PENNSYLVANIA
SCALE COMPANY

7800 Touchscreen Count Weigh Scale and Indicator Technical Manual

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Manual 7800TM2023REV3.24

Table of Contents

Unpacking and Setup	3
Specifications	4
Connections	5
Updating The Firmware	6 – 8
Saving and Uploading Scale Parameters and Database to Micro SD Card	9 – 12
Operation Guide	
Weighing, Counting, Check Weighing and Setpoint Relay Modes	13 – 17
Counting	18 – 21
Using the ID Database	22 – 28
Configuration and Calibration	
Weighing Settings	29 – 33
Calibration	34 – 37
Counting Modes	38 – 40
ID Database	41 – 43
Communication Protocols (Ethernet IP)	44 – 56
Data Output	57 – 70
Time and Date	71 – 72
Options	73 – 76
User Settings	77 – 78
Set Points and Relays	79 – 83
Password	84 – 85
Scale External Commands	86 – 87
Wired Ethernet	88 – 91
WiFi	92 – 97
Parts List	98 - 102

Unpacking and Startup

Unpack the Scale

- DO NOT LIFT SCALE BY THE TOP SPIDER OR SUB PLATFORM!
- Remove the molded foam top from the carton. On 2 lb. and 5 lb. capacity scales the platform is packaged on top of this foam. Gently lift and remove the stainless-steel platform cover only.
- Remove any options which may be packed with the scale.
- Carefully remove scale from the packaging by grasping both sides of the base.

Scale Setup

- Place the scale on a stable, level surface for operation.
- Adjust the corner leveling feet until the level bubble indicates the unit is level.
- Firmly tighten hex jam nuts on the leveling feet. (Any time the scale is relocated, it should be leveled.)
- Remove the protective plastic wrap from the platform and place the platform on the spider.
- Plug the scale into 110/120 VAC

SPECIFICATIONS

- Power AC line voltages 115/230 VAC, 50/60 Hz (Specify when ordering)
- Power Consumption 0.25A at 115 VAC, 0.13A at 230 VAC
- Circuit Protection RFI, EMI, ESD Protection ADC shielded
- Display: 800 X 320 dot resolution, and 4.6" full-color LCD display with resistive touch panel
- Indications for Gross, Net, Tare, Count, Piece Weight, % Accuracy, Check Weigh Over/Under/Accept, Setpoint Status, Active ID and Base 2
- Operating Temperature 14°F to 104°F, -10°C to 40°C
- Internal Resolution 1/8,000,000
- Displayed Resolution. Standard 1/10,000. Up to 1/50,000
- 5 VDC excitation to power up to 12, 350 ohm load cells
- Dimensions 12" X 14" Platter Size 10 lbs. and above capacities, 8" X 8" 2 and 5 lbs. capacities.
- Four Year Limited Warranty

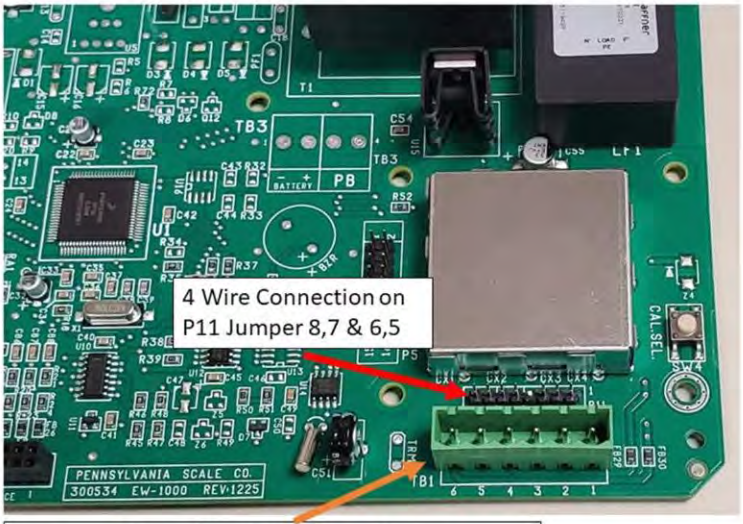
- **OPTIONS:**

- Second base input
- Battery AC operation, built-in re-chargeable system, 30+ hours of operation
- Printers for label, barcode label or receipt printing
- Barcode Scanner
- Upgraded Internal Product DB,
- 1500 and 3000 entries
- 1 alarm buzzer mounted inside scale or indicator
- Ball-top transfer plate
- Roller conveyor
- Setpoint/relays DC or AC
- Alarm stack lights and buzzer
- Communications:
  - Wired Ethernet
  - WiFi
  - USB Virtual Com Port & HID/Keyboard Emulation
  - Bluetooth® Virtual Com Port & HID/Keyboard Emulation
- Analog output, 4-20ma or 0-10vdc
- Custom label design and setup
- Custom engineering for unique applications

Connections:

Remote Base Connection

Quick Disconnect CPC Connector

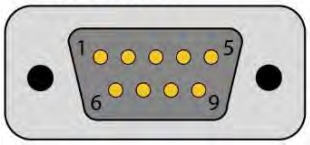


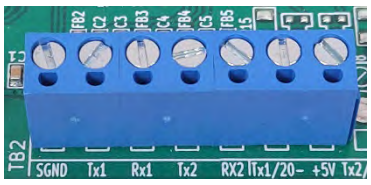
Internal Load Cell Connection
6 – EX+, 5 – Sen+, 4 – Ex-, 3 – Sen-, 2 Sig-, 1 – Sig+

RS-232 PIN ASSIGNMENTS AND IMPLEMENTED FUNCTIONS

Connection to the Serial Port is made via a DB-9 female connector found in the access area under the scale. Internal Instrument connection is on the main Board, TB2 1 through 7

DB9M Connector

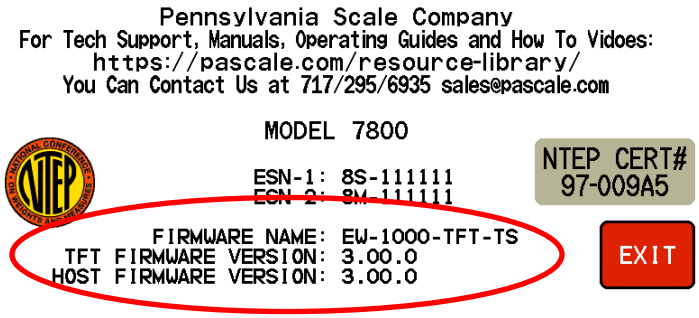




7800 Scale				7800 Indicator			
Com 1	**PIN#**	**Com 2**	**PIN#**	**Com 1**	**PIN#**	**Com 2**	**PIN#**
TXD Transmit	2	TXD Transmit	2	Ground	1	Ground	1
RXD Receive	3	RXD Receive	3	TXD Transmit	2	TXD Transmit	4
Ground	5	Ground	5	RXD Receive	3	RXD Receive	5
+5VDC	6 & 8	+5VDC	6 & 8	+5VDC	7	+5VDC	7

Scale Firmware Update

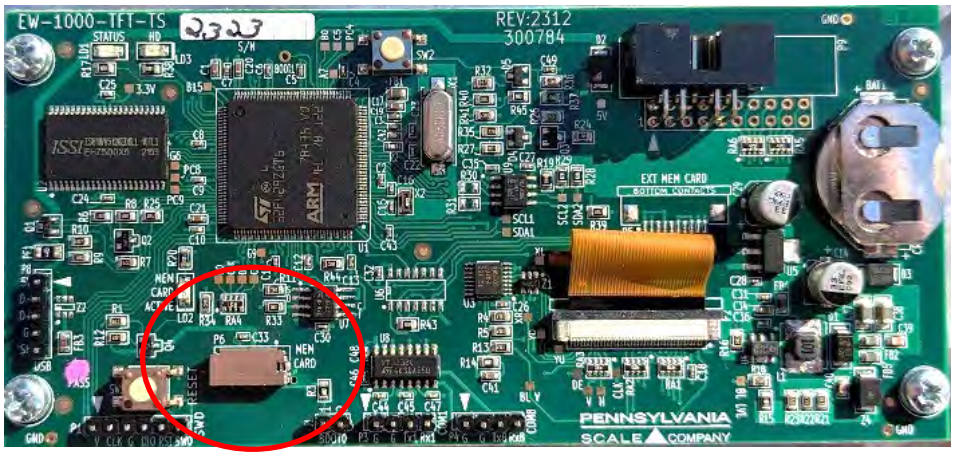
The 7800 firmware may be updated in the field for firmware versions 1.20.00 and above. You can determine the firmware version by pressing the MENU button from any operating mode, then INFO which will display the screen below:

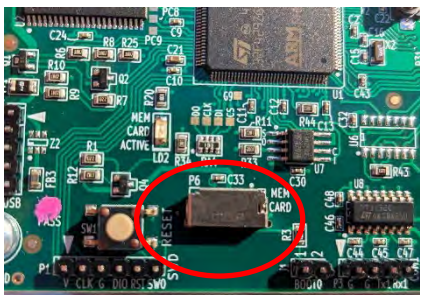


There are two sperate firmware files used by the system TST and HOST, circled in the above.

To update the firmware, save the EW-1000-TFT-TS - VX.XX.X.hex and HOSTXXXX.S19 (X=version number) to a Micro SD Card.

7800 Scale: Unplug the scale from Power and underneath the display casting removing the 4 screens that hold the mounting plate in place. Gently remove the cover plate to access the PC Board that is mounted underneath. Insert the Micro into the port as shown below





7800 Indicator: Remove the Backplate and find the Micro SD Extention cable. Insert the SD Cable withupdated firmware into the port.

Ensure the SD Card is inserted all the way and “clicks” into place

Press the MENU Button and then select USER and enable CHECK MEM CARD FoR FW as shown below

PARM	NAME	VALUE	UNIT
990	BACKLIGHT LEVEL	70	%
991	BACKLIGHT TIMER	OFF	min
992	SCREEN SAVER	YES	
993	TOUCH SCREEN BEEP DUR	SHORT	
994	CHECK MEM CARD FOR FW	YES	

USER SETTINGS

EDIT | SAVE & EXIT | CANCEL & EXIT

PARM	NAME	VALUE	UNIT
1	BATTERY ENABLE	OFF	
2	MULTI-RANGE MODE	OFF	%/x
4	REMOTE INPUTS (DIN/DIO)	OFF	
9.1	MEM-CARD EXTENDER	NO	
68.0	ADV CONNECTIVITY	EtherNet/IP	

OPTIONS

EDIT | SAVE & EXIT | CANCEL & EXIT

Press the MENU Button and then select and hold for 4 seconds the OPTIONS CONFIGURATION button to acceess advanced options. Select MEM-CARD EXTENDER and enable as shown below

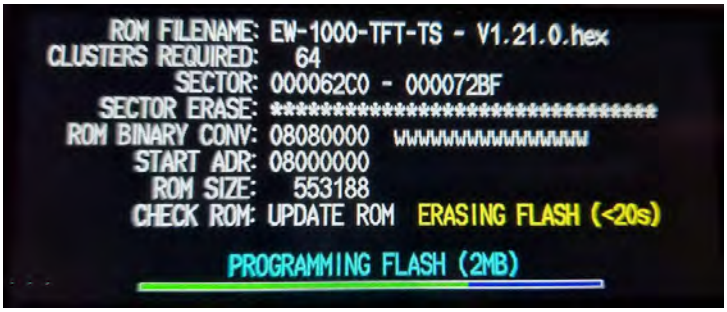
PARM	NAME	VALUE	UNIT
1	BATTERY ENABLE	OFF	
2	MULTI-RANGE MODE	OFF	%/x
4	REMOTE INPUTS (DIN/DIO)	OFF	
9.1	MEM-CARD EXTENDER	YES	
68.0	ADV CONNECTIVITY	EtherNet/IP	

OPTIONS

EDIT | SAVE & EXIT | CANCEL & EXIT

The 7800 will read the root folder files after inserting the Micro SD card or powering the meter with a Micro SD card already inserted. If the 7800 detects an LCD TFT upgrade, the user is queried to upgrade the firmware. The user will not be prompted again until a power cycle or the removal and reinsertion of the Micro SD card.

Selecting YES will activate the firmware upgrade process screen (see screen to the right). The LCD TFT firmware host file is processed, and if the firmware is different from the currently running firmware (in the case of user selected file selection), the firmware upgrade process is permitted.



After the file has been processed, the LCD TFT flash memory is erased and this process takes less than 20s. **The bargraph will not show movement for this time.** When the 7800 is writing the firmware to the internal flash memory, the bargraph will show the progress.

When the LCD TFT firmware update has been completed, the 7800 will restart.

If the host firmware requires an update, the following screen will be shown.

If the above right screen is displayed, Select OK to access the host update screen, see immediate right.

Select START to upgrade the host firmware.

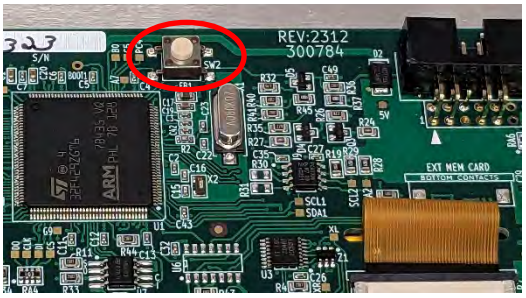
After it completes, tap exit twice to return to the main screen.

Scale Settings; Saving to and Loading From the Micro SD Card

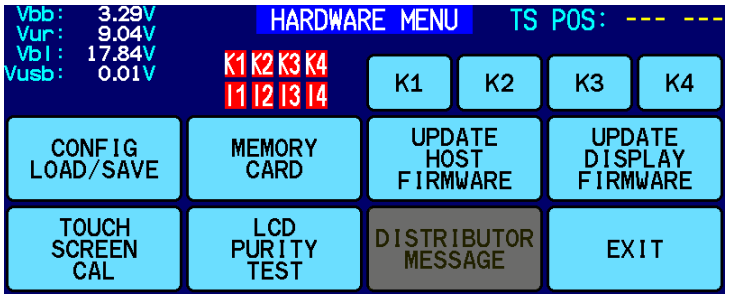
All settings can be saved to and loaded from a Micro SD card. This includes all settings but not the Mv/V used for calibration

To Save Settings: Insert Micro SD Card and access the Display PC Board Assembly

Press and release the SW2 switch shown below:



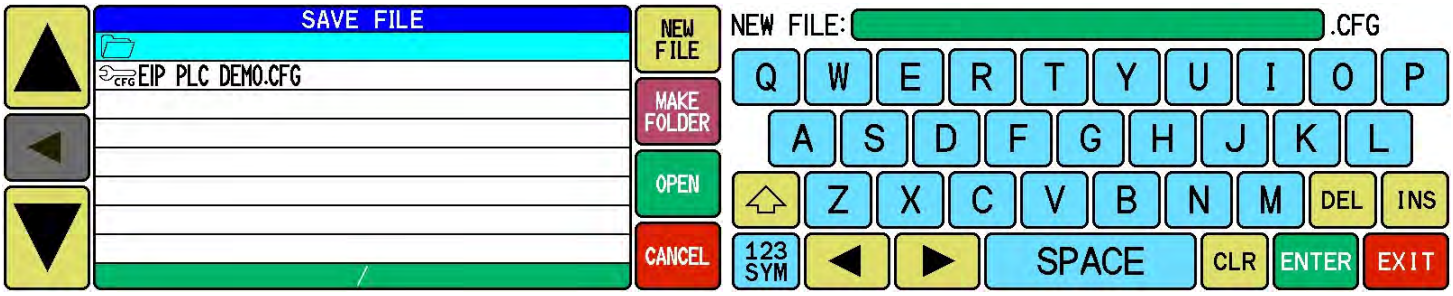
The Scale Displays the Hardware Menu as shown below



Select CONFIG LOAD/SAVE

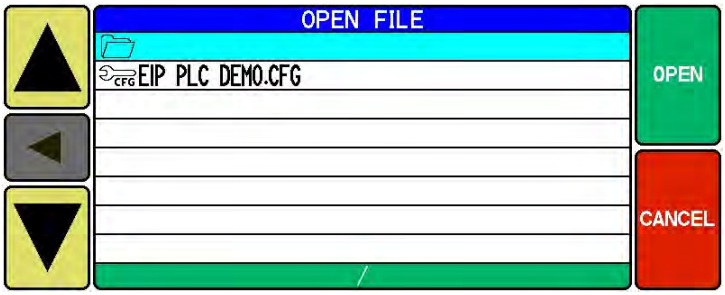
To Save Scale Parameters select SAVE PARM TO FILE

Save to File Menu appears. Select NEW FILE and enter a filename



Parameters are saved to the SD Card

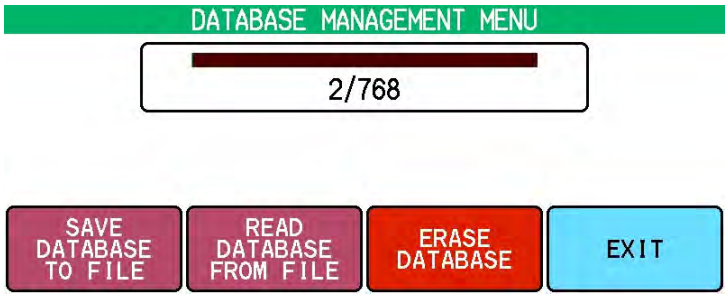
To Load Scale Parameters Select READ PARM FROM FILE. In the OPEN FILE menu use the UP/DOWN Keys to Highlight the file to load then select OPEN



Saved Parameters are loaded to the scale memory.

Database; Saving to and Loading From the Micro SD Card

The 7800 Database can be saved to or loaded from the Micro SD Card. To Access insert a micro SD card then go to MENU and press and hold for 4 seconds the ID DATABASE button. This will open the Database Management Menu Shown Below:

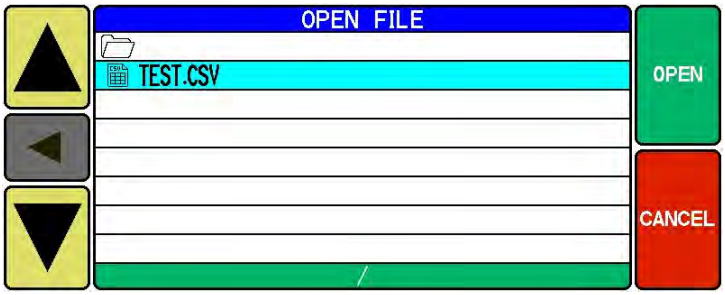


To Save Scale Parameters select SAVE DATABASE TO FILE

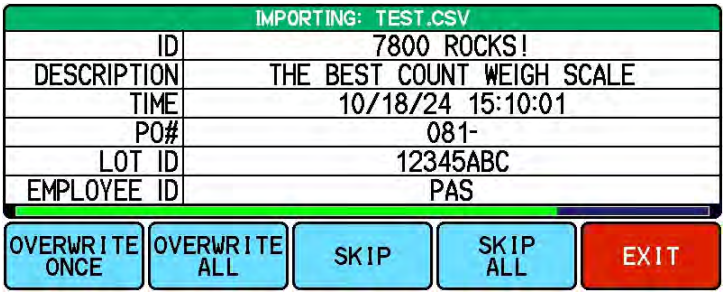
Save to File Menu appears. Select NEW FILE and enter a filename and ENTER

Database is now saved to the Micro SD Card.

To Load Database Select READ DATABASE FROM FILE. In the OPEN FILE menu use the UP/DOWN Keys to Highlight the file to load then select OPEN



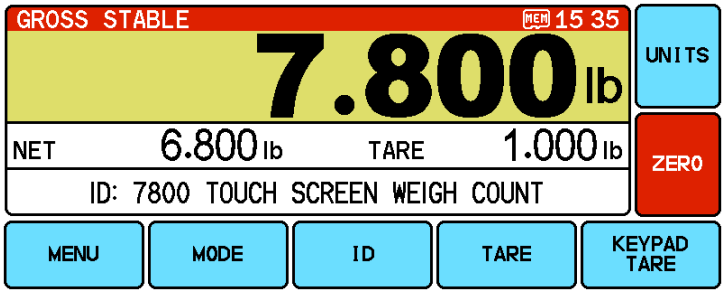
You many import 1 entry at time by using the OVERWRITE ONCE and SKIP or import all database entries selecting OVERWRITE ALL. When complete press the EXIT button to return to the main menu.



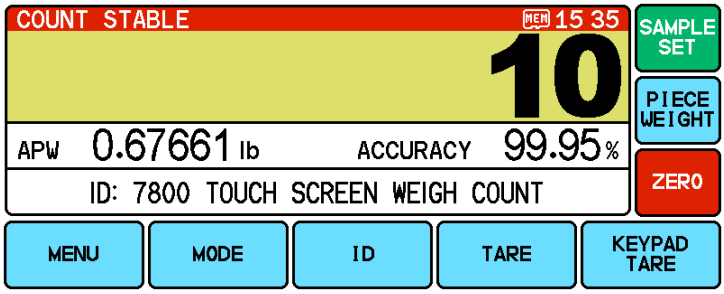
Operation Guide

The 7800 Touchscreen count/weigh scale and indicator uses a windows type operating system allowing the user to select the operational mode which only has the scale data and function buttons required for that operation. Use from any of the main operating displays use the MODE button to cycle through the available modes windows that are enabled. These include Weighing, Counting, Checkweighing and Setpoint Relay mode windows.

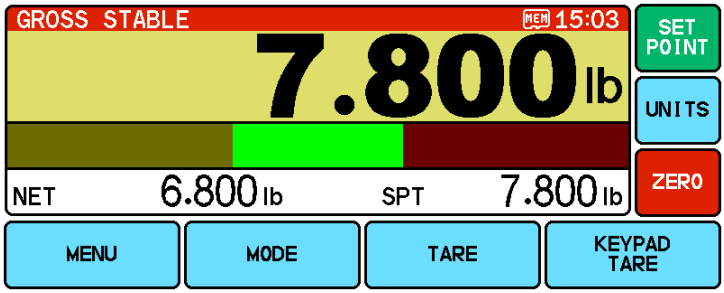
WEIGHING MODE



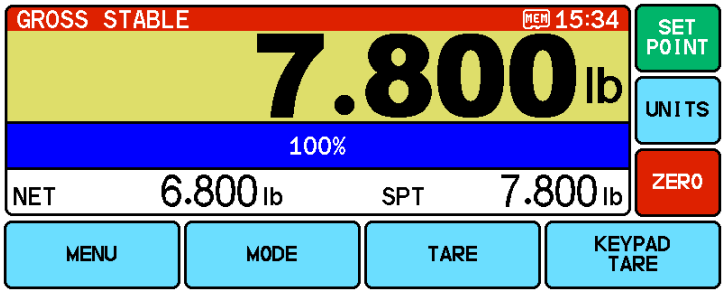
COUNTING MODE



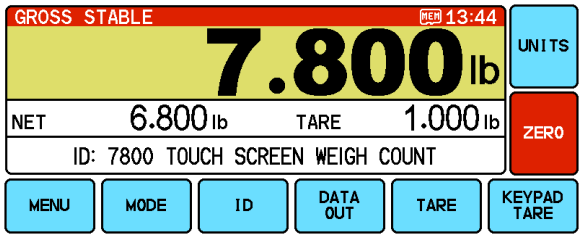
CHECKWEIGHING MODE



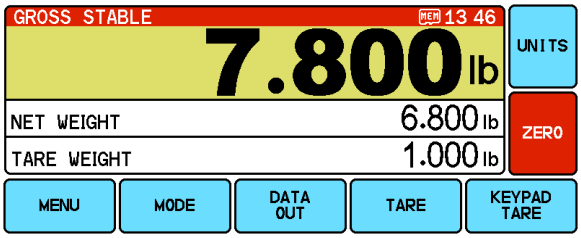
SETPOINT RELAY MODE



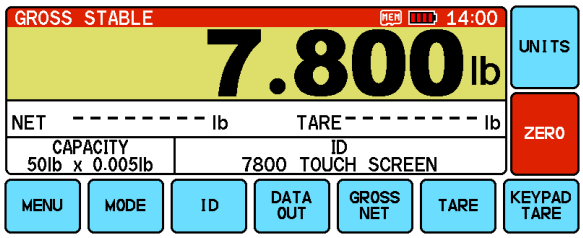
WEIGHING MODE, ID FUNCTION ENABLED



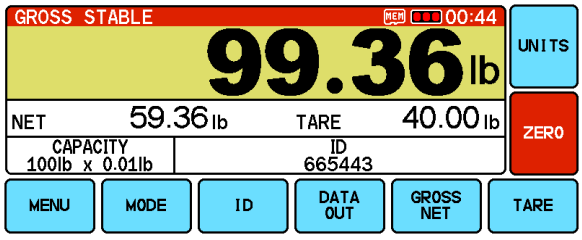
WEIGHING MODE, ID FUNCTION DISABLED

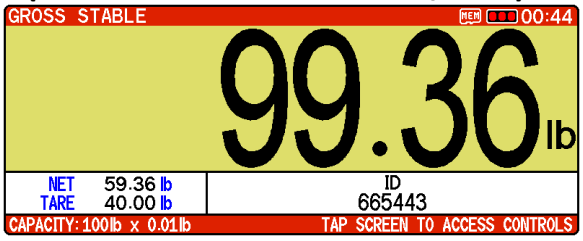


WEIGHING MODE, CAPACITY DISPLAYED & ID FUNCTION ENABLED



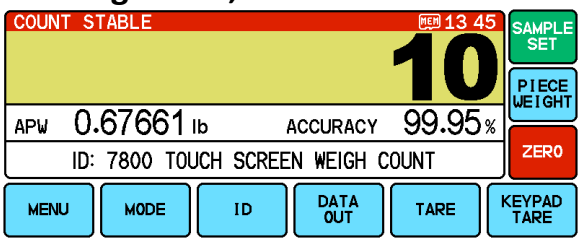
ZOOM MODE OUT ZOOM MODE IN (TAP SCREEN TO ZOOM IN/OUT)



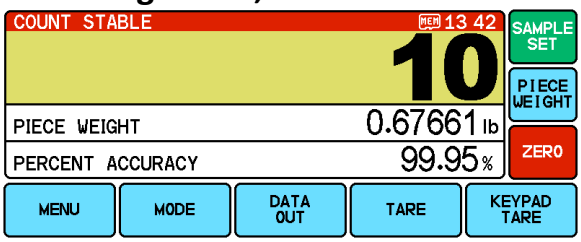


Scale Data Displayed	Function Buttons Available	Operation Performed
Primary Display Field GROSS WEIGHT Or GROSS/NET Configurable in Metrological Settings, parameter 101 Main Weight Display	MENU	Access calibration and configuration menus
Second Display Field NET WEIGHT And TARE WEIGHT Configurable in Metrological Settings, parameter 101 Main Weight Display	MODE	Cycles through available operational modes
Third Display Field ACTIVE ID Or Capacity When ID, Description or Custom Defined Data Fields are enabled in ID Database Active ID is displayed and Show Scale Capacity is Active	ID When ID, Description or Custom Defined Data Fields are enabled in ID Database	Enter an ID number, enter a new ID number in database, recall an ID number from database.
	DATA OUT	Sends formatted data output string to one or both comports
	GROSS NET Configurable in Metrological Settings, parameter 101 Main Weight Display	Cycles main display field between Gross and Net weight
	TARE	Performs a platform tare
	KEYPAD TARE Configurable in Metrological Settings, parameter 100 Keypad Tare Enable	Enter a known tare value
	ZERO	Zeros the scale
	UNITS	Cycles through primary and secondary units

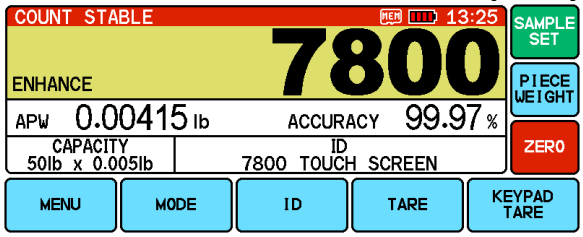
Counting Mode, ID Function Enabled



Counting Mode, ID Function Disabled

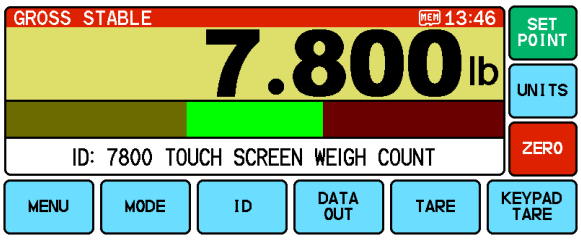


Counting Mode, ID Function Enabled & Capacity Displayed

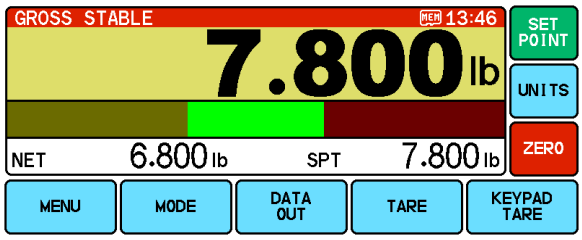


Scale Data Displayed	Function Buttons Available	Operation Performed
Primary Display Field COUNT	MENU	Access calibration and configuration menus
APW (Average piece Weight) ACCURACY/ERROR % Configured in Counting Modes Menu Parameter 56 Percent Mode and when ID function enabled	MODE	Cycles through available function modes
Third Display Field ACTIVE ID When ID, Description or Custom Defined Data Fields are enabled in ID Database Active ID is displayed OR Percent ACCURACY/ERROR Configured in Counting Modes Menu Parameter 56 Percent Mode and when ID function enabled	ID When ID, Description or Custom Defined Data Fields are enabled in ID Database	Enter an ID number, enter a new ID number in database, recall an ID number from database.
	DATA OUT	Sends formatted data output string to one or both comports
	TARE	Performs a platform tare
	KEYPAD TARE Configurable in Metrological Settings, parameter 100 Keypad Tare Enable	Enter a known tare value
	ZERO	Zeros the scale
	PIECE WEIGHT	Opens numeric keypad window for entry of known piece weights
	SAMPLE SET	Opens sample set window for establishing a piece weight through sampling process

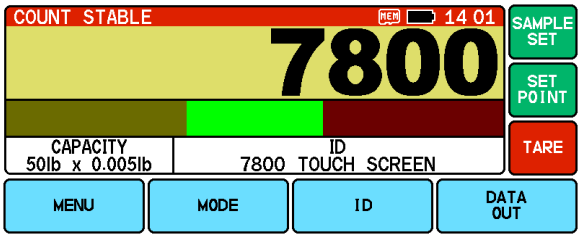
Checkweigh Mode, ID Function Enabled



Checkweigh Mode, ID Function Disabled

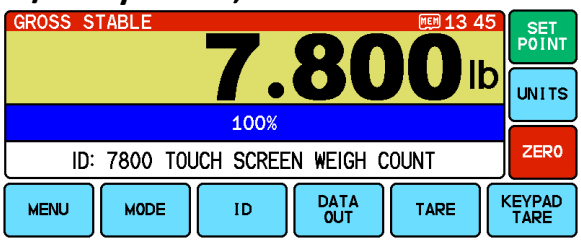


Checkweigh Mode, ID Function Enabled & Capacity Displayed

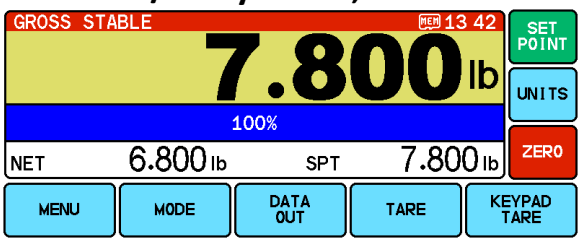


Scale Data Displayed	Function Buttons Available	Operation Performed
Primary Display Field GROSS WEIGHT Or GROSS/NET Configurable in Metrological Settings, parameter 101 Main Weight Display	MENU	Access calibration and configuration menus
UNDER/ACCEPT/OVER Checkweigh Bar graph Checkweigh by weight or count Configurable in Setpoint Configuration Parameter 8 Set Point Enable	MODE	Cycles through available function modes
Third Display Field ACTIVE ID When ID, Description or Custom Defined Data Fields are enabled in ID Database Active ID is displayed OR TARGET WEIGHT/COUNT Checkweigh by weight or count Configurable in Setpoint Configuration Parameter 8 Set Point Enable	ID When ID, Description or Custom Defined Data Fields are enabled in ID Database	Enter an ID number, enter a new ID number in database, recall an ID number from database.
	DATA OUT	Sends formatted data output string to one or both comports
	TARE	Performs a platform tare
	KEYPAD TARE Configurable in Metrological Settings, parameter 100 Keypad Tare Enable	Enter a known tare value
	ZERO	Zeros the scale
	UNITS	Change Unit of Measure
	SETPOINT	Opens Setpoint Target entry window for establishing a Target and Tolerance Values

