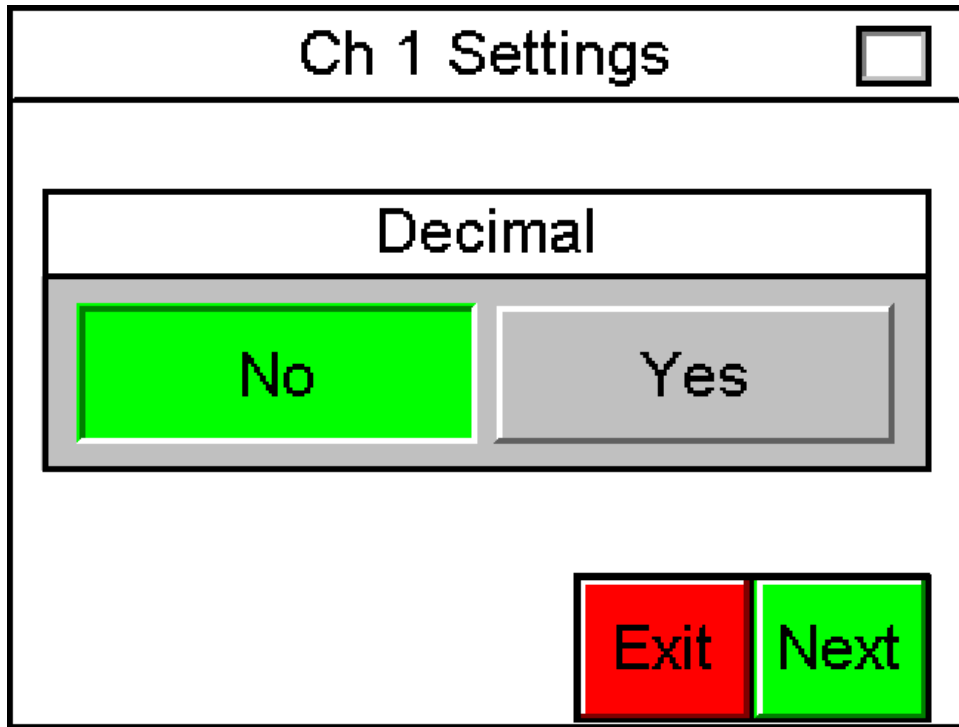


Figure 22: Configuration

NOTE: Calibration configuration and calibration reset require a password when passwords are enabled in developer options

5.1 Settings: Decimal

The decimal selection affects the precision of displays. “No” selection will result in no decimal (1). “Yes” selection will result in a decimal (1.0).

The image shows a graphical user interface for "Ch 1 Settings". At the top, the title "Ch 1 Settings" is displayed next to a small square icon. Below this, a section titled "Decimal" contains two buttons: "No" (highlighted in red) and "Yes" (gray). At the bottom right of the screen are two more buttons: "Exit" (blue) and "Next" (red).

Ch 1 Settings	
Decimal	
No	Yes
Exit Next	

Figure 23: Settings: Decimal

5.2 Settings: Weight Averaging

Weight averaging increases the stability while decreasing the sensitivity of the indicator. Larger values are useful for liquid measurements and stability purposes.

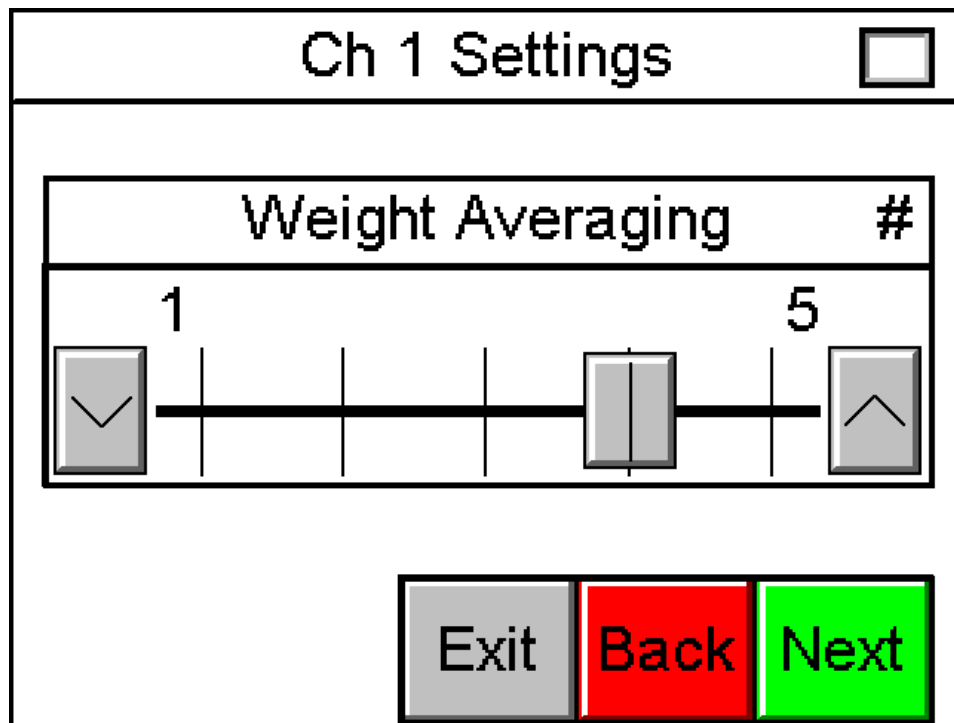
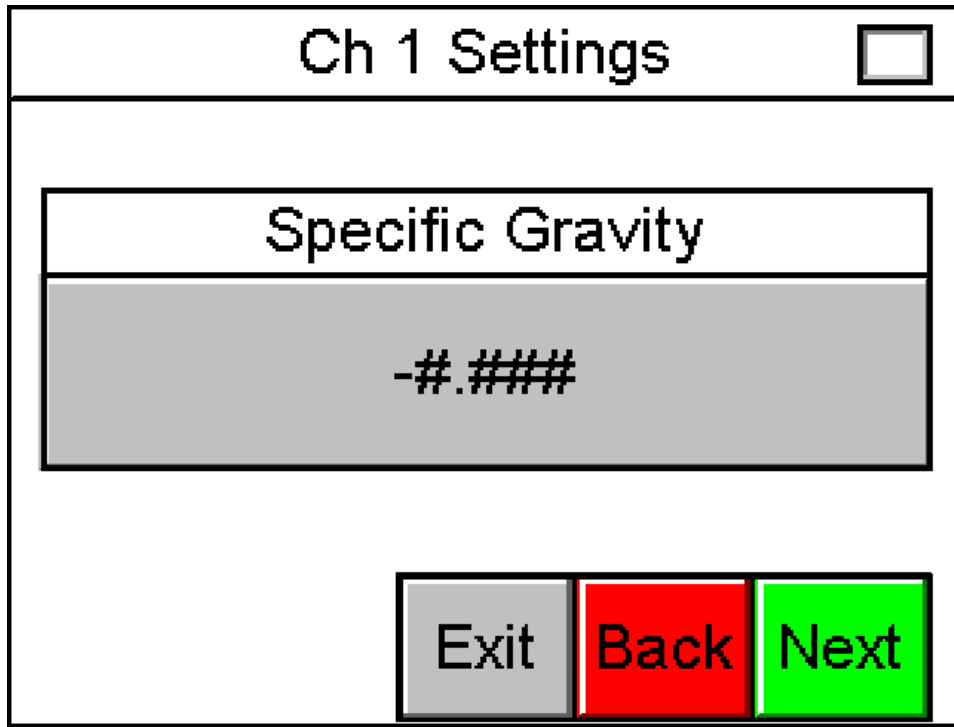


Figure 24: Settings: Weight Averaging

5.3 Settings: Specific Gravity

Specific gravity affects units of volume (gallons and liters). Default specific gravity is 1.000. A gallon of water has a specific gravity of 1.000, which weighs roughly 8.35 lbs. The specific gravity acts as a multiplier to the value 8.35.

EXAMPLE: If the user enters a specific gravity of 1.500, the weight of a gallon would increase to 12.5 lbs ($8.35 * 1.500 = 12.5$).



The screenshot shows a handheld device screen with a title bar labeled "Ch 1 Settings" and a small square icon on the right. Below the title bar is a large rectangular area containing the text "Specific Gravity" at the top and a grey input field below it. The input field contains the placeholder text "-#.####". At the bottom of the screen are three buttons: "Exit" (grey), "Back" (red), and "Next" (green).

Figure 25: Settings: Specific Gravity

5.4 Settings: 4-20 mA Output Selection

The 4-20 mA output selection is available when the 4-20 mA output is enabled via developer options. The user can select which parameter to output. Any display with a 4-20 mA output will show the parameter selected.

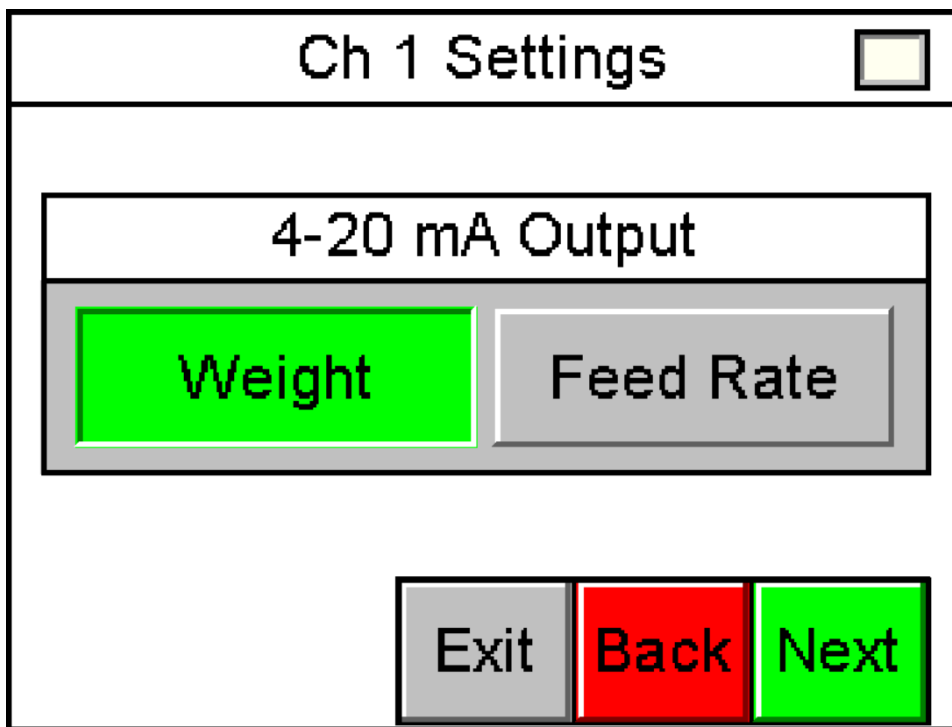


Figure 26: Settings: 4-20 mA Net Weight Output

5.5 Settings: 4-20 mA Net Weight Output

The 4 mA weight is the weight in which the indicator will output 4 mA's. The 20 mA weight is the weight in which the program will output 20 mA's. Any weight value in between the configured 4 mA weight and 20 mA weight will scale the output signal accordingly. The user can use the output signal to remotely determine net weight.

EXAMPLE: If the user enters a 4 mA weight of 0 lbs, and a 20 mA weight of 100 lbs, the indicator will output 8 mA's when net weight is equal to 25 lbs.

Ch 1 Settings

4 mA Output

-#####.# L

20 mA Output

-#####.# L

Exit

Unit

Back

Next

Figure 27: Settings: 4-20 mA Net Weight Output

NOTE: This screen is only available when the 4-20 mA output selection is on “Weight”

5.6 Settings: Max Feed Rate

The max feed rate affects the Y-axis on the feed rate data log display. In addition, the max feed rate will trigger an alarm when the feed rate is above the set value. When the alarm is disabled, no alarm will be present. When the 4-20 mA selection is on “Feed Rate”, the 20 mA output will be the set max feed rate. If the alarm is disabled, a warning will be shown on the data log display and the max feed rate value will be set to zero (0).

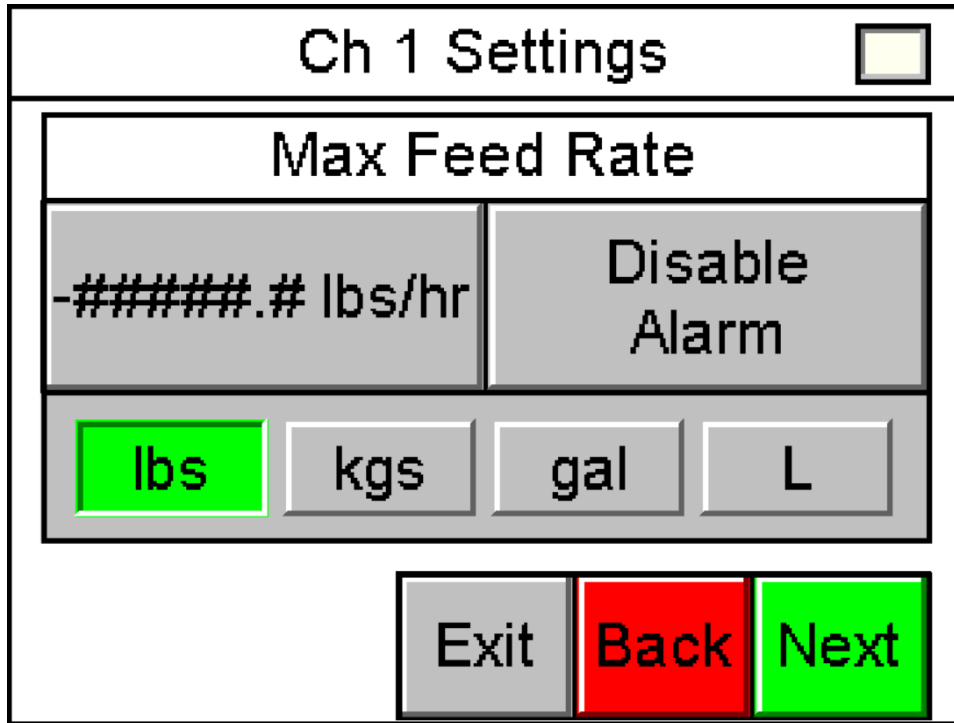


Figure 28: Settings: Max Feed Rate

NOTE: When weight setpoints are not enabled, this screen is the last of the settings. When the user presses the “Next” button when weight setpoints are not enabled, they will be brought to the settings confirmation screen

5.7 Settings: Weight Setpoints

The corresponding setpoint output will turn on when the net weight is above or below (trigger level depends on low/high selection) the setpoint value. The user can select the unit for the setpoint value. The user can exit, go back to the previous screen, or go to the next screen.

SETPOINT CONFIGURATION MAP:

- Single (1) channel with weight setpoints enabled, 2 setpoints total, 2 per channel
- Single (1) channel with extra weight setpoints enabled, 4 setpoints total, 4 per channel
- Dual (2) channel with weight setpoints enabled, 4 setpoints total, 2 per channel
- Dual (2) channel with extra weight setpoints enabled, 8 setpoints total, 4 per channel
- Triple (3) channel with weight setpoints enabled, 6 setpoints total, 2 per channel
- Quadruple (4) channel with weight setpoints enabled, 8 setpoints total, 2 per channel

Ch 1 Settings			
Setpoint 1		Setpoint 2	
-#####.# lbs		-#####.# lbs	
Low	High	Low	High
Exit		Unit	Back
			Next

Figure 29: Settings: Weight Setpoints

NOTE: Only available when weight setpoints are enabled

5.8 Settings: Weight Setpoints Options

The user can disable or enable trigger alarm or latch for setpoints. Trigger alarm affects the status level of weight setpoints. When disabled, weight setpoints function as an error and will activate a yellow status light when on. When trigger alarm is enabled, weight setpoints will function as an alarm and will activate a red status light when on. When latch is disabled, the setpoint will only be active when the setpoint is being triggered. When latch is enabled, the setpoint will remain on once triggered until the user acknowledges the setpoint in the status check menu under the setpoints section. The user can exit, go back to the previous screen, or go to the next screen.

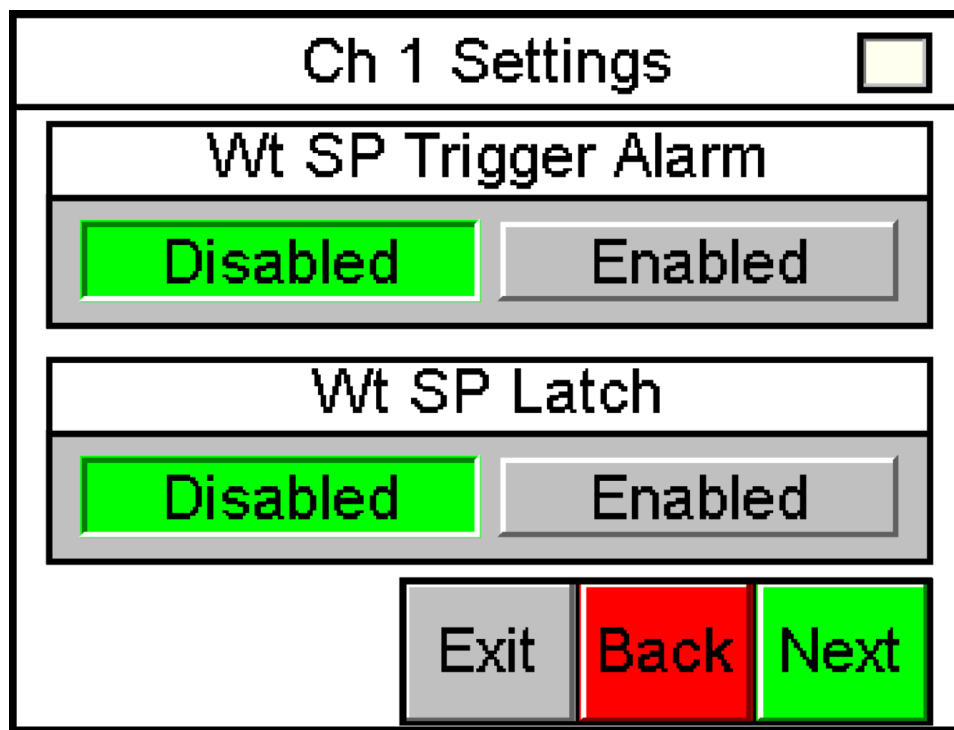


Figure 30: Settings: Weight Setpoints Options

NOTE: Only available when weight setpoints are enabled

5.9 Reset Settings

The user can access this screen by pressing the “Reset” button on the configuration screen (see figure 28). The user can reset the settings by pressing “Reset Settings”. A confirmation screen will be shown after the user presses “Reset Settings”.

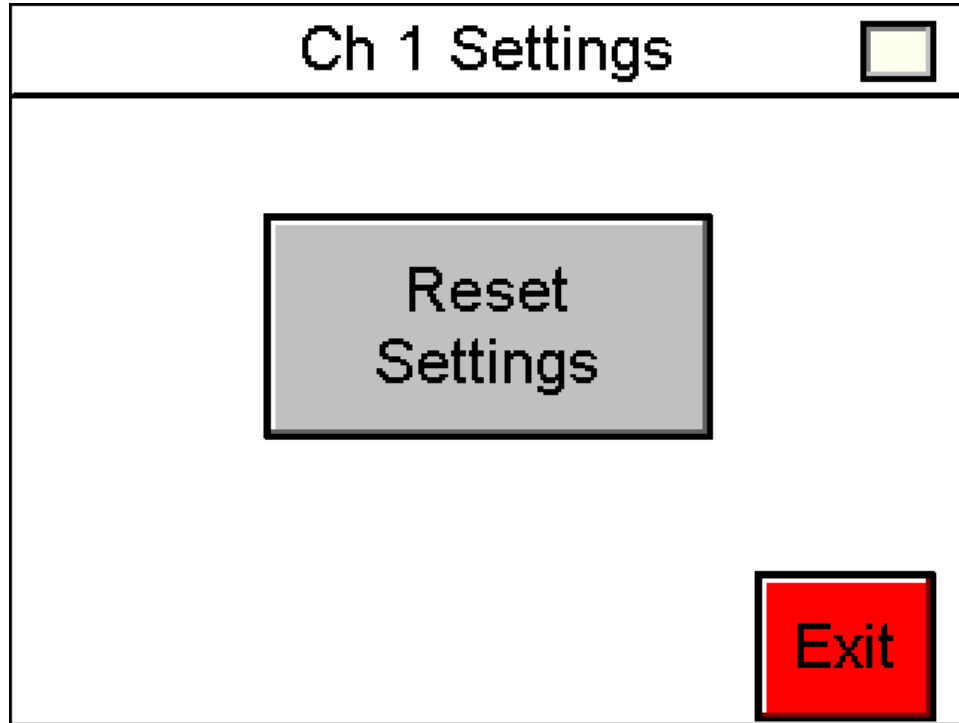


Figure 31: Reset Settings

6 Calibration

The user can access calibration by pressing the “Calibration” button on the configuration screen. The user can select standard or data entry calibration. Standard calibration allows the user to get dead load and calibration weight samples, enter calibration weight value, enter max net weight for indicator, and enter max gross weight for scale base. When taking dead load or calibration weight samples, the program checks to ensure a stable base during calibration. An unstable base during calibration will disregard the calibration value and prompt the user to attempt calibration again. An error will be present whenever a base is unstable during calibration. Data entry calibration allows the user to enter a dead load and weight bit value, enter calibration weight value, enter max net weight for indicator, and enter max gross weight for scale base.