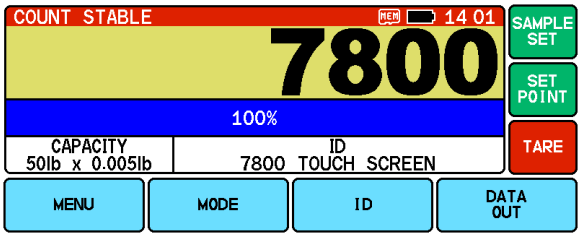
Set Point/Relay Mode, ID Function Enabled



Set Point/Relay Mode, ID Function Disabled



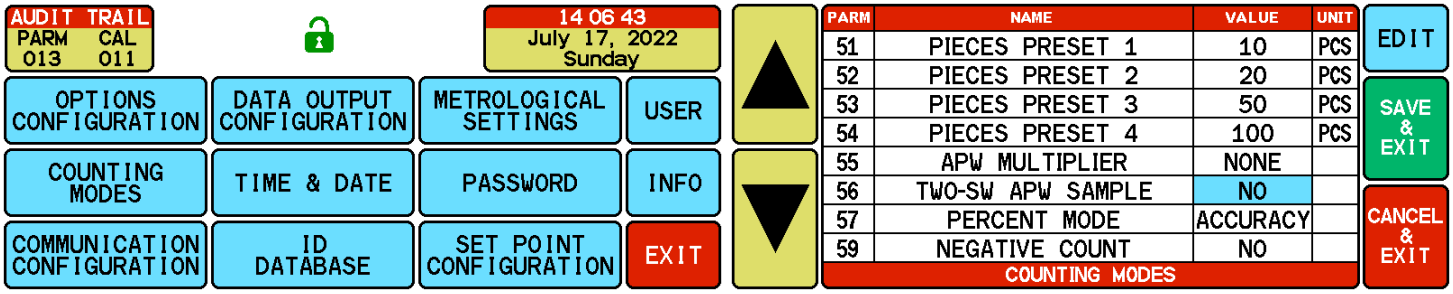
Set Point/Relay Mode, ID Function Enabled & Capacity Displayed



Scale Data Displayed	Function Buttons Available	Operation Performed
Primary Display Field GROSS WEIGHT Or GROSS/NET Configurable in Metrological Settings, parameter 101 Main Weight Display	MENU	Access calibration and configuration menus
_____100%_____ Setpoint/Relay Target Bar graph Setpoint by weight or count Configurable in Setpoint Configuration Parameter 8 Set Point Enable	MODE	Cycles through available function modes
Third Display Field ACTIVE ID When ID, Description or Custom Defined Data Fields are enabled in ID Database Active ID is displayed OR TARGET WEIGHT/COUNT Checkweigh by weight or count Configurable in Setpoint Configuration Parameter 8 Set Point Enable	ID When ID, Description or Custom Defined Data Fields are enabled in ID Database	Enter an ID number, enter a new ID number in database, recall an ID number from database.
	DATA OUT	Sends formatted data output string to one or both comports
	TARE	Performs a platform tare
	KEYPAD TARE Configurable in Metrological Settings, parameter 100 Keypad Tare Enable	Enter a known tare value
	ZERO	Zeros the scale
	UNITS	Change Unit of Measure
	SETPOINT	Opens Setpoint Target entry window for establishing a Target and Tolerance Values

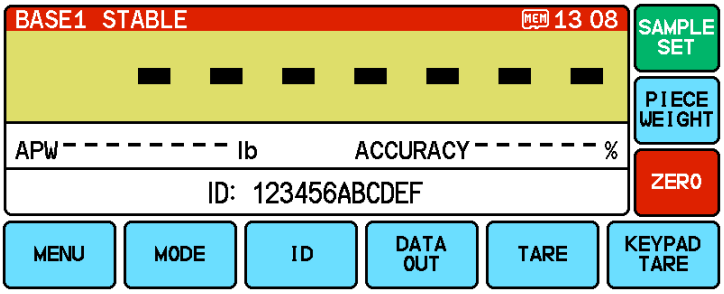
To Count an item using SAMPLE SET and ID DATABASE off

1 Step Counting In Counting Modes Set PARM 56 Two-SW APW SAMPLE To NO

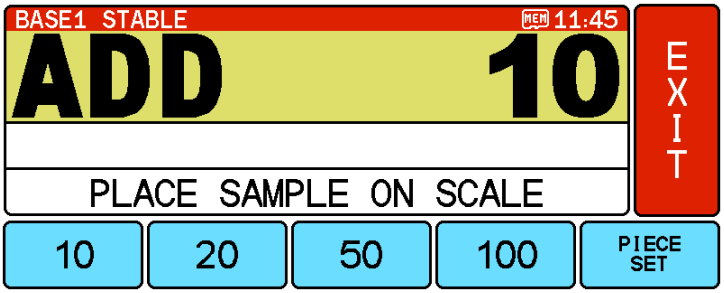


If using a container to count parts into place this empty container on the scale

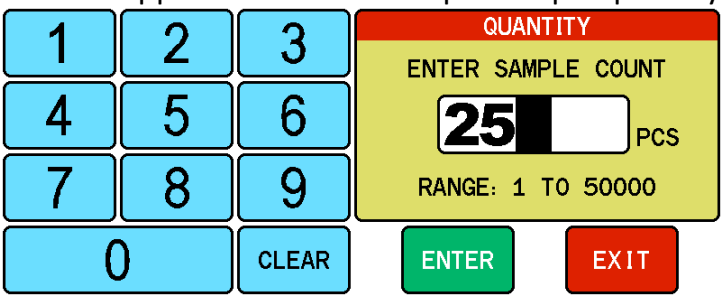
Use the MODE button to cycle through the counting mode window



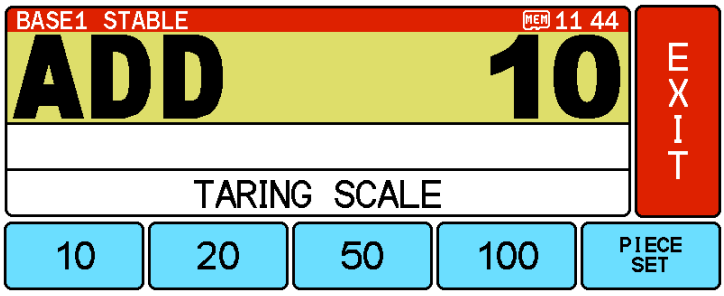
Select the SAMPLE SET button to enter piece weight calculation Window.

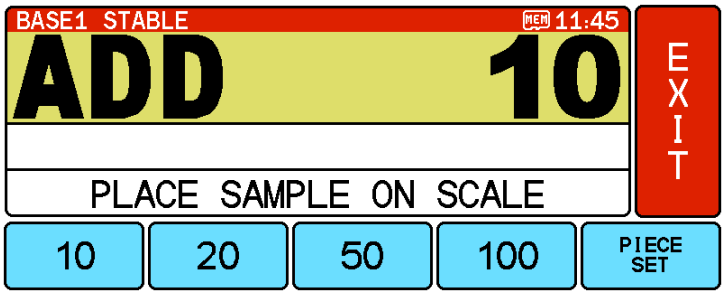


Select from the 4 preset sample size buttons or PIECE SET. If PIECE Set is selected a sample quantity window appears to enter a unique sample quantity.

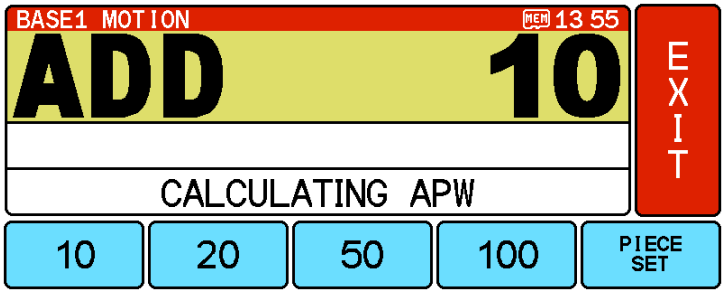


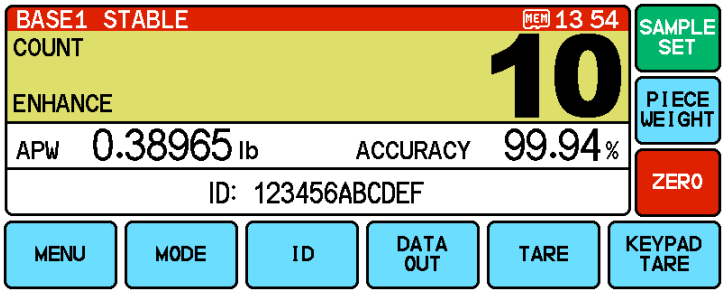
Wait for the system to tare platform then prompt to add sample





Place the entire sample quantity ALL AT ONCE on the scale piece weight is calculated and Counting Mode Window opens.

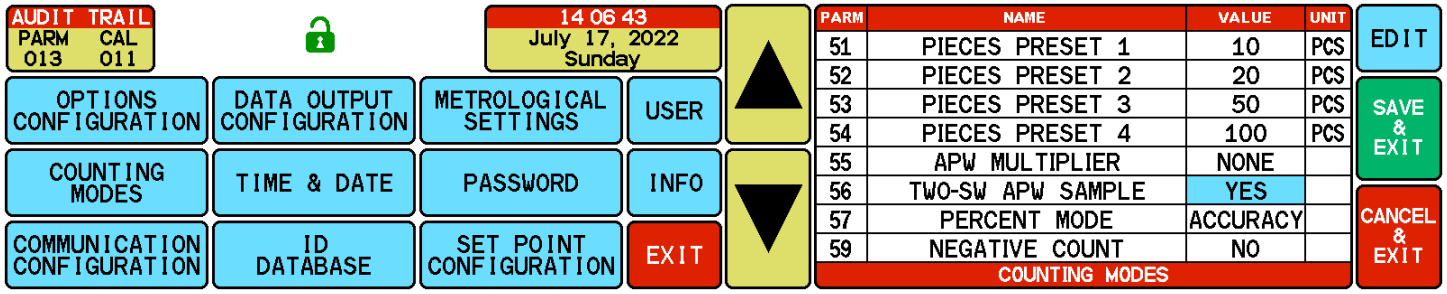




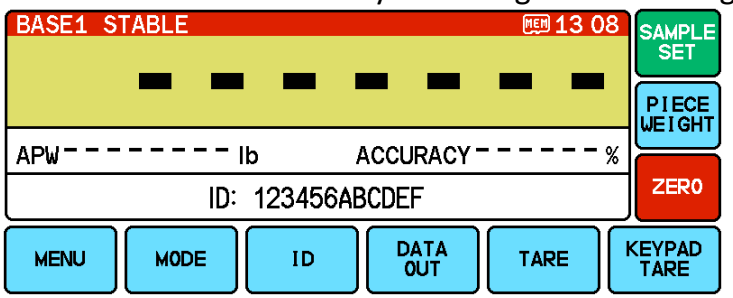
Place any additional items to be counted on the scale platform. Repeat the above steps for different items to be counted.

2 Step Counting

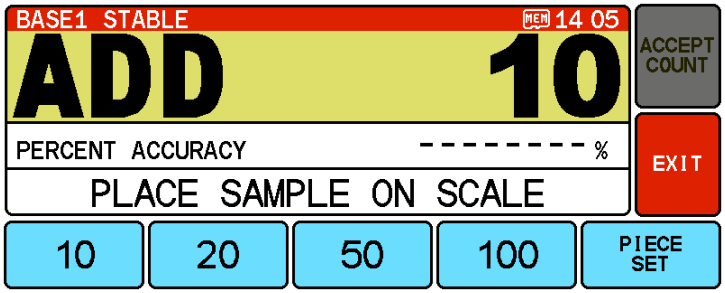
2 Step Counting In Counting Modes Set PARM 56 Two-SW APW SAMPLE To YES



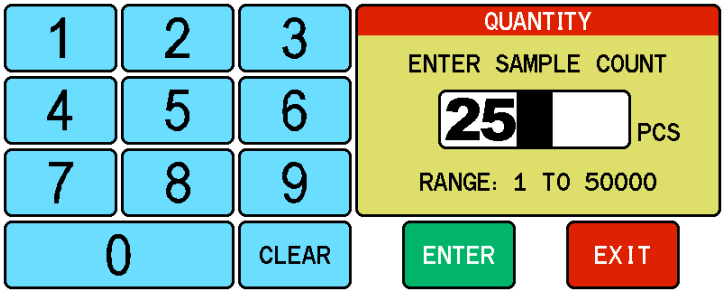
If using a container to count parts into place this empty container on the scale
Use the MODE button to cycle through the counting mode window



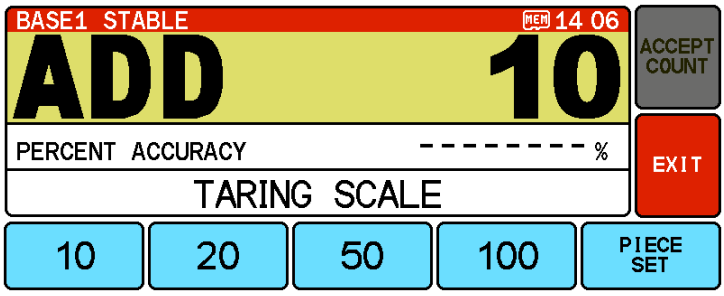
Select the SAMPLE SET button to enter the piece weight calculation Window.

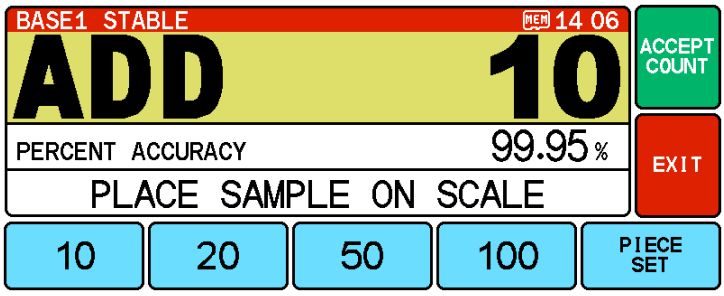


Select from the 4 preset sample size buttons or PIECE SET. If PIECE Set is selected a sample quantity window appears to enter a unique sample quantity.

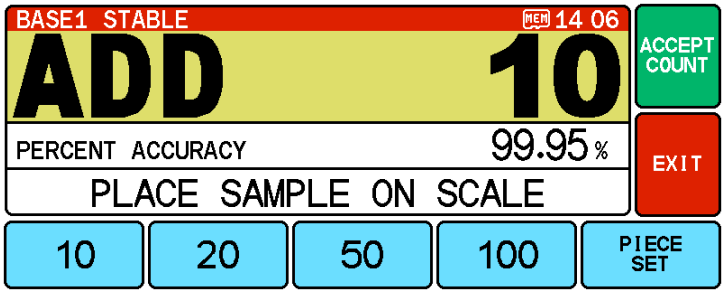


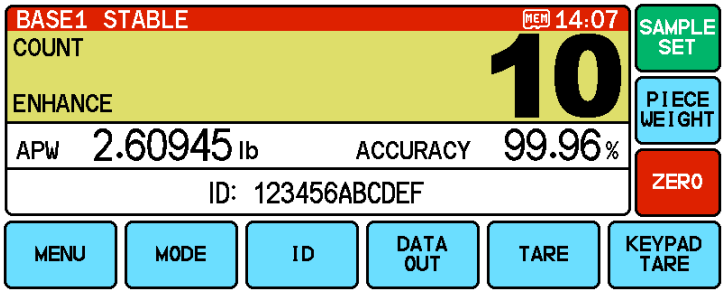
Wait for the system to tare platform then prompt to add sample





Place the entire sample quantity on the scale. When complete select the ACCEPT COUNT button. Piece weight is calculated, and Counting Mode Window opens.





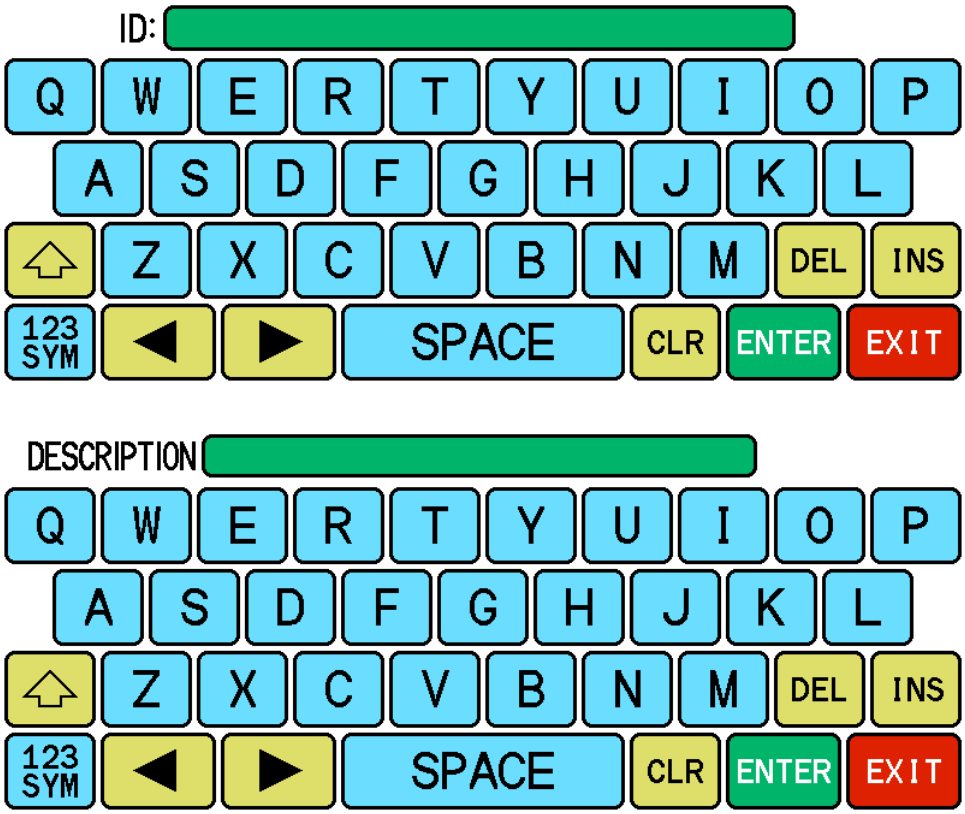
Place any additional items to be counted on the scale platform. Repeat the above steps for different items to be counted.

Using The Database

The 7800 has a built-in database to store and recall 750 alphanumeric ID's, Descriptions, up to 3 User Defined and labeled custom data fields, Piece Weight, Tare Weight and Checkweigh or setpoint Target weights or counts.

The ID button is available in the Weigh, Count, Checkweigh and Setpoint Modes. Pressing the ID button will start the process for recalling from memory or entering a new ID

Factory default s ID and Description ON but database turned off. Pressing the ID button with this setup and scale prompts for entry of:

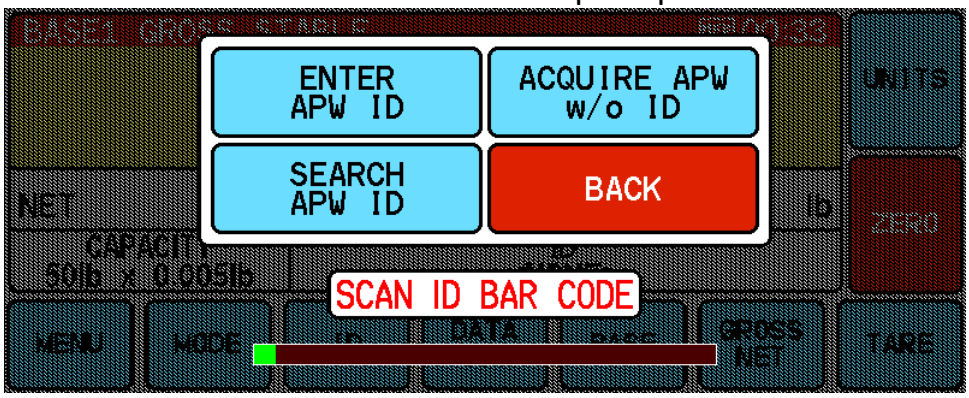


Return to the Mode when the ID button was pressed.

These values can be used for output to a printer, data collection or third-party software but are not stored in memory. They will remain as the ID and Description values until changed.

When the APW (Piece Weight), Database is enabled (See ID Database Menu on Pages 26 - 28)

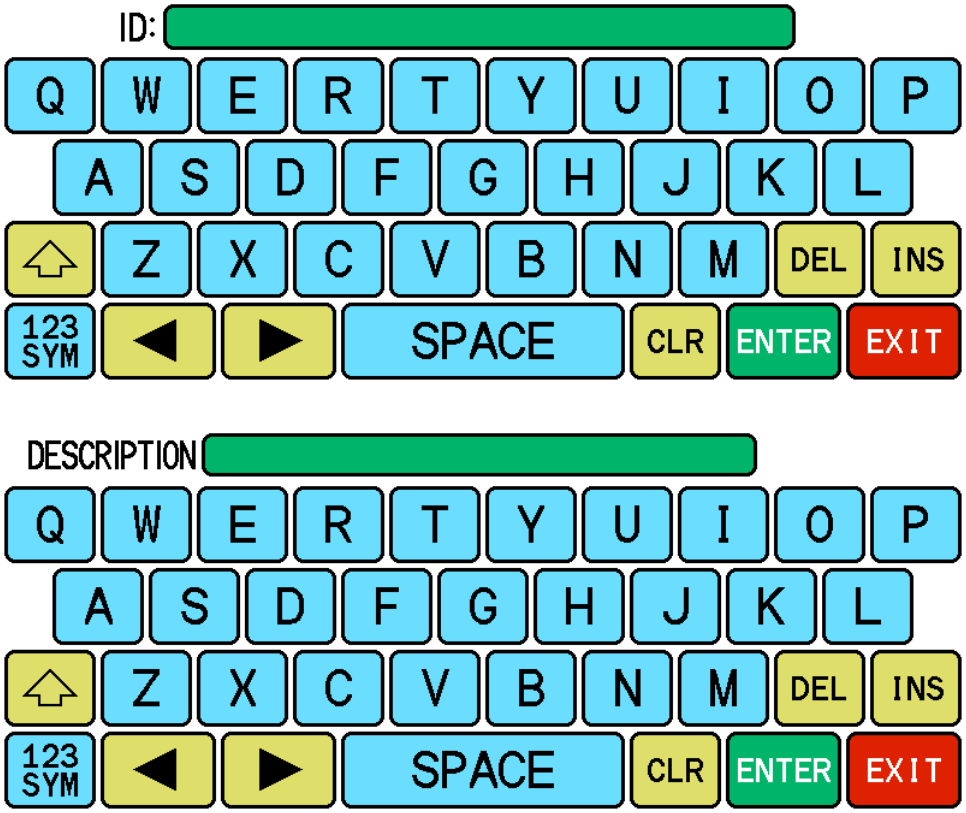
Press the ID button and the scale will prompt for:



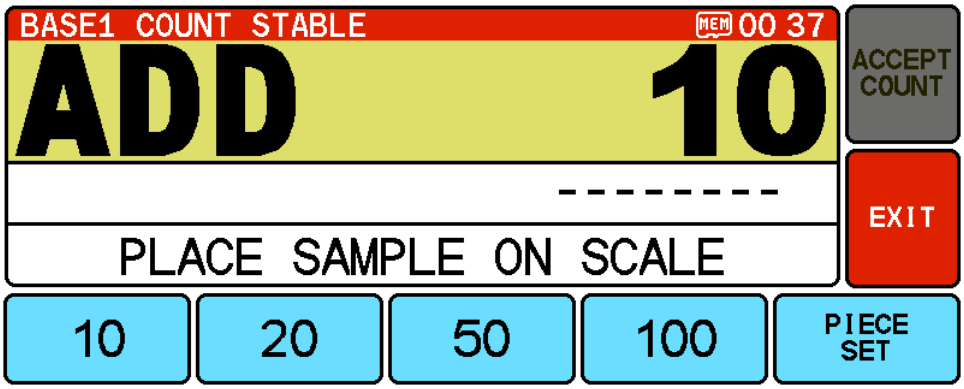
Select Search APW ID to recall and ID from the database.

Select ACQUIRE APW W/O ID to perform a counting function without saving or recall from the database

Select ENTER APW ID to enter a new ID into the database. When this is selected Scale will prompt for:



Sample Set



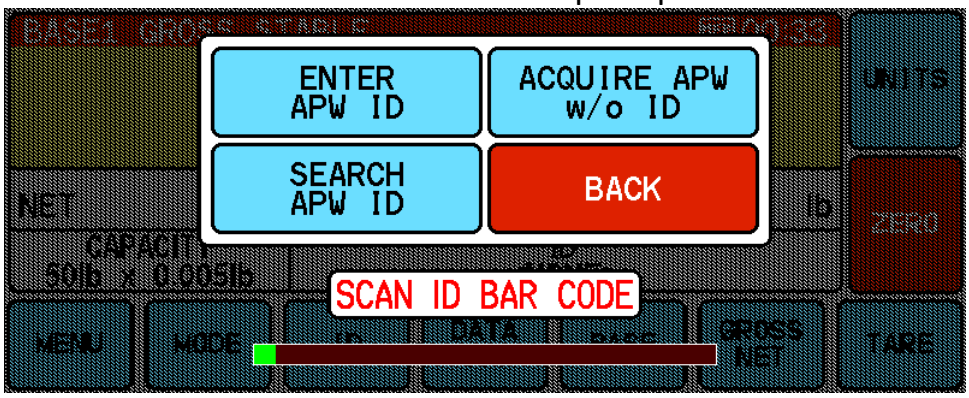
Perform the sample process to establish piece weight, or if in ID DATABASE parameter 16.1 APW AQUIRE is set to manual enter the Piece Weight value.

When complete it will return to the Mode when the ID button was pressed.

These values can be used for output to a printer, data collection or third-party software and are stored in the database. They will remain in the database until edited or deleted.

When the APW (Piece Weight), SETPOINT and TARE Database are enabled

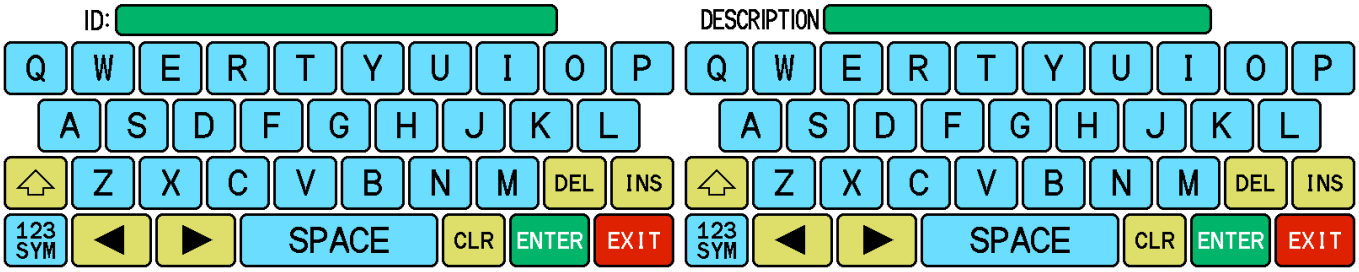
Press the ID button and the scale will prompt for:



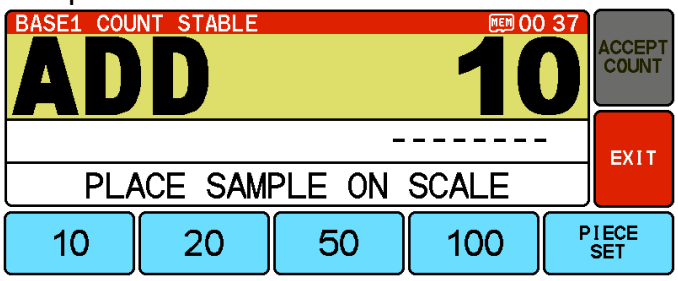
Select Search APW ID to recall and ID from the database.

Select ACQUIRE APW W/O ID to perform a counting function without saving or recall from the database

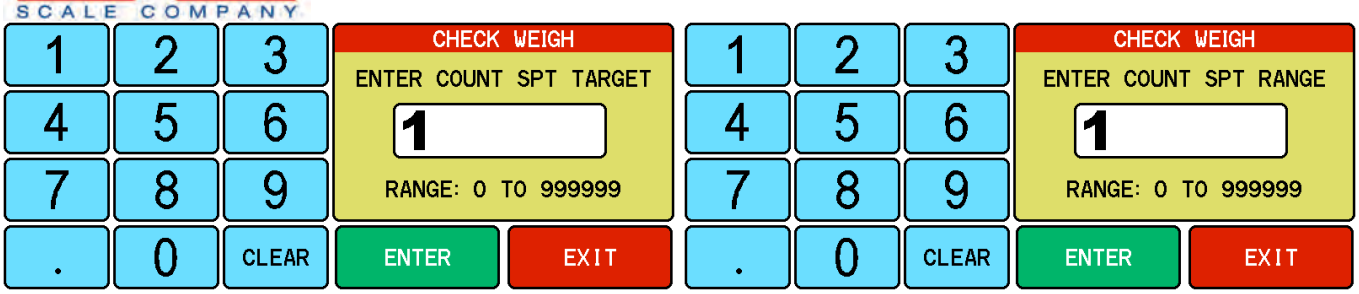
Select ENTER APW ID to enter a new ID into the database. When this is selected Scale will prompt for:



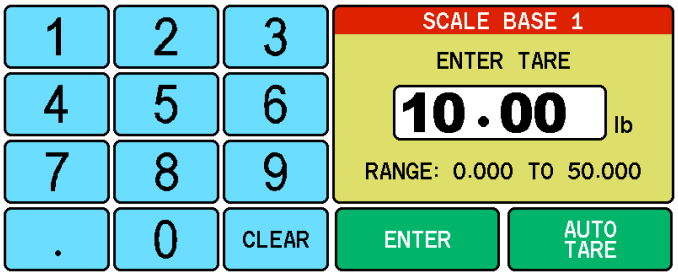
Sample Set



Perform the sample process to establish piece weight, or if in ID DATABASE parameter 16.1 APW AQUIRE is set to manual enter the Piece Weight value.



The above example is using counting this can also be weight if weight is selected in SETPOINT CONFIGURATION, Parameter 8.01 Source

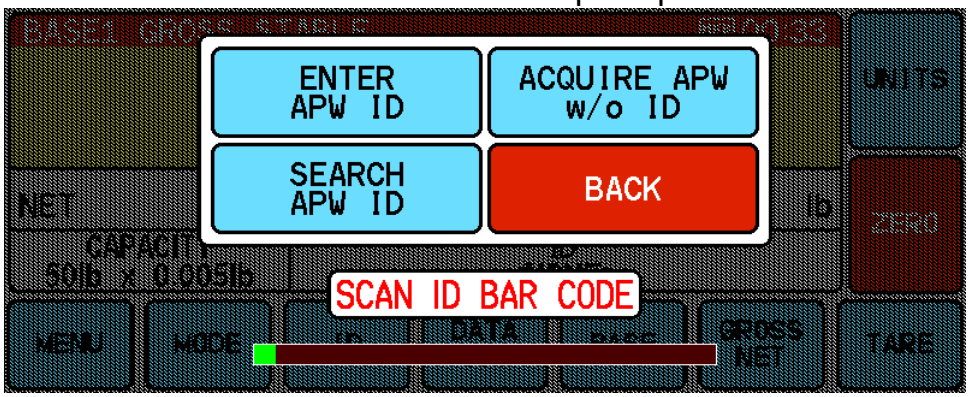


When complete it will return to the Mode when the ID button was pressed.

These values can be used for output to a printer, data collection or third-party software and are stored in the database. They will remain in the database until edited or deleted.

When the APW (Piece Weight), SETPOINT, TARE Database and all three Custom Defined Data Fields are enabled (See ID Database Menu on Pages 28 - 29)

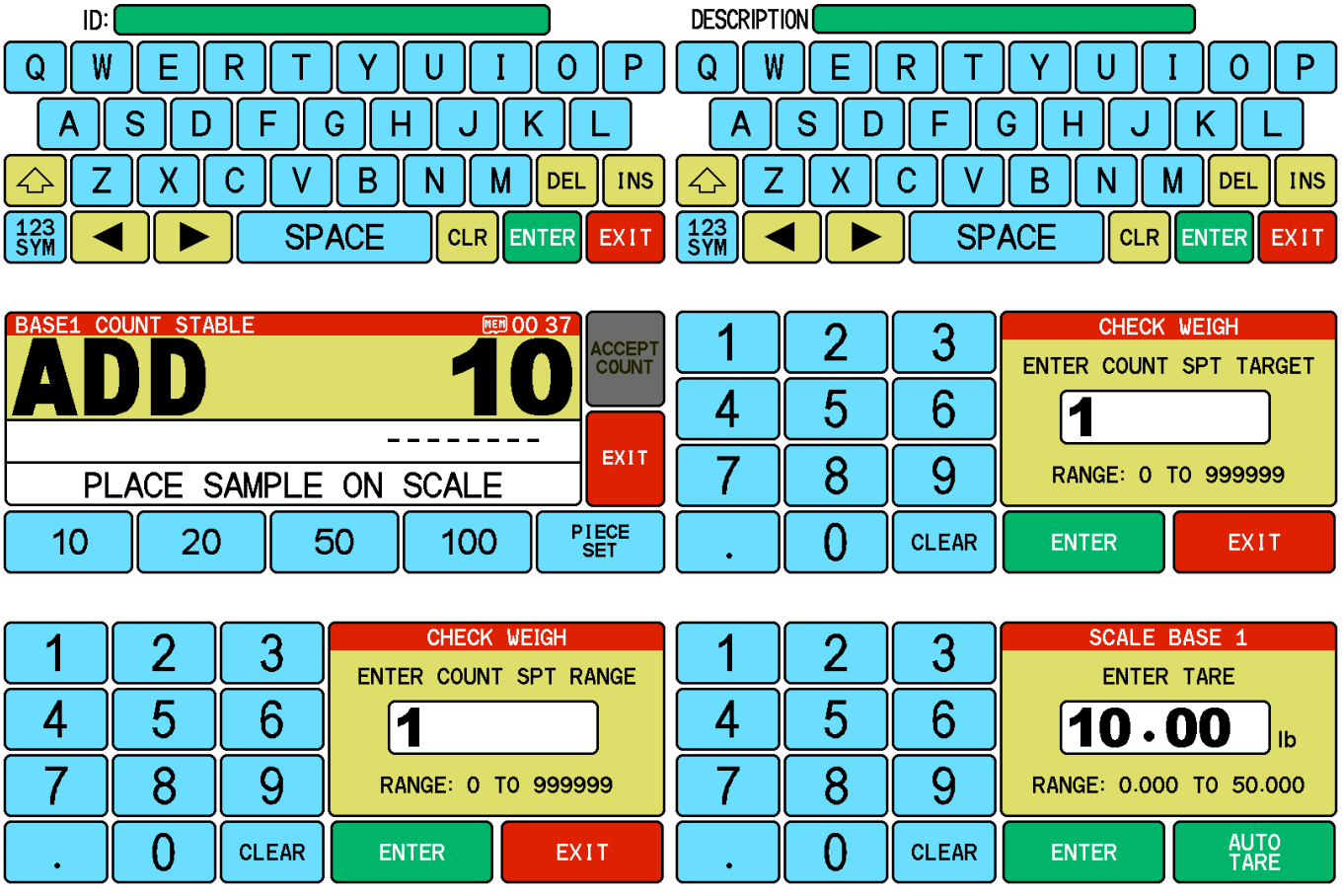
Press the ID button and the scale will prompt for:



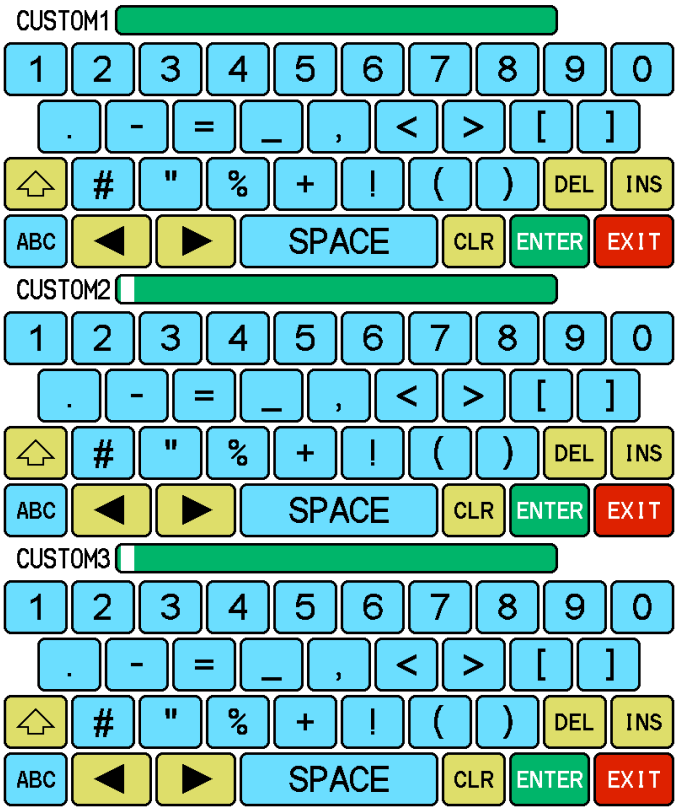
Select Search APW ID to recall and ID from the database.

Select ACQUIRE APW W/O ID to perform a counting function without saving or recall from the database

Select ENTER APW ID to enter a new ID into the database. When this is selected Scale will prompt for:



The 7800 will then prompt for entry of the Custom Data Fields that are enabled:



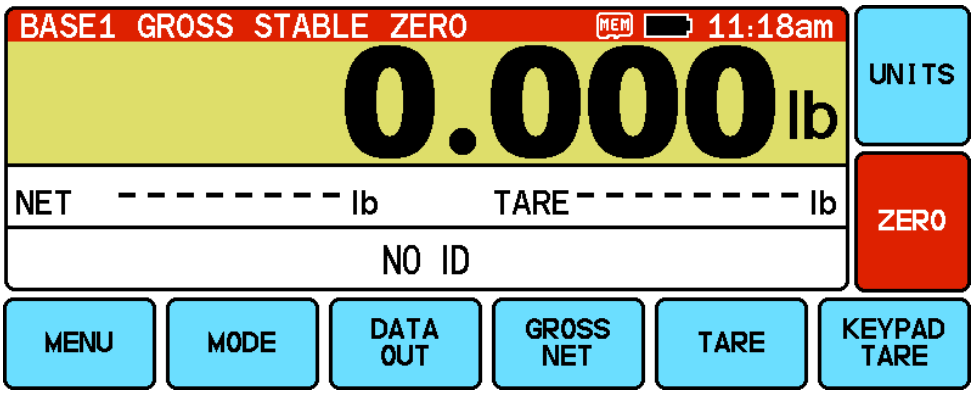
When complete it will return to the Mode when the ID button was pressed.

These values can be used for output to a printer, data collection or third-party software and are stored in the database. They will remain in the database until edited or deleted.

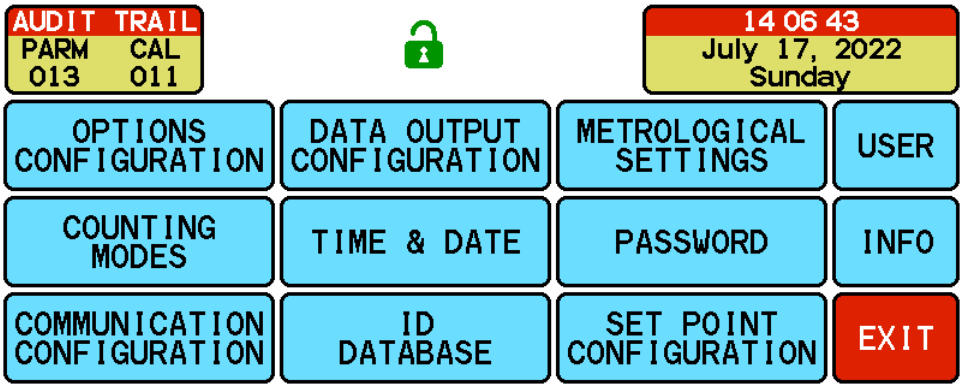
Configuration of Weighing Settings

From any of the main operating screens:

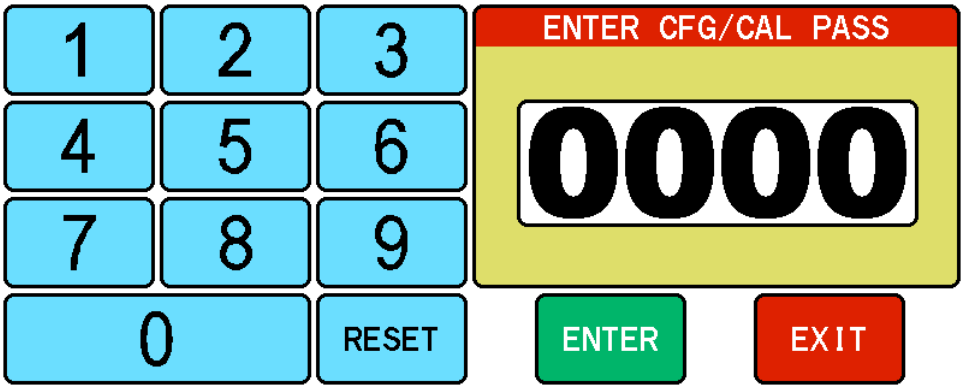
Select the MENU button



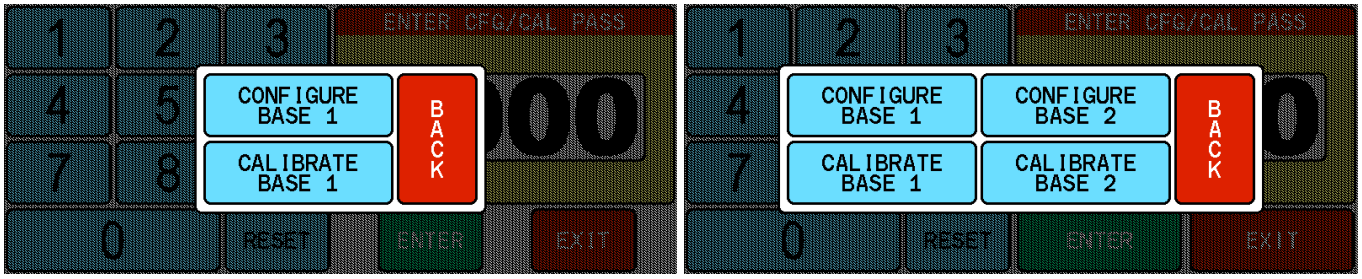
In the main menu select the METROLOGICAL SETTINGS button



Enter Password if prompted. Default password is 0000



To configure or check the weight configuration of the system select CONFIGURE BASE 1 (Or BASE 2 if option installed)



This will open the weigh configuration menu. Visible on page 1:

PARM	NAME	VALUE	UNIT
11	SCALE CAPACITY	100.00	lb
41	DISPLAY UD RATE/AVG	7.5/s	
13	ZERO ON POWER-UP	NO	
24	PRIMARY UNITS	lb	
22	PRIMARY RESOLUTION	0.01	lb
31	SECONDARY UNITS	kg	
32	SECONDARY RESOLUTION	0.005	kg
31.3	TERTIARY UNITS	g	
SCALE BASE ONE			

EDIT | SAVE & EXIT | CANCEL & EXIT

Use the DOWN arrow keys to scroll down for the settings visible on page 2:

PARM	NAME	VALUE	UNIT
32.3	TERTIARY RESOLUTION	5	g
31.4	QUATERNARY UNITS	lb-oz	
32.4	QUATERNARY RESOLUTION	0.2	oz
26	CANADA	NO	
23	ZERO RANGE	99.0	%
27	ZERO TRACKING (AZM)	0.25	GRAD
28	STABLE (MOTION)	1	
100	KEYPAD TARE ENABLE	YES	
SCALE BASE ONE			

EDIT | SAVE & EXIT | CANCEL & EXIT

Use the DOWN arrow keys to scroll down for the settings visible on page 3:

PARM	NAME	VALUE	UNIT
32.4	QUATERNARY RESOLUTION	0.2	oz
26	CANADA	NO	
23	ZERO RANGE	99.0	%
27	ZERO TRACKING (AZM)	0.25	GRAD
28	STABLE (MOTION)	1	
100	KEYPAD TARE ENABLE	YES	
101	MAIN WEIGHT DSP	G/N SELECT	
102	SHOW SCALE CAPACITY	YES	
SCALE BASE ONE			

EDIT | SAVE & EXIT | CANCEL & EXIT

To enter and/or change a setting use the UP/DOWN arrow keys to scroll up or down to setting and select the Blue EDIT button.

Selecting the Green SAVE & EXIT button will save and exit, Red CANCEL & EXIT will exit without saving Settings Menu:

Configuration of Weighing Settings Menu

PARAMETER (PARM)	NAME	VALUE/SELECTIONS	UNIT
11	SCALE CAPACITY	• Sets the scale capacity. • Select EDIT and enter Scale Capacity in Primary Units, 1 – 999,999	
41	DISPLAY UD RATE/AVG	• Digital filtering setting the values represent number of updates per second. The lower the value the higher the filtering, higher the value the lower the filtering. • Available selections updates per second: 1.0, 1.5, 2.0, 2.5, 3.0, 30, 15, 10, 7.5, 6.0, 5.0, 4.0 & 3.0 • Select the EDIT button to cycle through available selections.	
12	AUTO CONFIGURE	• Configures all metrological setting to factory default • Available selections YES, NO • Select the EDIT button to cycle through available selections.	
13	ZERO ON POWER-UP	• Automatically Zeros Scale on Startup • Available selections YES, NO • Select the EDIT button to cycle through available selections.	
24	PRIMARY UNITS	• Primary unit of measure • Available selections: lb., kg, g, ozt, lbt, grn, dwt, oz, crt, ozf, ml, l, tons, and lb/oz • Select the EDIT button to configure.	Primary UOM
22	PRIMARY RESOLUTION	• Sets the displayed weight graduation for primary units • Select EDIT and enter primary resolution 0.00001 to 500	Primary UOM
31	SECONDARY UNITS	• Secondary unit of measure • Available selections: lb., kg, g, ozt, lbt, grn, dwt, oz, crt, ozf, ml, l, tons, and lb/oz • Select the EDIT button to configure.	Secondary UOM
32	SECONDARY RESOLUTION	• Sets the displayed weight graduation for secondary units • Select EDIT and enter primary resolution 0.00001 to 500	Secondary UOM

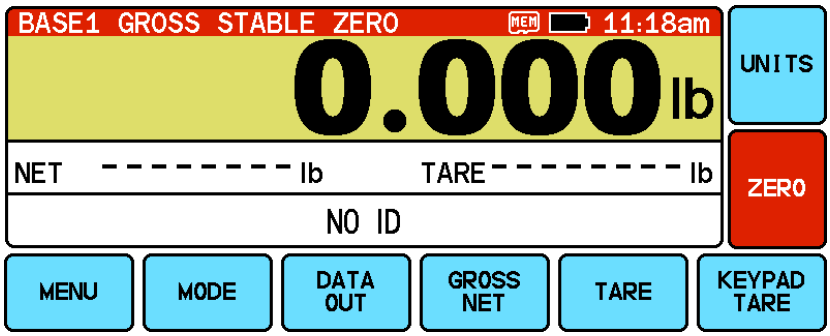
PARAMETER (PARM)	NAME	VALUE/SELECTIONS	UNIT
31.3	TERTIARY UNITS	• Tertiary unit of measure • Available selections: lb., kg, g, ozt, lbt, grn, dwt, oz, crt, ozf, ml, l, tons, and lb/oz • Select the EDIT button to configure.	TERTIARY UOM
32.3	TERTIARY RESOLUTION	• Sets the displayed weight graduation for primary units • Select EDIT and enter primary resolution 0.00001 to 500	TERTIARY UOM
31.4	QUATERNARY UNITS	• Quaternary unit of measure • Available selections: lb., kg, g, ozt, lbt, grn, dwt, oz, crt, ozf, ml, l, tons, and lb/oz • Select the EDIT button to configure.	QUATERNARY UOM
32.4	QUATERNARY RESOLUTION	• Sets the displayed weight graduation for primary units • Select EDIT and enter primary resolution 0.00001 to 500	QUATERNARY UOM
26	CANADA	• Enable/Disable default settings for Canada • Select EDIT to choose YES/NO	
23	ZERO RANGE	• The amount of weight as a % of capacity that the scale can zero. • Select EDIT and enter the % from 1% to 99%	
27	ZERO TRACKING (AZM)	• Zero tracking value entered as a percent of display resolution. Entering a 0.25* equals 25% of one display • graduation. “0” disables the zero-tracking feature. • Select EDIT and enter the % from 0% to 5%	
28	STABLE (MOTION)	• Stable/Motion configuration in grads/sec. Change is displayed weight in graduations GREATER than this value will cause the scale to be in motion. • Available selections: OFF, 1, 3, 5 & 10 • Select the EDIT button to cycle through available selections.	
100	KEYPAD TARE ENABLE	• Enables or disables keypad entry of tare values • Available selections YES, NO • Select the EDIT button to cycle through available selections	

PARAMETER (PARM)	NAME	VALUE/SELECTIONS	UNIT
101	MAIN WEIGHT DISPLAY	• Selects the weigh value to display in primary window • Available Selections: Gross Only, Net Only, G/N Select • Select the EDIT button to cycle through available selections.	
102	SHOW SCALE CAPACITY	• Select YES to display scale capacity. Required for legal for trade	

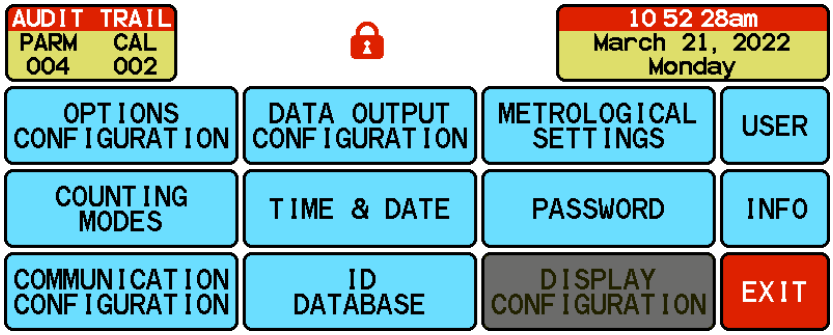
Calibration Procedure

From any of the main operating screens:

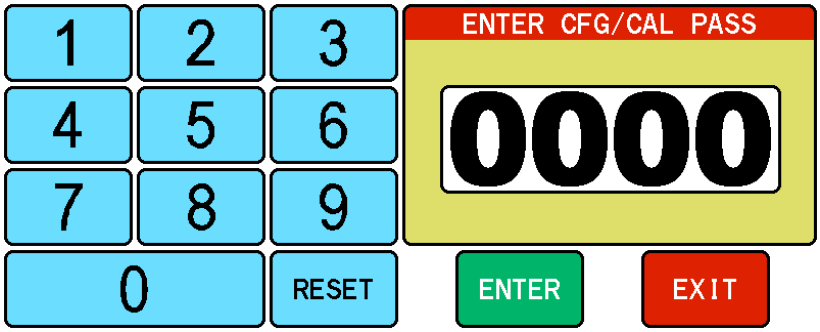
Select the MENU button



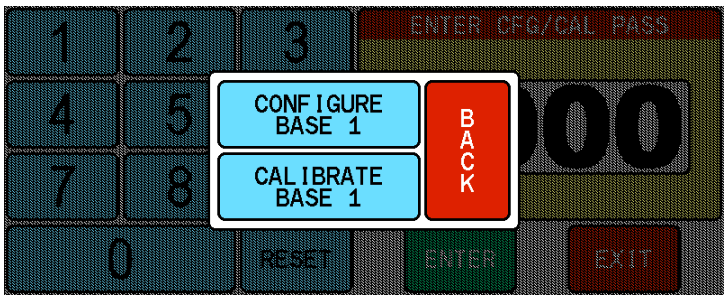
In the main menu select the METROLIGICAL SETTINGS button

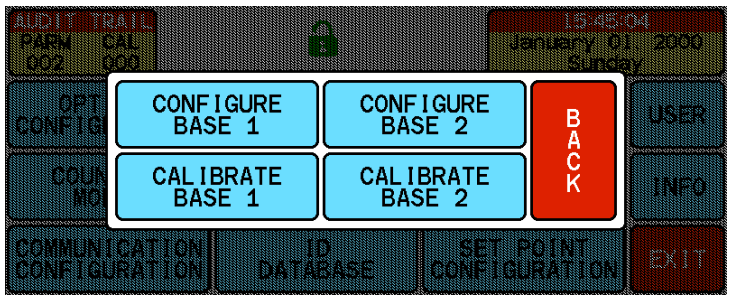


Enter Password if prompted. Default password in 0000

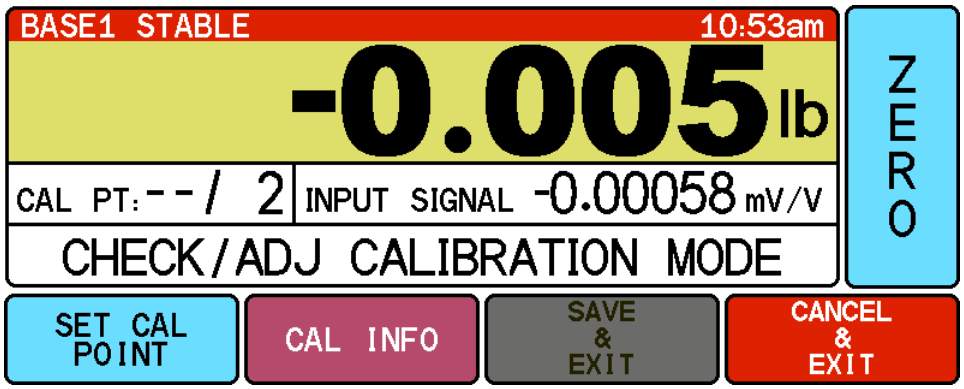


To calibrate the system select CALIBRATE BASE 1 (Or BASE 2 if option installed)

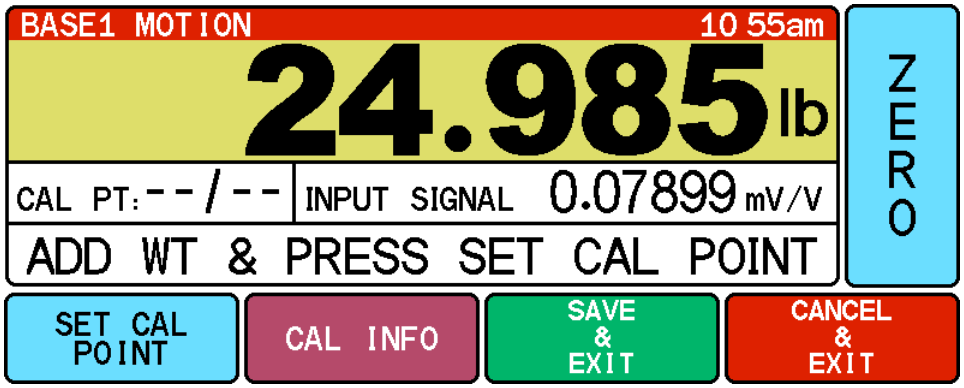




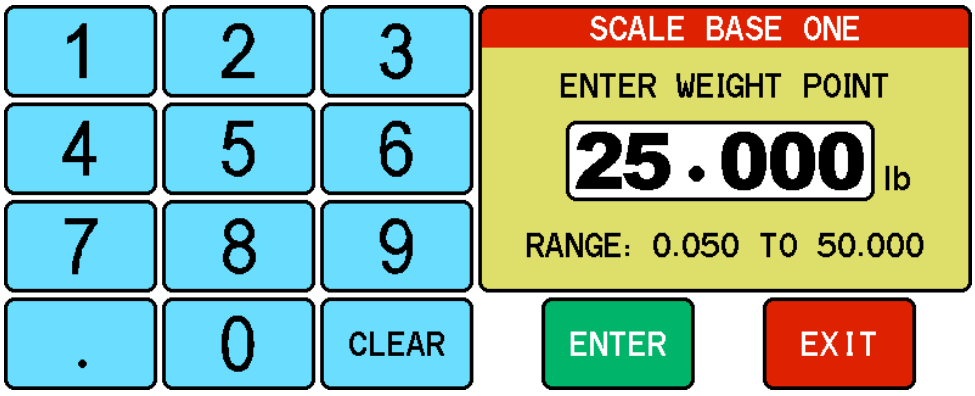
Zero Calibration, with no weight or items on the weighbridge select the ZERO button



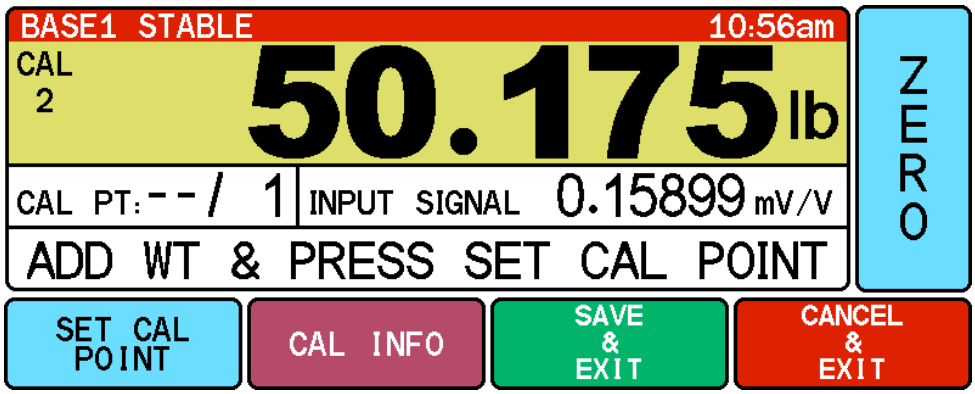
Place a known calibration weight on the scale to perform span calibration point 1. In this example a 25 lb. weight is used.



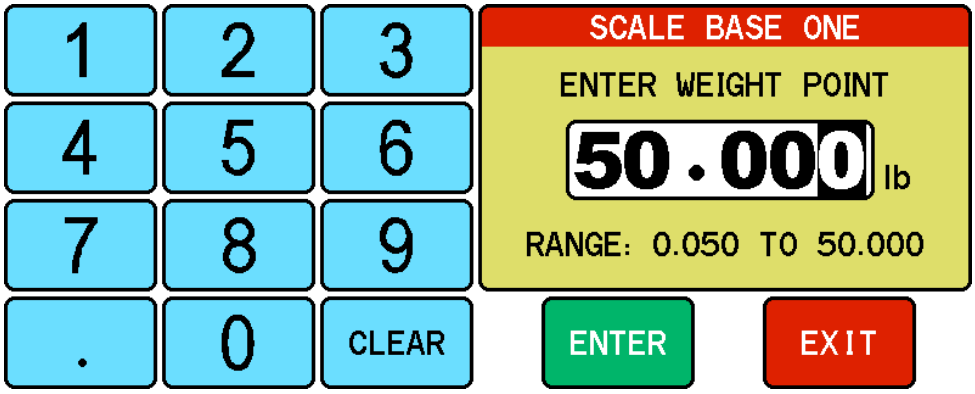
Select the SET CAL POINT and key in the calibration weigh value (25 lb. in this example)



Place a known calibration weight on the scale to perform span calibration point 2. In this example a 50 lb. weight is used.

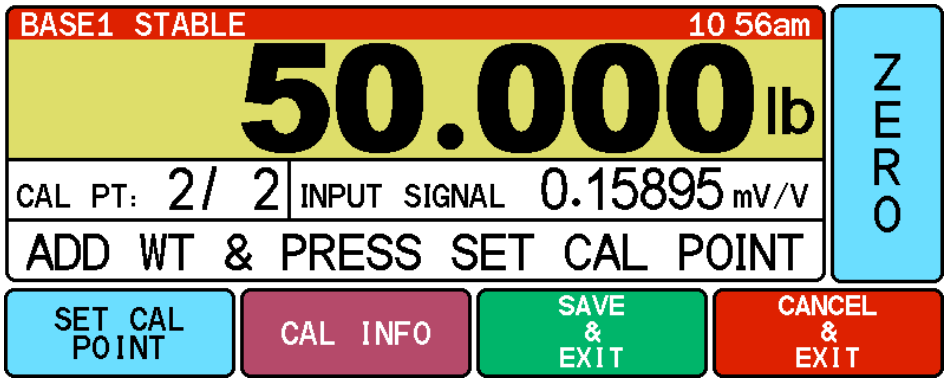


Select the SET CAL POINT and key in the calibration weigh value (50 lb. in this example)



Repeat as needed for up to 10 span calibration points.