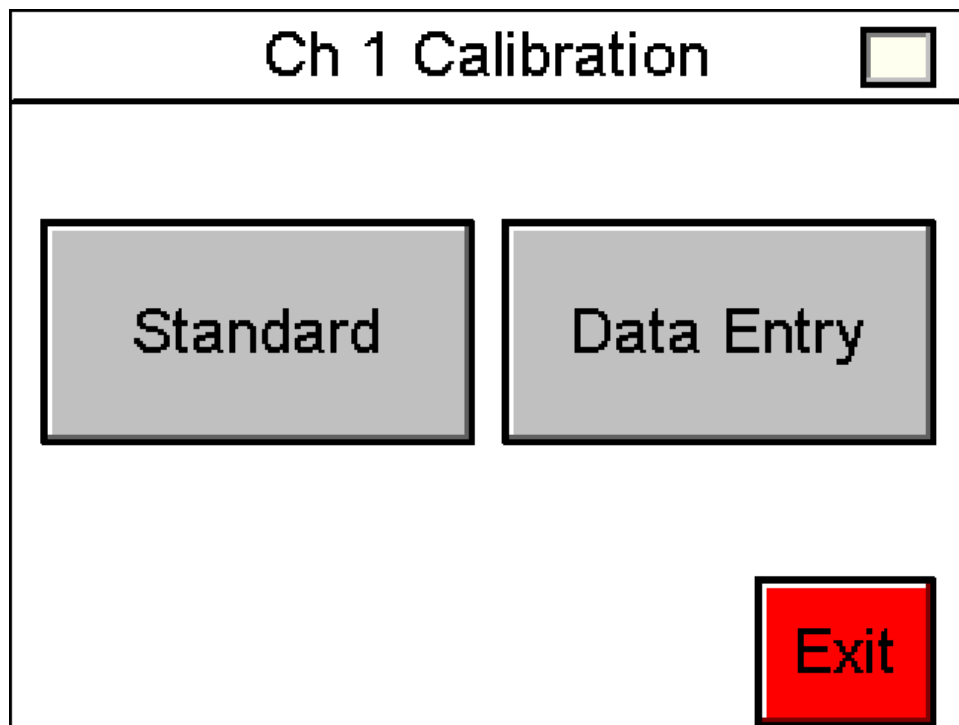
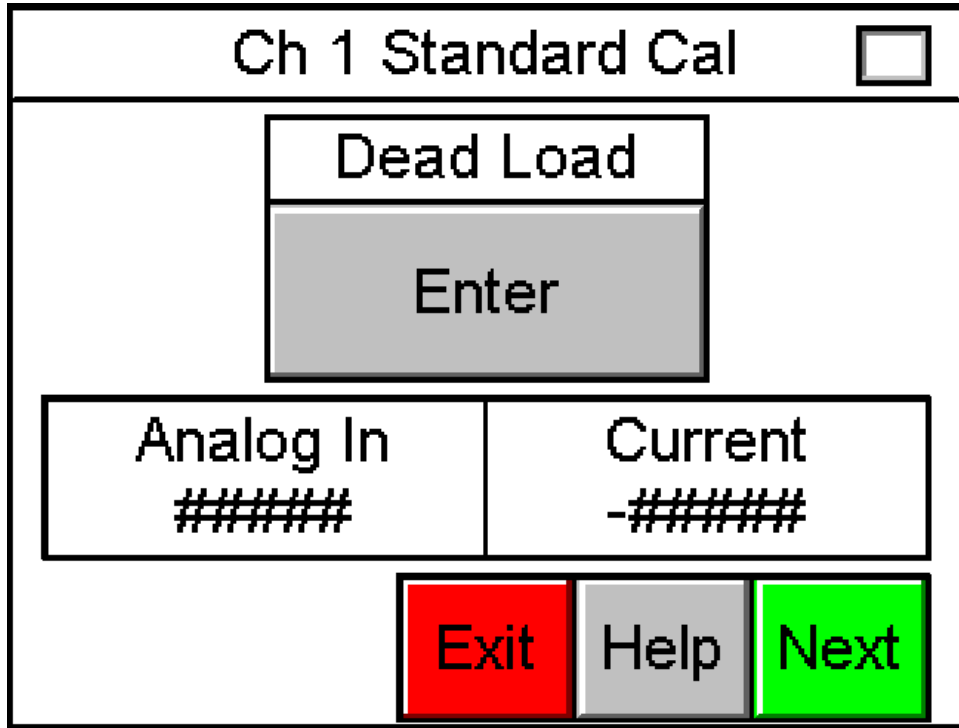


Figure 32: Calibration Type Select

NOTE: Standard and data entry calibration menus require a password when passwords are enabled

6.1 Calibration: Dead Load

The user can access the standard calibration screens by pressing the “standard” button on the calibration type select screen. The user can press “Enter” to start the dead load calibration sample. The user can also view the analog input bit value, and the current dead load bit value.

The screen is titled "Ch 1 Standard Cal" in a large font at the top. To the right of the title is a small square icon. Below the title, the screen is divided into several sections. In the center, there is a box containing the text "Dead Load" above a larger, shaded box containing the text "Enter". Below this, there are two side-by-side boxes. The left box is labeled "Analog In" and contains the text "#####". The right box is labeled "Current" and contains the text "-#####". At the bottom of the screen, there are three colored buttons: a red button labeled "Exit", a gray button labeled "Help", and a green button labeled "Next".

Ch 1 Standard Cal		
Dead Load		
Enter		
Analog In #####	Current -#####	
Exit	Help	Next

Figure 33: Calibration: Dead Load

6.2 Calibration: Dead Load Sample

Shows the time remaining of the dead load sample. Sample total length is 10 seconds. 2 samples are taken each second and are averaged at the end to get the resulting dead load bit. A check is run on the dead load calibration to ensure stability. If the base was unstable during calibration, the user will be brought to an error screen. If no error was detected, the user will be brought to a screen displaying the new dead load bit value. The user can press “Cancel” to stop the dead load sample and return to the previous screen.

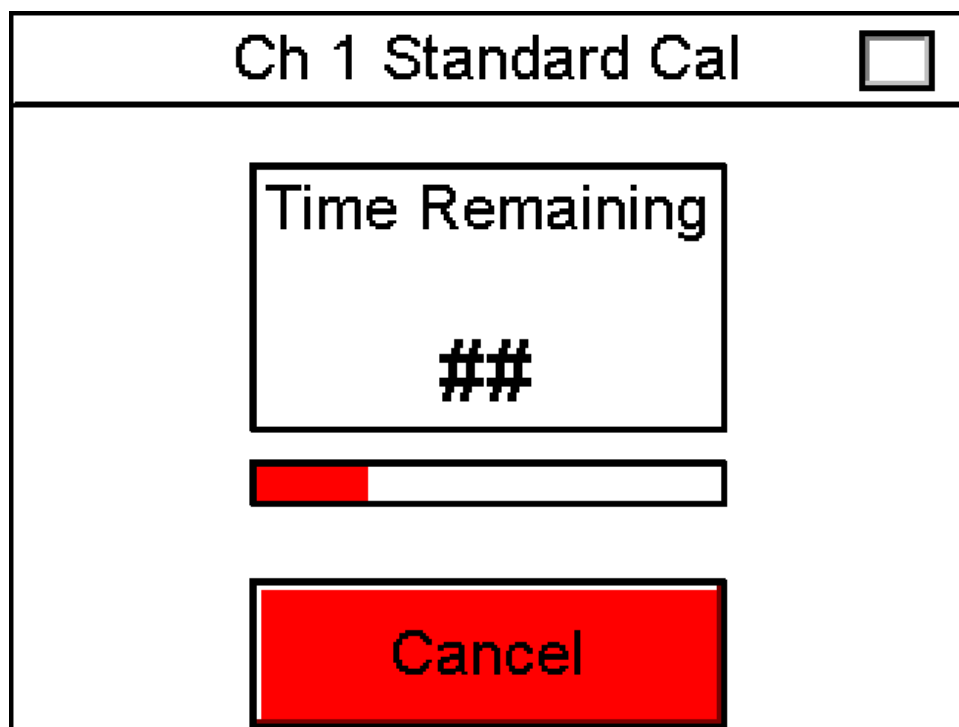


Figure 34: Calibration: Dead Load Sample

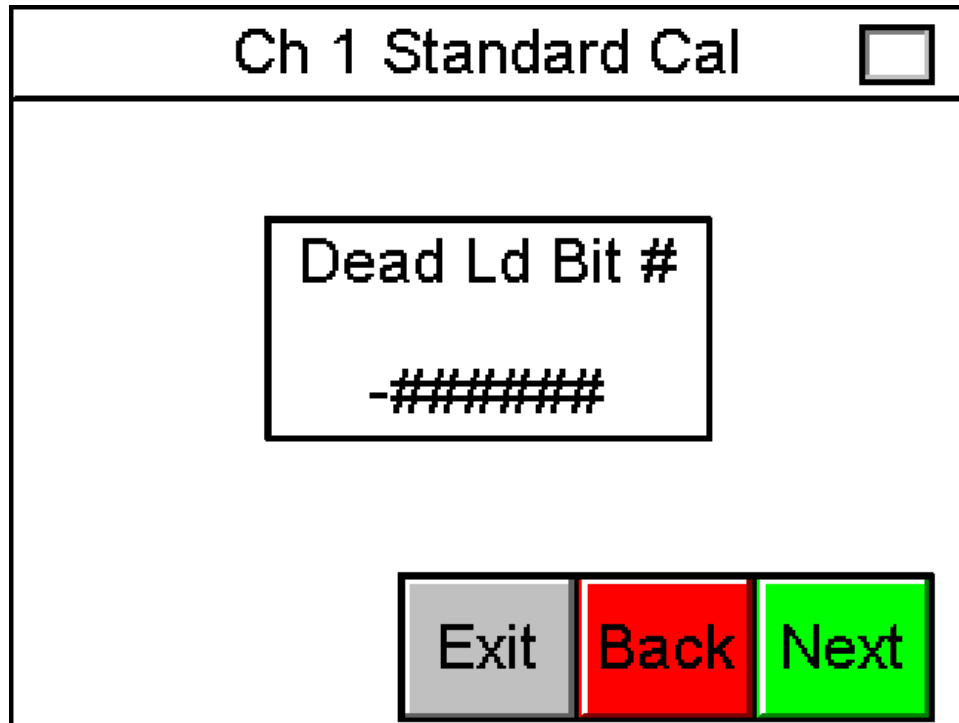


Figure 35: Calibration: Dead Load Sample Success

Displays the resulting dead load bit from the dead load calibration sample

NOTE: Only will display after a stable dead load sample

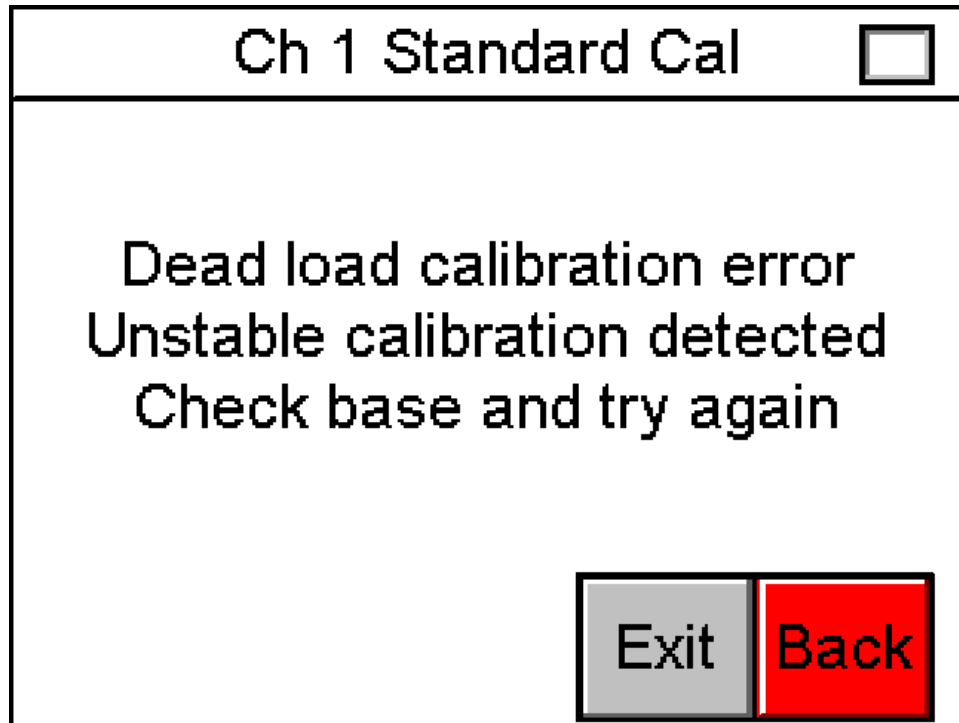


Figure 36: Calibration: Dead Load Sample Error

Displays the dead load calibration error. The dead load calibration error will occur when the analog input varies more than 10 bits during the sample

NOTE: Only will display after an unstable dead load sample

6.3 Calibration: Calibration Weight

The user can press “Enter” to start the calibration weight sample. The user can also view the analog input bit value, and the current calibration weight bit value.

Ch 1 Standard Cal		☐	
Weight Cal			
Enter			
Analog In #####		Current -#####	
Exit	Help	Back	Next

Figure 37: Calibration: Calibration Weight

6.4 Calibration: Calibration Weight Sample

Shows the time remaining of the calibration weight sample. Sample total length is 10 seconds. 2 samples are taken each second and are averaged at the end to get the resulting calibration weight sample bit. A check is run on the calibration weight sample to ensure stability. If the base was unstable during calibration, the user will be brought to an error screen. If no error was detected, the user will be brought to a screen displaying the new calibration weight sample bit value. The user can press “Cancel” to stop the calibration weight sample and return to the previous screen.

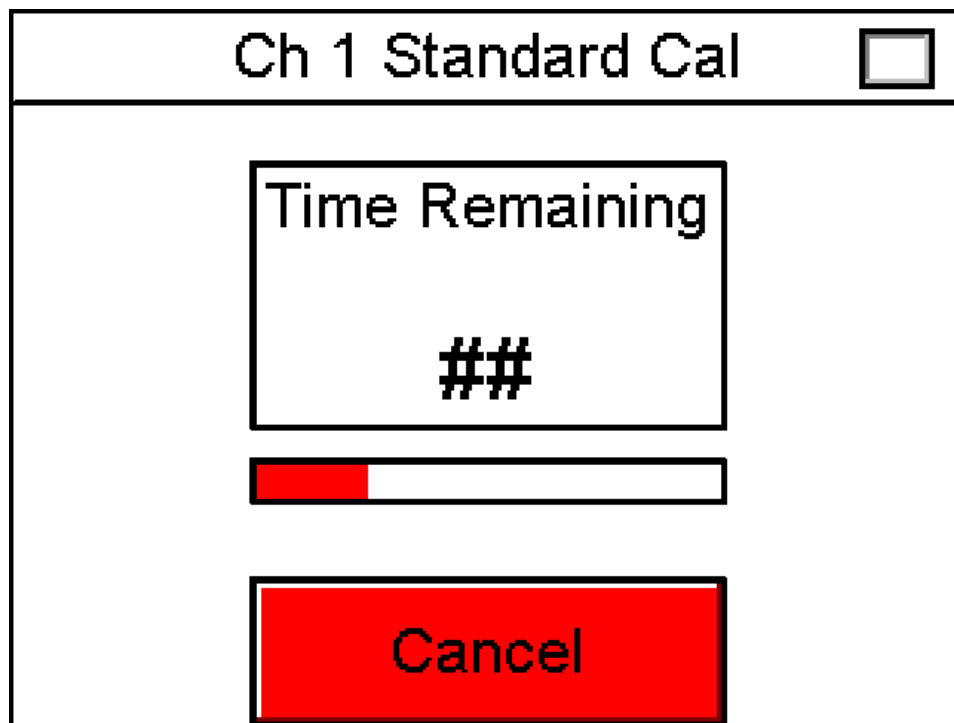
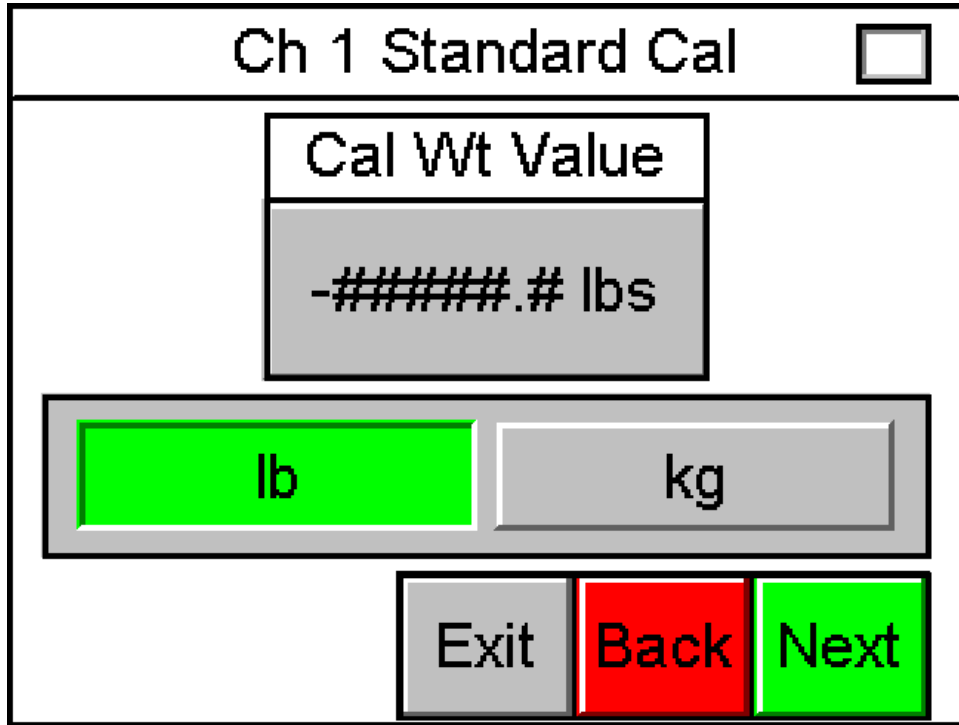


Figure 38: Calibration: Calibration Weight Sample

The screen displays the "Ch 1 Standard Cal" menu. At the top right is a small square icon. Below the title is a box labeled "Cal Wt Value" containing the text "-#####.# lbs". Below this is a row of two buttons: "lb" (highlighted in green) and "kg" (grey). At the bottom is a row of three buttons: "Exit" (grey), "Back" (red), and "Next" (green).

Ch 1 Standard Cal		
Cal Wt Value		
-#####.# lbs		
lb	kg	
Exit	Back	Next

Figure 39: Calibration: Calibration Weight Sample Success

Displays the resulting calibration weight bit from the calibration weight sample

NOTE: Only will display after a stable calibration weight sample

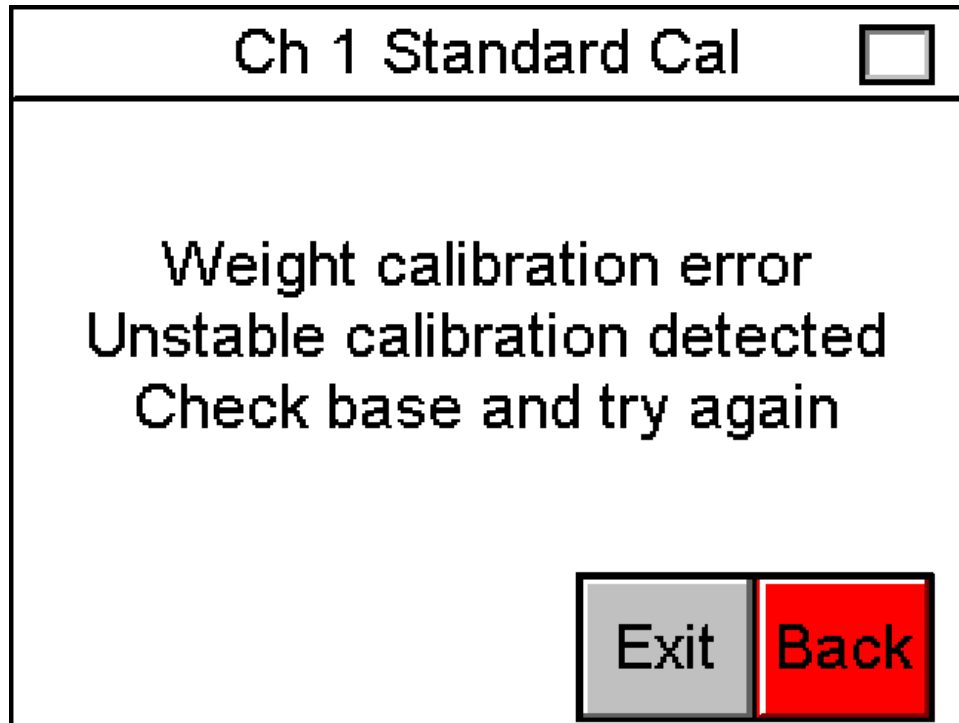


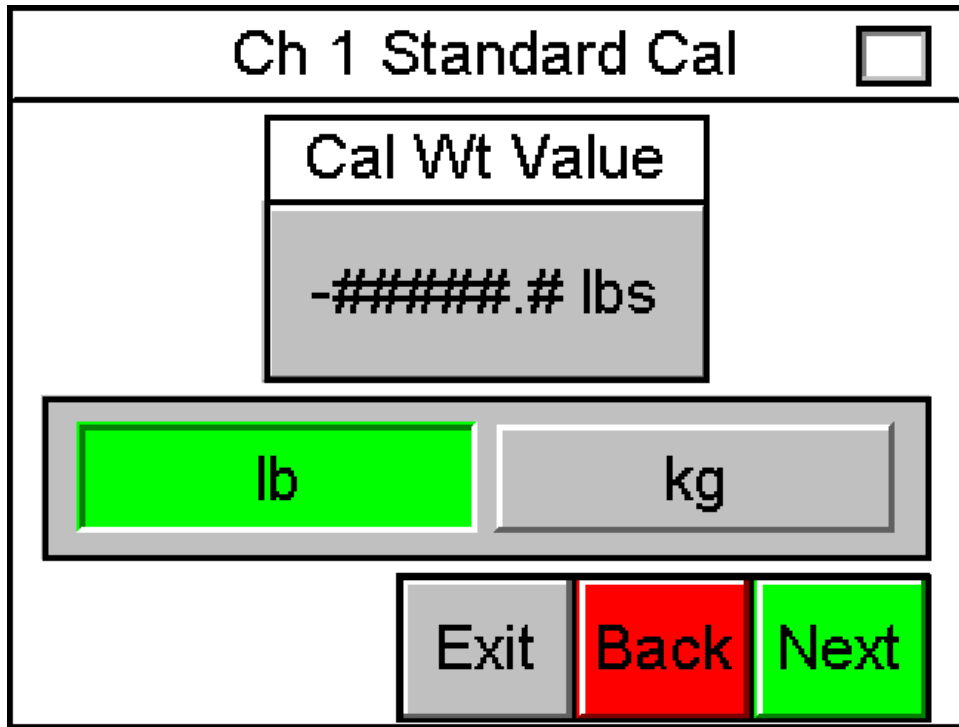
Figure 40: Calibration: Calibration Weight Sample Error

Displays the calibration weight sample error. The calibration weight sample error will occur when the analog input varies more than 10 bits during the sample

NOTE: Only will display after an unstable calibration weight sample

6.5 Calibration: Calibration Weight Value

Prompts the user to enter the weight value used for calibration. The user can exit, go back to the previous display, or go to the next display.

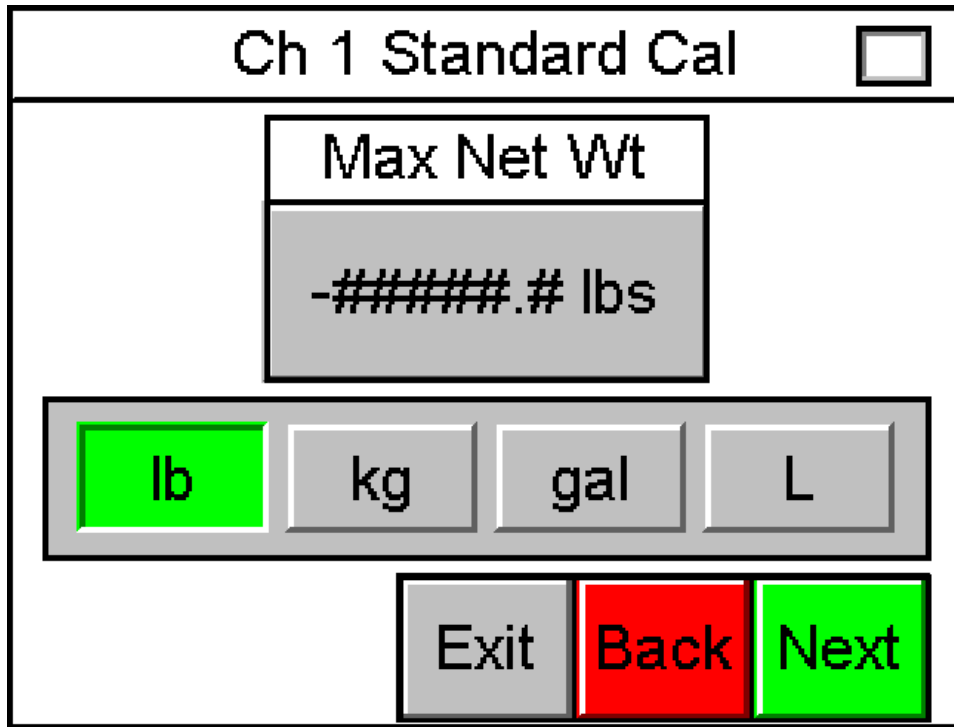
The screen is titled "Ch 1 Standard Cal" in a large, black, sans-serif font. To the right of the title is a small, empty square box. Below the title, the text "Cal Wt Value" is displayed in a black, sans-serif font. Underneath this, a large, gray rectangular box contains the text "-#####.# lbs" in a black, sans-serif font. Below the gray box, there are two buttons: a green button labeled "lb" and a gray button labeled "kg". At the bottom of the screen, there are three buttons: a gray button labeled "Exit", a red button labeled "Back", and a green button labeled "Next".

Ch 1 Standard Cal		☐
Cal Wt Value		
-#####.# lbs		
lb	kg	
Exit	Back	Next

Figure 41: Calibration: Calibration Weight Value

6.6 Calibration: Max Net Weight

Prompts the user to enter the max net weight for indicator. The max net weight will be used for scaling functions and alarms.

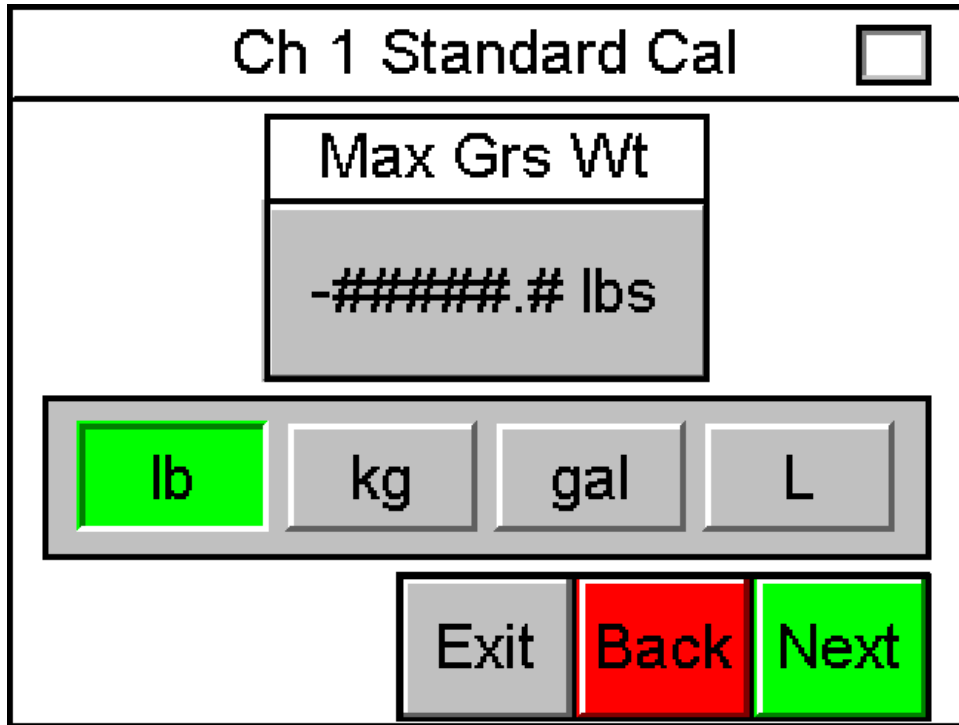


The screenshot displays the 'Ch 1 Standard Cal' screen. At the top, the title 'Ch 1 Standard Cal' is shown next to a small square icon. Below the title, the text 'Max Net Wt' is displayed above a large input field containing the placeholder '-#####.# lbs'. Below the input field, there are four buttons for unit selection: 'lb' (highlighted in green), 'kg', 'gal', and 'L'. At the bottom of the screen, there are three buttons: 'Exit' (gray), 'Back' (red), and 'Next' (green).

Figure 42: Calibration: Max Net Weight

6.7 Calibration: Max Gross Weight

Prompts the user to enter the max gross weight for scale base. The max gross weight will be used for scaling functions and alarms.



Ch 1 Standard Cal ☐

Max Grs Wt

-#####.# lbs

lb kg gal L

Exit Back Next

Figure 43: Calibration: Max Gross Weight

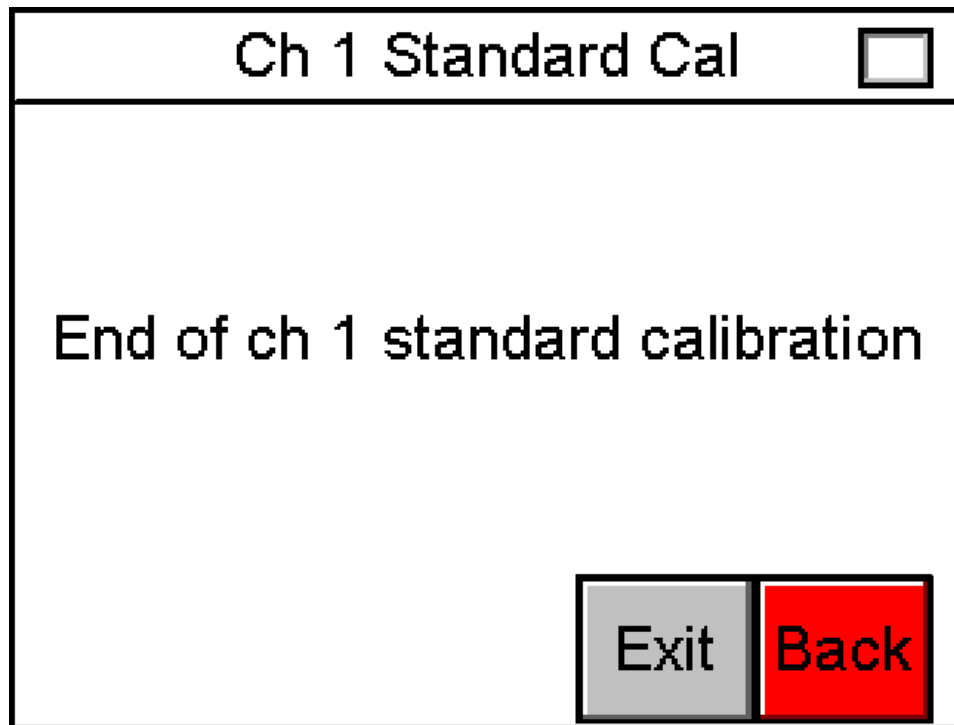


Figure 44: Calibration: Ending Confirmation

6.8 Calibration View

The user can access calibration view by pressing the “View” button under the “Calibration” button on the configuration screen. The user can view dead load bit, weight calibration bit, calibration weight value, max net weight, and max gross weight.

Ch 1 Calibration View ☐	
Dead Load # -#####	Weight Cal # -#####
Cal Wt Value -##### lbs	Max Net Wt -##### lbs
Max Grs Wt -##### lbs	Exit

Figure 45: Calibration View

6.9 Reset Calibration

The user can access this screen by pressing the “Reset” button under the “Calibration” button on the configuration screen. The user can reset the calibration by pressing “Reset Calibration”. A confirmation screen will be shown after the user presses “Reset Calibration”.

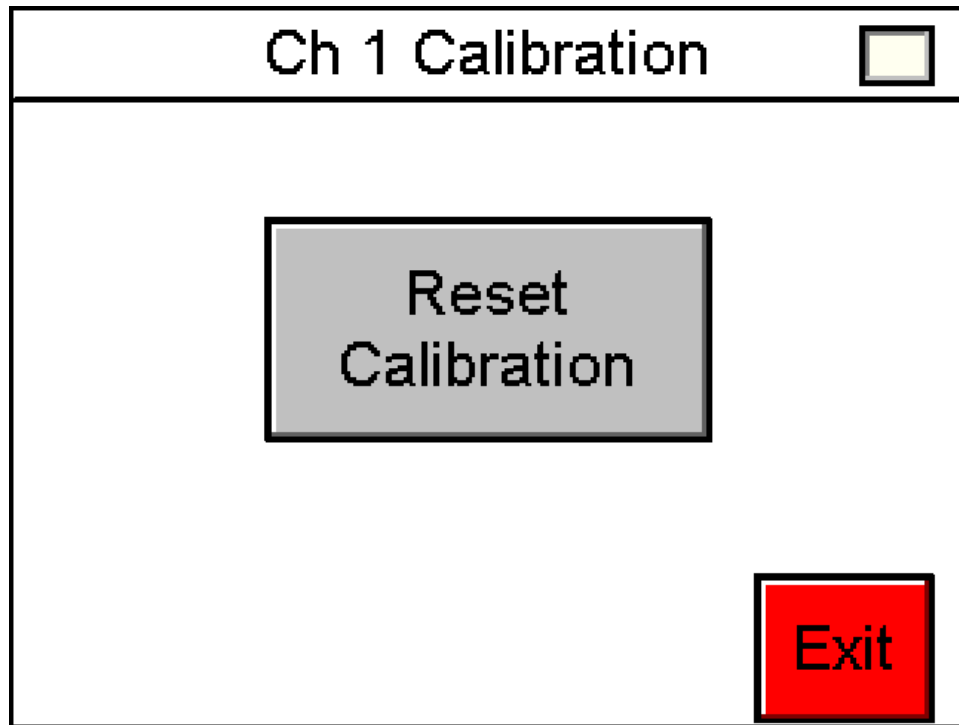


Figure 46: Reset Calibration

NOTE: Requires a password when passwords are enabled

7 Status Check

The user can access the status check menu by pressing the “Status Check” button on the home screen. The user can view current and past errors, current and past alarms, perform a load cell (s) check, test outputs, view the channel analog inputs, and view weight setpoints (if applicable). The user can only perform the load cell (s) check when the channel is calibrated, and no alarms are present.

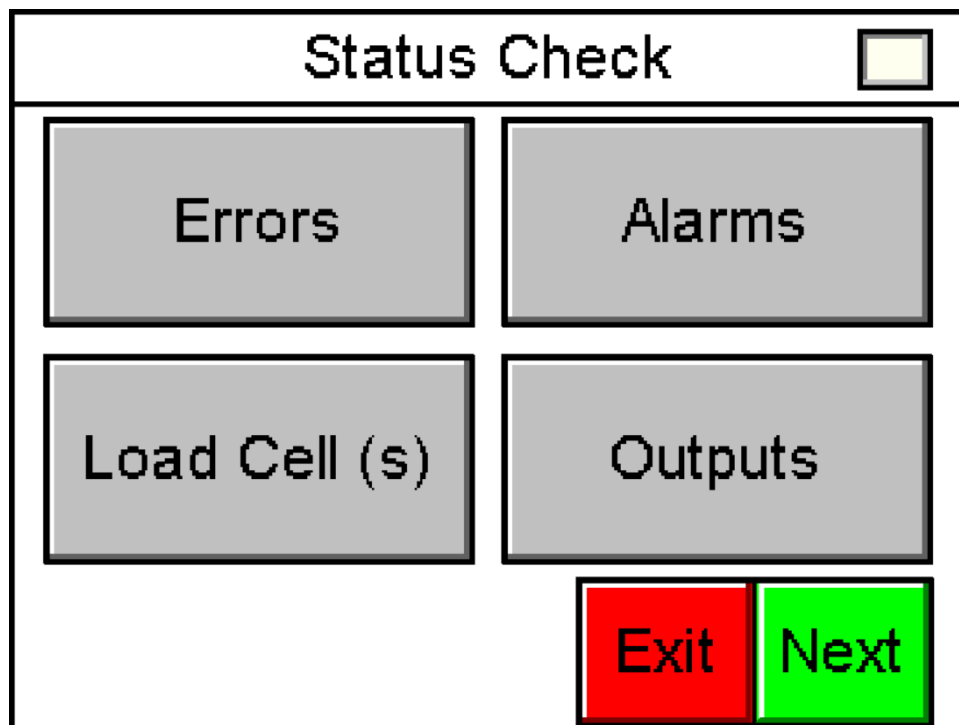


Figure 47: Status Check Home 1

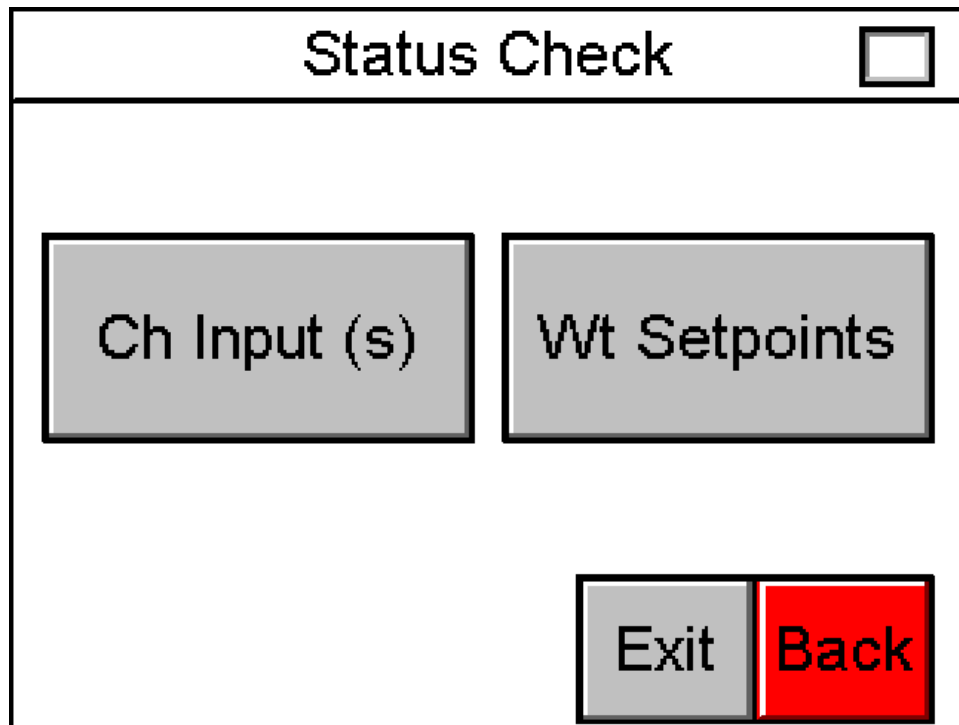


Figure 48: Status Check Home 2

7.1 Indicator Light

The AccuPro 7000-TS has a tri-colored status light located in the top right of every screen. For any display screen, the indicator light is located across the entire title portion of the screen for greater visibility. A solid green light means that there are no errors or alarms present in any channels. A blinking yellow light is called an error. An error is active whenever there is a problem with the configuration of at least one channel or a weight setpoint is active. A blinking red light is called an alarm. An alarm is active whenever there is a critical status present in at least one channel. A blinking green light means that there is an error or alarm present, but that the user has acknowledged it through the current errors or alarms status check screen.

Green (Steady)	Green (Flashing)
No errors or alarms are active in any channel. The indicator is functioning normally.	An error or alarm is currently active and is acknowledged by the user.

Red (Alarm)	Yellow (Error)
• Analog Input Limit • Max Net Weight • Max Gross Weight • Leak Detected • Weight Setpoint Active (Optional Configuration) • Max Feed Rate (Optional Configuration)	• Settings Not Configured • Calibration Not Complete • Dead Load Calibration Unstable • Weight Calibration Unstable • Improper Calibration (1) • Improper Calibration (2) • Weight Setpoint Active (Optional Configuration) • Invalid Operational Time • Operational Time Not Set • Clock Not Set

Figure 49: Indicator Light Table

7.2 Errors

An error is present where there is a problem with the configuration of the indicator, or when a setpoint is active (depending on configuration). The user can access the error select screen by pressing the “Errors” button on status check home screen 1. The user can view current errors or the error log.