At any point in the calibration process all calibration points can be viewed with mV/V and weights used by selecting CAL INFO



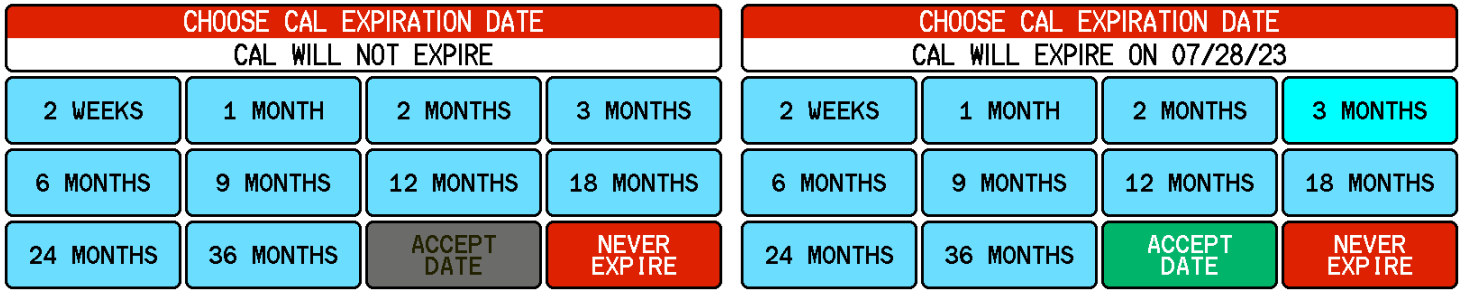
POINT	mV/V	lb
DEAD-ZERO	-0.00058	0.000
1	0.07782	25.000
2	0.15866	50.000
3	—	—
4	—	—
5	—	—
6	—	—
7	—	—
8	—	—
9	—	—
10	—	—

SCALE BASE1 CAL POINTS LIST

EXIT

When Calibration is complete select SAVE & EXIT to save

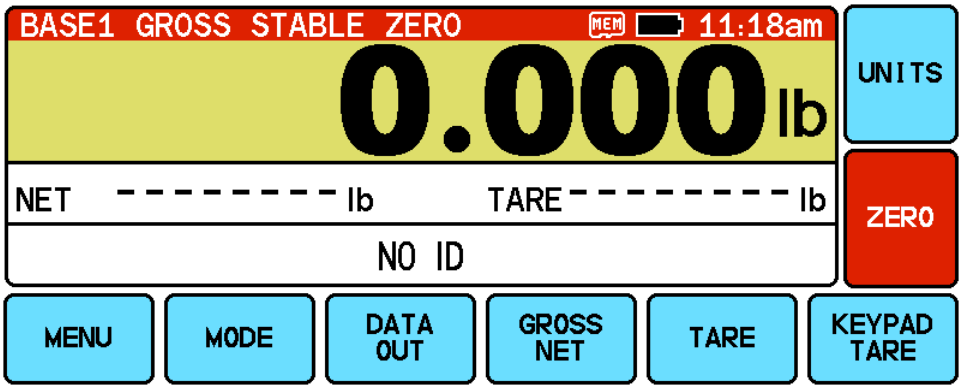
When Zero and Span calibration points are complete the calibration expiration settings appear. Select the calibration expiration date and ACCEPT DATE or NEVER to return to main menu.



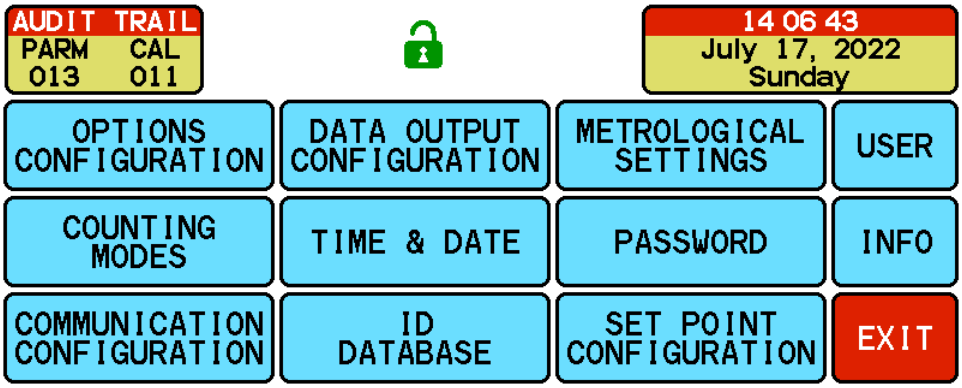
Configuration of Counting Modes

From any of the main operating screens:

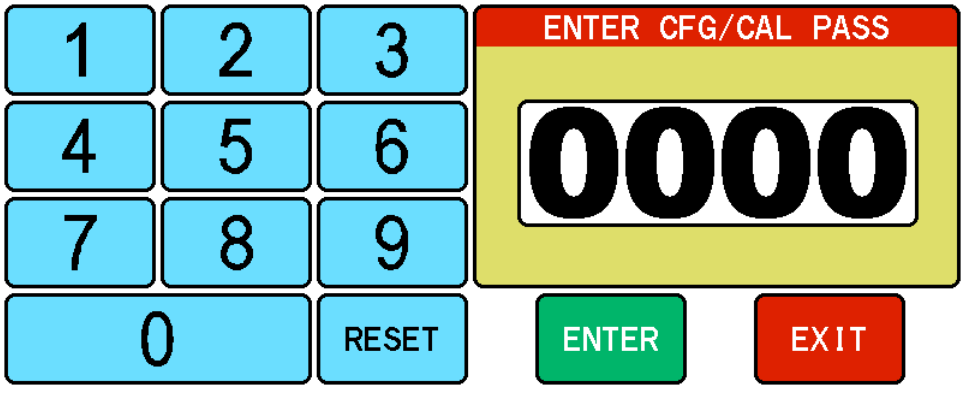
Select the MENU button



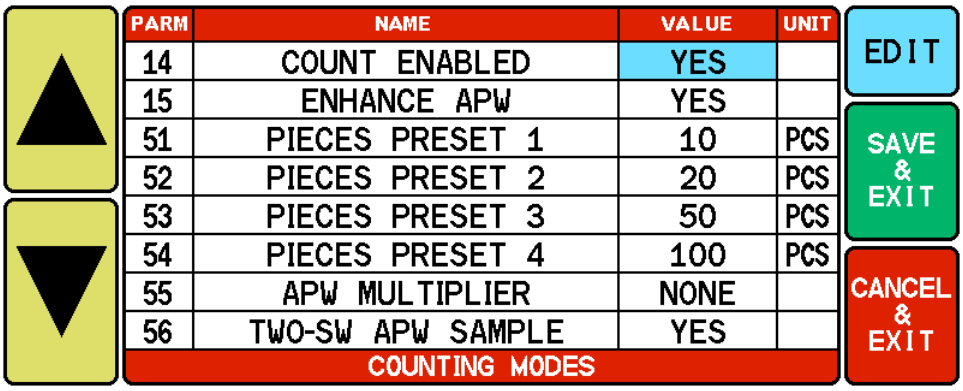
In the main menu select the COUNTING MODES



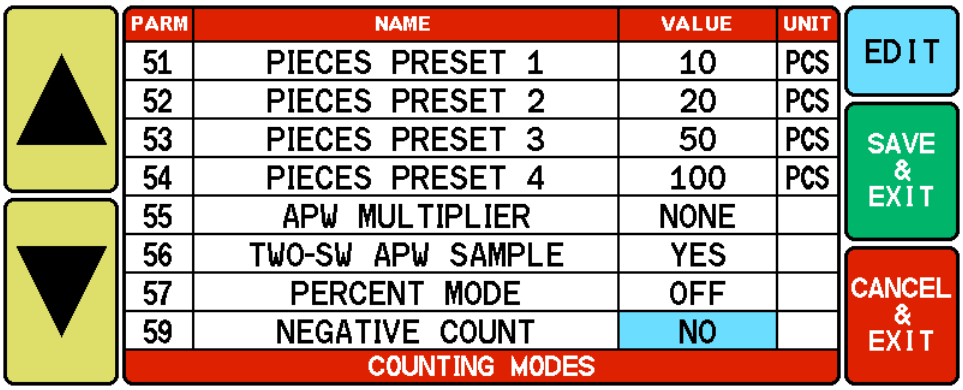
Enter Password if prompted. Default password in 0000



This will open the counting modes configuration menu. Visible on page 1



Use the DOWN arrow keys to scroll down for the settings visible on page 2:



To enter and/or change a setting use the UP/DOWN arrow keys to scroll up or down to setting and select the Blue EDIT button.

Selecting the Green SAVE & EXIT button will save and exit, Red CANCEL & EXIT will exit without saving

Settings

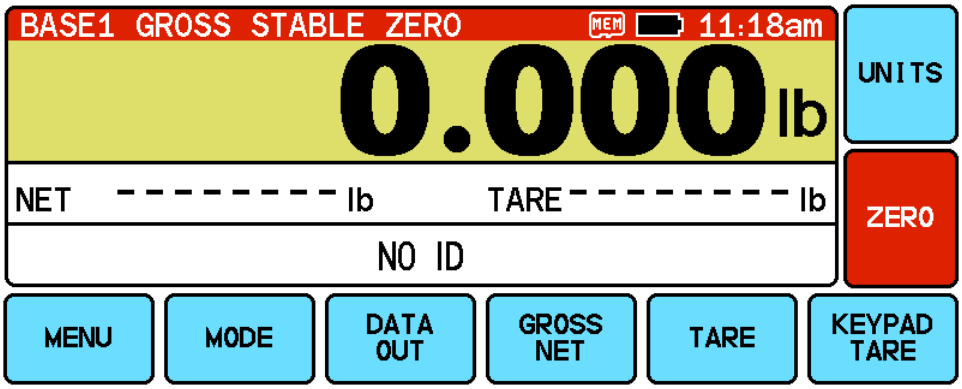
Counting Modes Configuration Menu:

PARAMETER (PARM)	NAME	VALUE/SELECTIONS	UNIT
14	COUNT ENABLED	• Turn the Counting function ON or OFF. • Select the EDIT button to cycle through available selections.	
15	ENHANCE APW	• Turns ON or OFF the Auto Piece Weight Update function • Select the EDIT button to cycle through available selections.	
15.1 Only Available With Super Precision Option	ENHANCED MANUAL APW	• Turns ON or OFF the Auto Piece Weight Update function for manually entered Piece Weights • Select the EDIT button to cycle through available selections.	
15.2 Only Available With Super Precision Option	ENHANCED APW RANGE	• Set the range as a % of capacity that Auto Piece Weight Update will function • Select EDIT and Key in the range as a % of Capacity	
15.3 Only Available With Super Precision Option	APW ACQUISITION TIME	• Set the number of seconds for piece weight calculation when performing a count sample • Select the EDIT Button to cycle through AUTO, 2 Seconds and 3 Seconds	
51 – 54	PIECES PRESET 1-4	• Edit preset sample sizes • Select EDIT and enter Scale Capacity in Primary Units, 1 – 999,999	PCS
55	APW Multiplier	• Turn ON or Off and select piece weight Multiplier • Select EDIT and scroll through NONE X100 or X1000	
56	TWO-SW APW SAMPLE	• ENABLE or DISABLE two step counting. When NO one step counting is enable • Select EDIT and scroll through NO or YES	
57	PERCENT MODE	• Enable % of accuracy, % of error or disable display of sample accuracy or error • Select EDIT and scroll through OFF, ERROR or ACCURACY	
59	NEGATIVE COUNT	• ENABLE or DISABLE Negative Counting • Select EDIT and scroll through YES or NO	

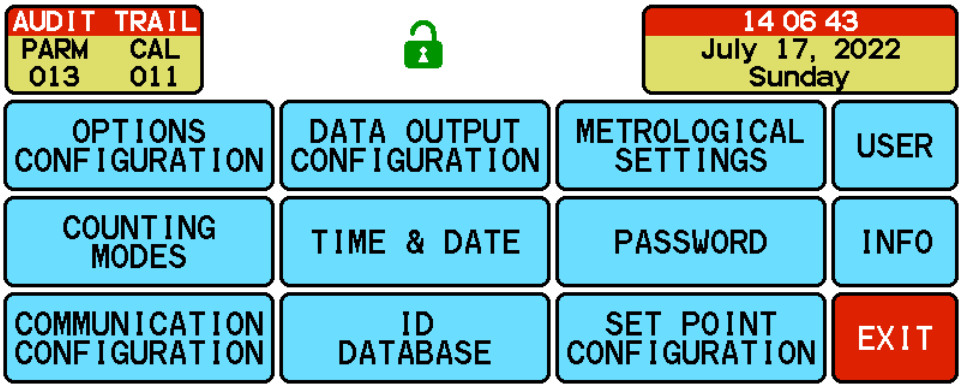
Configuration of ID Database

From any of the main operating screens:

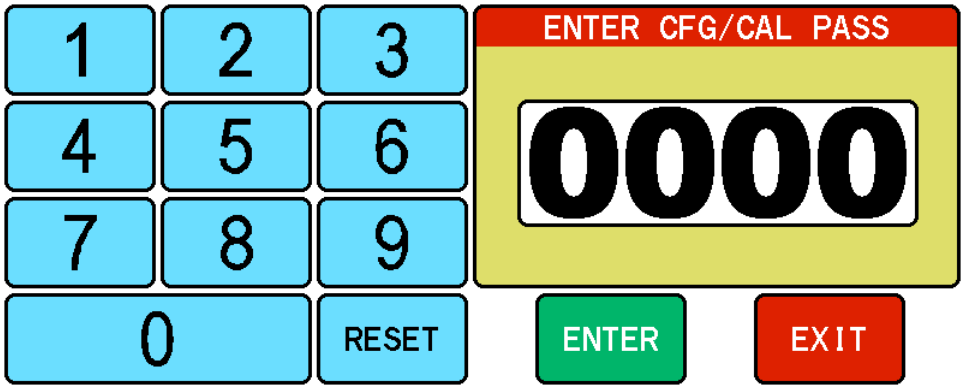
Select the MENU button



In the main menu select ID DATABASE



Enter Password if prompted. Default password in 0000



This will open the weigh configuration menu. Default settings are shown below:

Visible on page 1 & 2

PARM	NAME	VALUE
16	APW DATABASE	OFF
16.7	CHECKWEIGH DATABASE	OFF
16.5	TARE WEIGHT DATABASE	OFF
190	ID TYPE	ALPHA-NUMERIC
200	DESCRIPTION	ON
210	CUSTOM DATA FIELD 1	ALPHA-NUMERIC
211	CDF 1 LABEL	
220	CUSTOM DATA FIELD 2	ALPHA-NUMERIC

ID & DATABASE

EDIT | SAVE & EXIT | CANCEL & EXIT

PARM	NAME	VALUE
190	ID TYPE	ALPHA-NUMERIC
200	DESCRIPTION	ON
210	CUSTOM DATA FIELD 1	ALPHA-NUMERIC
211	CDF 1 LABEL	
220	CUSTOM DATA FIELD 2	ALPHA-NUMERIC
221	CDF 2 LABEL	
230	CUSTOM DATA FIELD 3	ALPHA-NUMERIC
231	CDF 3 LABEL	

ID & DATABASE

EDIT | SAVE & EXIT | CANCEL & EXIT

When the APW, Check Weigh and/or Checkweigh Databases are enabled the settings are shown below:

PARM	NAME	VALUE
16	APW DATABASE	ON
16.7	SET POINT DATABASE	ON
16.4	TARE WEIGHT DATABASE	ON
16.1	APW ACQUIRE	SCALE
190	DATABASE ID TYPE	ALPHA-NUMERIC
200	DESCRIPTION	ON
210	CUSTOM DATA FIELD 1	ALPHA-NUMERIC
211	CDF 1 LABEL	

ID & DATABASE

EDIT | SAVE & EXIT | CANCEL & EXIT

PARM	NAME	VALUE
210	CUSTOM DATA FIELD 1	ALPHA-NUMERIC
211	CDF 1 LABEL	
220	CUSTOM DATA FIELD 2	ALPHA-NUMERIC
221	CDF 2 LABEL	
230	CUSTOM DATA FIELD 3	ALPHA-NUMERIC
231	CDF 3 LABEL	
290	PASSWORD PROTECT EDIT	YES
291	RECORD EXPIRE	30 DAYS

ID & DATABASE

EDIT | SAVE & EXIT | CANCEL & EXIT

To enter and/or change a setting use the UP/DOWN arrow keys to scroll up or down to setting and select the Blue EDIT button.

Configuration of ID Database Menu

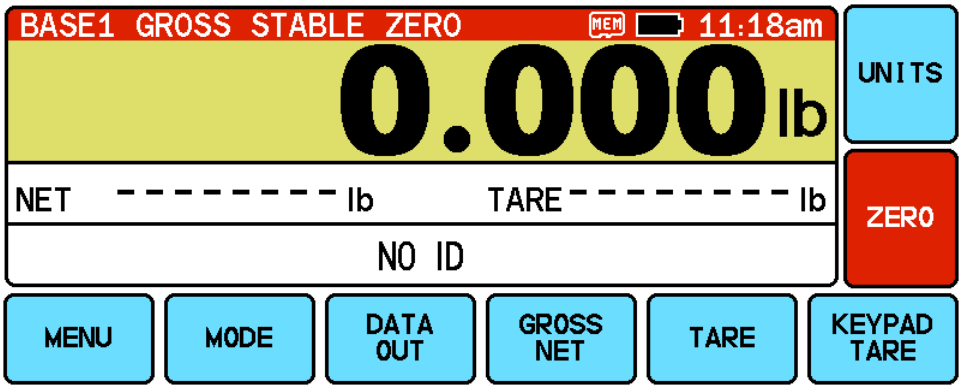
PARAMETER (PARM)	NAME	VALUE/SELECTIONS
16	APW DATABASE	• Enable or disable the PIECE WEIGHT storage in the DB • Selections are OFF or ON • Select the EDIT button to cycle through available selections.
16.7	SET POINT DATABASE	• Enable or Disable the SET POINT (CHECKWEIGH) values storage in DB • Selections are OFF or ON • Select the EDIT button to cycle through available selections.

PARAMETER (PARM)	NAME	VALUE/SELECTIONS
16.4 16.5	TARE WEIGHT DATABASE	• Enable or Disable the TARE WEIGHT values storage in DB • Selections are OFF or ON • Select the EDIT button to cycle through available selections.
16.1	APW AQUIRE	• When APW database is enabled piece weight can be acquired by: o SCALE – Using the piece weight sample process o MANUAL – Entering a piece weight manually
190	ID DATABASE TYPE	• Sets up ALPHA-NUMERIC or NUMERIC only for DB • Selections are ALPHA-NUMERIC or NUMERIC • Select the EDIT button to cycle through available selections.
200	DESCRIPTION	• Enable or disable the description field • Selections are OFF or ON • Select the EDIT button to cycle through available selections.
210 220 230	CUSTOM DATA FIELD 1 CUSTOM DATA FIELD 2 CUSTOM DATA FIELD 3	• Enable or disable custom data fields 1, 2 or 3 and select if data is NUMERIC or ALPHA-NUMERIC • Selections are OFF, ON, ALPHA-NUMERIC or NUMERIC • Select the EDIT button to cycle through available selections.
211 221 231	CDF 1 LABEL CDF 2 LABEL CDF 3 LABEL	• Enters the user defined LABEL for each of the custom data fields that are enabled. • When these fields are on the operator will be promoted to enter the values and the label will appear on the keyboard entry screen • Select the CDF X Label to edit by using the UP/DOWN arrows to highlight • Select the EDIT button and key in the label on the Keyboard
290	PASSWORD PROTECT EDIT	• Password protect entries in the database for editing o Selections are YES or NO • Select the EDIT button to cycle through available selections.
291	RECORD EXPIRE	• Scale piece weights, tare weights, check weigh or setpoint target weights expire and required to be updated after the selected time periods or NEVER • Select the EDIT button to cycle through available selections.

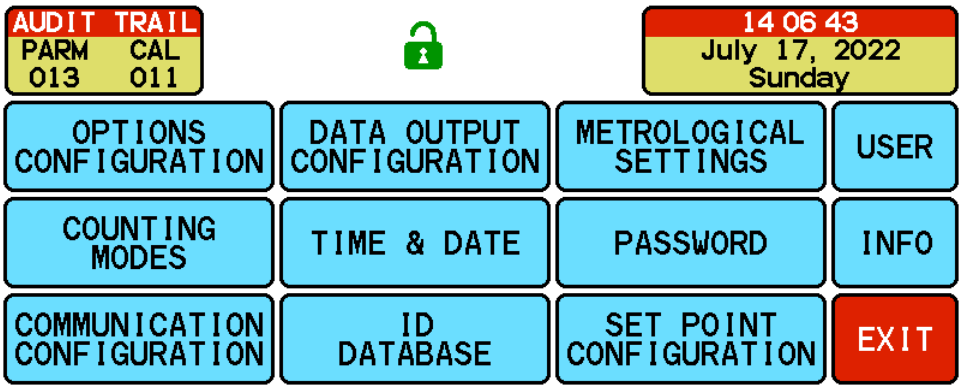
Configuration of Communication Protocols

From any of the main operating screens:

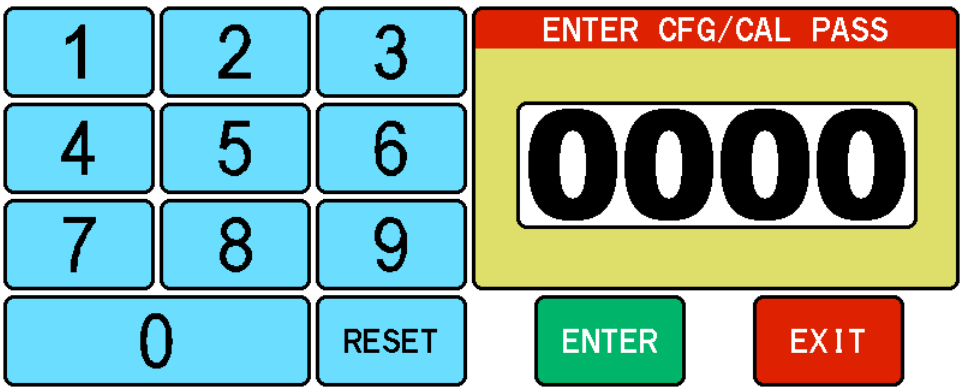
Select the MENU button



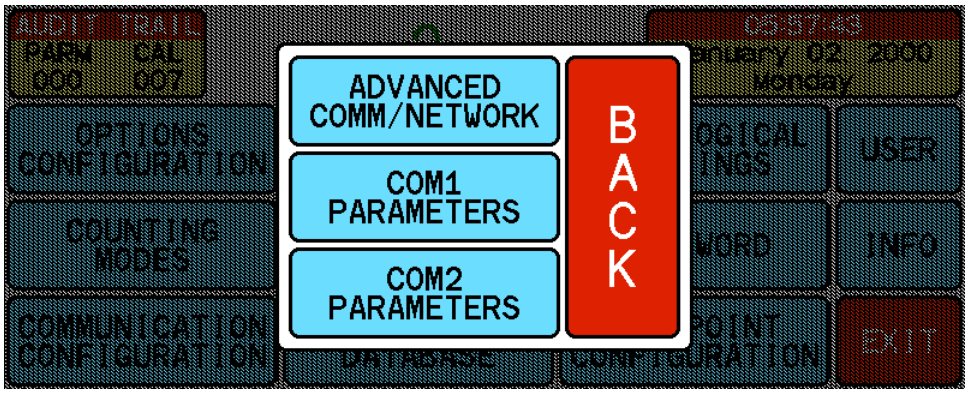
In the main menu select the COMMUNICATION CONFIGURATION



Enter Password if prompted. Default password in 0000

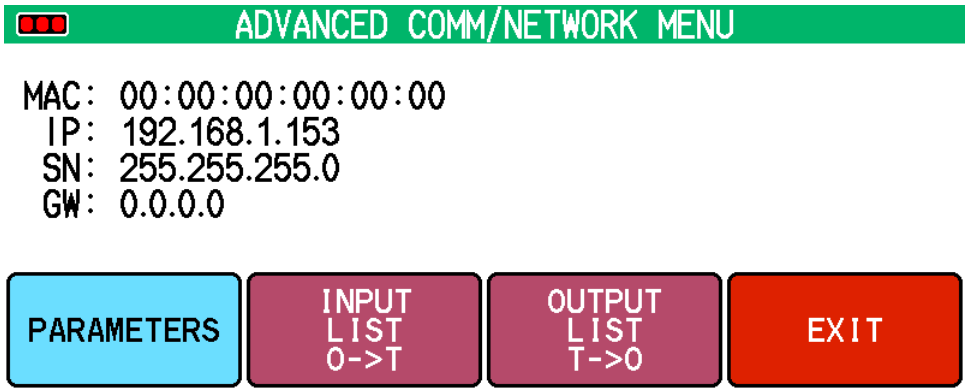


Select COM1 or COM 2

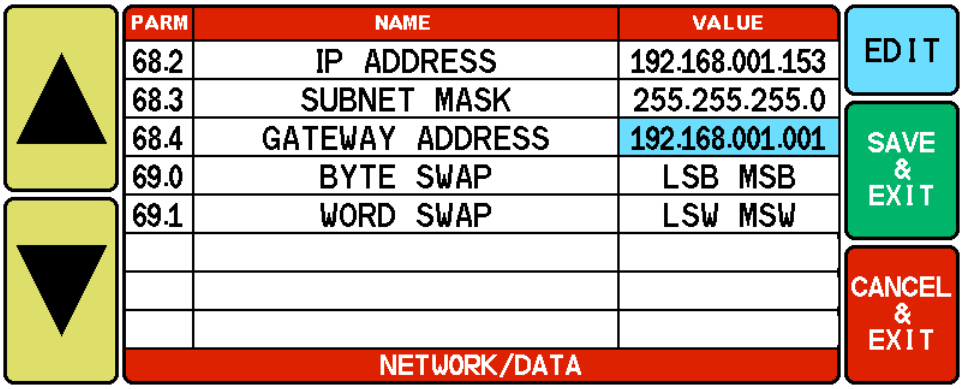


This will open the communication configuration menu for the port selected.

ADVANCED COMM/NETWORK configuration for Ethernet IP



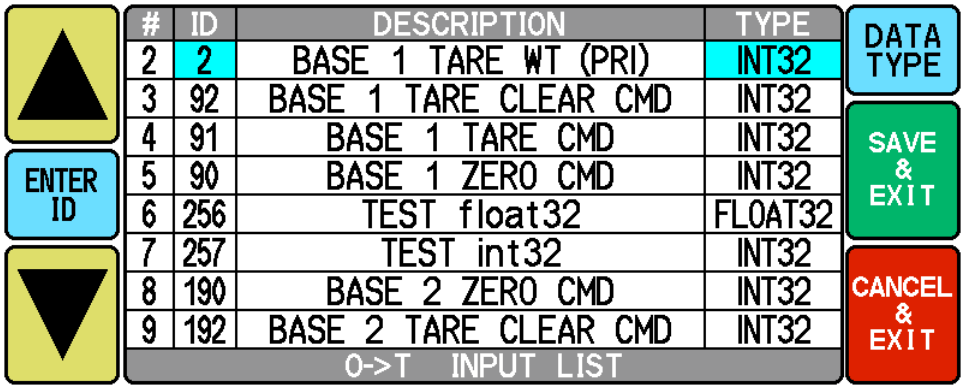
Select the PARAMETERS button and the following screen appears



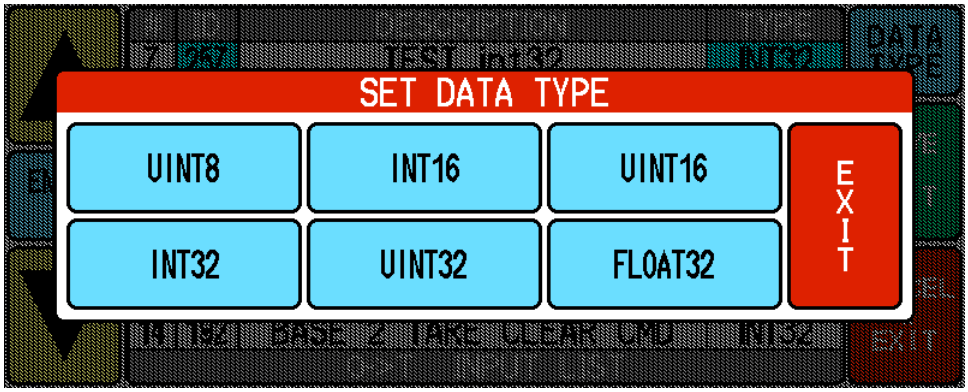
Use the DOWN arrow keys to scroll down for the settings

PARAMETER (PARM)	NAME	VALUE/SELECTIONS
68.2	IP ADDRESS	• Configure the static IP Address • Select the EDIT button enter the IP Address
68.3	SUBNET MASK	• Configure the static Subnet Mask • Select the EDIT button enter the Subnet Mask
68.4	GATEWAY ADDRESS	• Configure the static Gateway Address • Select the EDIT button enter the Gateway Address
69.0	BYTE SWAP	• Configure Byte Swap Setting • Select Edit to Change • The settings available are LSB MSB (Least significant byte/most significant byte) or MSB LSB
69.1	WORD SWAP	• Configure Word Swap Setting • Select Edit to Change • The settings available are LSW MSW (Least significant word/most significant word) or MSW LSW

Select the INPUT LIST 0->T button and the following screen appears



The 7800 Ethernet IP input command list has 17 registers that a data input command token may be assigned. Any input may be assigned a token to any register. The data type can be formatted from the list below:



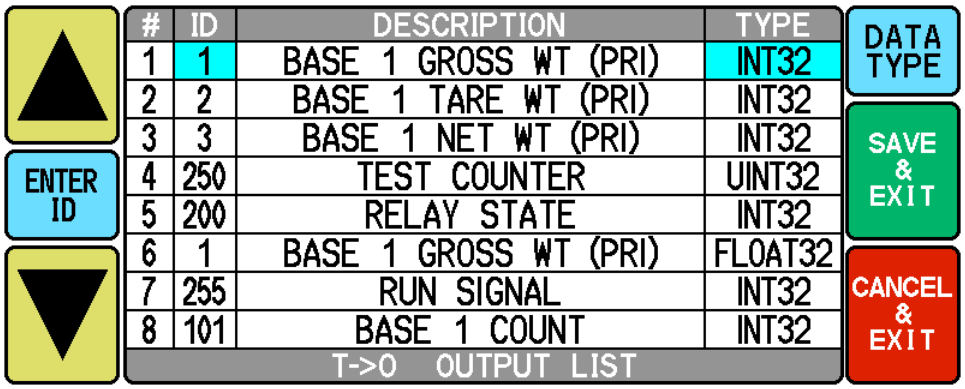
NAME	VALUE/SELECTIONS
UINT8	• Unsigned 8 bit integer
INT16	• Signed 16 bit integer
UINT16	• Unsigned 16 bit integer
INT32	• Signed 32 bit integer
UINT32	• Unsigned 32 Bit Integer
FLOAT32	• Single-precision floating-point format

The input commands available are listed below and tokens for the command may be entered in any of the 17 available registers.

ID	NAME	VALUE/SELECTIONS
0	No function/Skip	This entry is skipped
2	Tare weight (BASE1/PRI)	Tare weight, primary unit weight
12	Tare weight (BASE1/SEC)	Tare weight, secondary unit weight
90	*Zero BASE1	Send a 1 to zero the scale (once) Send a 0 normally
91	*Tare BASE1	Send a 1 to tare the scale (once) Send a 0 normally
92	*Tare BASE1 clear	Send a 1 to clear the tare. Send a 0 normally
100	APW	Average piece weight (float)
201-206	Weight Set point (1-6)	Weight set points.
211-216	Count set point (1-6)	Count set points
255	RUN SIGNAL	This value should be re-transmitted by the originator first position so the E/IP O→T communication functions. This is required for implicit communications.
256	Read/Write float 32-bit	Read/Write a float value (on the 7800) for testing.
257	Read/Write int 32-bit	Read/Write a 32-bit integer value (on the 7800) for testing.