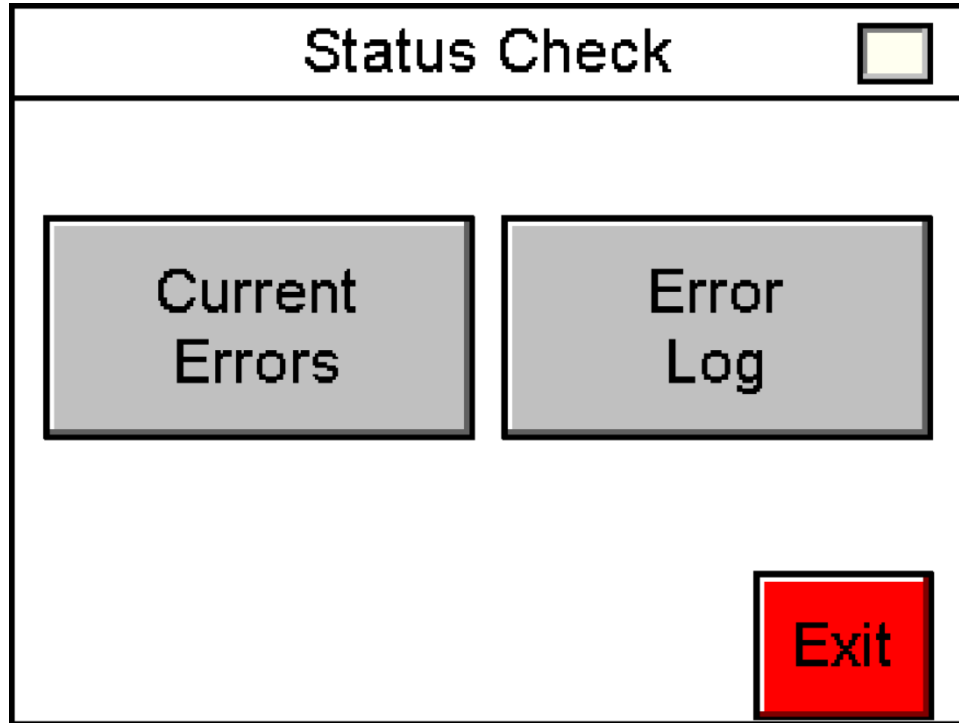


Figure 50: Status Check: Errors

7.3 Current Errors

The user can view all current errors. Any error in red means that it is currently active, and that the user has not acknowledged it. Any error that is blue means that it is currently active, and that the user has acknowledged it. Any error that is green means that while the error was active and was not acknowledged, the error condition was no longer present. If an error was active and was acknowledged while the error condition was no longer present, the error would disappear without turning green. Each status notification has the time when it was triggered. The user can acknowledge all errors by pressing the “Acknowledge” button.

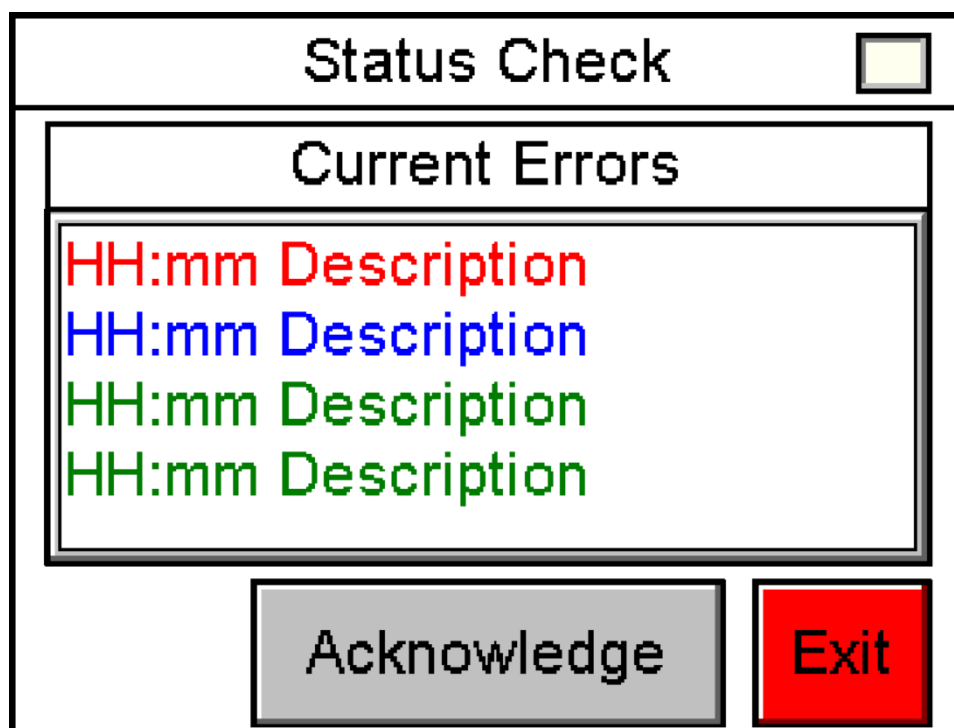


Figure 51: Status Check: Current Errors

7.4 Error Log

The user can view the log of all errors. When an error is triggered, it will appear in red with the time and date next to it. When an error is no longer present, the error will appear in green with the time and date next to it.

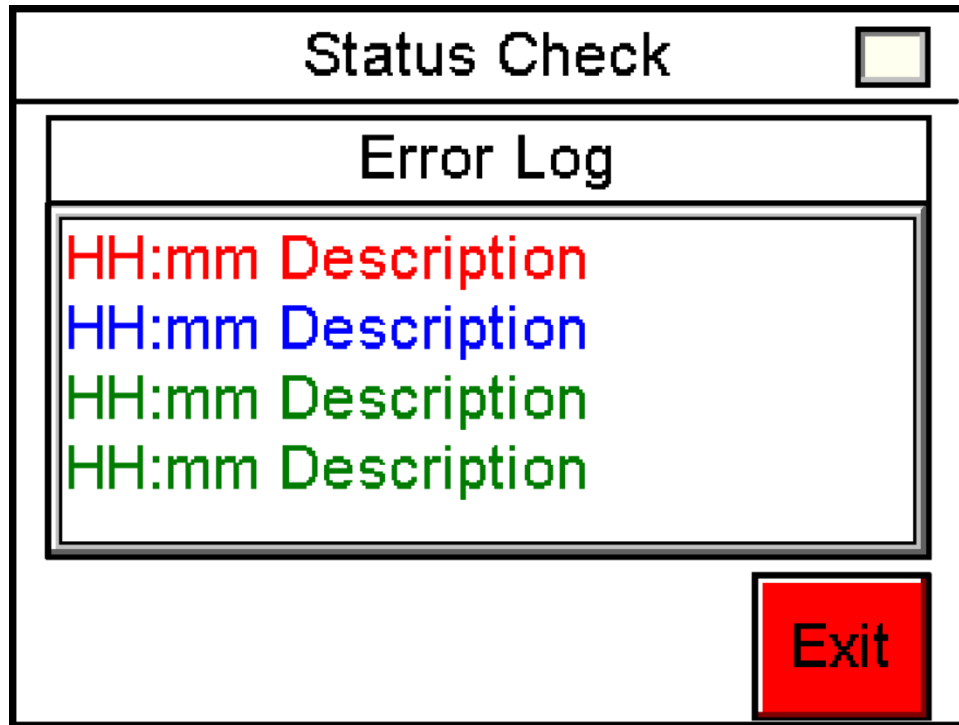


Figure 52: Status Check: Error Log

7.5 Alarms

An alarm is present when there is a critical problem with the base or indicator, or when a setpoint is active (depending on configuration). The user can access the alarm select screen by pressing the “Alarms” button on status check home screen 1. The user can view current alarms or the alarm log.

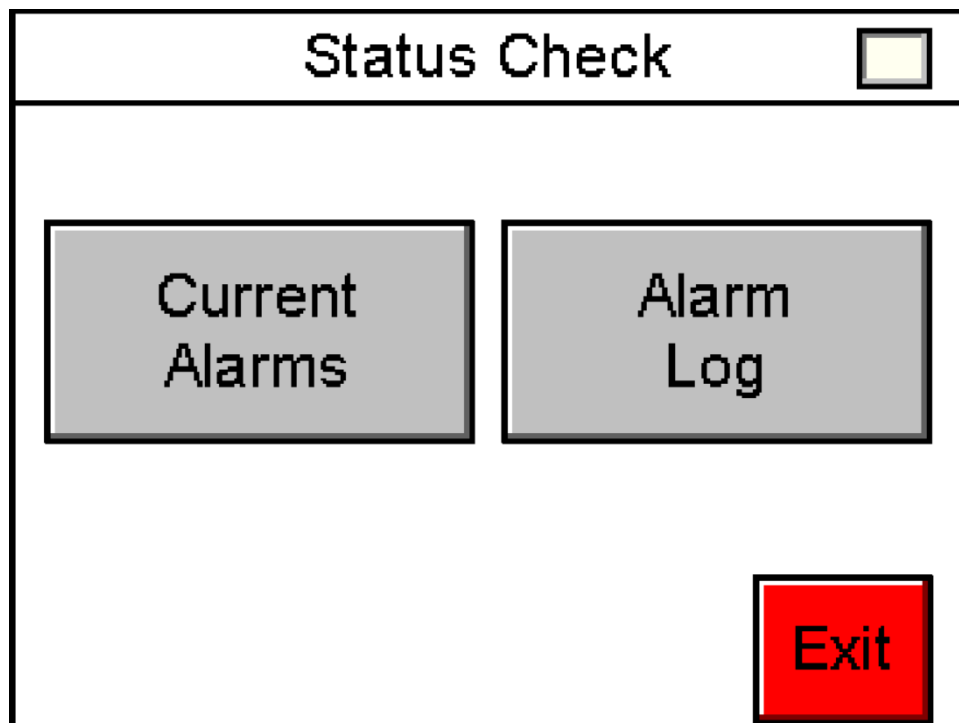


Figure 53: Status Check: Alarms

7.6 Current Alarms

The user can view all current alarms. Any alarm in red means that it is currently active, and that the user has not acknowledged it. Any alarm that is blue means that it is currently active, and that the user has acknowledged it. Any alarm that is green means that while the alarm was active and was not acknowledged, the alarm condition was no longer present. If an alarm was active and was acknowledged while the alarm condition was no longer present, the alarm would disappear without turning green. Each status notification has the time when it was triggered. The user can acknowledge all alarms by pressing the “acknowledge” button.

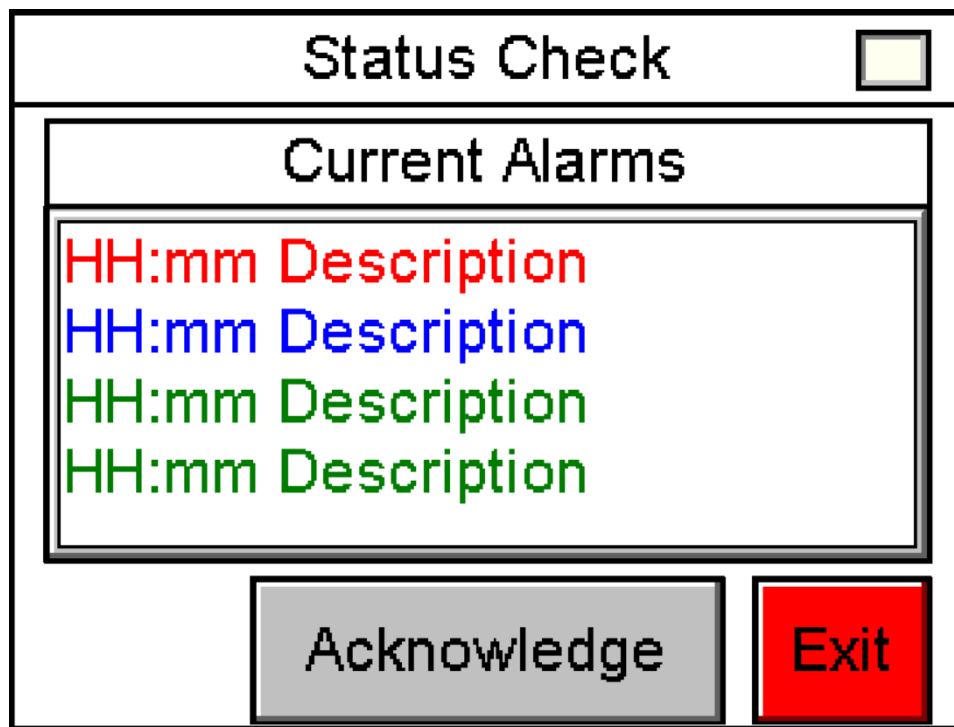


Figure 54: Status Check: Current Alarms

7.7 Alarm Log

The user can view the log of all alarms. When an alarm is triggered, it will appear in red with the time and date next to it. When an alarm is no longer present, the alarm will appear in green with the time and date next to it.

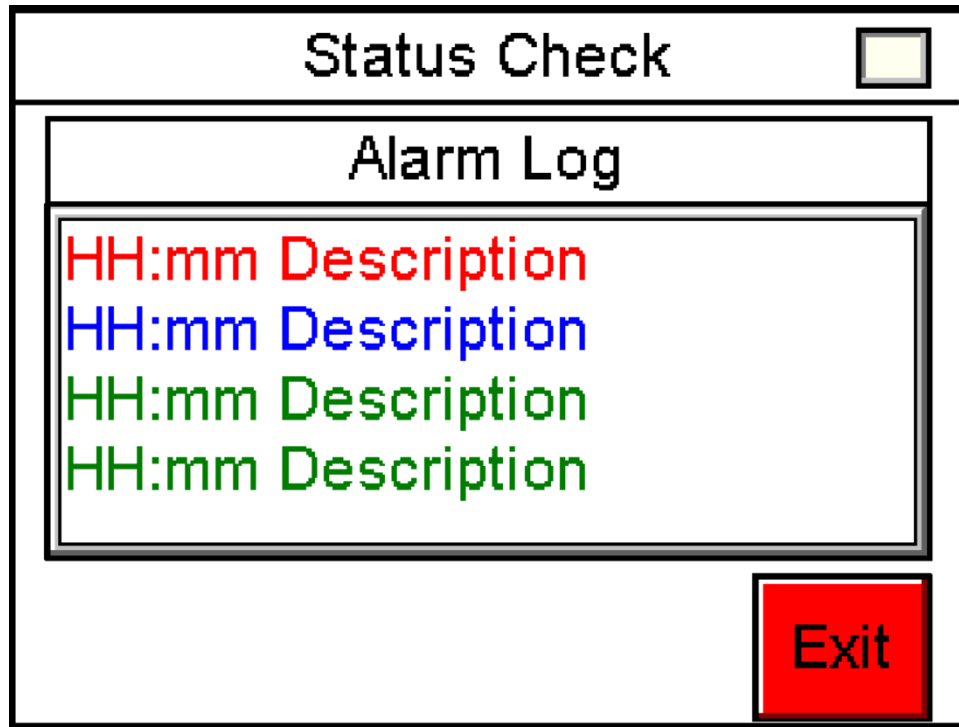
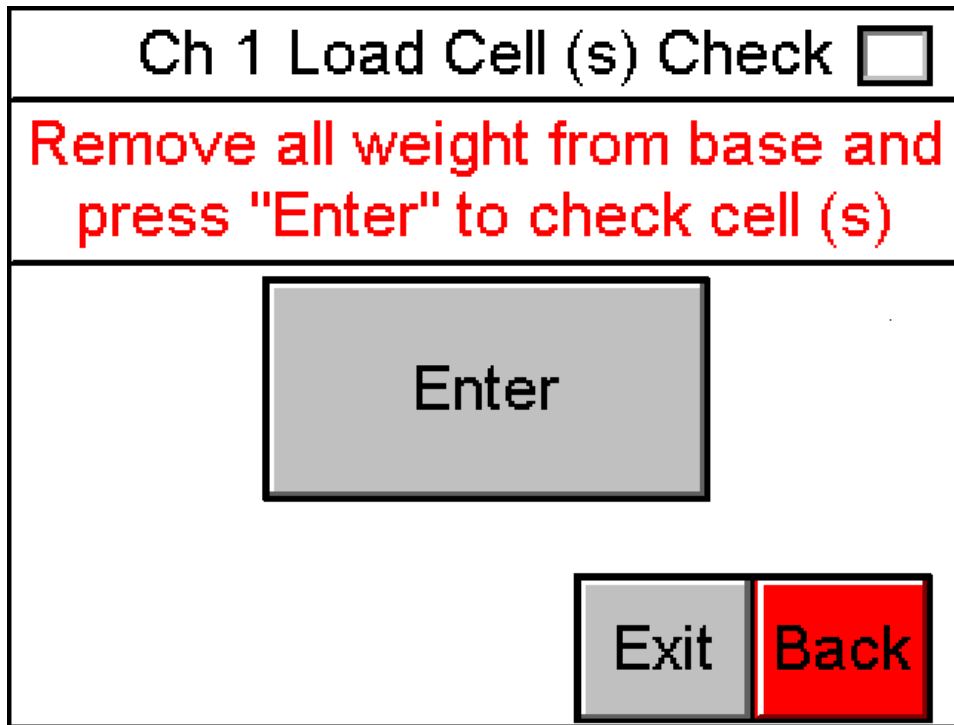


Figure 55: Status Check: Alarm Log

7.8 Status Check: Load Cell (s)

The user can access this screen by pressing “Load Cell (s)” on the status check screen. The user can check status of the load cell (s) by comparing the factory set dead load bit value to the current dead load bit value. The channel must be calibrated, and no alarms must be present to perform the load cell (s) check. When the user presses “Enter” they will be brought to a status screen (see figure 116 and 117) which displays the status of the load cells.

The screenshot shows a screen titled "Ch 1 Load Cell (s) Check" with a small square icon to the right of the title. Below the title, there is a red instruction: "Remove all weight from base and press 'Enter' to check cell (s)". In the center of the screen is a large grey button labeled "Enter". At the bottom right, there are two buttons: a grey "Exit" button and a red "Back" button.

Ch 1 Load Cell (s) Check ☐	
Remove all weight from base and press "Enter" to check cell (s)	
Enter	
Exit	Back

Figure 56: Status Check: Load Cell (s)

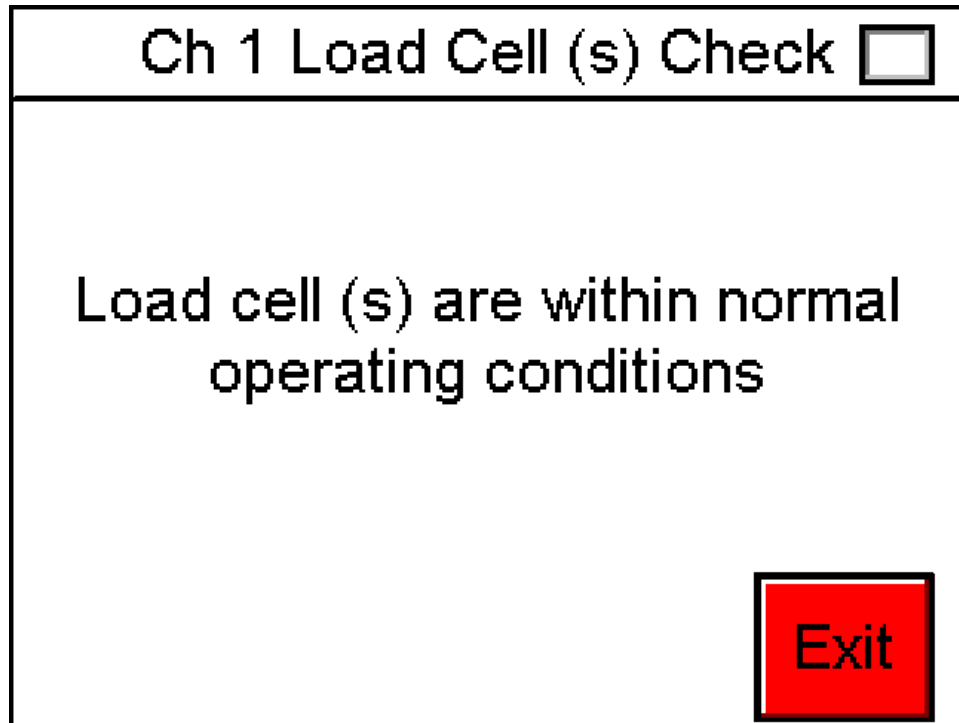


Figure 57: Status Check: Load Cell (s) Normal

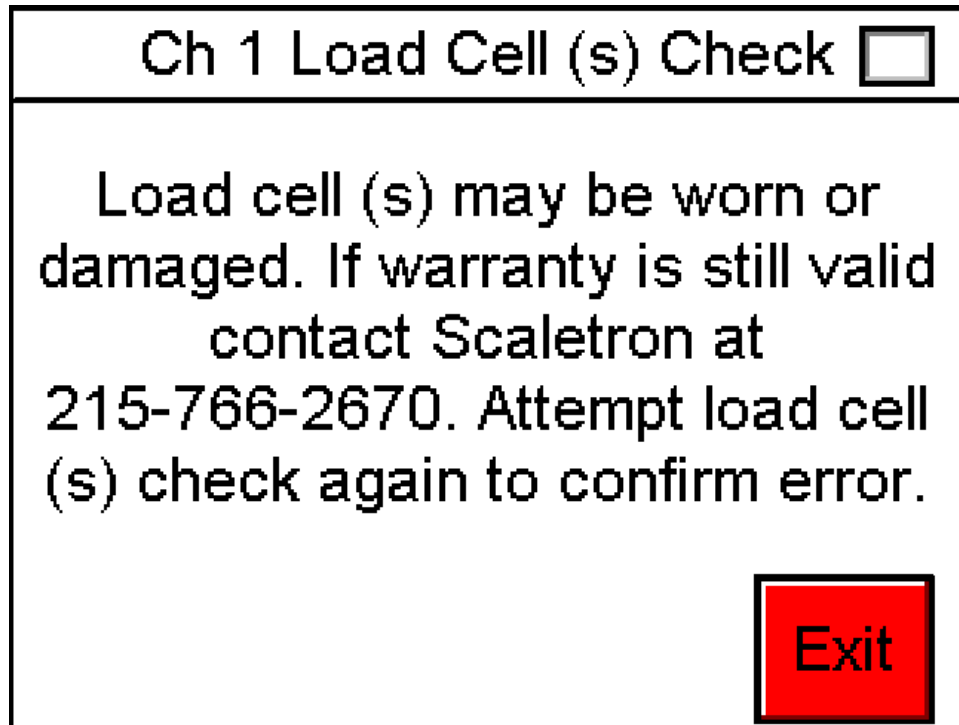


Figure 58: Status Check: Load Cell (s) Error

7.9 Status Check: Outputs

The user can access this screen by pressing “Outputs” on the status check screen. The user can turn on all output setpoints for testing. When all setpoints are active, the indicator will be green.

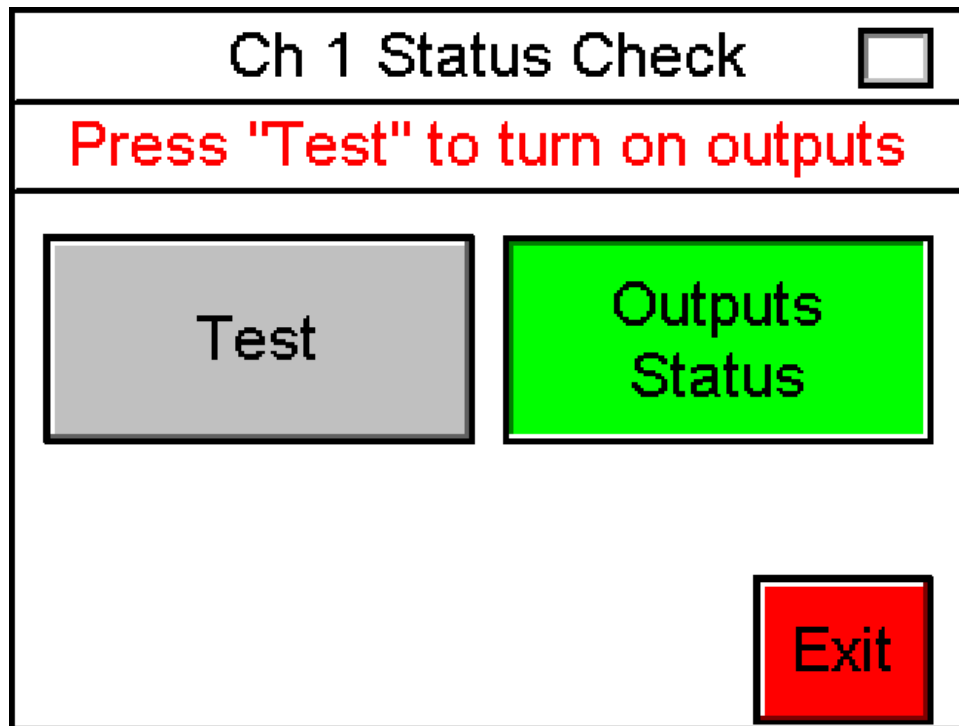


Figure 59: Status Check: Outputs

NOTE: All indicators are shown active

7.10 Status Check: Channel Inputs

The user can access this screen by pressing “Weight Setpoints” on the status check screen. The user can view all weight setpoints per channel. Any setpoint that is active will blink red. The user can acknowledge latched weight setpoints by pressing the “Acknowledge” button.

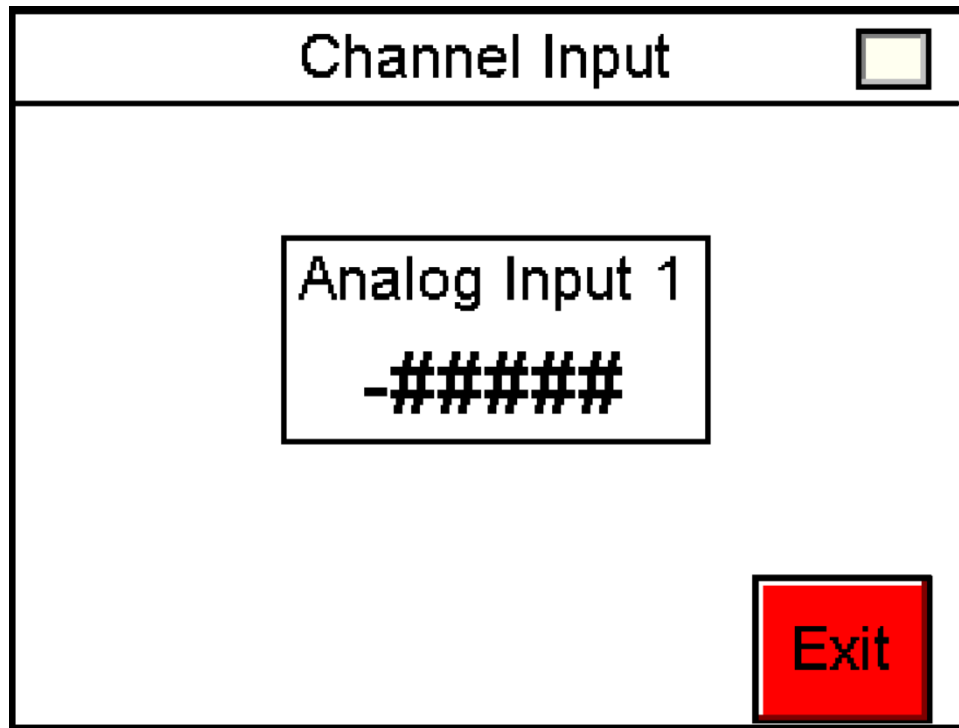


Figure 60: Status Check: Channel Inputs

NOTE: Display will vary based on the amount of channels active

7.11 Status Check: Weight Setpoints

The user can access this screen by pressing “Weight Setpoints” on the status check screen. The user can view all weight setpoints per channel.

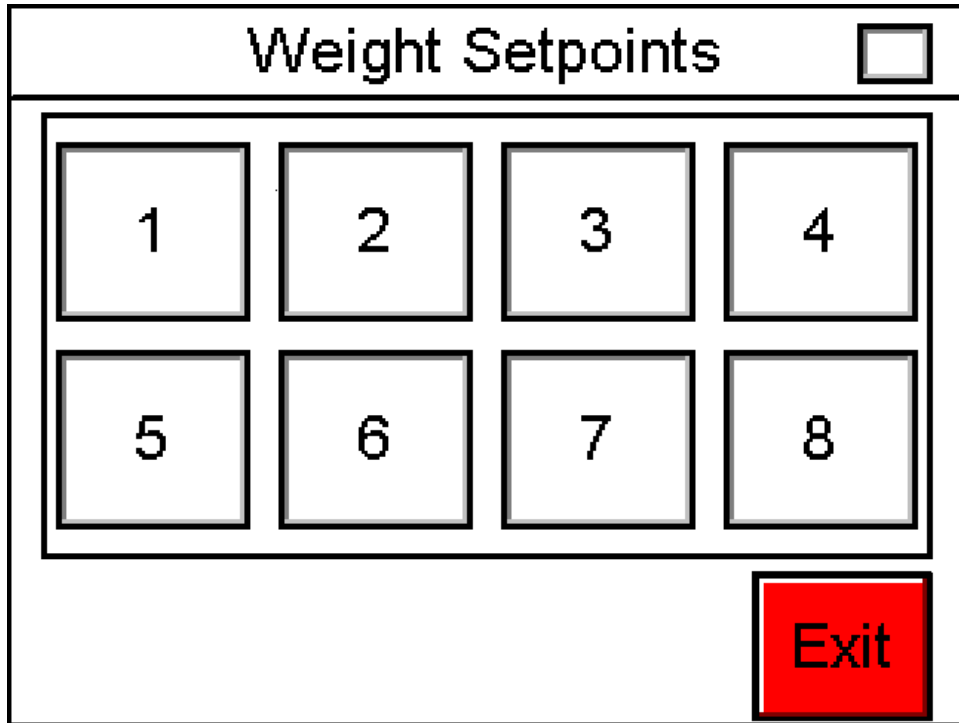
The image shows a graphical user interface for "Weight Setpoints". At the top, the title "Weight Setpoints" is displayed in a large, bold, black font. To the right of the title is a small, empty square box. Below the title is a grid of eight square buttons, arranged in two rows of four. The buttons are numbered 1 through 8 in a large, black font. The first row contains buttons 1, 2, 3, and 4. The second row contains buttons 5, 6, 7, and 8. Below the grid is a large, red rectangular button with the word "Exit" written in black text.

Figure 61: Status Check: Weight Setpoints

8 System Info

The user can access system info by pressing the “System Info” button on the home screen. The user can view information about the F-Keys, adjust display brightness, view and adjust Modbus configuration, view temperature adjustment parameters, view and set the system clock, view and set the operational time for the indicator, adjust data log parameters, view contact information, restore factory configuration, view software version, and view the serial number.

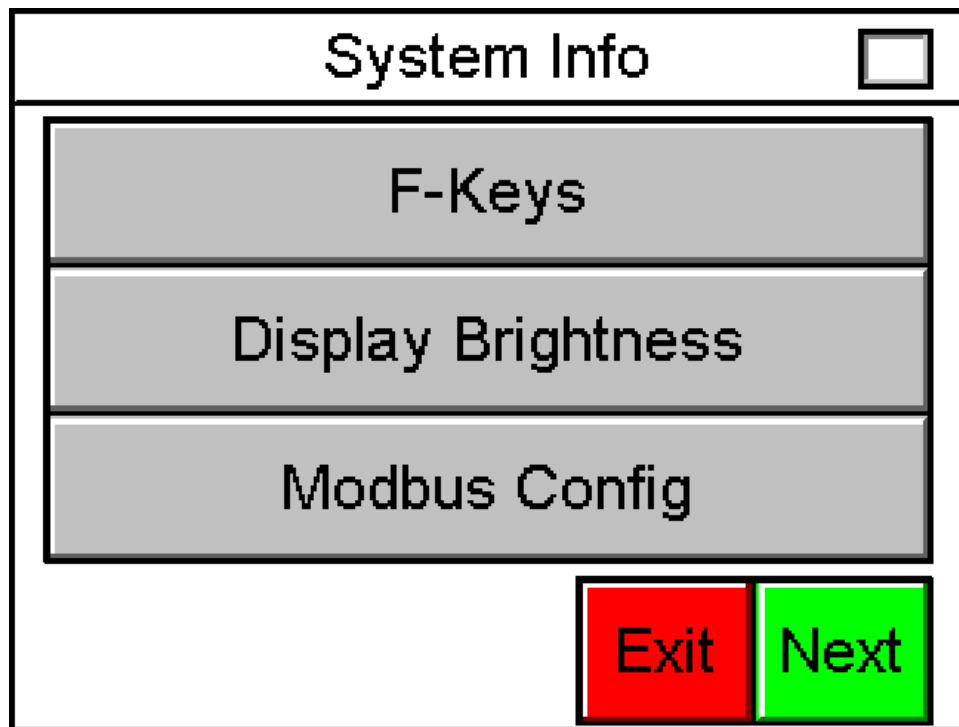


Figure 62: System Info 1

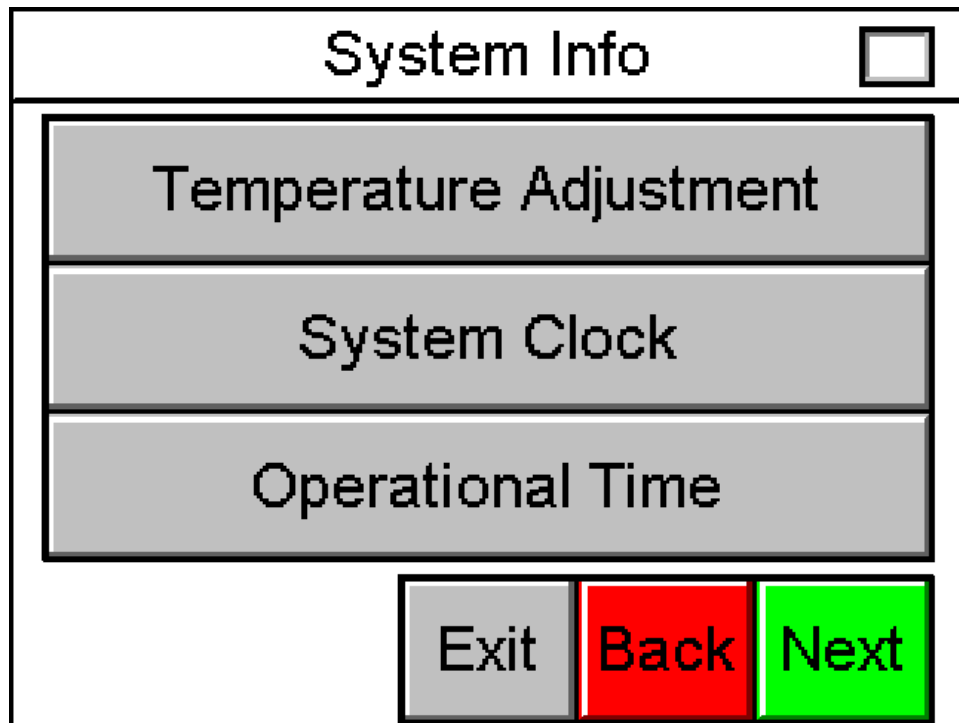


Figure 63: System Info 2

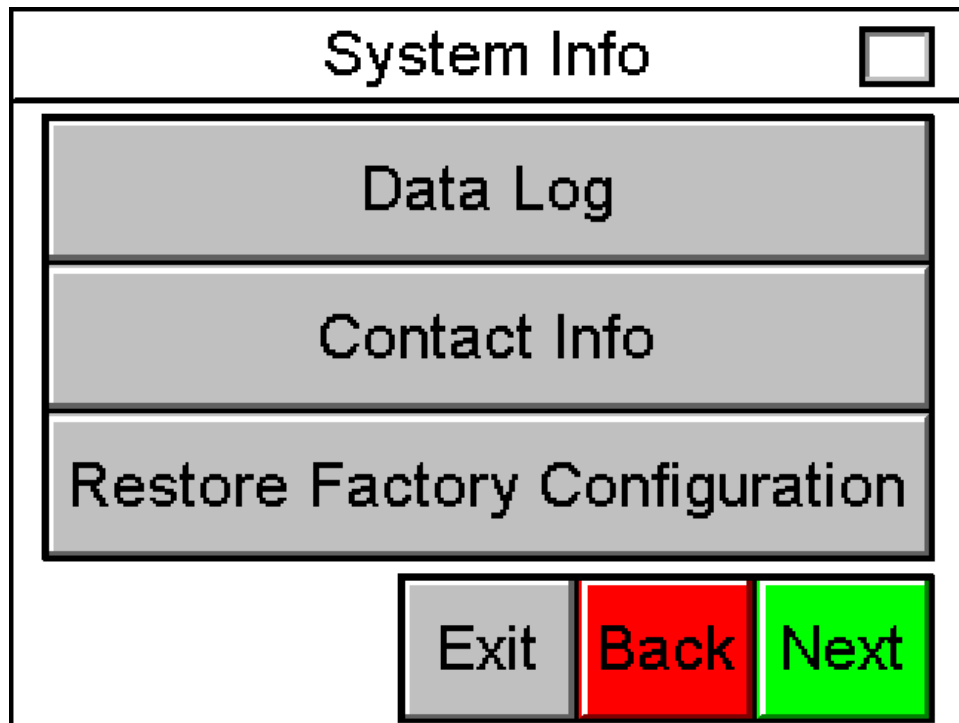
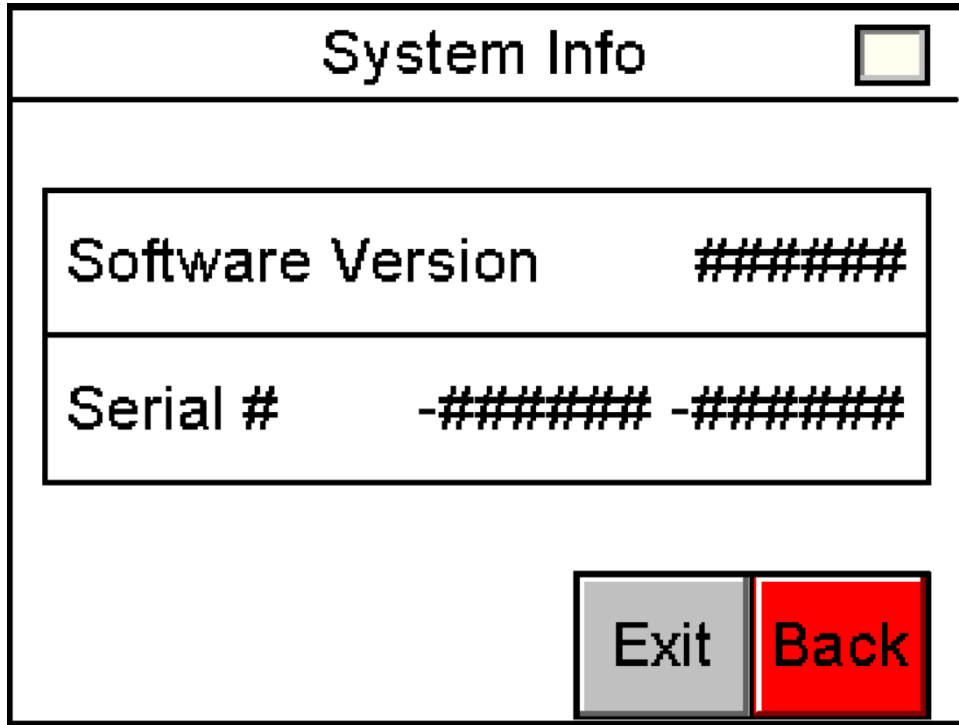


Figure 64: System Info 3

A screenshot of a handheld device screen titled "System Info". The screen has a black border. At the top, the title "System Info" is centered in a large font, with a small yellow square icon to its right. Below the title, there are two rows of information. The first row shows "Software Version" followed by seven hash symbols "#####". The second row shows "Serial #" followed by a hyphen, seven hash symbols, another hyphen, and seven more hash symbols. At the bottom right of the screen, there are two buttons: a grey "Exit" button and a red "Back" button.