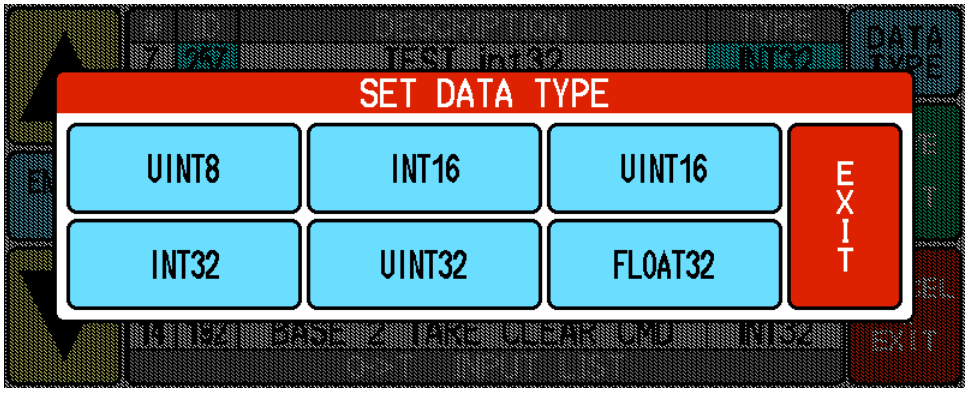
When complete select the Green SAVE & EXIT to save and exit or Red CANCEL & EXIT to exit without saving

Select the OUTPUT LIST T-0-> button and the following screen appears



#	ID	DESCRIPTION	TYPE
1	1	BASE 1 GROSS WT (PRI)	INT32
2	2	BASE 1 TARE WT (PRI)	INT32
3	3	BASE 1 NET WT (PRI)	INT32
4	250	TEST COUNTER	UINT32
5	200	RELAY STATE	INT32
6	1	BASE 1 GROSS WT (PRI)	FLOAT32
7	255	RUN SIGNAL	INT32
8	101	BASE 1 COUNT	INT32

The 7800 Ethernet IP output command list has 17 registers that a data input command token may be assigned. Any input may be assigned a token to any register. The data type can be formatted from the list below:



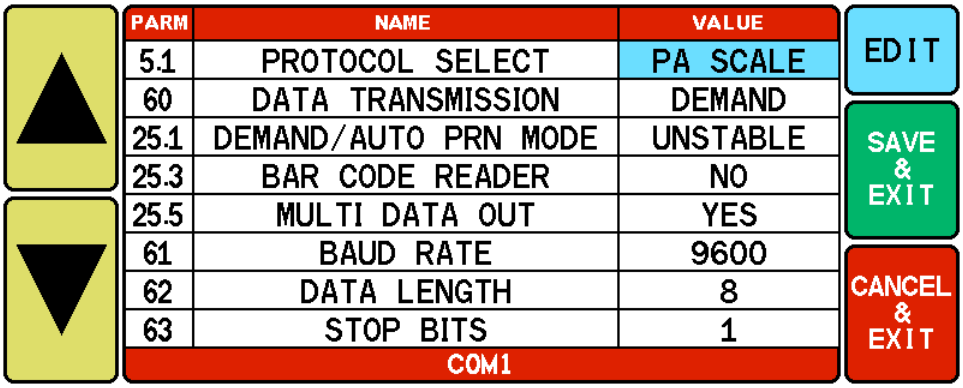
NAME	VALUE/SELECTIONS
UINT8	• Unsigned 8 bit integer
INT16	• Signed 16 bit integer
UINT16	• Unsigned 16 bit integer
INT32	• Signed 32 bit integer
UINT32	• Unsigned 32 Bit Integer
FLOAT32	• Single-precision floating-point format

The output commands available are listed below and tokens for the command may be entered in any of the 17 available registers.

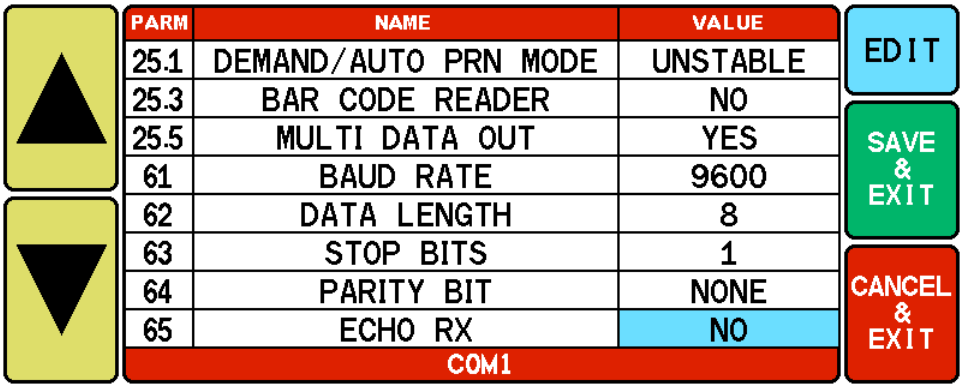
ID	NAME	VALUE/SELECTIONS
0	No function/Skip	This entry is skipped
1	Gross weight (BASE1/PRI)	Gross weight, primary unit weight
2	Tare weight (BASE1/PRI)	Tare weight, primary unit weight
3	Net weight (BASE1/PRI)	Net weight, primary unit weight
11	Gross weight (BASE1/SEC)	Gross weight, secondary unit weight
12	Tare weight (BASE1/SEC)	Tare weight, secondary unit weight
13	Net weight (BASE1/SEC)	Net weight, secondary unit weight
100	APW	Average piece weight (float)
101	COUNT (BASE1)	Count for base 1
102	COUNT (BASE2)	Count for base 2
200	RELAYS	Bits 0 thru 3 represent the DIO relay state
201-206	Weight Set point (1-6)	Weight set points.
210	INPUTS	Bits 0 thru 3 represent the DIO/DIN input state
211-216	Count set point (1-6)	Count set points
251	Zero	Filler for the ID data (for debug only)
252	Send 0x12345678	Test value in hexadecimal for originator testing
253	Send 0x55555555	Test value in hexadecimal for originator testing
254	Send 12345678	Test value in decimal for originator testing
255	RUN SIGNAL	This value should be re-transmitted by the originator first position so the E/IP O→T communication functions. This is required for implicit communications.
256	Read/Write float 32-bit	Read/Write a float value (on the 7800) for testing.
257	Read/Write int 32-bit	Read/Write a 32-bit integer value (on the 7800) for testing.

When complete select the Green SAVE & EXIT to save and exit or Red CANCEL & EXIT to exit without saving

COM 1 Parameters



Use the DOWN arrow keys to scroll down for the settings visible on page 2:



To enter and/or change a setting use the UP/DOWN arrow keys to scroll up or down to setting and select the Blue EDIT button.

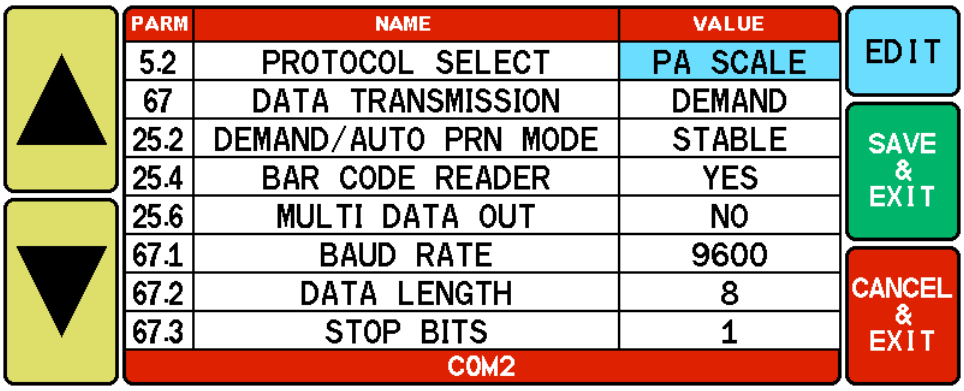
Selecting the Green SAVE & EXIT button will save and exit, Red CANCEL & EXIT will exit without saving

COM 1 Communication Configuration Menu

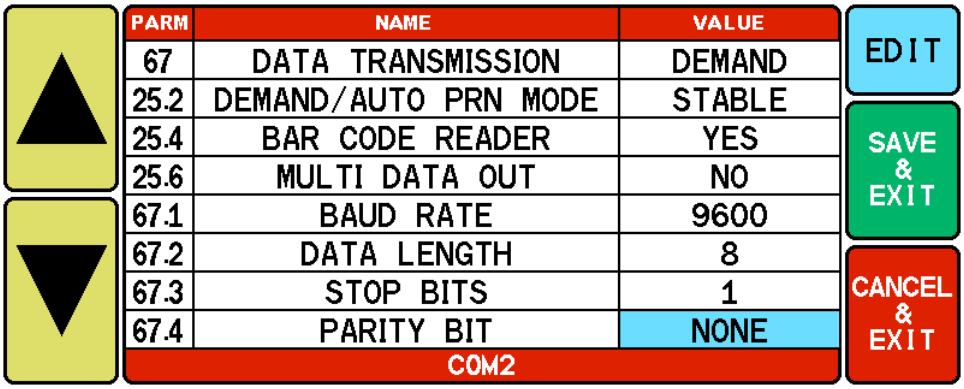
PARAMETER (PARM)	NAME	VALUE/SELECTIONS
5.1	PROTOCOL SELECT	• Select the communication protocol • Available: PA SCALE, UPS, FEDEX 1200, FEDEX 9600, CONDEC, TOLEDO or NCI. See appendix below for details • Select the EDIT button to cycle through available selections.
60	DATA TRANSMISSION	• Select how/when data is transmitted. Available: o DEMAND (When Data Out button is pressed, or Request for Data command Received) o CONTINOUS (Data is constantly being outputted) o TOGGLE (Data is constantly outputted until Data Out button is pressed. Resumes when Data Out is pressed again) o OFF (Data output is disabled) • Select the EDIT button to cycle through available selections.

PARAMETER (PARM)	NAME	VALUE/SELECTIONS
25.1	DEMAND/AUTO PRN MODE	• Select the scale condition for how/when data is transmitted. Available: o UNSTABLE (Output when requested even if scale not stable) o NTEP (Output per NTEP Legal for Trade specification) o AUTO NRTZ (Output when scale moves 20+ Divisions +/- o ONCE (Output one time then must return to zero before another output) o LST STABLE (Output last stable non zero weight. Must return to zero before next output) o STABLE (Output only when scale in stable condition) o FIRST (Output first stable non-zero weight. Must return to zero before next output) • Select the EDIT button to cycle through available selections.
25.3	BAR CODE READER	
25.5	MULTI DATA OUT	• Enable the multiple data output assigned to a specific data out button. **Up to 4 may be enabled. Setup of these data outputs are found in the DATA OUTPUT CONFIGURATION menu section.** • Select Edit then YES or NO
61	BAUD RATE	• Select the baud rate • Available: 300, 600, 1200, 2400, 4800, 9600, 19200 & 38400. • Select the EDIT button to cycle through available selections.
62	DATA LENGTH	• Select the data length • Available: 7 or 8 • Select the EDIT button to cycle through available selections.
63	STOP BITS	• Select the stop bits • Available: 1 or 2 • Select the EDIT button to cycle through available selections.
64	PARITY BIT	• Select the parity bit • Available: NONE, ODD or EVEN • Select the EDIT button to cycle through available selections.
65	ECHO RX	• Enable or disable echo back of received data transmission • Available: NO or YES • Select the EDIT button to cycle through available selections.

COM 2 Communication Configuration Menu



Use the DOWN arrow keys to scroll down for the settings visible on page 2:



PARAMETER (PARM)	NAME	VALUE/SELECTIONS
5.2	PROTOCOL SELECT	• Select the communication protocol • Available: PA SCALE, UPS, FEDEX 1200, FEDEX 9600, CONDEC, TOLEDO, NCI, BARCODE. See below for detailed information on these settings • Select the EDIT button to cycle through available selections.
67	DATA TRANSMISSION	• Select how/when data is transmitted. Available: o DEMAND (When Data Out button is pressed, or Request for Data command Received) o CONTINOUS (Data is constantly being outputted) o TOGGLE (Data is constantly outputted until Data Out button is pressed. Resumes when Data Out is pressed again) o OFF (Data output is disabled) • Select the EDIT button to cycle through available selections.

PARAMETER (PARM)	NAME	VALUE/SELECTIONS
25.2	DEMAND/AUTO PRN MODE	• Select the scale condition for how/when data is transmitted. Available: o UNSTABLE (Output when requested even if scale not stable) o NTEP (Output per NTEP Legal for Trade specification) o AUTO NRTZ (Output when scale moves 20+ Divisions +/- o ONCE (Output one time then must return to zero before another output) o LST STABLE (Output last stable non zero weight. Must return to zero before next output) o STABLE (Output only when scale in stable condition) o FIRST (Output first stable non-zero weight. Must return to zero before next output) • Select the EDIT button to cycle through available selections.
25.4	BAR CODE READER	• Enable/Disable barcode scanner interface • Select NO or YES • Select the EDIT button to cycle through available selections. • **NOTE: Selecting YES will allow scanning of barcode data into an open keyboard same as if manually typed in. Selecting NO will require the PA Scale remote command embedded in the barcode in order to scan in data.**
25.6	MULTI DATA OUT	• Enable the multiple data output assigned to a specific data out button. **Up to 4 may be enabled. Setup of these data outputs are found in the DATA OUTPUT CONFIGURATION menu section.** • Select Edit then YES or NO
67.2	DATA LENGTH	• Select the data length • Available: 7 or 8 • Select the EDIT button to cycle through available selections.
67.3	STOP BITS	• Select the stop bits • Available: 1 or 2 • Select the EDIT button to cycle through available selections.
67.4	PARITY BIT	• Select the parity bit • Available: NONE, ODD or EVEN • Select the EDIT button to cycle through available selections.

7800 communication protocols details.

UPS WorldShip Emulation

Data 18 bytes, six data with decimal and leading zero blanking

Command	Description	Response Format
(cr) Carriage Return	Request weight on scale	(sp)(sp)0.00(sp)lb.(sp)GR(sp)(sp)(cr)(lf)(etx) Example, with 10.55 lbs. on scale: (sp)10.55(sp)lb.(sp)GR(sp)(sp)(cr)(lf)(etx)
(cr) Carriage Return	When in Overload/Underload condition	(cr)(etx)
(cr) Carriage Return	When scale in motion	(sp)(sp)0.00(sp)lb.(sp)gr(sp)(sp)(cr)(lf)(etx) "GR" becomes "gr"
Minus sign: included in data as "-0.10", in place closest blank position. Default settings: 9600 - 7 - odd - 2		

FedEx Emulation (FED12 & FED96)

Data 14 bytes, including start (LF), space, six data (five plus decimal), LB/KG (upper case), <CR>, two status characters, and stop (ETX).

Command	Description	Response Format
W(cr) Capital "W"	Request weight on scale	(lf)(sp)000.00(Unit of Measure) (cr)(Status Character)(etx) Example, with 10.55 lbs. on scale: (lf)(sp)10.55LB(cr)00(etx)
ASCII Status Characters		Description
00		Normal weight - <30><30>
1X		Motion - <31><30>
2X		Center of Zero - <32><30>
3X		Not Center of Zero - <33><30>
X1		Under load - <30><31>
X2		Over load - <30><32>
X3		Motion/Over load - <31><32>
Data sent during any error		<000.00>
Default settings FED12: 1200 - 8 - N – 1, Default settings FED96: 9600 - 7 - E - 1		

Condec Emulation

Emulates Condec and Rice Lake data output and communication protocols for interface with RLWS remote scoreboard displays

Data Output	<STX> - Start of text <P> - Polarity <W7.> - 7-digit weight, floating decimal, leading spaces <U> - Units, upper case L or K <M> - Mode, upper case G or N <S> - Status, upper case <SP> - OK, M – motion, O – overload, Z – zero, I – invalid <CR><LF> - carriage return and line feed

Toledo Emulation:

Toledo Protocol Host Commands Following is a listing of host commands and scale responses. ASCII Start of Text character:(stx)<HEX 02>. ASCII Carriage Return: (cr)<HEX 0D>.

Command	Description	Response Format
W*	Send normal resolution weight data	(stx)XXXX.X(cr) for 300 X 0.1 lbs. capacity (stx)XXX.XX(cr) for 150 X 0.05 kg. capacity (stx)?(statusbyte)(cr) if current weight not valid
H	Send high resolution weight data	(stx)XXXX.XX(cr) for 300 X 0.1 lbs. capacity (stx)XXX.XXX(cr) for 150 X 0.05 kg. capacity (stx)?(statusbyte)(cr) if current weight not valid
Z	Zero the scale unless in motion or out of range under or over capacity	(stx)?(statusbyte)(cr)

Note:* A status byte message (STX)?(status byte)(CR) is sent in place of the requested weight data field if the scale is in motion, under zero, or over capacity when the weight data request is sent. The question mark "?" indicates that the following data is a non-ASCII status byte after than weight data. See below for status:

Bit No:	Description	Bit No:	Description
6	Always 1	5	Always 1
4	1 = Center of Zero 0 = Not at center of Zero	3	1 = Outside Zero capture range 0 = Within range
2	1 = Under Zero 0 = Within weighing range	1	1 = Over capacity 0 = Within weighing range
0	1 = Scale in motion 0 = Stable weight data		

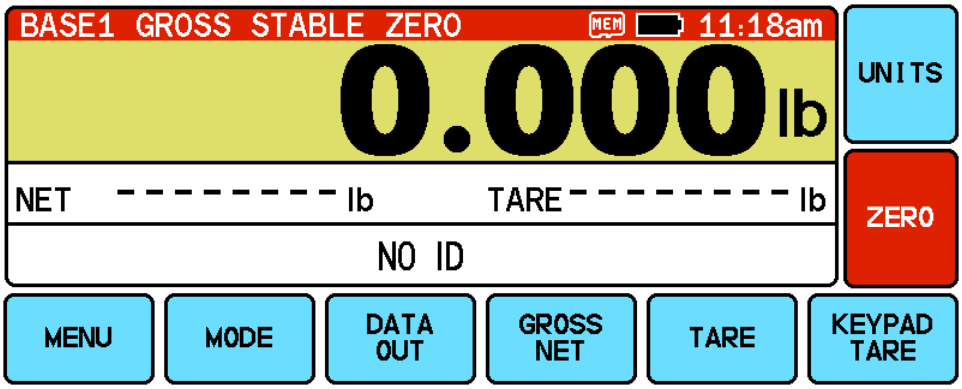
NCI Emulation:

Command	Description	Response Format
W	Sends weight and three-character status information. Note: lb.-oz is transmitted as oz only.	(lf)XXXXXXX(Unit of Measure)(cr)(lf)(Status Character)(cr)(etx). Example: 10.135 lbs. on scale transmits: (lf)(sp)10.135lb(cr)(lf)0p0(cr)(etx) If count is displayed, it is transmitted as: (lf)xxxxxxxct(cr)(lf)hhh(cr)(etx)
Z	Zero the scale unless in motion or out of range under or over capacity and sends two-character status	(lf)(status character)(cr)(etx) Example if successful scale transmits: (lf)00(cr)(etx)
T	Tares the scale unless in motion or out of range under or over capacity and sends two-character status	(lf)(status character)(cr)(etx) Example if successful scale transmits: (lf)00(cr)(etx)

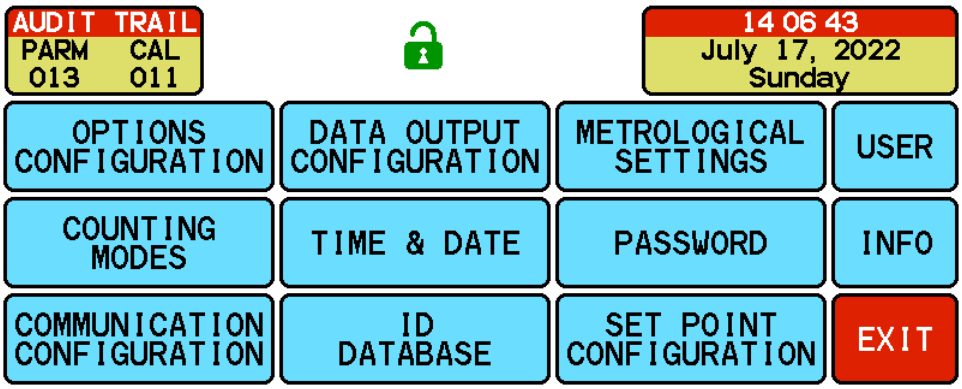
Configuration of Data Output

From any of the main operating screens:

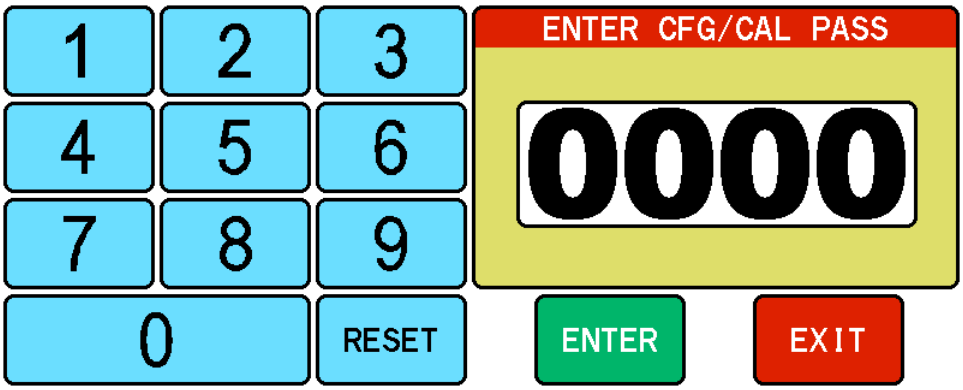
Select the MENU button



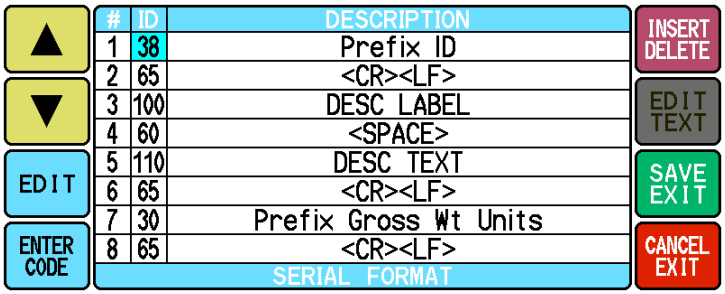
In the main menu select the DATA OUTPUT CONFIGURATION

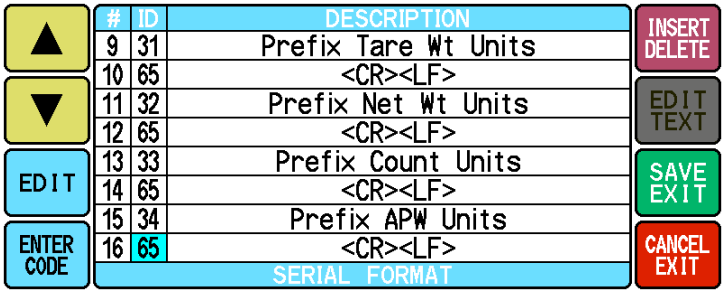


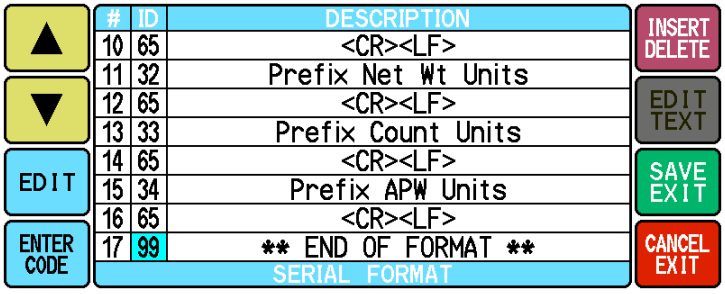
Enter Password if prompted. Default password in 0000



The default DATA OUTPUT is MULTI DATA OUT set to OFF on both Com Ports and below shows the factory default data output:







<u>This will output:</u>

ID<ID Data><CR><LF>

DESCRIPTION<SPACE><Description Data><CR><LF>

GROSS<SPACE><Gross Weight Data><SPACE><UOM><<CR><LF>

TARE<SPACE><Tare Weight Data><SPACE><UOM><CR><LF>

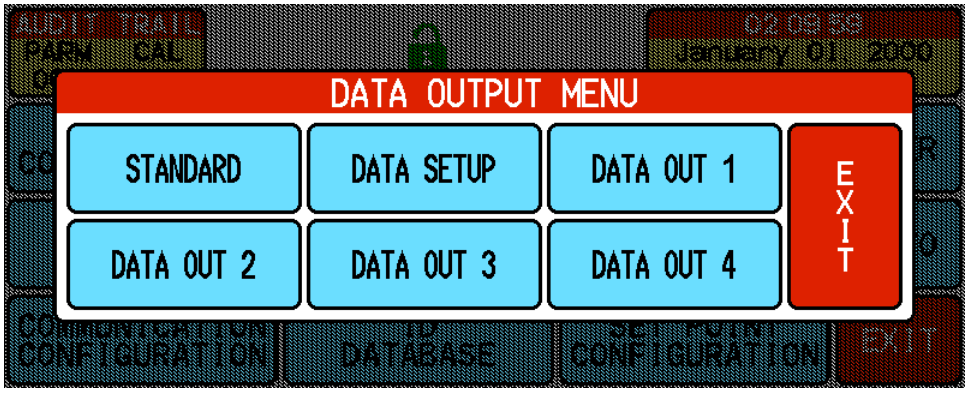
NET<SPACE><Net Weight Data><SPACE><UOM><<CR><LF>

COUNT<SPACE><Count Data><SPACE><PCS><CR><LF>

PIECE WEIGHT<SPACE><Piece Weight Data><SPACE><UOM><<CR><LF>

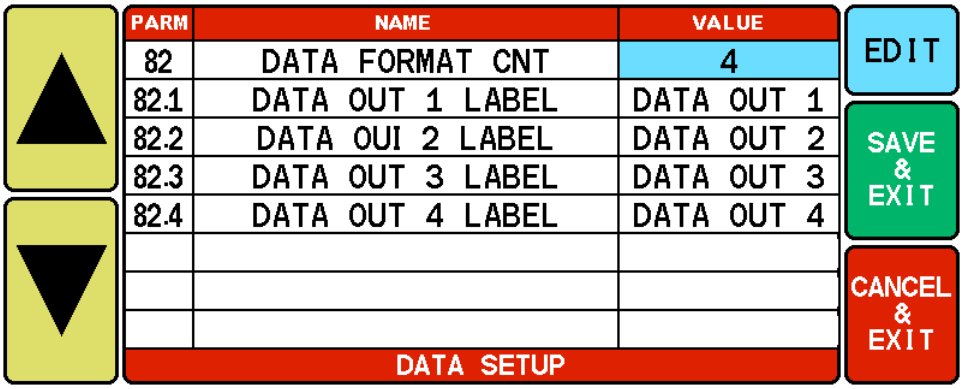
End Of Data

When MULTI DATA OUT is set to ON entering the DATA OUTPUT CONFIG. Opens The Menu Below:



STANDARD - Setup up a standard data output, IE: not a Multi Data Out, see the Data Output Set Up Functions section on following pages.

DATA SETUP - Programs the label for the Multi Data Out button that will appear from any of the operating mode windows when the DATA OUT button is selected:

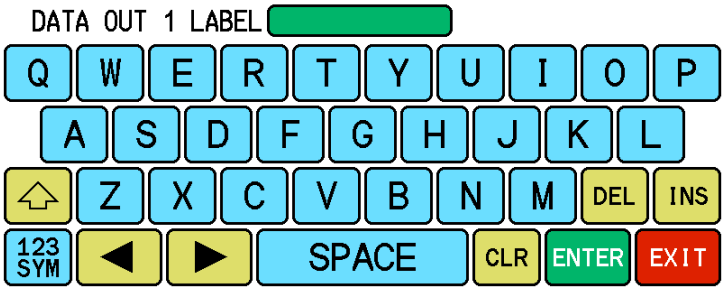


PARAMETER (PARM)	NAME	VALUE/SELECTIONS
82	DATA FORMAT CNT	• Number of Data Outputs • Select 2, 3 or 4
82.1	DATA OUT 1 LABEL	• Program the data out label for the button that appears from any of the operating mode windows when the DATA OUT button is selected
82.2	DATA OUT 2 LABEL	• Program the data out label for the button that appears from any of the operating mode windows when the DATA OUT button is selected
82.3	DATA OUT 3 LABEL	• Program the data out label for the button that appears from any of the operating mode windows when the DATA OUT button is selected
82.4	DATA OUT 4 LABEL	• Program the data out label for the button that appears from any of the operating mode windows when the DATA OUT button is selected

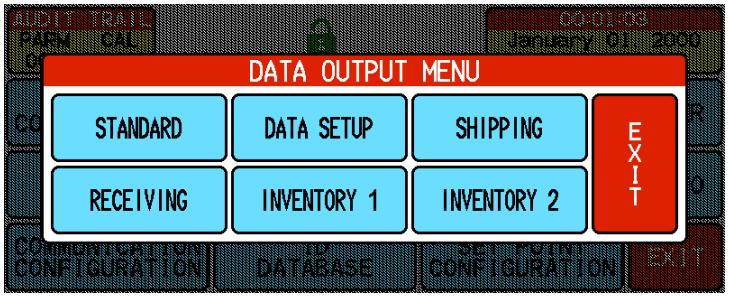
Use the UP/DOWN arrow keys to scroll to a setting and select EDIT to change the parameter or enter the label.