System Info	
Software Version	#####
Serial #	-##### -#####
Exit Back	

Figure 65: System Info 4

8.1 System Info: F-Keys

The user can view the function of the F-Keys (the physical buttons on the bottom of the indicator display). F1: go to home screen F2: go to status check F3: go to system info F4: toggle weight display lock (view figure 126)

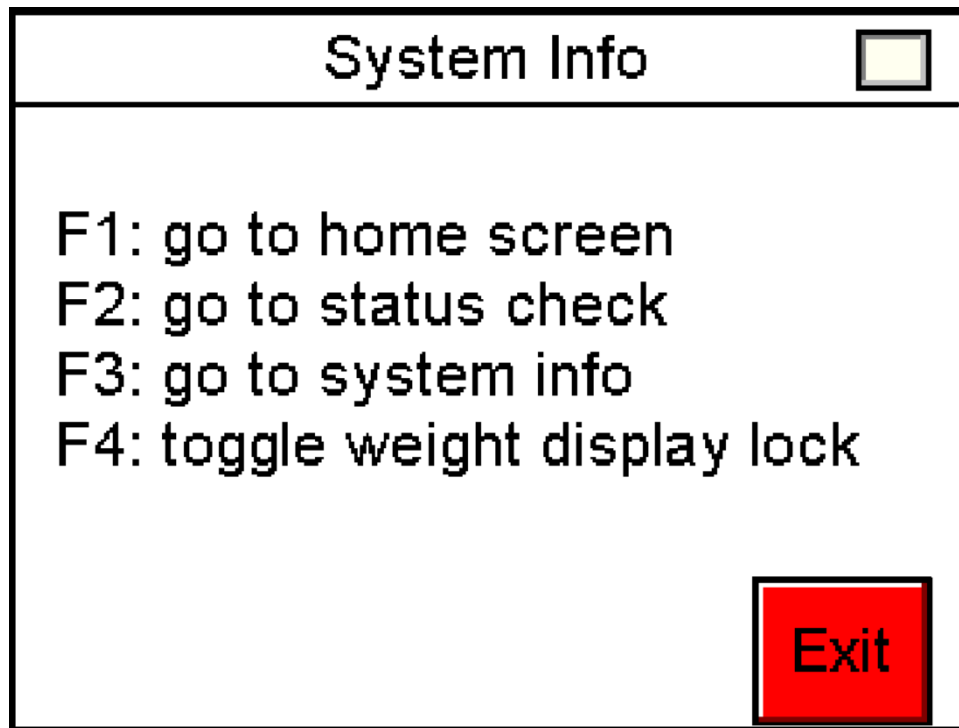


Figure 66: System Info: F-Keys

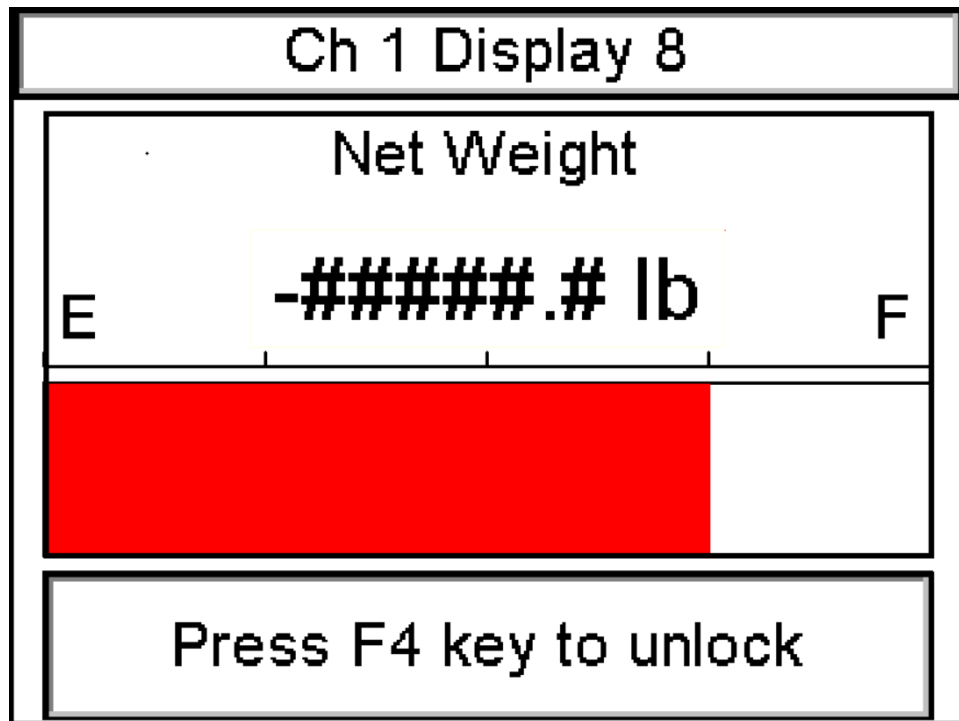


Figure 67: Display Lock

The user can toggle the display lock by pressing the F4 key. Only available on display screens

8.2 System Info: Display Brightness

The user can access display brightness by pressing the “Display Brightness” button on the system info menu screen. The user can adjust the display brightness from a range of 20% to 100%.

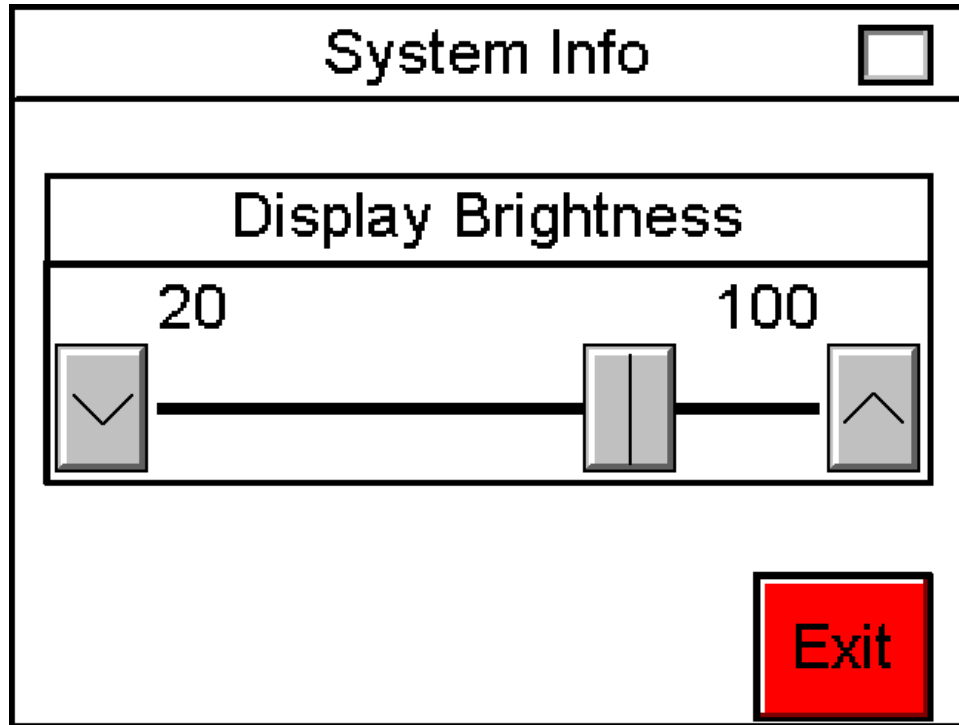


Figure 68: System Info: Display Brightness

8.3 System Info: Modbus

The user can access Modbus by pressing the “Modbus Config” button on the system info menu screen. The user can configure the indicator’s network addresses by pressing “Network Configuration”. The user can also view the Modbus address map by pressing “Address Map”. The user can configure the indicator’s IP address, net mask, and gateway through the network configuration. The user can view all reserved outputs for Modbus through the address map.

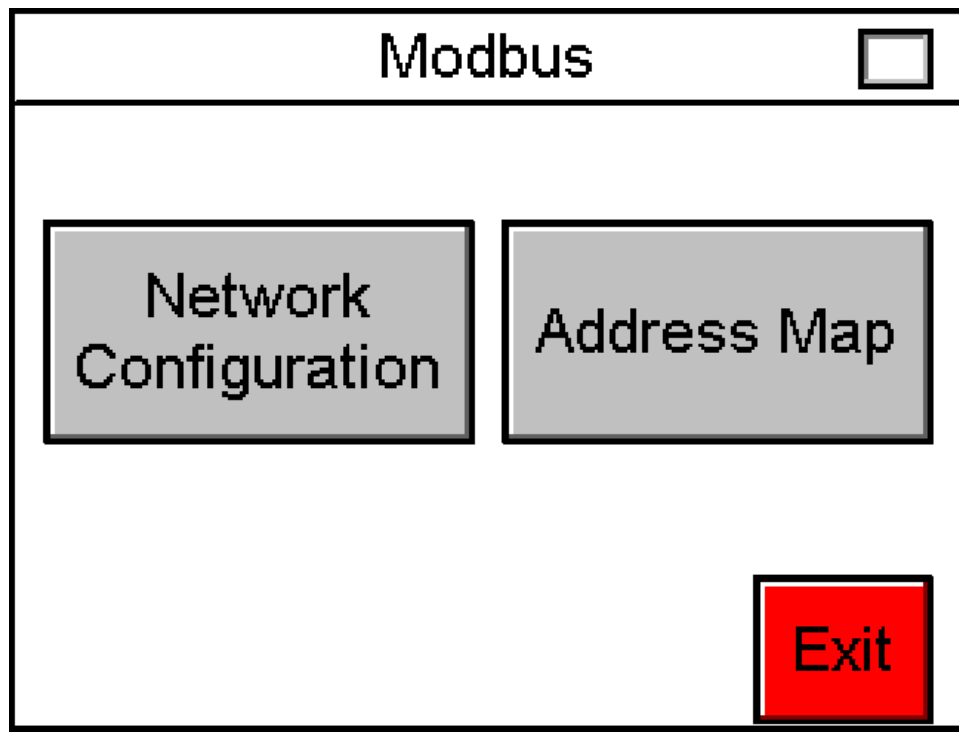
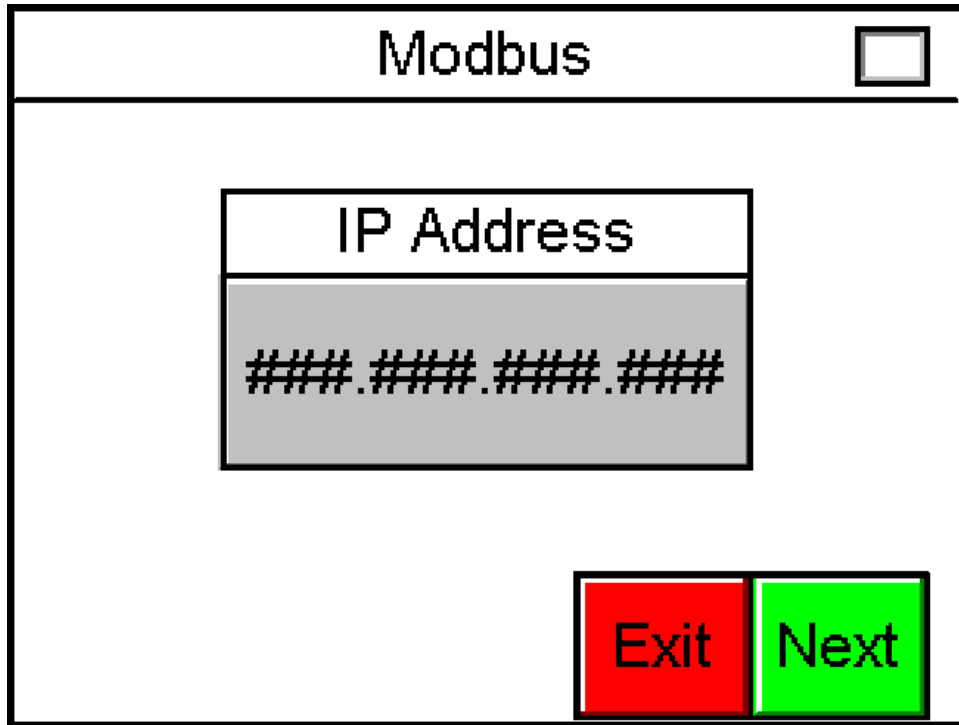


Figure 69: System Info: Modbus

NOTE: Only available when Modbus is enabled

A screenshot of a graphical user interface window titled "Modbus". The window has a standard title bar with a close button in the top right corner. Inside the window, there is a central box labeled "IP Address". Below the label is a text input field containing the placeholder text "###.###.###.###". At the bottom right of the window, there are two buttons: a red button labeled "Exit" and a green button labeled "Next".

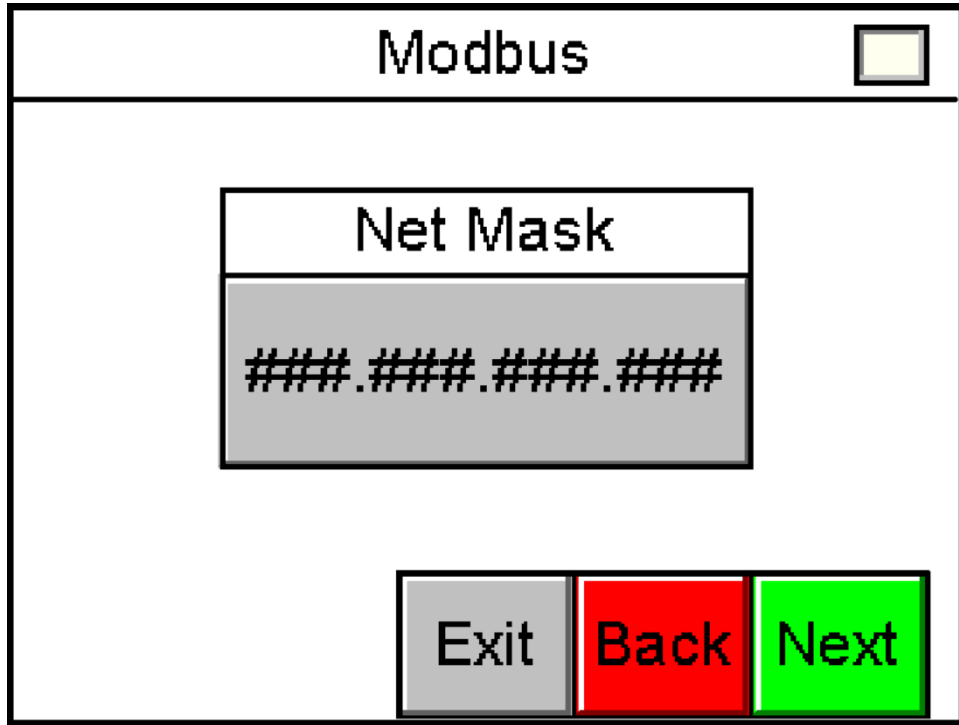
Modbus

IP Address

###.###.###.###

Exit Next

Figure 70: System Info: Modbus IP Address

A screenshot of a Modbus configuration screen. The screen has a title bar labeled "Modbus" with a small yellow square icon on the right. Below the title bar is a large white area. In the center of this area is a smaller box titled "Net Mask". Below the "Net Mask" title is a grey rectangular field containing the text "###.###.###.###". At the bottom right of the main screen area are three buttons: a grey "Exit" button, a red "Back" button, and a green "Next" button.

Modbus

Net Mask

###.###.###.###

Exit Back Next

Figure 71: System Info: Modbus Net Mask

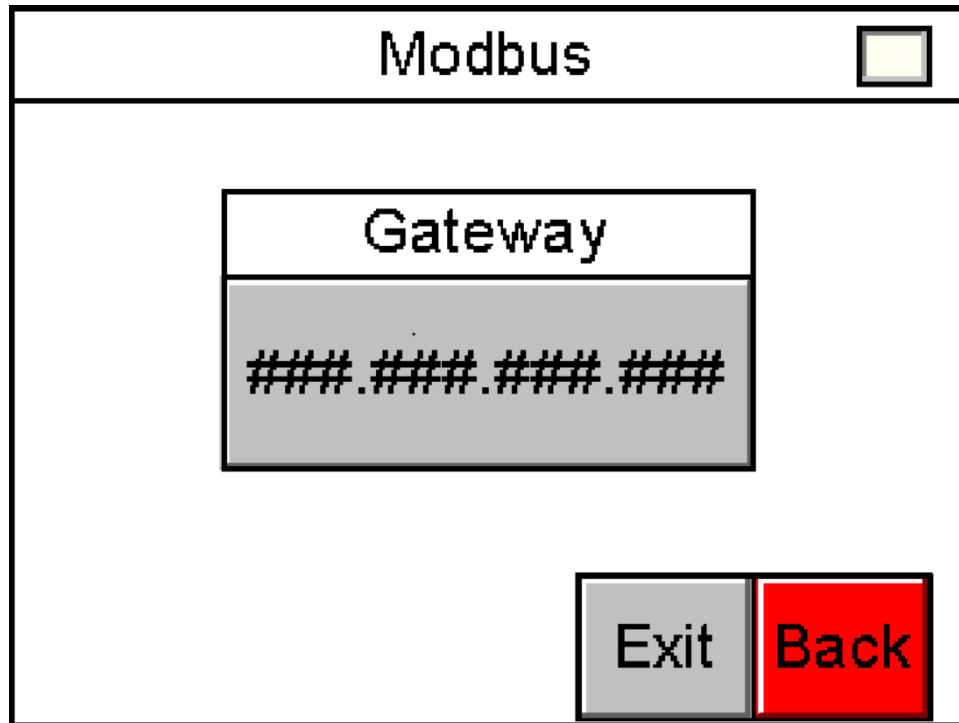


Figure 72: System Info: Modbus Gateway

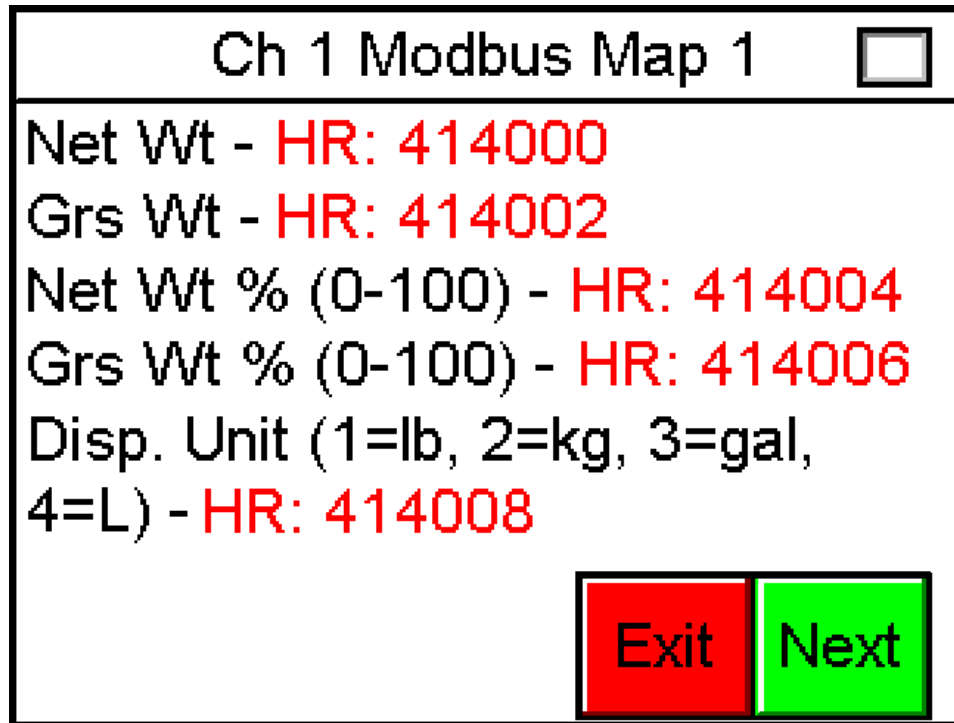


Figure 73: System Info: Modbus Address Map 1

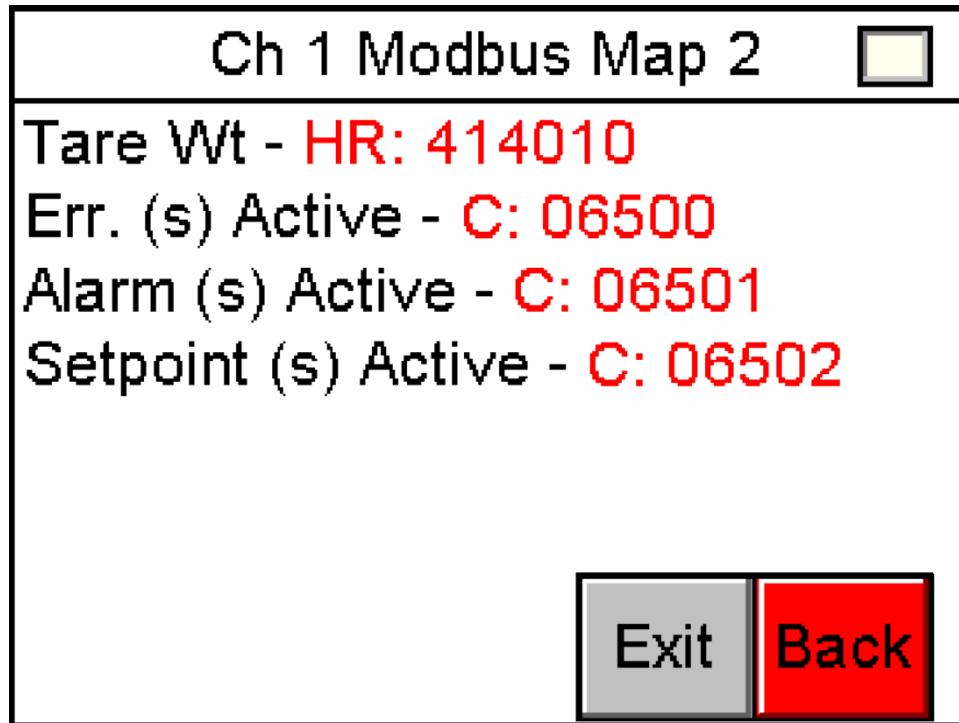
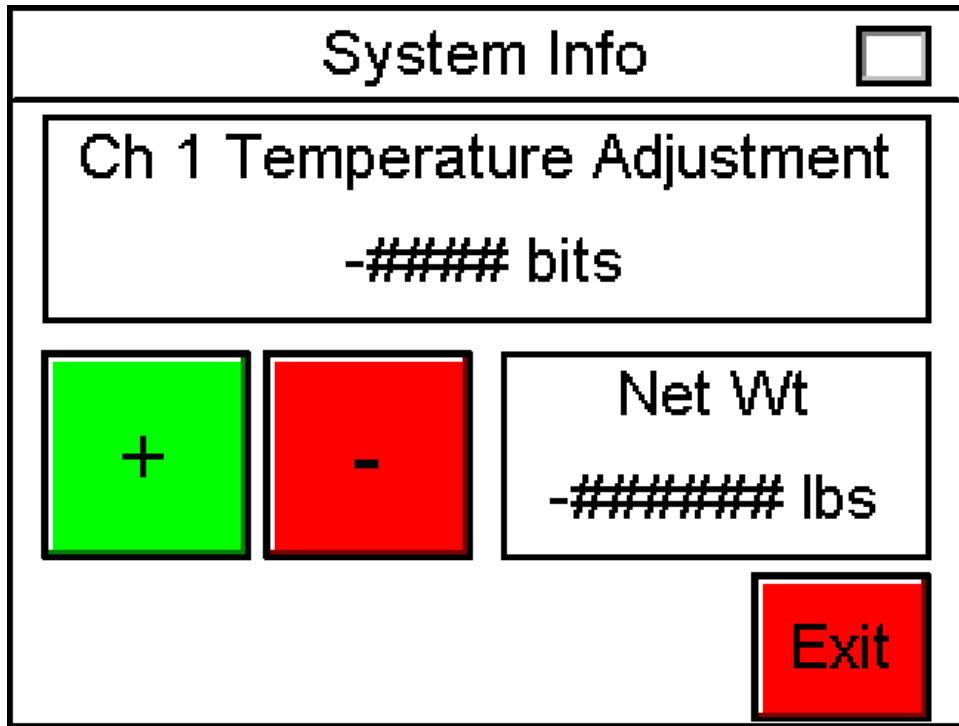


Figure 74: System Info: Modbus Address Map 2

8.4 System Info: Temperature Adjustment

The user can access temperature adjustment by pressing the “Temperature Adjustment” button on the system info menu screen. The user can add or subtract bits from the analog input to offset the difference caused by temperature fluctuations.

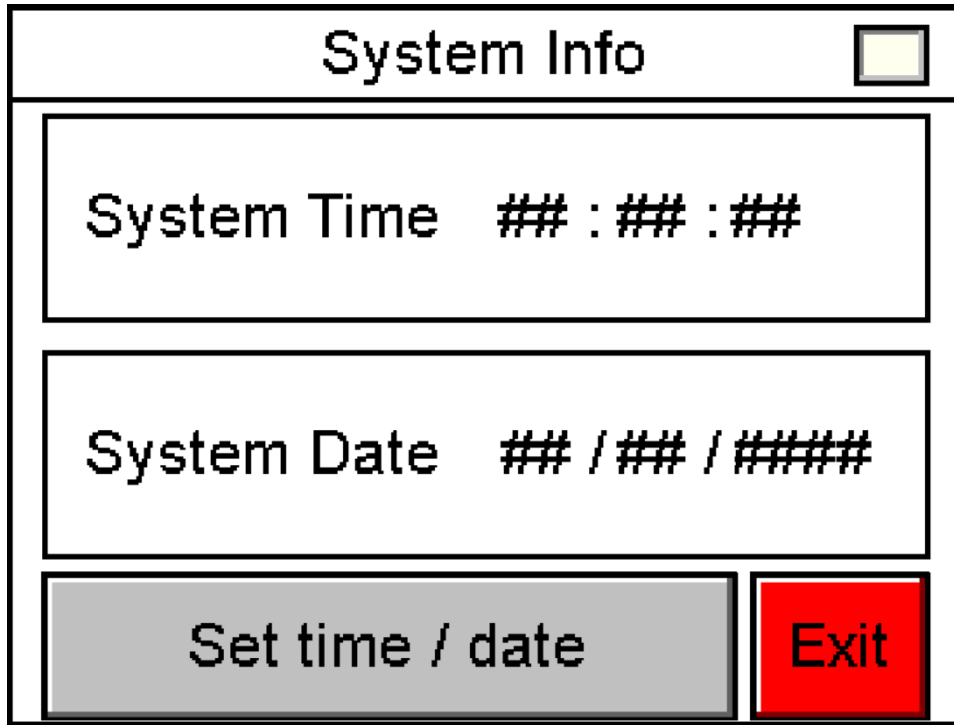
The image shows a graphical user interface for "System Info". At the top, the title "System Info" is centered, with a small square icon to its right. Below the title bar is a large rectangular box containing the text "Ch 1 Temperature Adjustment" and "-#### bits". Underneath this box are two colored buttons: a green button with a white "+" sign and a red button with a white "-" sign. To the right of these buttons is another box containing the text "Net Wt" and "-##### lbs". In the bottom right corner of the main interface area is a red button with the text "Exit".

System Info ☐		
Ch 1 Temperature Adjustment -#### bits		
+	-	Net Wt -##### lbs
		Exit

Figure 75: System Info: Temperature Adjustment

8.5 System Info: System Clock

The user can view the system time and date. The user can also set the time and date.

A screenshot of a handheld device screen titled "System Info". The screen has a white background with black text and a black border. At the top, the title "System Info" is centered, with a small yellow square icon to its right. Below the title, there are two large rectangular boxes. The first box contains the text "System Time" followed by a placeholder "## : ## : ##". The second box contains the text "System Date" followed by a placeholder "## / ## / #####". At the bottom of the screen, there are two buttons: a gray button on the left labeled "Set time / date" and a red button on the right labeled "Exit".

System Info	
System Time ## : ## : ##	
System Date ## / ## / #####	
Set time / date	Exit

Figure 76: System Info: System Clock

System Info		
Hr (24Hr Time) ##	Minute ##	
Month ##	Day ##	Year ####
Set		Exit

Figure 77: System Info: Set Time and Date

8.6 System Info: Operational Time

The operational time is used for feed rate functions and data log functions. For correct system operation, enter the start and end time for the system in 24-hour time. The operational time entered should be the time in which feed rate data is required to be logged.

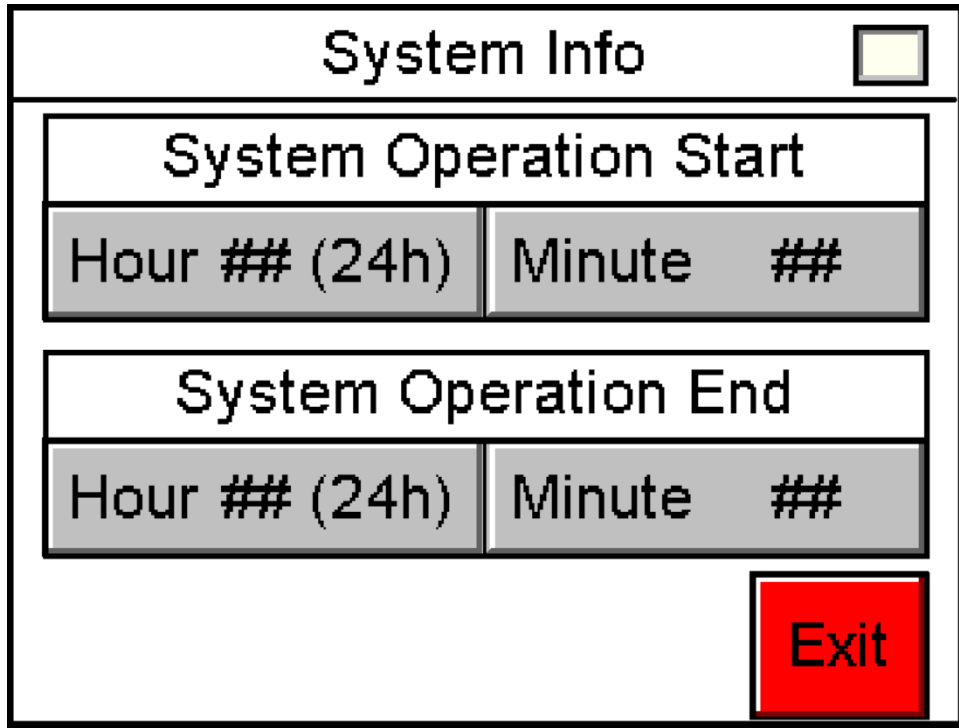
The screen is titled "System Info" in a large, bold font at the top center. To the right of the title is a small yellow square icon. Below the title, there are two main sections. The first section is titled "System Operation Start" and contains two input fields: "Hour ## (24h)" and "Minute ##". The second section is titled "System Operation End" and also contains two input fields: "Hour ## (24h)" and "Minute ##". At the bottom right of the screen is a red rectangular button with the word "Exit" in white text.

Figure 78: System Info: Operational Time

8.7 System Info: Data Log

The user can enable or disable micro-SD card logging. The user can also adjust the interval of logging. User configuration only affects the micro-SD card logging, not the local data log graphs.

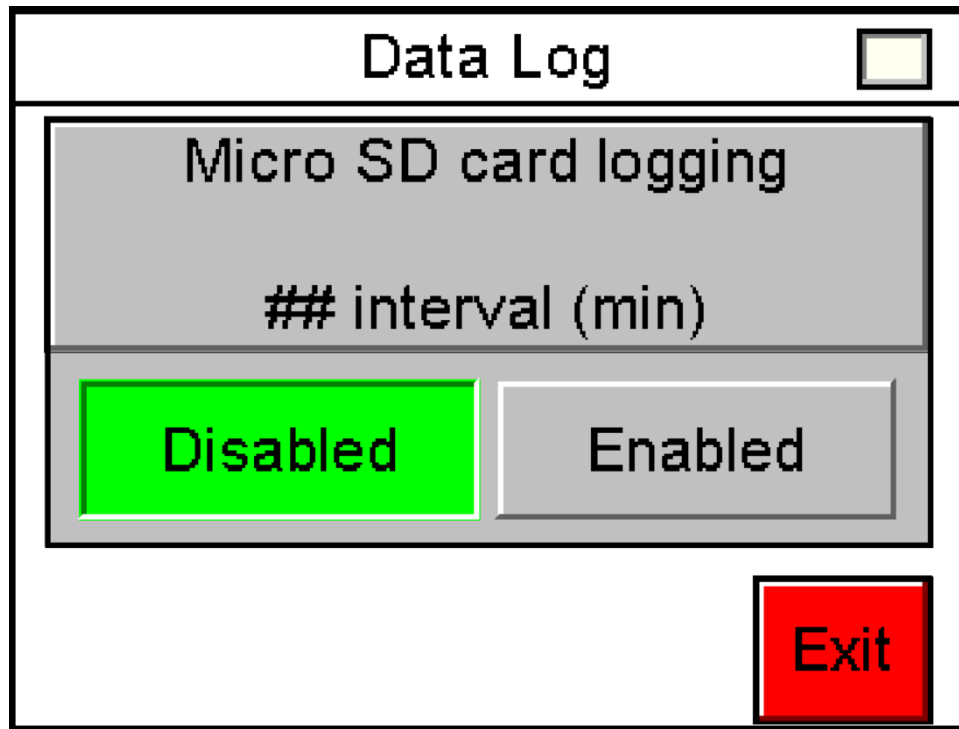


Figure 79: System Info: Data Log

8.8 Data Log Folders

When data log micro SD card logging is enabled in system info, files will be written to the micro SD card. The user can view the micro SD card contents on a computer. Any active channel will have a folder for net weight and a folder for feed rate. In addition, a status folder contains a log of any errors or alarms that were present.

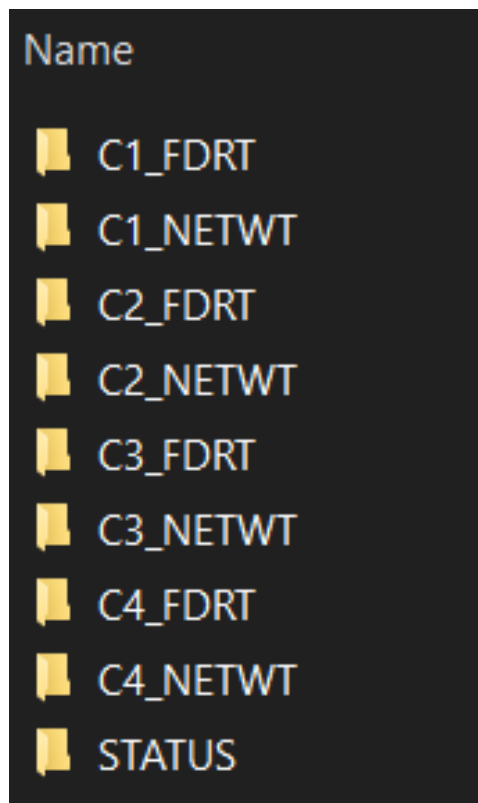


Figure 80: Data Log Folders on Computer

8.9 Data Log Files

When the user selects a net weight or feed rate folder, any excel files will appear with a date given as a name. The first 2 numbers are the year, the next 2 numbers are the month, and the final 2 numbers are the day of the month.

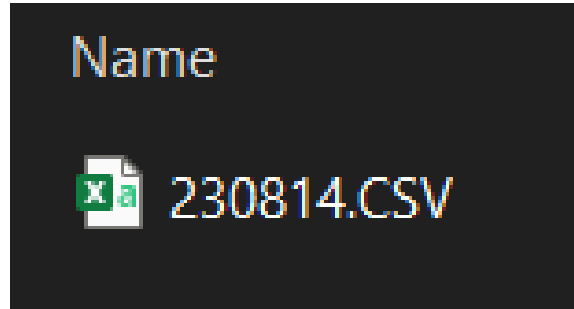


Figure 81: Data Log File on Computer

8.10 Net Weight Data Log File

The excel file is formatted: date, time, and net weight.

Date	Time	Ch2_Net_Weight
8/14/2023	8:50:23	42
8/14/2023	8:51:23	42
8/14/2023	8:52:23	39.55
8/14/2023	8:53:23	39.55
8/14/2023	8:54:23	39.55
8/14/2023	8:55:23	38.3
8/14/2023	8:56:23	35.8
8/14/2023	8:57:23	35.8
8/14/2023	8:58:23	35.8
8/14/2023	8:59:23	35.8
8/14/2023	9:00:23	35.8
8/14/2023	9:01:23	32.2
8/14/2023	9:02:23	32.2
8/14/2023	9:03:23	21.7
8/14/2023	9:04:23	21.7
8/14/2023	9:05:23	42.25
8/14/2023	9:06:23	42.4

Figure 82: Net Weight Data Log File on Computer

NOTE: Data log interval is set to one minute

8.11 Feed Rate Data Log File

The excel file is formatted: date, time, average feed rate, and current feed rate.

Date	Time	Ch2_Average_FR	Ch2_Current_FR
8/14/2023	8:50:23	180	180
8/14/2023	8:51:23	90	0
8/14/2023	8:52:23	109	147
8/14/2023	8:53:23	81.75	0
8/14/2023	8:54:23	65.4	0
8/14/2023	8:55:23	67	75
8/14/2023	8:56:23	78.8572	150
8/14/2023	8:57:23	69	0
8/14/2023	8:58:23	61.3333	0
8/14/2023	8:59:23	56.1	9.00009
8/14/2023	9:00:23	51	0
8/14/2023	9:01:23	64.75	216
8/14/2023	9:02:23	60.4615	9.00009
8/14/2023	9:03:23	100.5	621
8/14/2023	9:04:23	93.8	0
8/14/2023	9:05:23	87.9375	0
8/14/2023	9:06:23	82.7647	0

Figure 83: Feed Rate Data Log File on Computer

NOTE: Data log interval is set to one minute

8.12 Status Data Log File

The excel file is formatted: date, time, event, group #, and error/alarm name. An event is either “ALM” or “RTN”. An “ALM” is when the error or alarm is first triggered active. A “RTN” is triggered when the error or alarm becomes unactive. Group #1 is linked to errors, group #2 is linked to alarms.

Date	Time	Event	Group	Alarm Name
14-Aug	8:39	ALM	1	C2 Cal Incomplete
14-Aug	8:39	ALM	1	C2 Settings not Conf
14-Aug	8:39	ALM	1	C3 Cal Incomplete
14-Aug	8:39	ALM	1	C3 Settings not Conf
14-Aug	8:39	ALM	1	C4 Cal Incomplete
14-Aug	8:39	ALM	1	C4 Settings not Conf
14-Aug	8:39	RTN	1	C2 Cal Incomplete
14-Aug	8:40	RTN	1	C2 Settings not Conf
14-Aug	8:40	RTN	1	C3 Settings not Conf
14-Aug	8:40	RTN	1	C3 Cal Incomplete
14-Aug	8:41	RTN	1	C4 Cal Incomplete
14-Aug	8:41	ALM	1	Wt SP 7
14-Aug	8:41	RTN	1	C4 Settings not Conf
14-Aug	8:41	ALM	1	Wt SP 8
14-Aug	8:41	RTN	1	Wt SP 8
14-Aug	8:42	ALM	1	Wt SP 2
14-Aug	8:42	ALM	2	C1 Max Net Wt
14-Aug	8:42	ALM	2	C2 Max Net Wt
14-Aug	8:42	ALM	1	Wt SP 4
14-Aug	8:42	RTN	2	C2 Max Net Wt
14-Aug	8:42	ALM	2	C3 Max Net Wt
14-Aug	8:42	ALM	1	Wt SP 6
14-Aug	8:42	RTN	2	C3 Max Net Wt

Figure 84: Status Data Log File on Computer

NOTE: Data log interval is set to one minute

8.13 System Info: Contact Information

The user can access contact information by pressing the “Contact Info” button on the system info menu screen (see figure 91). The user can view Scaletron’s website, toll free, international, fax, email, and address.

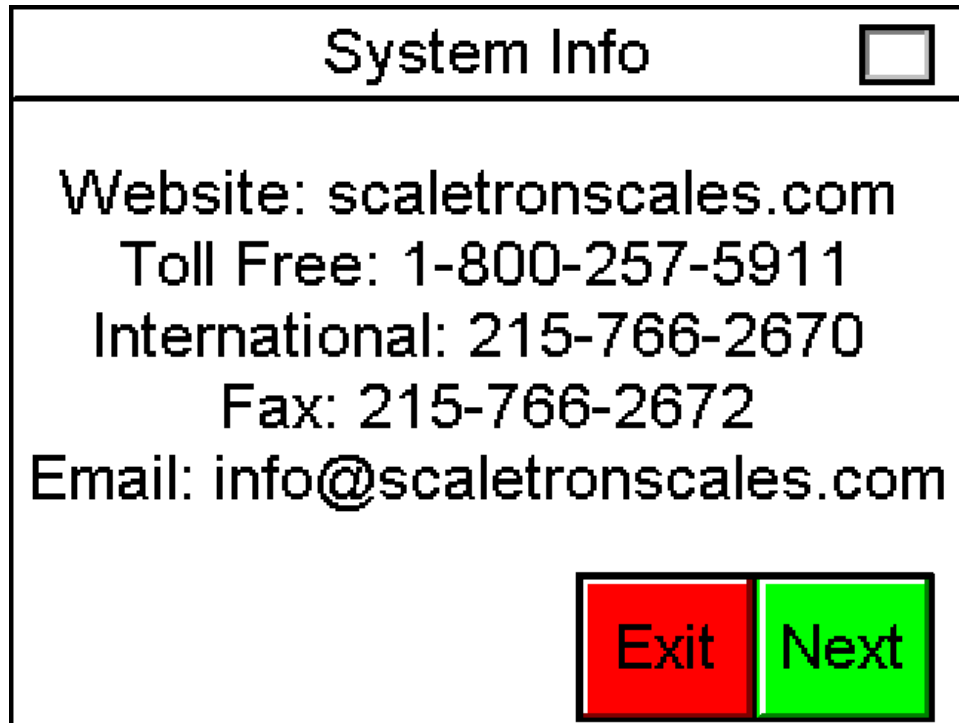


Figure 85: System Info: Contact Information 1

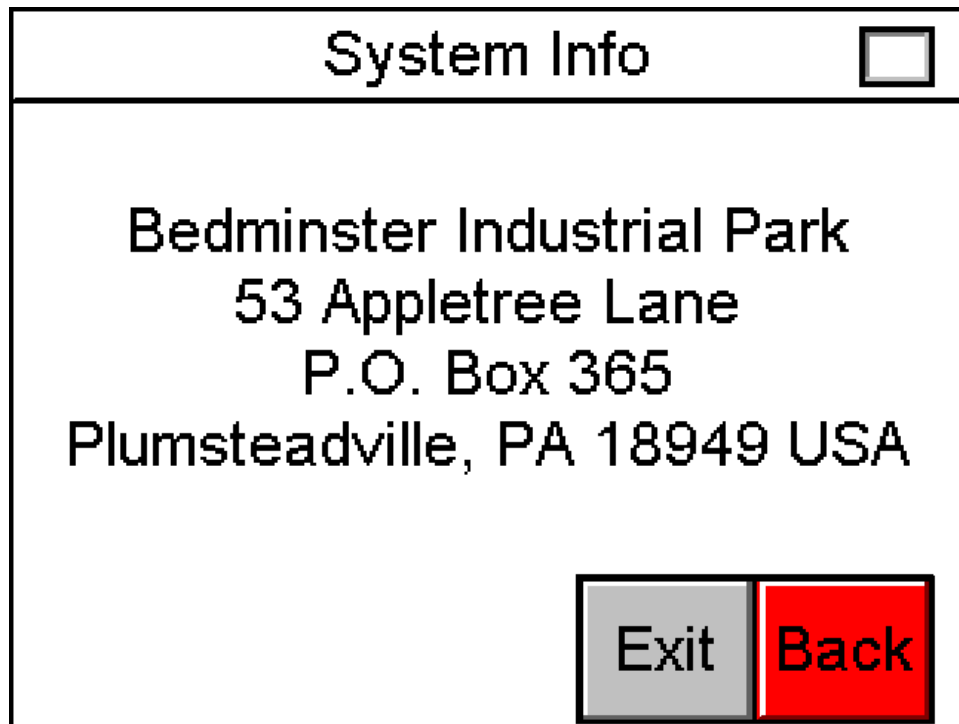


Figure 86: System Info: Contact Information 2

8.14 System Info: Restore Factory Configuration

The user can access factory restore by pressing the “Restore Factory Configuration” button on the system info menu screen. The user can restore the indicator to the default configuration setup by pressing the “Restore” button. Any changes made to the indicator outside of the factory will be lost.