As example:

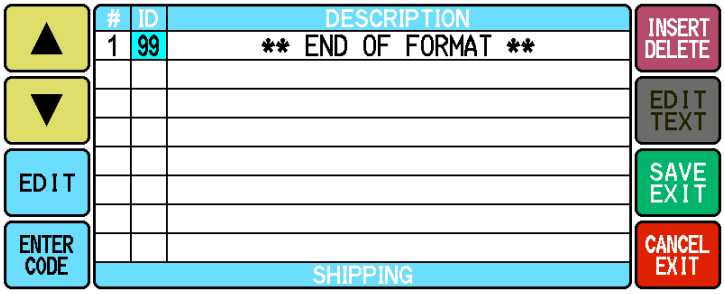
- Set the DATA FORMAT CNT to 4
- Set DATA OUT 1 LABEL to “SHIPPING”
- Set DATA OUT 2 LABEL to “RECEIVING”
- Set DATA OUT 3 LABEL to “INVENTORY 1”
- Set DATA OUT 4 LABEL to “INVENTORY 2”



When SAVE & EXIT is selected this Window appears:

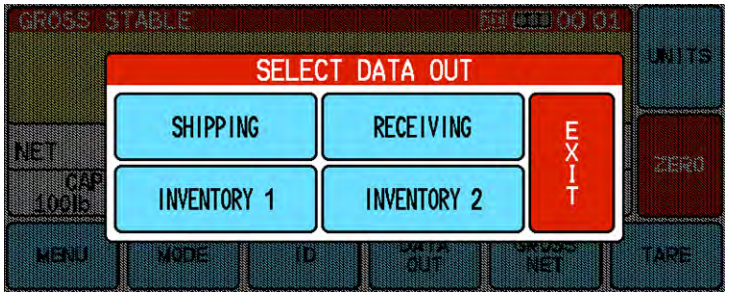


To setup and program the individual Multi Data Out, select the data out button and the data output menu appears as shown below for each of the above data outputs:

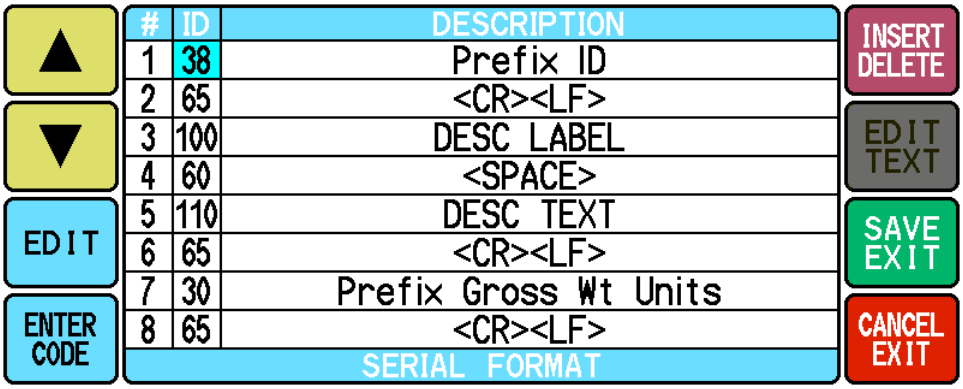


Setup and program the data output for this data out button using the Data Output Set Up Functions section on following pages

When in any of the Operating modes when the DATA OUT button is pressed this Window Appears:



Data Output Codes and Functions Menu



UP/DOWN ARROWS Select to scroll Up or Down

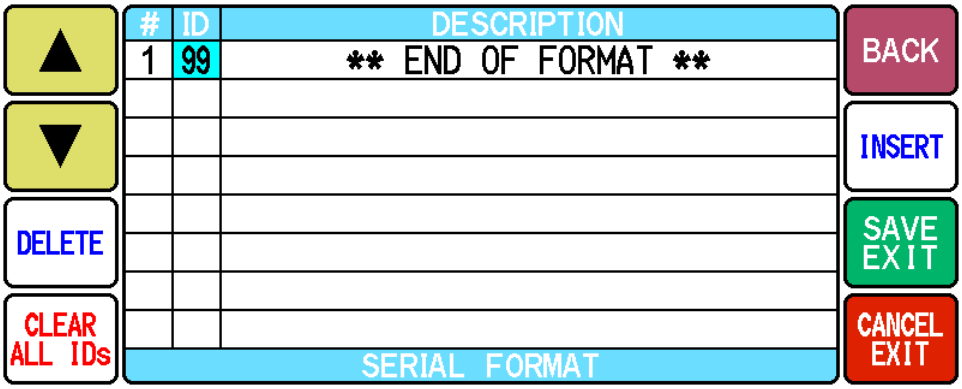
EDIT add or edit the data output slot highlighted from the list of available data output codes/descriptions

ENTER CODE add or edit the data output slot using the numeric code value

SAVE EXIT Save and return to main menu

CANCEL EXIT Return to main menu without saving

INSERT DELETE go to sub menu below



UP/DOWN ARROWS Select to scroll Up or Down

DELETE Deletes the code in the highlighted data output slot

CLEAR ALL IDs Press and hold for 3 seconds to delete ALL data output slots

BACK Return to main Data Output Configuration menu

INSERT Add a new data output slot in the position highlighted or scrolled to

SAVE EXIT Save and return to main Data Output Configuration menu

CANCEL EXIT Return to main Data Output Configuration menu without saving

Data Output Codes:

ID	DESCRIPTION
2	TIME: hh:mm:ss ap
3	DATE: mm/dd/yy
4	UNIT
5	"Gross" Prefix
6	"Tare" Prefix
7	"Net" Prefix
8	"Count" Prefix
9	"APW" Prefix

CHOOSE DATA OUTPUT

SELECT

60 <SPACE>
65 <CR><LF>
99 [END]
EXIT

ID	DESCRIPTION
10	"Sample Size" Prefix
11	"%Acc/%Err" Prefix
12	"Base" Prefix
13	"ID" Prefix
15	[BARCODE PROLOGUE]
16	[BARCODE EPILOGUE]
17	[Z-BARCODE PROLOGUE]
18	[Z-BARCODE EPILOGUE]

CHOOSE DATA OUTPUT

SELECT

60 <SPACE>
65 <CR><LF>
99 [END]
EXIT

ID	DESCRIPTION
19	"Pieces" Prefix
20	Gross Value Only
21	Tare Value Only
22	Net Value Only
23	Count Value Only
24	APW Value Only
25	Sample Size Value Only
26	% Err/Acc Value Only

CHOOSE DATA OUTPUT

SELECT

60 <SPACE>
65 <CR><LF>
99 [END]
EXIT

ID	DESCRIPTION
27	Base Value Only
28	ID Value Only
29	Gross unrounded Value Only
30	Prefix Gross Wt Units
31	Prefix Tare Wt Units
32	Prefix Net Wt Units
33	Prefix Count Units
34	Prefix APW Units

CHOOSE DATA OUTPUT

SELECT

60 <SPACE>
65 <CR><LF>
99 [END]
EXIT

ID	DESCRIPTION
35	Prefix Sample Size
36	Prefix % Err/Acc
37	Prefix Base #
38	Prefix ID
40	{undefined}
41	{undefined}
42	{undefined}
43	{undefined}

CHOOSE DATA OUTPUT

SELECT

60 <SPACE>
65 <CR><LF>
99 [END]
EXIT

ID	DESCRIPTION
44	{undefined}
45	{undefined}
46	{undefined}
47	{undefined}
48	{undefined}
49	{undefined}
51	LF DELAY 60s
52	STATUS CHR

CHOOSE DATA OUTPUT

SELECT

60 <SPACE>
65 <CR><LF>
99 [END]
EXIT

ID	DESCRIPTION
53	ABO CS
54	LEADING ZERO EN
55	LF DELAY 1s
56	LF DELAY 2s
57	LF DELAY 3s
58	LEADING ZERO/NO DP
59	DISPLAY
60	<SPACE>

CHOOSE DATA OUTPUT

SELECT

60 <SPACE>
65 <CR><LF>
99 [END]
EXIT

ID	DESCRIPTION
61	<HT>
62	<LF>
63	<SOH>
64	<CR>
65	<CR><LF>
66	<FF>
67	<SO>
68	<SI>

CHOOSE DATA OUTPUT

SELECT

60 <SPACE>
65 <CR><LF>
99 [END]
EXIT

ID	DESCRIPTION
69	<NUL>
70	<ESC>
71	{COMMA}
72	<STX>
73	<EXT>
74	<TAB>
75	[PAPER CUT]
76	[PAPER RELEASE]

CHOOSE DATA OUTPUT

SELECT

60 <SPACE>
65 <CR><LF>
99 [END]
EXIT

ID	DESCRIPTION
78	[START INVERSE]
79	[STOP INVERSE]
80	Prefix Accum-Total Units
81	"Accum Total." Prefix
82	Accum Value Only
83	Clear Accum
84	Clear Accum Query
85	Transaction Prefix & Counter

CHOOSE DATA OUTPUT

SELECT

60 <SPACE>
65 <CR><LF>
99 [END]
EXIT

ID	DESCRIPTION
86	Transaction Prefix
87	Transaction Counter Only
88	"Total" Prefix
90	OUTPUT CONDEC FORMAT
91	[BASE1]
92	[PRIMARY UNITS]
93	[SECONDARY UNITS]
94	[BASE2]

CHOOSE DATA OUTPUT

SELECT

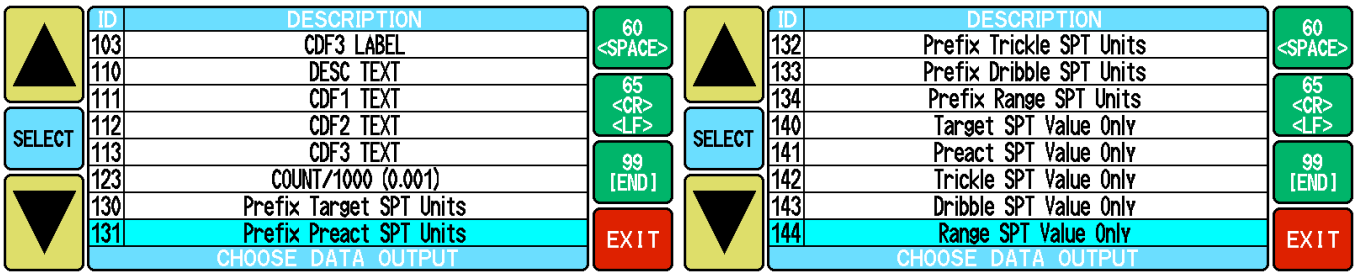
60 <SPACE>
65 <CR><LF>
99 [END]
EXIT

ID	DESCRIPTION
95	{ESC FUNCTION}
96	BATTERY VOLTAGE
97	** COM2 START **
98	** ACCUM START **
99	** END OF FORMAT **
100	DESC LABEL
101	CDF1 LABEL
102	CDF2 LABEL

CHOOSE DATA OUTPUT

SELECT

60 <SPACE>
65 <CR><LF>
99 [END]
EXIT



The screens above show the list of available data output codes. Use the UP/DOWN arrow keys to scroll to the code needed and use the SELECT button to insert into the data string. You can also use the 60 <SPACE>, 65<CE><LF> or 99 [END] to insert these commonly used data output codes/functions.

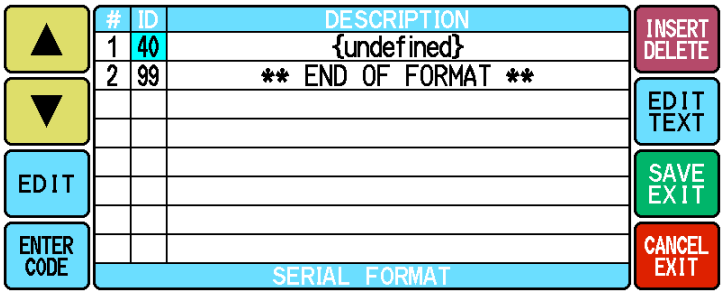
Data Output Codes and Functions Menu

ID	DESCRIPTION
2	• TIME: hh:mm:ss ap • Current time as set in scale
3	• DATE: mm/dd/yy • Current date as set in scale
4	• UNIT • Current unit of measure on display when data is outputted
5	• “GROSS” Prefix • The word GROSS to identify gross weight data
6	• “TARE” Prefix • The word TARE to identify tare weight data
7	• “NET” Prefix • The word NET to identify net weight data
8	• “COUNT” Prefix • The word COUNT to identify count data
9	• “APW” Prefix • The word PIECE WEIGHT to identify piece weight data
10	• “SAMPLE SIZE” Prefix • The word SAMPLE SIZE to identify the original sample size in qty
11	• “%ACC/%ERR Prefix • The word ACCURACY or ERROR to identify the % of accuracy or % of error data • To select if the scale displays and outputs % of accuracy or error go to the COUNTING MODES menu to setup
12	• “BASE” Prefix • The word BASE to identify the base in use value
13	• “ID” Prefix • The word ID to identify the ID data
15	• Zebra Barcode Printer Prologue. This sends the following data to recall and print barcode labels: • <LF><FR”F1”<LF><?><LF>
16	• Zebra Barcode Epilog This sends the following data to print the label • P1

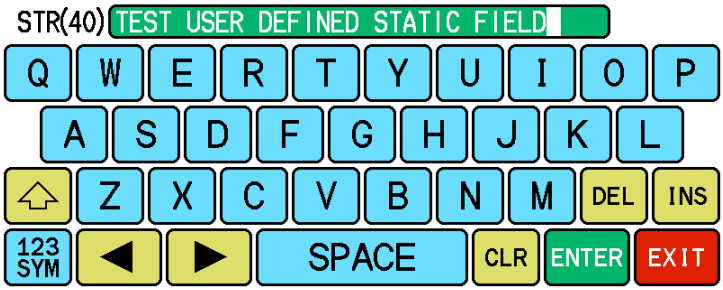
ID	DESCRIPTION
17	• Godex Barcode Printer Prologue. This sends the following data to recall and print barcode labels: • ^KF1<CR><LF>
18	• Zebra Barcode Epilog This sends the following data to print the label • E<CR><LF>~P1<CR><LF>
19	• "PIECES" Prefix • The word PIECES to identify the piece count on the scale data
20	• GROSS VALUE ONLY • Gross weight data
21	• TARE VALUE ONLY • Tare weight data
22	• NET VALUE ONLY • Net weight data
23	• COUNT VALUE ONLY • Count data
24	• APW VALUE ONLY • Piece weight data
25	• SAMPLE SIZE VALUE ONLY • Sample size data
26	• %ERR/ACC VALUE ONLY • % of error or accuracy data
27	• BASE VALUE ONLY • Base in use data
28	• ID VALUE ONLY • ID data
29	• GROSS UNROUNDED VALUE ONLY • Gross unrounded weight data
30	• PREFIX GROSS WT UNITS • Outputs: GROSS(WEIGHT VALUE)(CURRENT UNIT OF MEASURE)
31	• PREFIX TARE WT UNITS • Outputs: TARE(WEIGHT VALUE)(CURRENT UNIT OF MEASURE)
32	• PREFIX NET WT UNITS • Outputs: NET(WEIGHT VALUE)(CURRENT UNIT OF MEASURE)
33	• PREFIX COUNT NUMBER UNITS • Outputs: COUNT(NUMBER VALUE)(PCS)

ID	DESCRIPTION
34	• PREFIX APW PIECE WEIGHT UNITS • Outputs: PIECES(PIECE WEIGHT VALUE)(CURRENT UNIT OF MEASURE)
35	• PREFIX SAMPLE SIZE • Outputs: SAMPLE SIZE(NUMBER VALUE)
36	• Prefix % Error or Accuracy
37	• PREFIX BASE # • Outputs: BASE (NUMBER) that is the active base 1 or optional 2
38	• PREFIX ID • Outputs: ID(ID NAME)
40 – 49	• USER DEFINED STATIC DATA FIELD

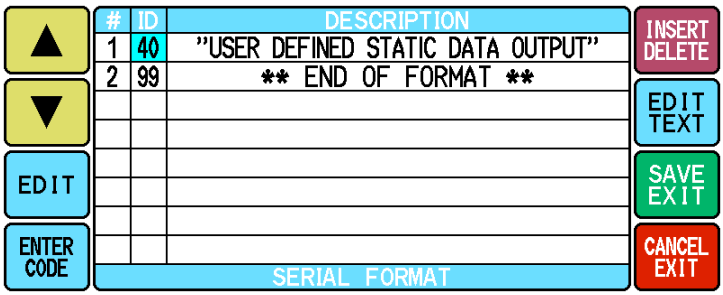
When selecting one of the codes 40 – 49 user defined static data fields the actual data output can be entered through the scale keyboard. Use the UP/DOWN arrow keys to highlight the data output slot that contains the code:



Select EDIT TEXT and key in the data



The scale will now out put the data entered at this point in the data output string



ID	DESCRIPTION
51	• LF Delay 60s. Delay after line feed of 60 seconds
52	• STATUS CHARACTER • Outputs status character to show scale condition
53	• ABO CS • Outputs ABO Checksum for data validation
54	• LEADING ZERO EN • Outputs all weight values with leading zeros (0) instead of spaces
55	• LF DELAY 1S • Delays the LINE FEED command by 1 second
56	• LF DELAY 2S • Delays the LINE FEED command by 2 seconds
57	• LF DELAY 3S • Delays the LINE FEED command by 3 seconds
58	• LEADING ZERO/NO DP • Outputs all weight values with leading zeros (0) instead of spaces and no decimal point
59	• DISPLAY • Outputs current weight or count values on primary display
60	• <SPACE> • Outputs a SPACE
61	• <HT> • Outputs a HORIZONTAL TAB command
62	• <LF> • Outputs a LINE FEED command
63	• <SOH> • Outputs a START OF HEADER command
64	• <CR> • Outputs a CARRAIGE RETURN command
65	• <CR><LF> • Outputs a CARRIAGE RETURN LINE FEED command
66	• <FF> • Outputs a FORM FEED command
67	• <SO> • Outputs a SHIFT OUT command
68	• <SI> • Outputs a SHIFT IN command
69	• <NUL> • Outputs NULL command

ID	DESCRIPTION
70	• <ESC> • Outputs and Escape Character
71	• {COMMA} • Outputs a Comma
72	• <STX> • Outputs START OF TEXT command
73	• <ETX> • Outputs END OF TEXT command
74	• <TAB> • Outputs TAB command
75	• [PAPER CUT] • Outputs PAPER CUT command
76	• [PAPER RELEASE] • Outputs PAPER RELEASE command
78	• [START INVERSE] • Outputs START INVERSE command
79	• [PAPER STOP INVERSE] • Outputs STOP INVERSE command
80	• PREFIX ACCUM-TOTAL UNITS • Outputs: ACCUM(ACUMULATED WEIGHT/COUNT VALUE)(CURRENT UNIT OF MEASURE)
81	• ACCUM TOTAL PREFIX • Outputs ACCUM TOTAL
82	• ACCUM VALUE ONLY • Outputs Accumulated weight or count data only
83	• CLEAR ACCUM • Clears the Accumulator register of data
84	• CLEAR ACCUM QUERY • Clears the Accumulator query
85	• TRANSACTION PREFIX & COUNTER • Outputs TRANSACTION(# OF ACCUMULATIONS)
86	• TRANSACTION PREFIX • Outputs TRANSACTIONS
87	• TRANSACTION COUNTER ONLY • Outputs(# OF ACCUMULATIONS)
88	• TOTAL PREFIX • Outputs TOTAL
90	• OUTPUT CONDEC FORMAT • Outputs data in CONDEC format for interface with third party remote scoreboard type displays

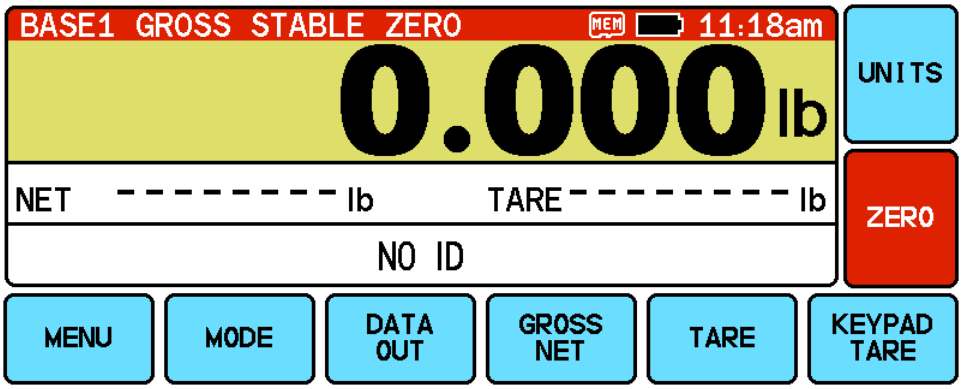
ID	DESCRIPTION
91	• [BASE 1] • Data output codes that follow are scale data from Base 1
92	• [PRIMARY UNITS] • Data output codes that follow are in primary unit of measure
93	• [SECONDARY UNITS] • Data output codes that follow are in secondary unit of measure
94	• [BASE2] • Data output codes that follow are scale data from Base 2
95	• {ESC FUNCTION} • Outputs ESCAPE command
96	• Battery Voltage • Outputs the current battery voltage on AC/DC Models
97	• ** COM2 START** • Starts the data output to COM 2, everything preceding this will output to COM 1
98	• ACCUM START • When ACCUMULATE is enabled the data after this will output every time an ACCUMULATE function occurs
99	• END OF FORMAT • End of outputted data format
100	• DESC LABEL • Outputs DESC to identify the DESCRIPTION field • Can be enabled or disabled in the ID DATABASE menu
101-103	• CDF1(2 or 3) LABEL • Outputs user defined label for custom data fields 1 through 3. • This Label is set up in ID DATABASE menu • Can be enabled or disabled in the ID DATABASE menu
110	• DESC TEXT • Outputs the data entered in the DESCRIPTION FIELD • Can be enabled or disabled in the ID DATABASE menu
111-113	• CDF1(2 or 3) TEXT • Output the data entered in the custom data fields 1 through 3. Can be enabled or disabled in the ID DATABASE menu
123	• COUNT/1000 (0.001) • Outputs the count value /1000

ID	DESCRIPTION
130	• PREFIX TARGET SPT UNITS • Outputs the setpoint target weight when setpoints are enabled
131	• PREFIX PREACT SPT UNITS • Outputs the setpoint PREACT target weight when setpoints are enabled
132	• PREFIX TRICKLE SPT UNITS • Outputs the setpoint TRICKLE target weight when setpoints are enabled
133	• PREFIX DRIBBLE SPT UNITS • Outputs the setpoint DRIBBLE target weight when setpoints are enabled
134	• PREFIX RANGE SPT UNITS • Outputs the setpoint RANGE target weight when setpoints are enabled
140	• TARGET SPT VALUE ONLY • Outputs the setpoint TARGET weight value only when setpoints are enabled
141	• PREACT SPT VALUE ONLY • Outputs the setpoint PREACT weight value only when setpoints are enabled
142	• TRICKLE SPT VALUE ONLY • Outputs the setpoint TRICKLE weight value only when setpoints are enabled
143	• DRIBBLE SPT VALUE ONLY • Outputs the setpoint DRIBBLE weight value only when setpoints are enabled
144	• RANGE SPT VALUE ONLY • Outputs the setpoint RANGE weight value only when setpoints are enabled

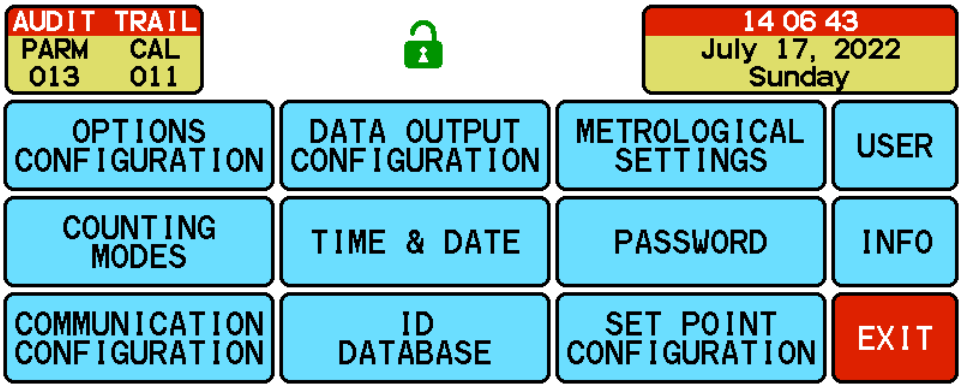
Configuration of Time and Date

From any of the main operating screens:

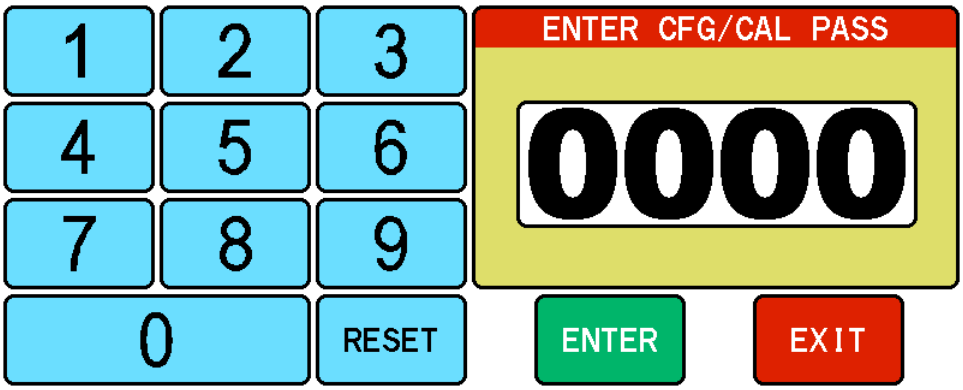
Select the MENU button



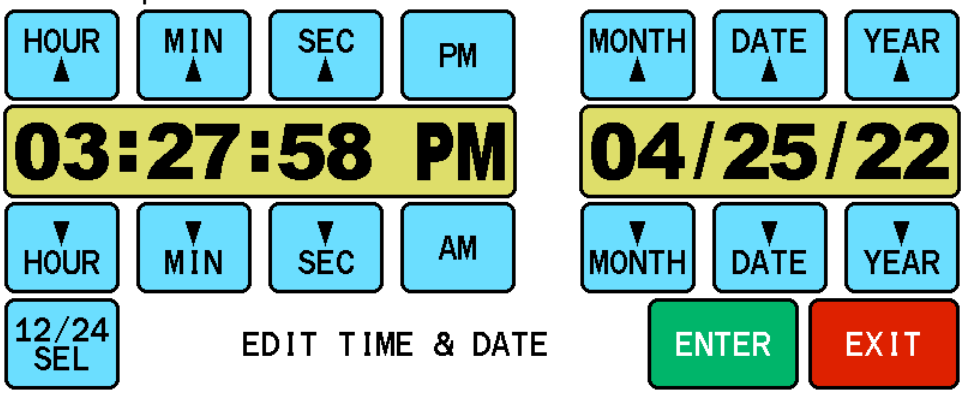
In the main menu select the TIME & DATE



Enter Password if prompted. Default password in 0000



This will open the time and date menu.



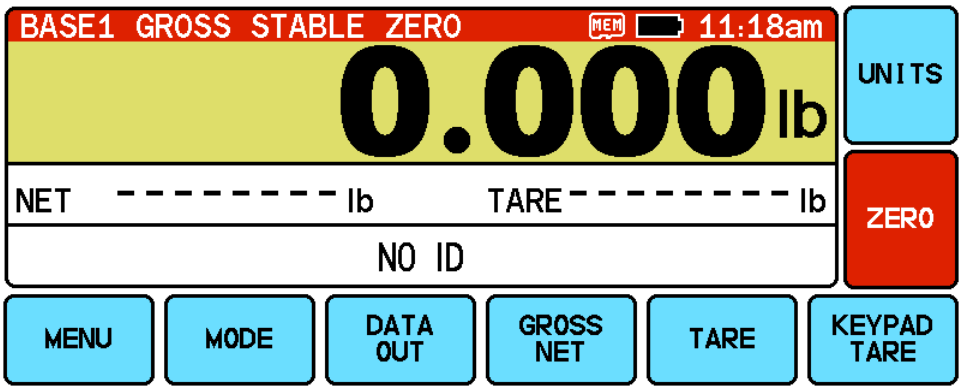
Use the UP and DOWN arrow keys to adjust the time and date settings

Select the 12/24 SEL button to scroll between 12-hour AM/PM and 24-hour military time.

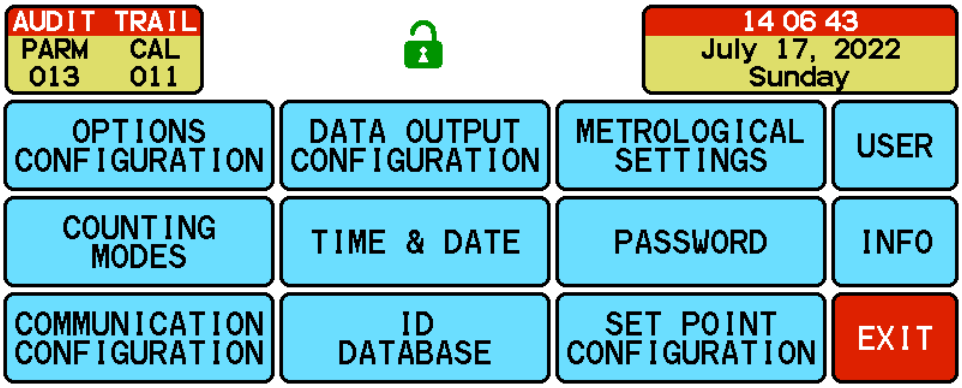
Options Configuration

From any of the main operating screens:

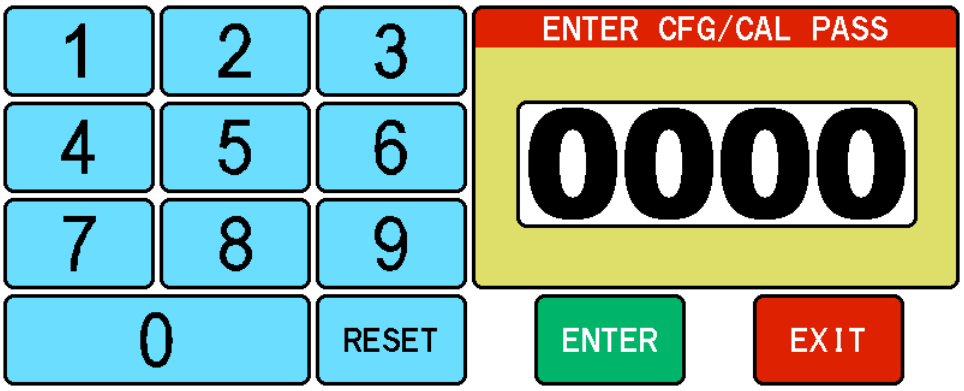
Select the MENU button



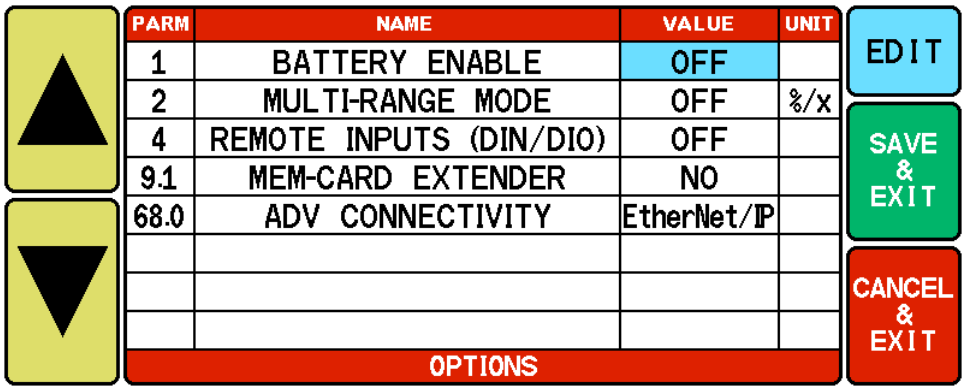
In the main menu select the OPTIONS CONFIGURATION



Enter Password if prompted. Default password in 0000



This will open the Options Configuration Menu.



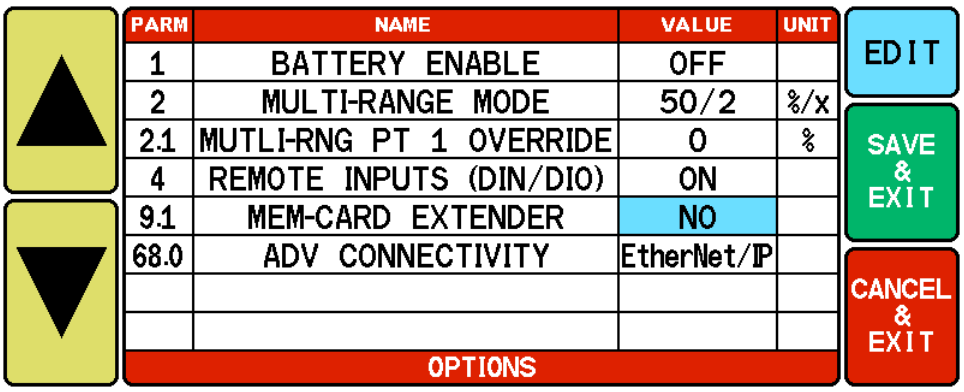
To enter and/or change a setting use the UP/DOWN arrow keys to scroll up or down to setting and select the Blue EDIT button.

Selecting the Green SAVE & EXIT button will save and exit, Red CANCEL & EXIT will exit without saving

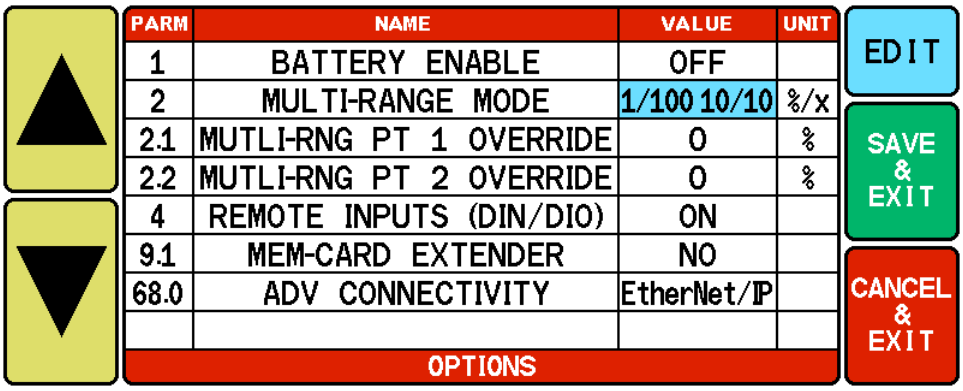
Options Configuration Menu

PARAMETER (PARM)	NAME	VALUE/SELECTIONS	UNIT
1	BATTERY ENABLE	• Enable or disable the battery option • Selections are ON or OFF • Select the EDIT button to cycle through available selections.	
2	MULTI-RANGE MODE	• Enable and configuration Multi Range Mode • Selections are OFF, 50/2, 50/5, 25/2, 25/2, 20/2, 20/5, 20/10, 10/2, 10/5, 10/10, 25/5 50/2, 10/5 50/2, 25/10 50/2, 10/10 50/2, 1/100 & 10/10. See chart at end of this section for details of these settings	%/x

When 50/2, 50/5, 25/2, 25/2, 20/2, 20/5, 20/10, 10/2, 10/5 or 10/10 are selected additional menu selections are enabled as shown below:



When 25/5 50/2, 10/5 50/2, 25/10 50/2, 10/10 50/2, 1/100 or 10/10 are selected additional menu selections are enabled as shown below:



PARAMETER (PARM)	NAME	VALUE/SELECTIONS	UNIT
2.1	MULTI-RANGE PT1 OVERIDE	• First % of scale capacity that scale resolution defaults to normal as set up in CONFIGURE BASE 1 (Or 2) • Select EDIT and enter % of Scale Capacity in Primary Units	%/x
2.2	MULTI-RANGE PT2 OVERIDE	• Second % of scale capacity that scale resolution defaults to normal as set up in CONFIGURE BASE 1 (Or 2) • Select EDIT and enter % of Scale Capacity in Primary Units	%/x
4	REMOTE INPUTS (DIN/DIO)	• Enables or disables remote switch function with DIN or DIO • Selections are ON or OFF	
9.1	MEM-CARD EXTENDER	• Enables or disables Memory Card extender on the indicator version • Selections are ON or OFF	
68.0	ADV CONNECTIVITY	• Enables or disables advanced connectivity functions • Selections are ETHERNET/IP or NONE NOTE: Setup for Ethernet IP is found in the COMMUNICATION CONFIGURATION menu	

Dual and Triple Ranging Setup – Based upon the displayed resolution setting in METROLOGICAL SETTINGS\CONFIGURE BASE 1(2)

DTR Setting	High Resolution up to % of capacity	Resolution Increase Factor	Medium Resolution	Resolution Increase Factor
0				
1	50%	2		
2	50%	5		
3	25%	2		
4	25%	5		
5	20%	2		
6	20%	5		
7	20%	10		
8	10%	2		
9	10%	5		
10	10%	10		
11	25%	5	50%	2
12	10%	5	50%	2
13	25%	10	50%	2
14	10%	10	50%	2
15	1%	100	10%	10

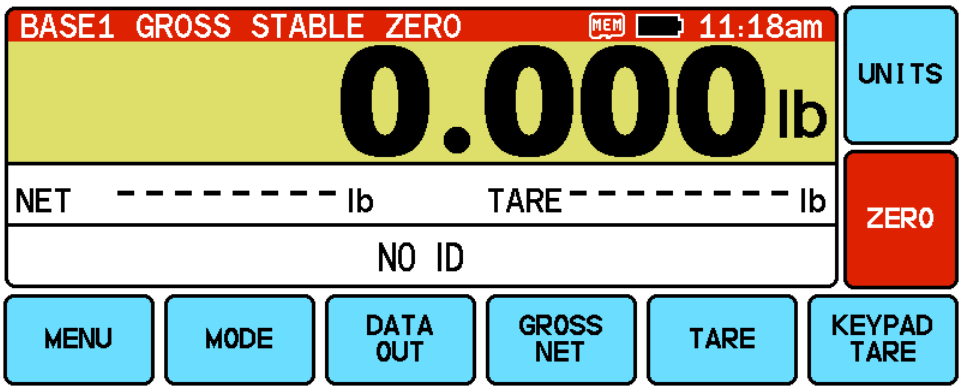
Dual and Triple Ranging Example

Scale Capacity 100		RES 22 (Displayed resolution 0.01)		
DTR Setting	High Resolution Up To lbs.:	High Resolution at This Setting:	Medium Resolution Up To lbs.:	Medium Resolution at This Setting:
0				
1	50	0.005		
2	50	0.002		
3	25	0.005		
4	25	0.002		
5	20	0.005		
6	20	0.002		
7	20	0.001		
8	10	0.005		
9	10	0.002		
10	10	0.001		
11	25	0.002	50	0.005
12	10	0.002	50	0.005
13	25	0.001	50	0.005
14	10	0.001	50	0.005
15	1	0.0001	10	0.001

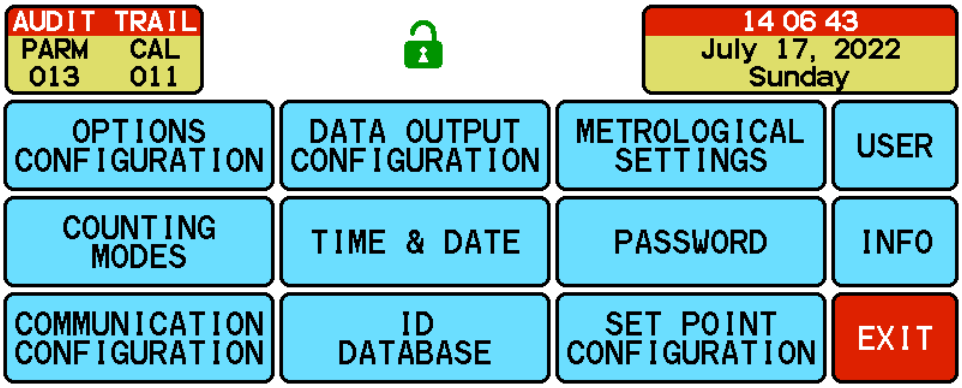
User Configuration Menu

From any of the main operating screens:

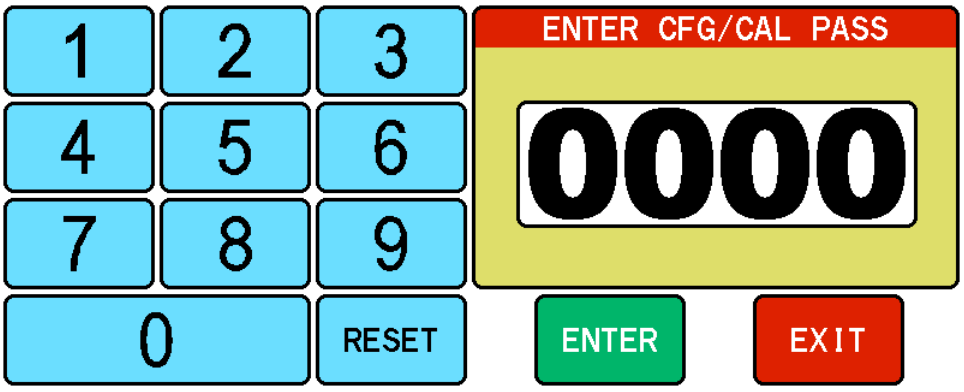
Select the MENU button



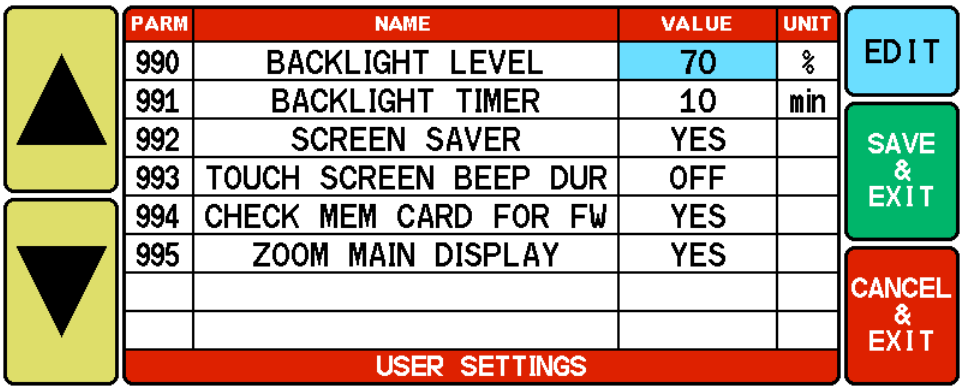
In the main menu select the USER



Enter Password if prompted. Default password in 0000



This will open the USER Menu.



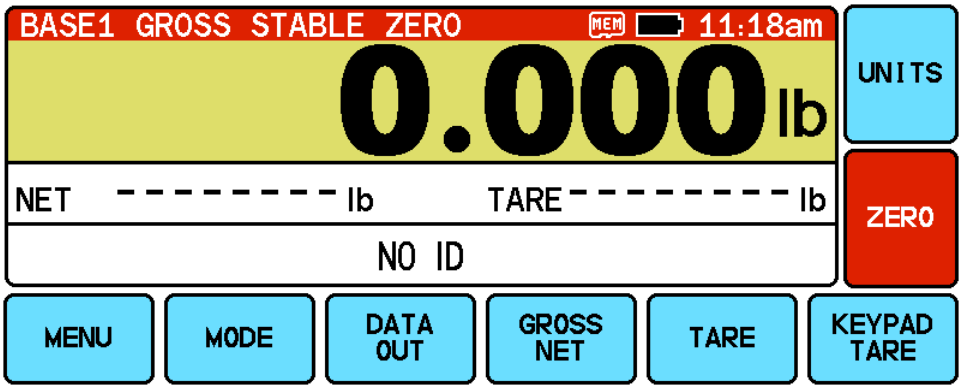
User Configuration Menu

PARAMETER (PARM)	NAME	VALUE/SELECTIONS	UNIT
990	BACKLIGHT LEVEL	• Control the amount of display back light • Select the EDIT button to cycle through available selections.	%
991	BACKLIGHT TIMER	• Control the back light sleep timer • Select the EDIT button to cycle through available selections.	Min
992	SCREEN SAVER	• Enable or Disable Screen Saver • Select the EDIT button to cycle through available selections.	
993	TOUCH SCREEN BEEP DUR	• Control Beeper condition • Selections are OFF, SHORT, MEDIUM, LONG • Select the EDIT button to cycle through available selections	
994	CHECK MEM CARD FOR FW	• Check for firmware update when SD card is installed • EDIT to select YES or NO	
995	ZOOM MAIN DISPLAY	• Enables Full Screen Mode on Display • EDIT to select YES or NO	

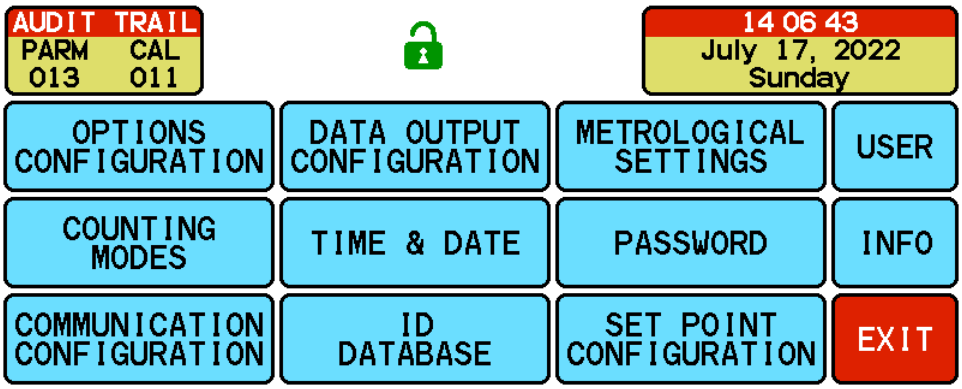
SET POINT Configuration Menu

From any of the main operating screens:

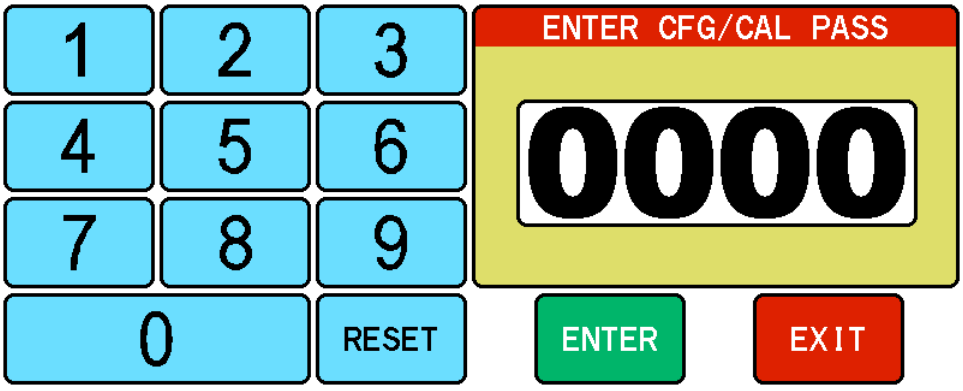
Select the MENU button



In the main menu select SETPOINT CONFIGURATION



Enter Password if prompted. Default password in 0000



This will open the SET POINT CONFIGURATION Menu. The setting Below is Factory Default:

PARM	NAME	VALUE
8	SET POINT ENABLE	CHECK WEIGH
8.01	SOURCE	COUNT
8.02	NEGATIVE BAR GRAPH	YES
8.11	RELAY OUTPUT	DIO

SET POINTS

EDIT

SAVE & EXIT

CANCEL & EXIT

When SINGLE SET POINT and COUNT enabled:

PARM	NAME	VALUE
8	SET POINT ENABLE	SINGLE SET PT
8.01	SOURCE	COUNT
8.02	NEGATIVE BAR GRAPH	YES
8.11	RELAY OUTPUT	DIO
8.12	TARGET MODE	+DRIBBLE

SET POINTS

EDIT

SAVE & EXIT

CANCEL & EXIT

When SINGLE SET POINT and COUNT enabled:

PARM	NAME	VALUE
8	SET POINT ENABLE	SINGLE SET PT
8.01	SOURCE	WEIGHT
8.02	NEGATIVE BAR GRAPH	YES
8.11	RELAY OUTPUT	DIO
8.12	TARGET MODE	+DRIBBLE
8.13	WEIGHT SOURCE	GROSS

SET POINTS

EDIT

SAVE & EXIT

CANCEL & EXIT

Set Point Configuration Menu

PARAMETER (PARM)	NAME	VALUE/SELECTIONS
8	SET POINT ENABLE	• Enable or disable the Setpoint Operation • Selections are OFF, CHECK WEIGH or SINGLE SET PT • Select the EDIT button to cycle through available selections.
8.01	SOURCE	• Select source for set point • Selections are WEIGHT or COUNT • Select the EDIT button to cycle through available selections.
8.02	NEGATIVE BAR GRAPH	• Enables Negative Bar Graph for Checkweighing and setpoint relay operation
8.11	RELAY OUTPUT	• Select relay output • Selections are NONE, DIO (Use with setpoint/relay option installed), CHARGE or CHARGE-NC • Select the EDIT button to cycle through available selections.
8.12	TARGET MODE	• Only available when SINGLE SET PT is enabled • Selections are + NONE, + PREACT, +DRIBBLE or +DRIBBLE/TRICKLE • Select the EDIT button to cycle through available selections.
8.13	WEIGHT SOURCE	• Only available when SOURCE is set to WEIGHT • Selections are NET, GROSS or DISPLAY

Relay Operation and Connections

When Configured as follows:

PARM	NAME	VALUE
8	SET POINT ENABLE	CHECK WEIGH
8.01	SOURCE	COUNT
8.02	NEGATIVE BAR GRAPH	YES
8.11	RELAY OUTPUT	DIO

SET POINTS

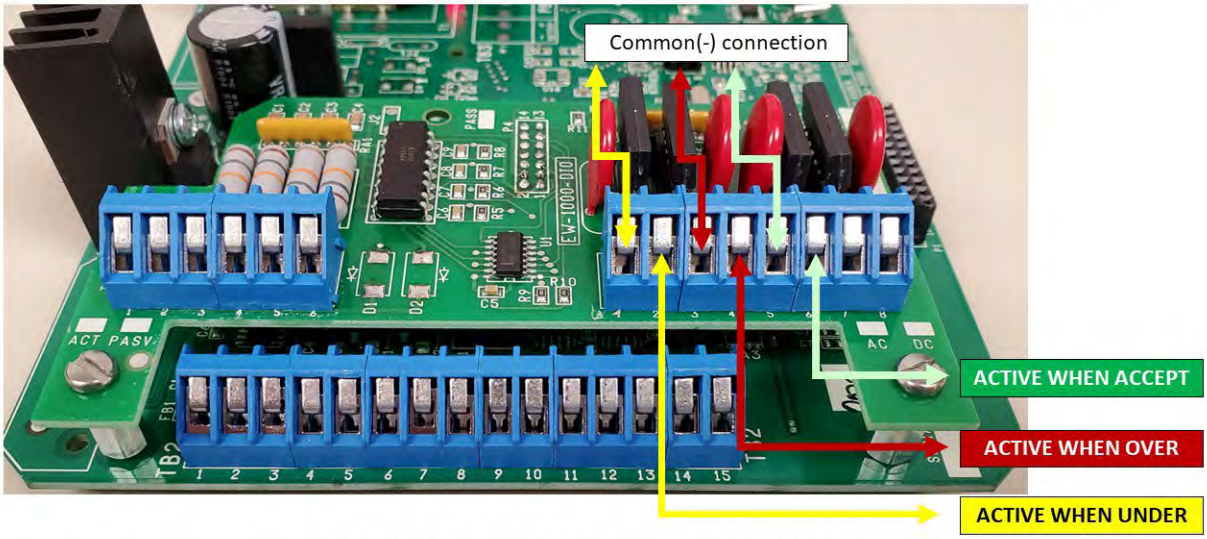
EDIT

SAVE & EXIT

CANCEL & EXIT

Wiring and Function to Relay Board

Set Point Relay Option Part Number 57881(AC) or 57880 (DC)



Set Point Enable = Check Weigh

When Configured as follows:

PARM	NAME	VALUE
8	SET POINT ENABLE	SINGLE SET PT
8.01	SOURCE	COUNT
8.02	NEGATIVE BAR GRAPH	YES
8.11	RELAY OUTPUT	DIO
8.12	TARGET MODE	+DRIBBLE

SET POINTS

EDIT | SAVE & EXIT | CANCEL & EXIT

OR

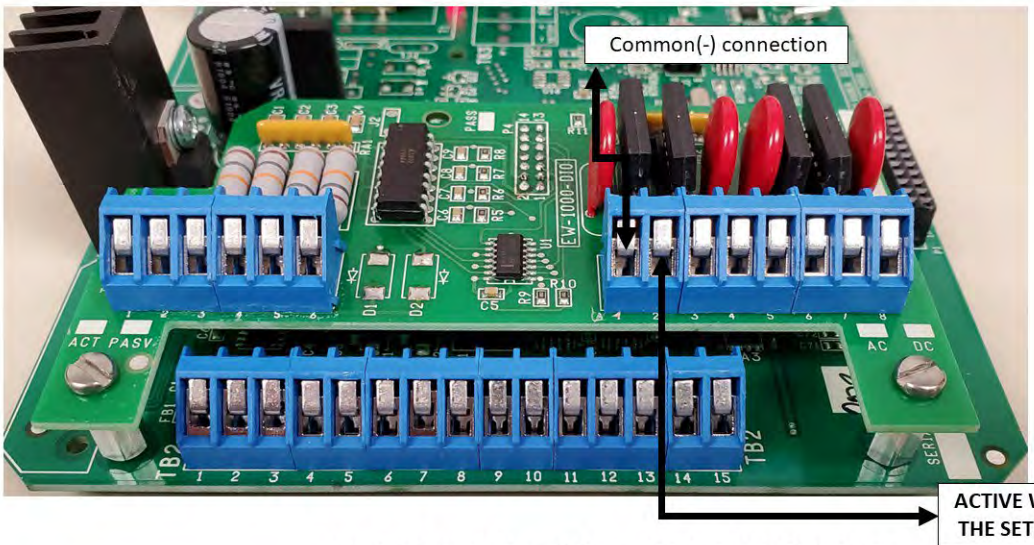
PARM	NAME	VALUE
8	SET POINT ENABLE	SINGLE SET PT
8.01	SOURCE	WEIGHT
8.02	NEGATIVE BAR GRAPH	YES
8.11	RELAY OUTPUT	DIO
8.12	TARGET MODE	+DRIBBLE
8.13	WEIGHT SOURCE	GROSS

SET POINTS

EDIT | SAVE & EXIT | CANCEL & EXIT

Wiring and Function to Relay Board

Set Point Relay Option Part Number 57881(AC) or 57880 (DC)

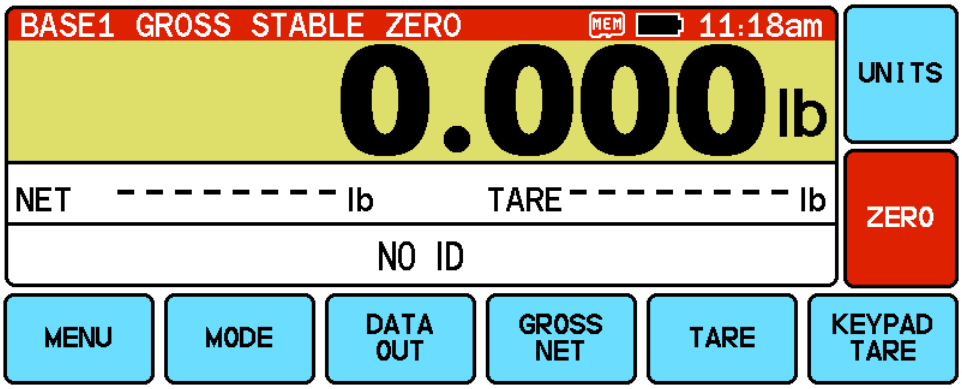


Set Point Enable = SINGLE SET PT

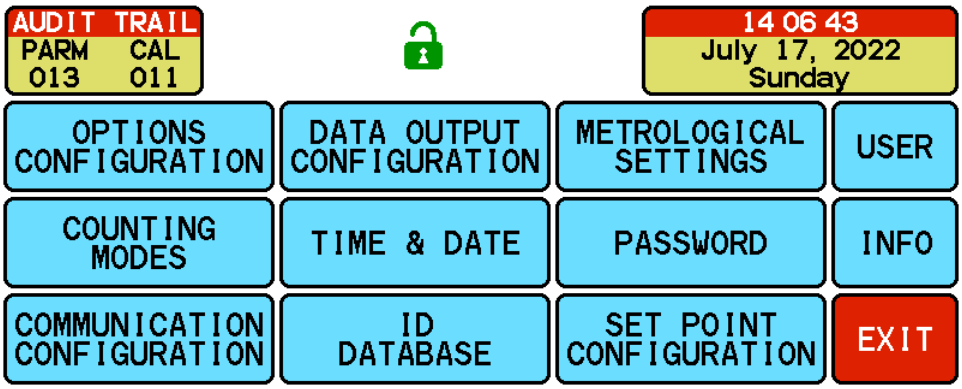
PASSWORD Configuration Menu

From any of the main operating screens:

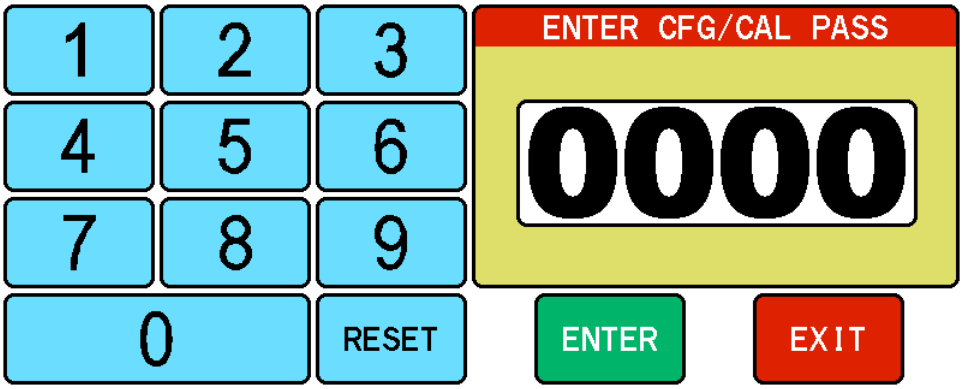
Select the MENU button



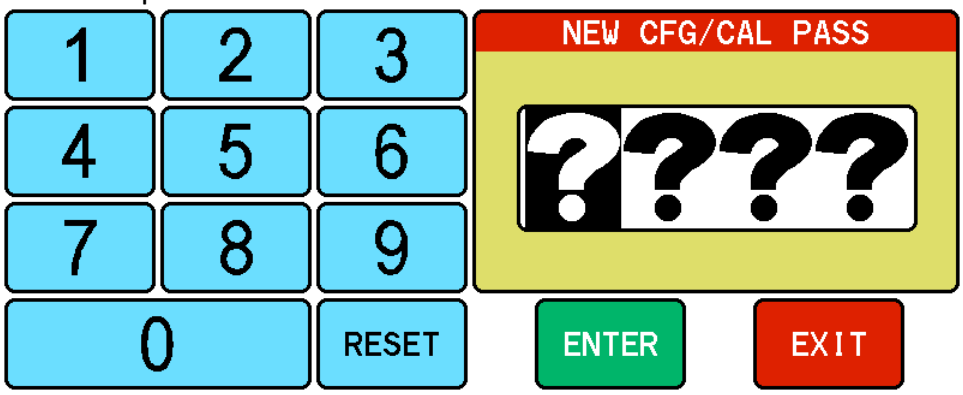
In the main menu select the PASSWORD



Enter Password if prompted. Default password in 0000



This will open the PASSWORD Menu.



Key in the new password and ENTER.

Scale External Command Formats

Pennsylvania Scale Bench Weighing and Counting Scales or Indicators can be controlled from an external device (such as a computer, terminal or barcode scanning) by various commands, each three letters long sending with a Carriage Return or Enter (cr)

Examples:

- ZERO the scale: ZRO(cr)
- Send programmed data: SRP(cr)
- Acquire a TARE WEIGHT: ATW(cr)

Remote Scale Commands <XXX>(cr) XXX = Command

Command	Description
ATW	Acquire Tare Weight
RES	Reset, clears tare weight and count information
SCI	Output Configuration
SWM	Selects Weigh Mode
UNP	Select Primary Weighing Unit
UNS	Select Secondary Weighing Unit

Remote Scale Commands to Enter Data into Scale

Command	Description	Format
IBA	Input Base Number 1 or 2. With installed remote base option.	**IBA(sp)X(cr) X= 1 or 2**
IPW	Input Piece Weight and Enter Count Mode.	**IPW(sp)XXXXX(cr) XXXXX = Piece Weight Value, Example: .00015**
ITW	Input Tare Weight and Enter Net Weight Mode.	**ITW(sp)XXXX(cr) XXXX = Tare Weight Value, Example: 10.5**
IID	Input Product ID, up to 32 Alphanumeric Characters	**IID(sp)XXXXXXXXXX(cr) XXXXXXXXXX = Product ID, Example: 123456-ABC**
IUS(X)	Input User Defined Data String, 1-9 these correspond to data output codes 40 – 49 up to 22 alphanumeric characters. **X = 1-9**	**IUS1(sp)XXXXXXXXXX(cr) = XXXXXXXXXX = User defined Data String, Example: 456-DEF-12**

Remote Scale Commands Which Request Information

Command	Description	Response Format
SBA	Send Base in use with second base option,	**Base(sp)1(cr)(lf)** **Base(sp)1(cr)(lf)**
SCO	Send Count	**Count(sp)XXXXXXX Pieces(cr)(lf)**
SDT	Send Date	**XX/XX/XX(cr)(lf)**
SGW	Send Gross Weight	**Gross(sp)XXXXXXX(cr)(lf)**
SID	Send Product ID	**ID(sp)XXXXXXXXXXXXXXX(Cr)(lf)**
SMI	Send Metrological or Load Cell Calibration Information	
SNW	Send Net Weight	**Net(sp)XXXXXXX(cr)(lf)**
SPC	Send Data Output Codes	
SPR	Send Percentage of Error or Accuracy	**Error(sp)XXXXXXX(cr)(lf)** **Accuracy(sp)XXXXXXX(cr)(lf)**
SPW	Send Piece Weight	**Piece Weight(sp)XXXXXXX(cr)(lf)**
SRP	Send Formatted Data Output	
SSZ	Send Sample Size	**Sample Size(sp)XXXXXXX(cr)(lf)**
STM	Send Time	**XX:XX:XX(cr)(lf)**
STW	Send Tare Weight	**Tare(sp)XXXXXXX(cr)(lf)**
SVN	Send Firmware Version	**V(sp)X.XX.X(cr)(lf)**

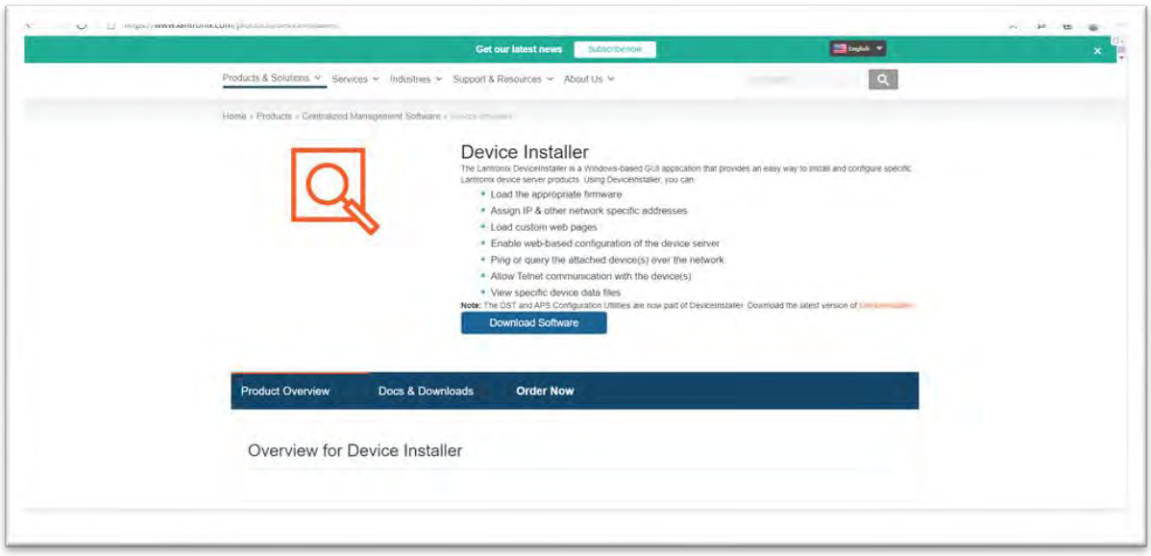
Wired Ethernet Option

Configuring the Pennsylvania Scale Wired Ethernet Option

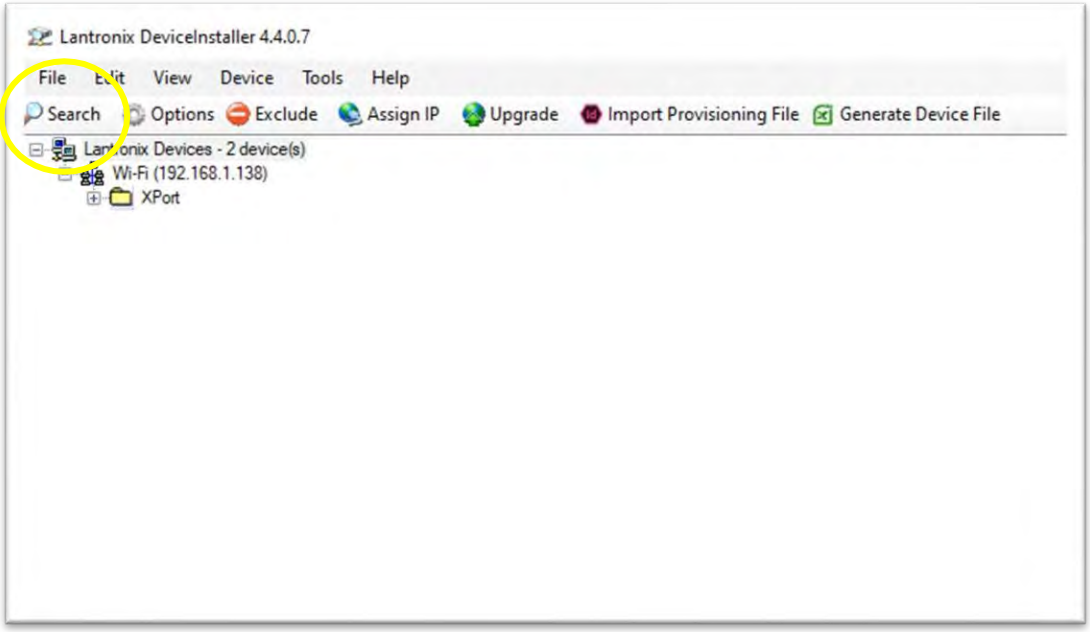
Note: Please consult with IT or Network administrator to determine the network protocols required for connection on the local area network and/or interface to software programs.