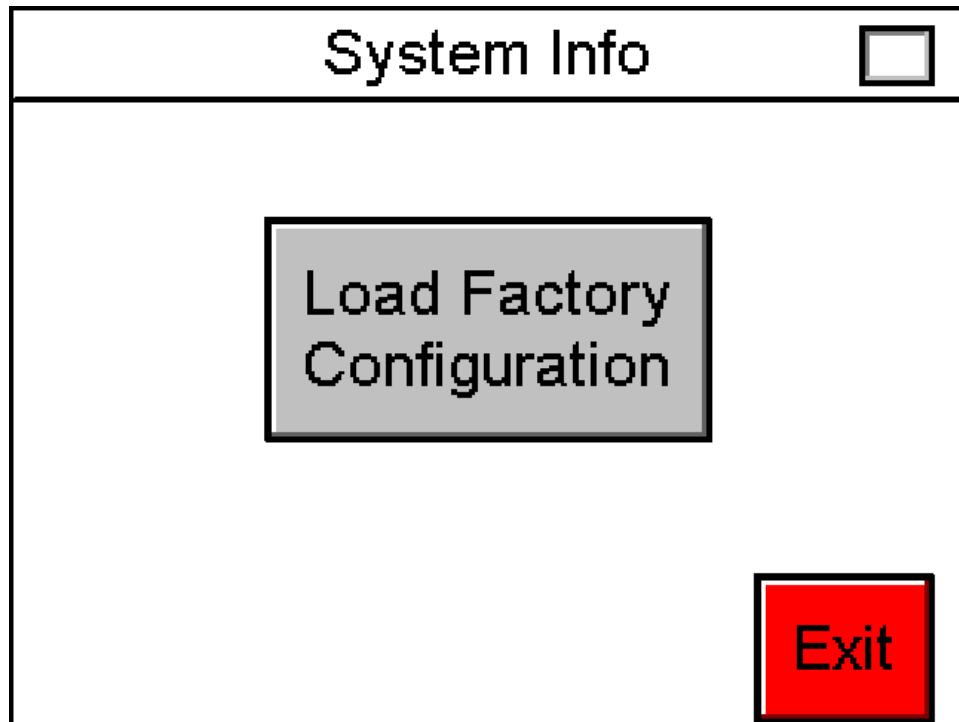


Figure 87: *System Info: Restore Factory Configuration*

NOTE: Only available when a restore point has been made

9 Batch Control

The user can access batch control by pressing the “Batch Control” button on the home screen. The user can set a batch amount value and unit. While the batch process is active, the user can stop the batch, pause the batch, change the display unit, or exit the batch control display screen. While in the batch control display screen, the user can view net weight, the set batch amount, the total amount batched, and the time to complete estimate. Only channel 1 controls the batch function. Relay outputs for “batch active” and “batch complete” are available.

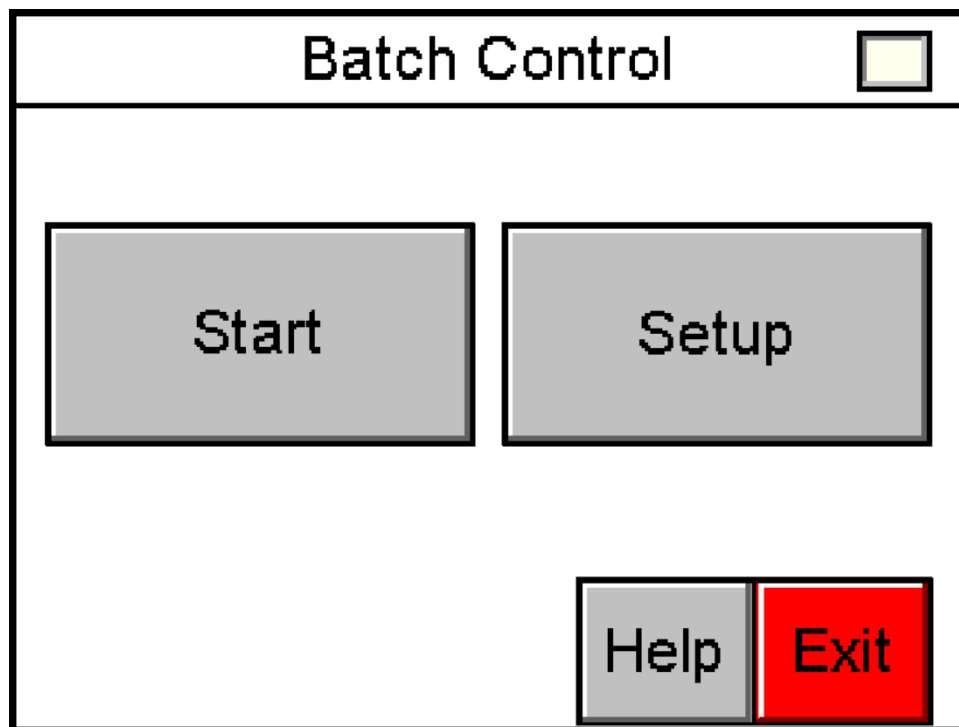


Figure 88: Batch Control

9.1 Batch Setup

The user can access the batch control setup by pressing the “Setup” button on the batch control screen. The user can enter the desired batch amount and unit.

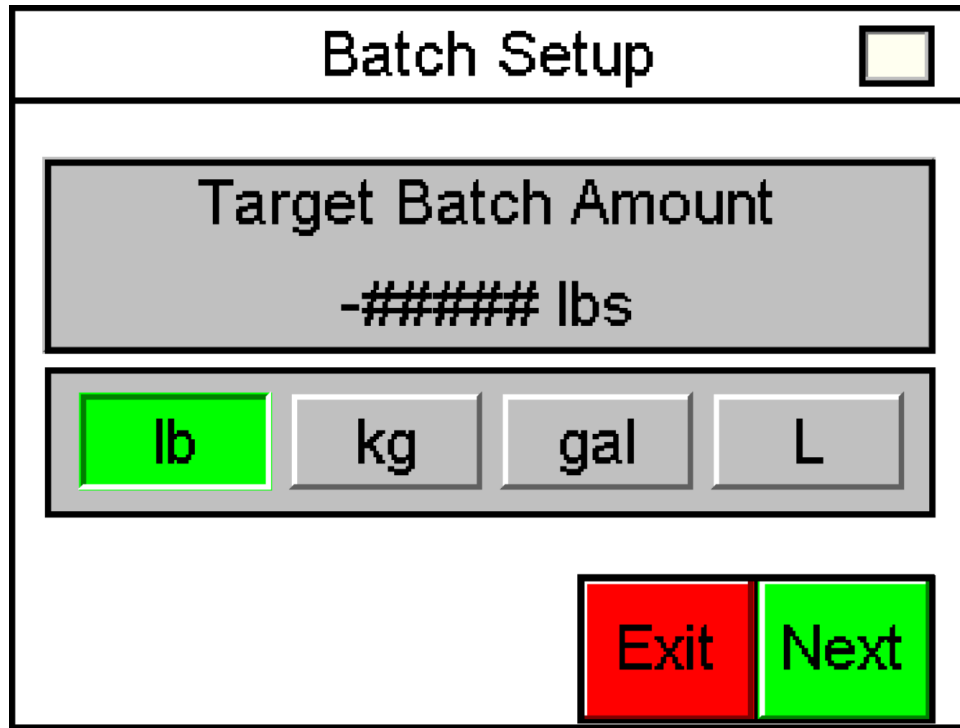
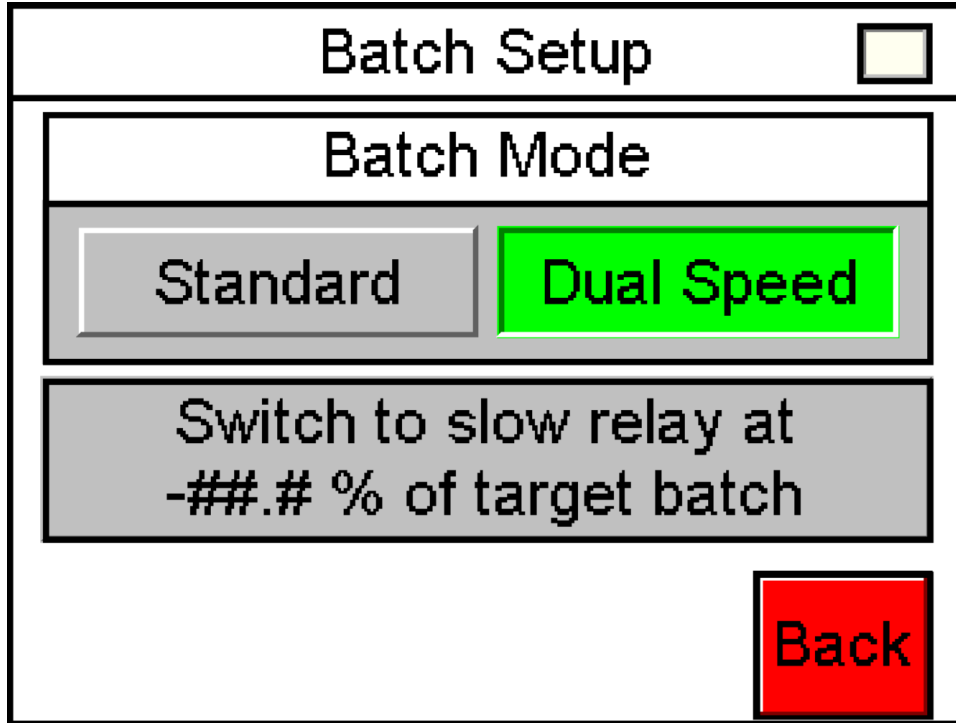
The image shows a graphical user interface for "Batch Setup". At the top, the title "Batch Setup" is centered in a large, black, sans-serif font. To the right of the title is a small, empty square box. Below the title bar is a large, light gray rectangular area containing the text "Target Batch Amount" in a bold, black, sans-serif font. Below this text is a line of text "-##### lbs" where the hash symbols represent input fields. Below this input area is a row of four buttons: "lb" (highlighted in green), "kg" (gray), "gal" (gray), and "L" (gray). At the bottom right of the screen are two buttons: "Exit" (red) and "Next" (green).

Figure 89: Batch Setup 1/2

Note: The batch control cannot be setup while a batch process is active

The user can choose between standard and dual speed batch modes. In standard mode, the fast relay operates throughout the entire batch process. In dual speed mode, the fast relay is used until the batch reaches a user-adjustable completion percentage, at which point it switches to the slow relay for improved accuracy.



The image shows a graphical user interface for 'Batch Setup'. At the top, the title 'Batch Setup' is displayed next to a small yellow square icon. Below the title is a section labeled 'Batch Mode'. Inside this section, there are two buttons: 'Standard' (grey) and 'Dual Speed' (green). Below the 'Batch Mode' section is a grey box containing the text 'Switch to slow relay at -###.# % of target batch'. At the bottom right of the screen is a red button labeled 'Back'.

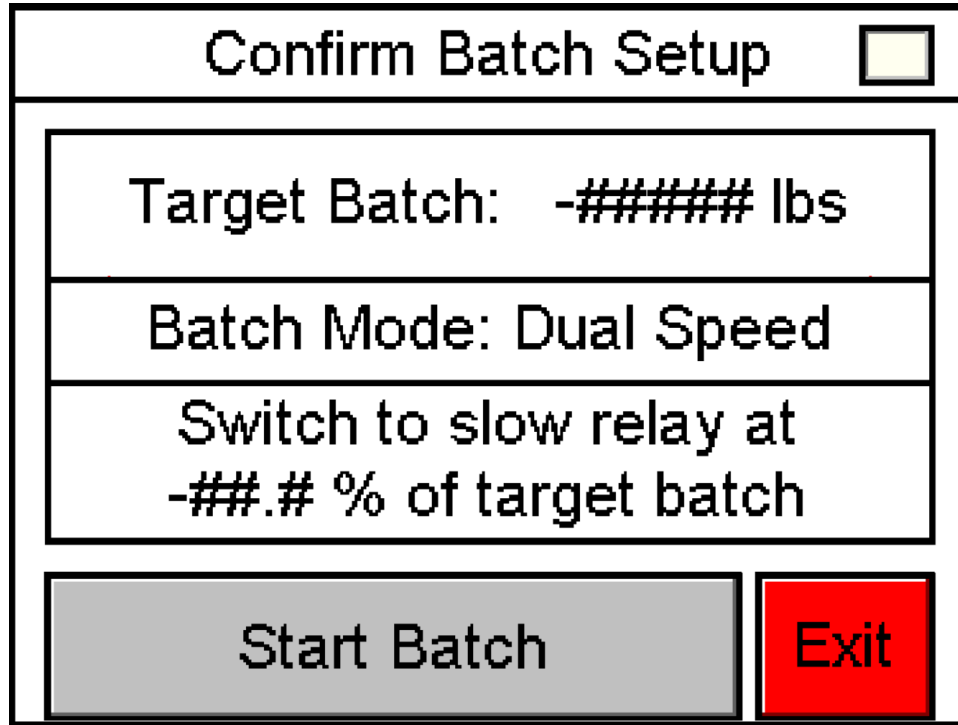
Figure 90: Batch Setup 2/2

Note: The batch control cannot be setup while a batch process is active

Note: Data entry “Switch to slow relay at ###.# % of target batch” is only visible when dual speed batch mode is selected

9.2 Batch Display

When the user presses the “Start batch” button on the batch control screen, they will be brought to the confirm batch setup screen where they can confirm their batch parameters before starting a batch.

The image shows a graphical user interface for a "Confirm Batch Setup" screen. At the top, the title "Confirm Batch Setup" is displayed in a large, bold, black font. To the right of the title is a small yellow square icon. Below the title bar, there are three stacked rectangular boxes. The first box contains the text "Target Batch: -##### lbs". The second box contains the text "Batch Mode: Dual Speed". The third box contains the text "Switch to slow relay at -##.# % of target batch". At the bottom of the screen, there are two buttons: a large gray button labeled "Start Batch" and a smaller red button labeled "Exit".

Confirm Batch Setup	
Target Batch: -##### lbs	
Batch Mode: Dual Speed	
Switch to slow relay at -##.# % of target batch	
Start Batch	Exit

Figure 91: Confirm Batch Setup

NOTE: Screen will vary depending on batch setup

The user can start a batch by pressing the “Start Batch” button on the confirm batch setup screen. In the batch display, the user can view target batch amount, current amount batched, net weight, batch progress bar, and fast/slow relay status. The user can also change the net weight unit, pause the batch, or stop the batch.

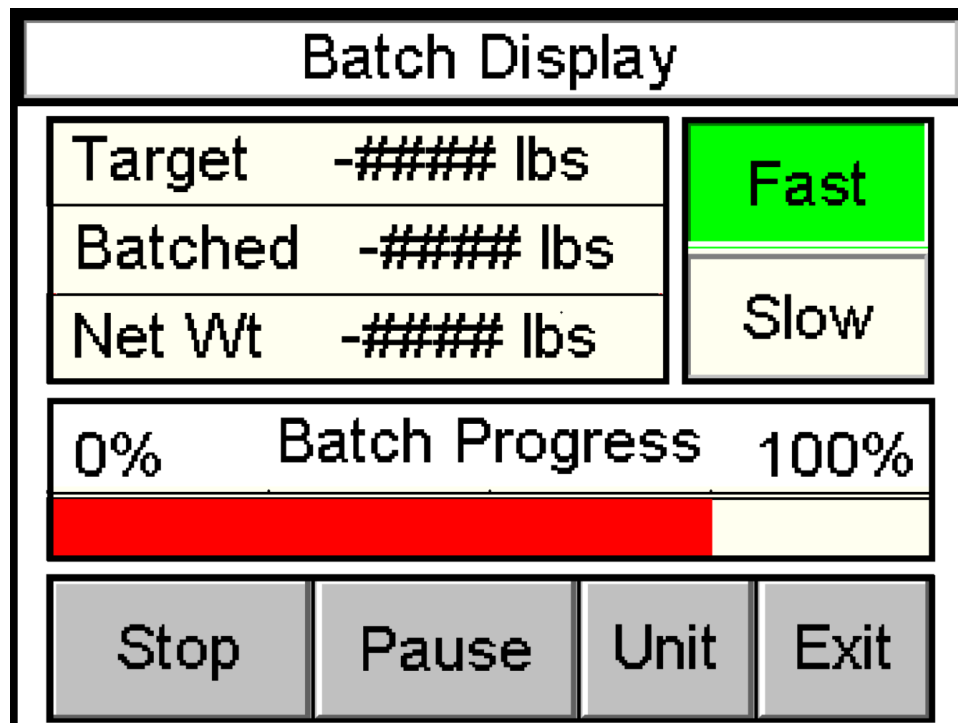


Figure 92: Batch Display

Note: As shown only the fast relay is on

9.3 Batch Complete Confirmation

Once the target batch amount has been reached, the batch process will stop and the batch complete relay will be active until acknowledged.

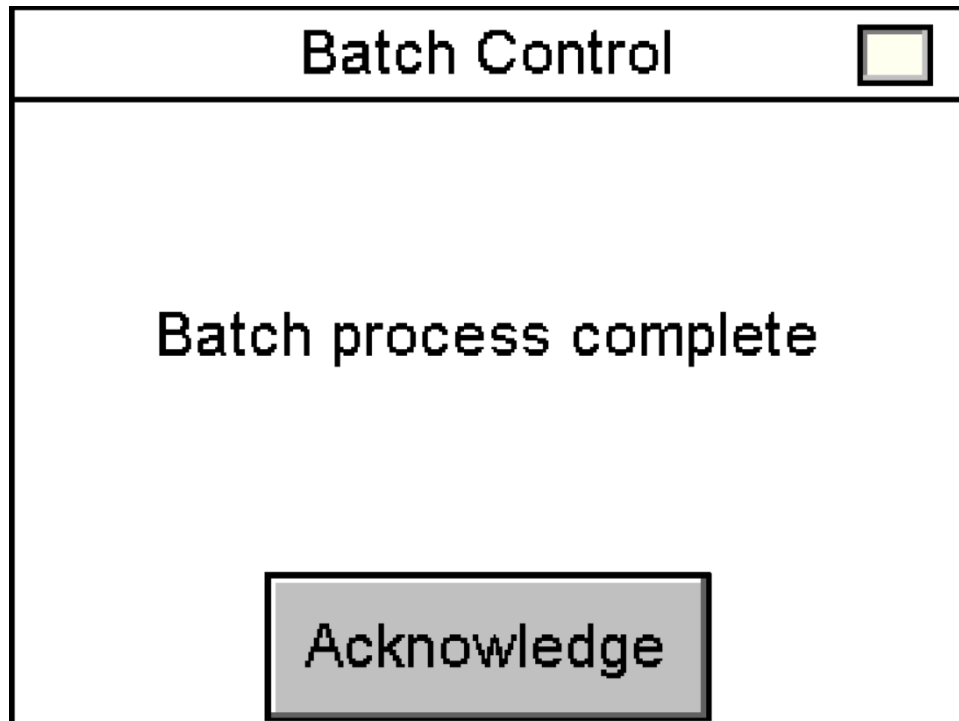


Figure 93: Batch Complete Confirmation