The Default Port number for the Pennsylvania Scale Wired Ethernet Option is 10001

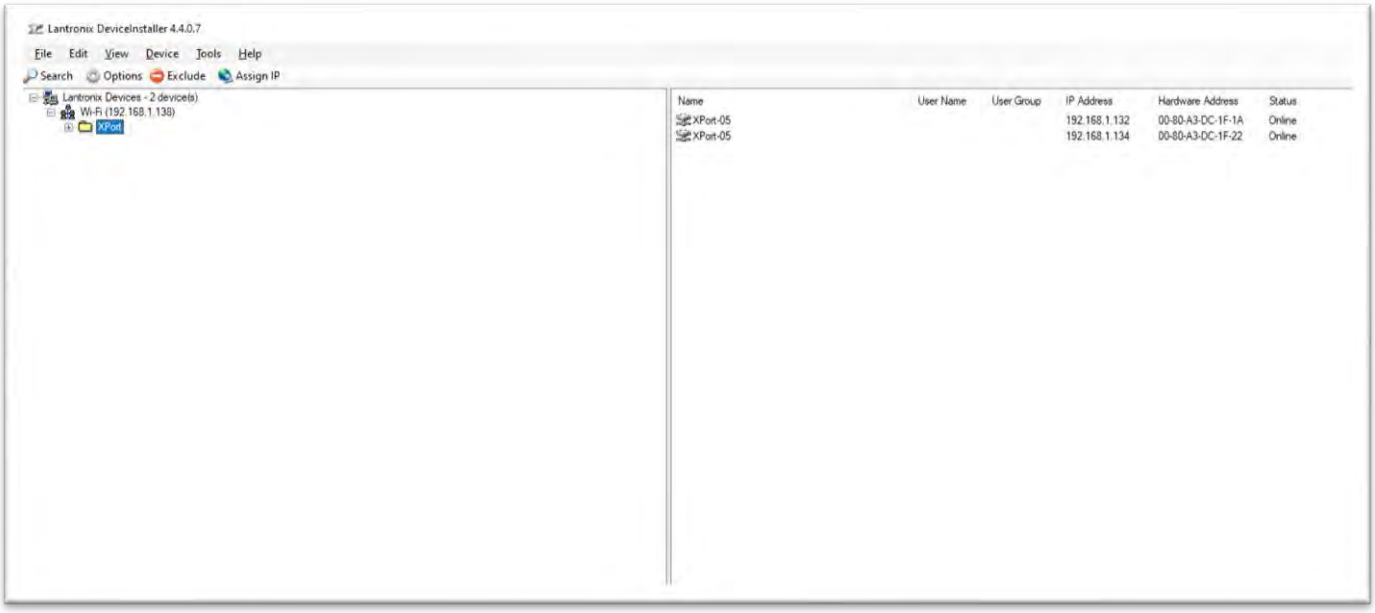
Go to https://www.lantronix.com/products/deviceinstaller/ and download the device installer application.



Install and run the Device Installer program and connect the scale and PC to the network. Click on the SEARCH function to discover Pennsylvania Scale Ethernet options that are on the network.

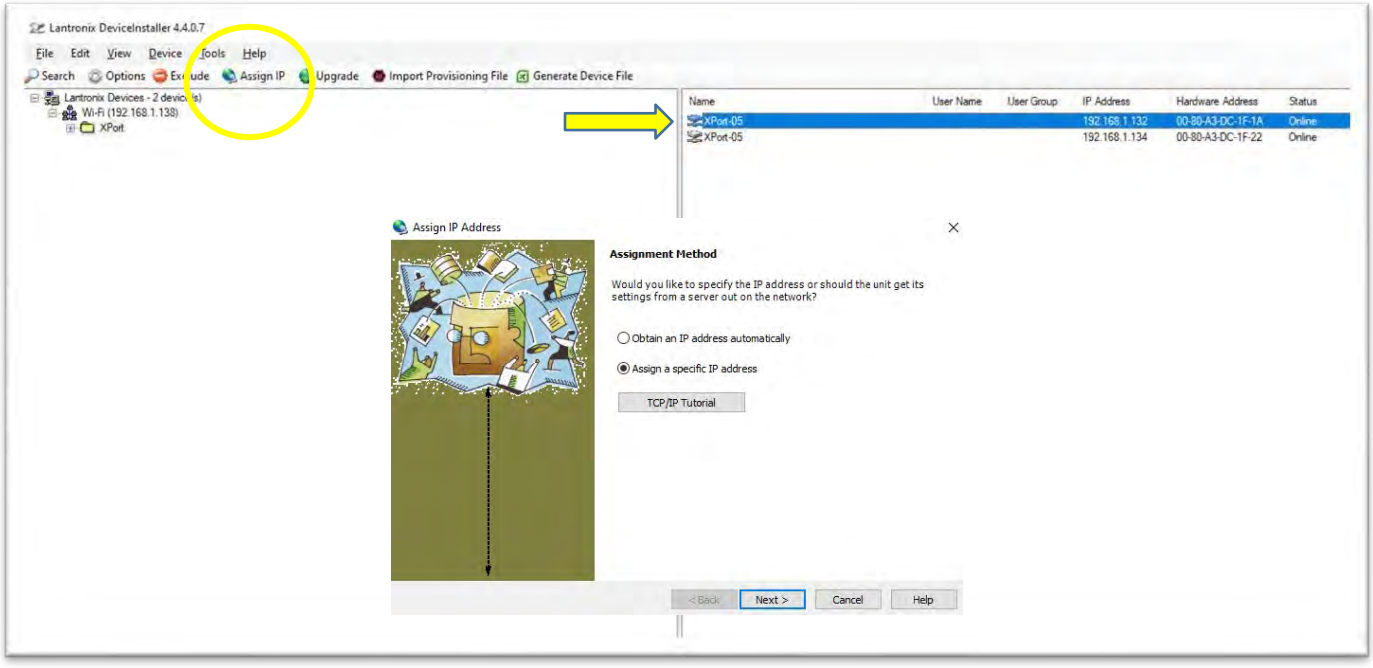


Any Pennsylvania Scale Ethernet Options that are reachable on the network will be shown on the Device Installer program.

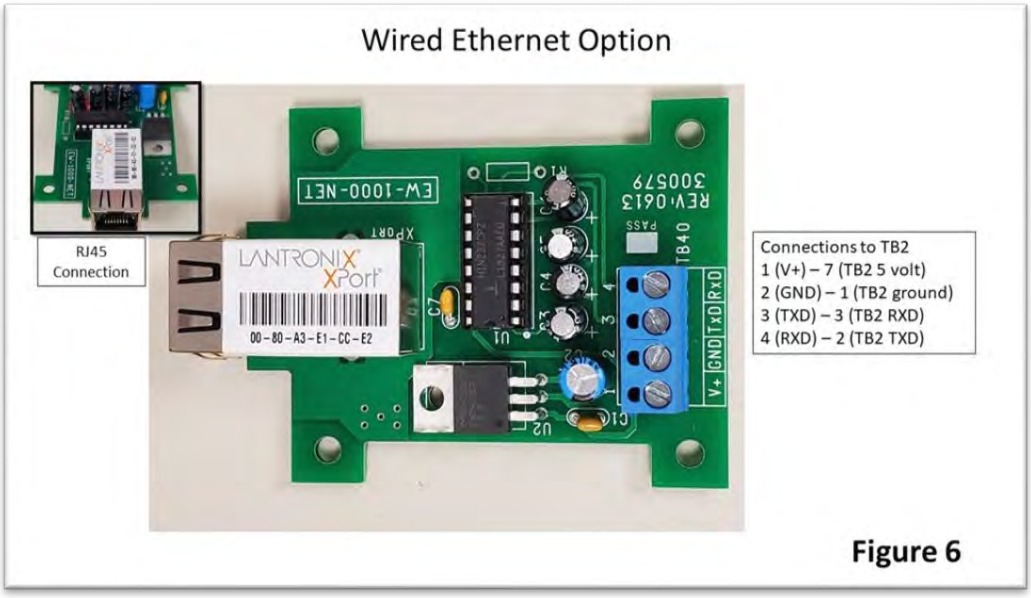


Note the factory default network protocol is DHCP, IP Address, Subnet and Default Gateway are assigned by the server. The Default port is 10001

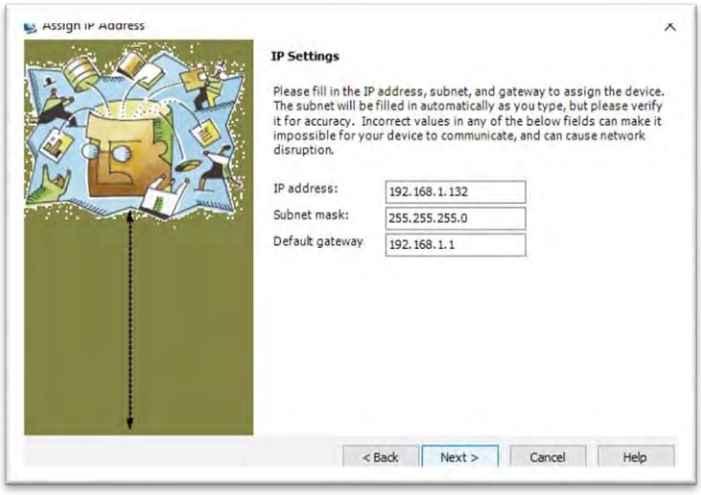
To change from DHCP to a Static IP, Subnet and Default gateway click on the connection to configure, then click on ASSIGN IP. Select ASSIGN A SPECIFIC IP ADDRESS and NEXT

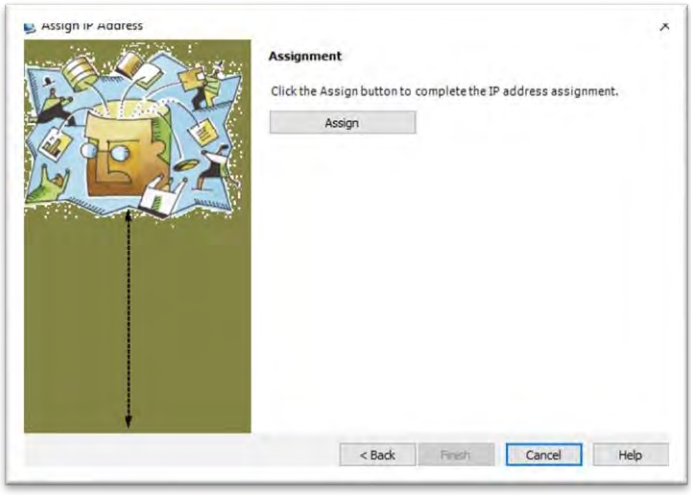


Wired Ethernet Board



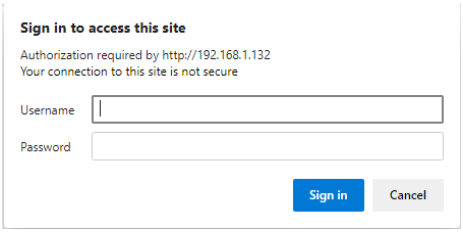
Enter the static IP Address, Subnet Mask and Default Gateway, then click NEXT, then ASSIGN.



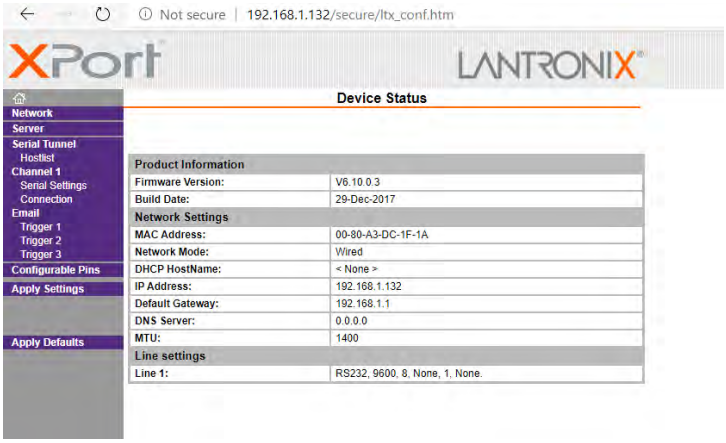


The Pennsylvania Scale Ethernet Option will be configured with these IP Settings and reboot.

If the IP address is known you can also login into the device and configure it through a web browser. Key in the IP into the web browser address bar. The Lantronix log in window appears, factory default is no user name and password, leave blank and click on SIGN IN



The Lantronix Xport program will open, and more advanced settings can be accessed for configuring the Pennsylvania Scale ethernet option.



Wireless Ethernet Option - Wi-Fi

Configuring the Pennsylvania Scale Wireless Ethernet Option

Note: Please consult with IT or Network administrator to determine the network protocols required for connection on the local area network and/or interface to software programs.

The Default Port number for the Pennsylvania Scale Wi-Fi Ethernet Option is 2000

Scale/Indicator communications that must be configured for Wi-Fi operation:

In COMMUNICATION CONFIGURATION set to

- (Baud Rate) 9600
- (Data bits) 8
- (Stop Bits) 1
- (Parity) None
- (Echo) No
- (Com address) 0

Initial configuration and soft AP usage

The quickest way to configure the module dynamically or in the field is to use its built-in webserver (soft AP mode). After powering on the module press and hold for 1 second the J1/adhoc button on the wireless board.

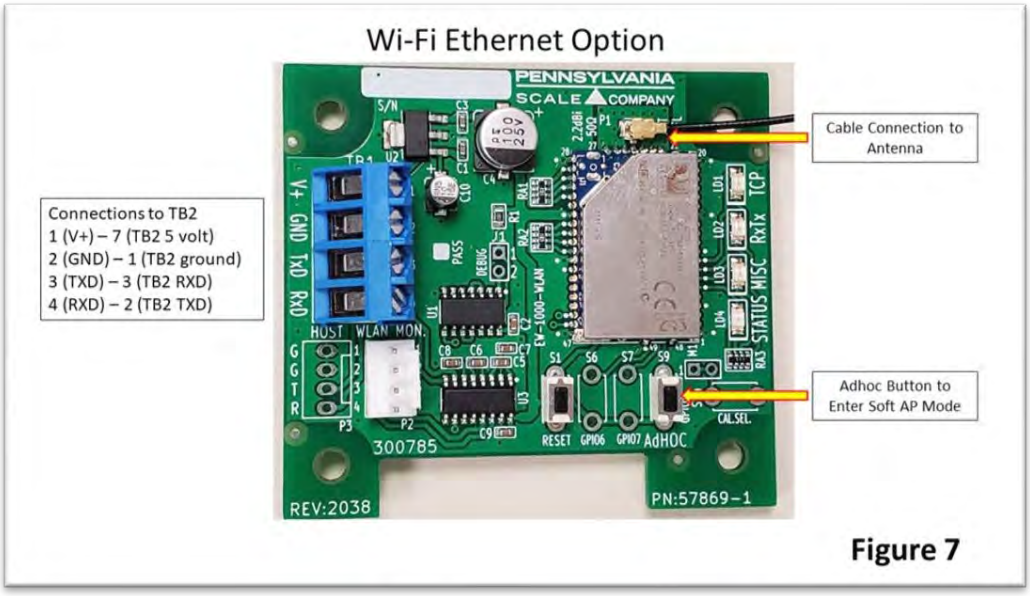


Figure 7

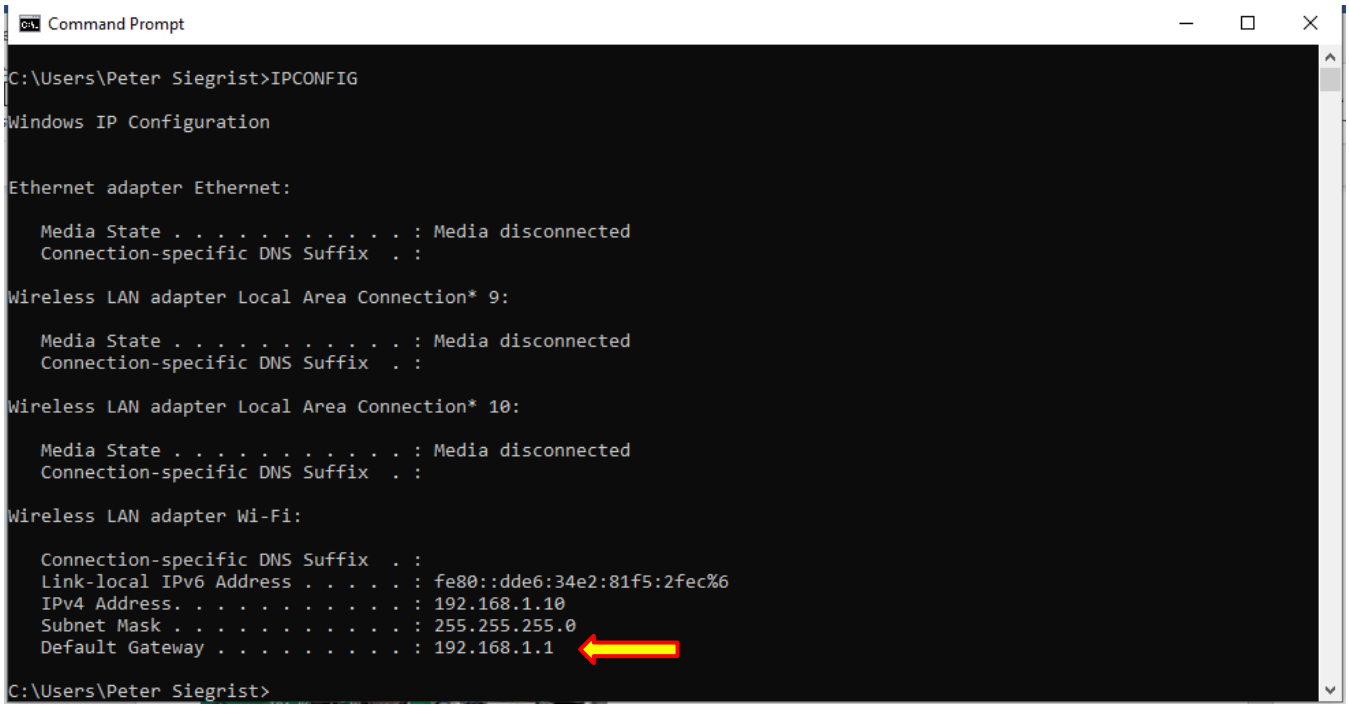
This will start the web app program on the module itself and create a standalone wireless network. This network can then be joined by any computer or device (Tablets, Cell Phones Etc.) that have a wireless connection by the standard methods of joining any normal wireless network.

For a PC running Windows, Open the wireless network selection in the system tray (lower right of the screen) and selecting WiFly-EZX-(XX) where the last two characters are the mac address of the module. With Android devices swipe down and press and hold the Wireless icon to view available networks.

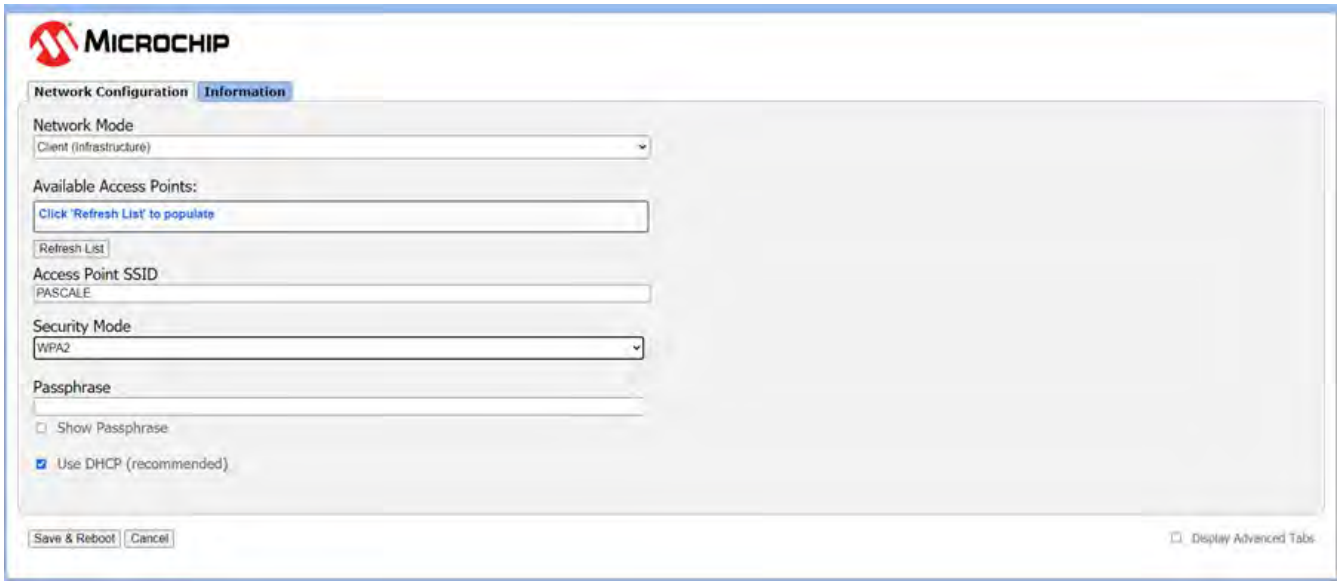
When the connection has been made the configuration webpage of the module can be opened by any web browser using the following methods.

- It is possible to directly type in http://config to navigate to the configuration app, however this is not always reliable depending on network and browser configurations.
- The more reliable way is to access the configuration webpage requires the following steps:
    - Check what the actual IP address of the gateway (AP) is for the device being used to connect with the scale Wi-Fi.

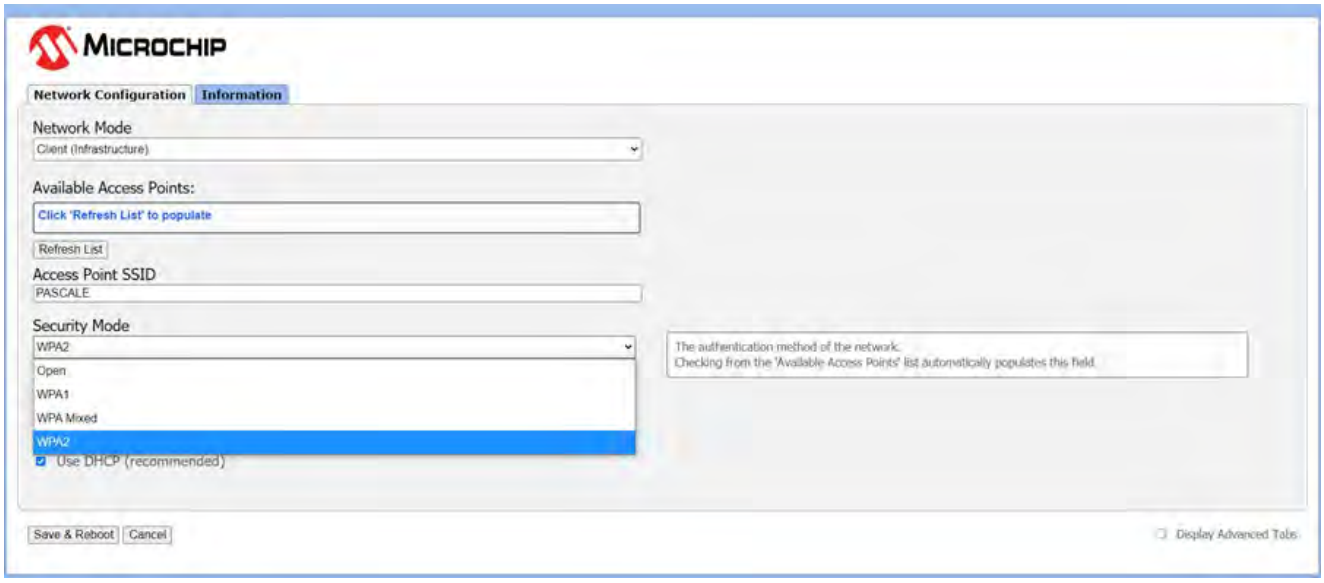
- In windows open a command prompt and type ipconfig to record the gateway IP address. Currently the default is 192.168.1.1.



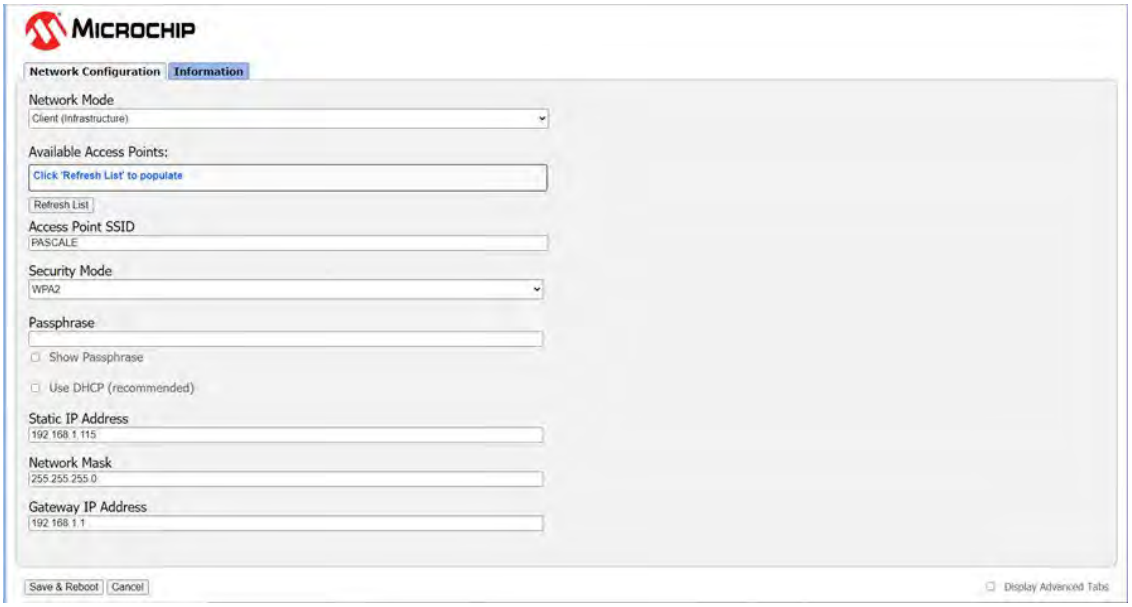
- Then type into the web browser address the gateway IP followed by80, as an example: 192.168.1.1:80. This will open the configuration webpage:



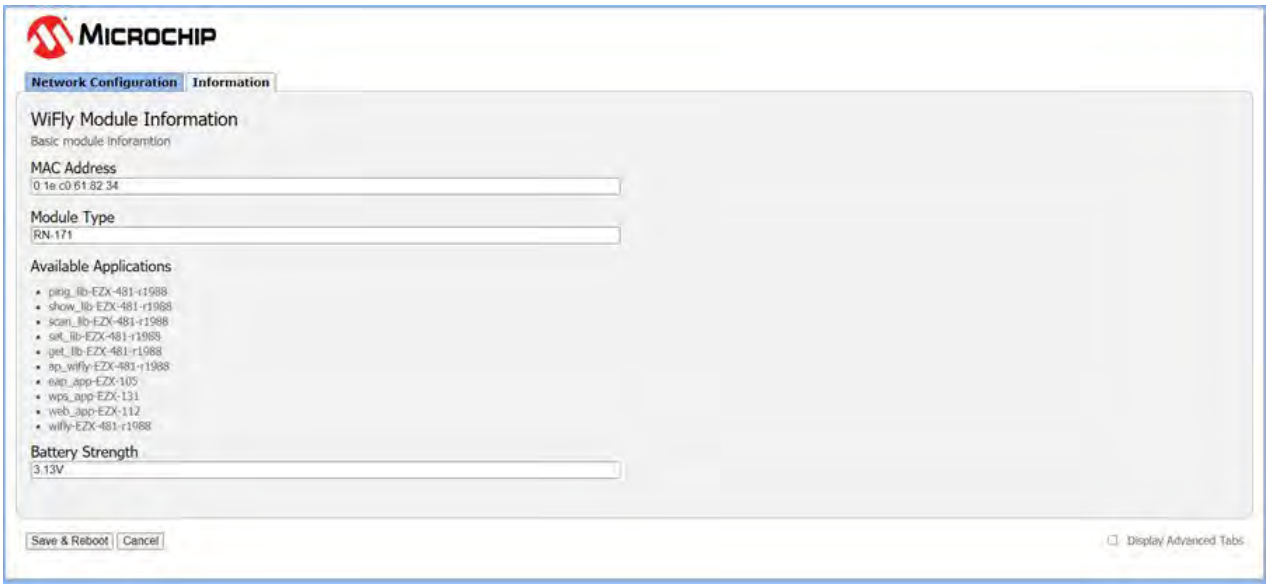
- In the “NETWORK CONFIGURATION” tab you can configure Access Point SSID, Security Mode



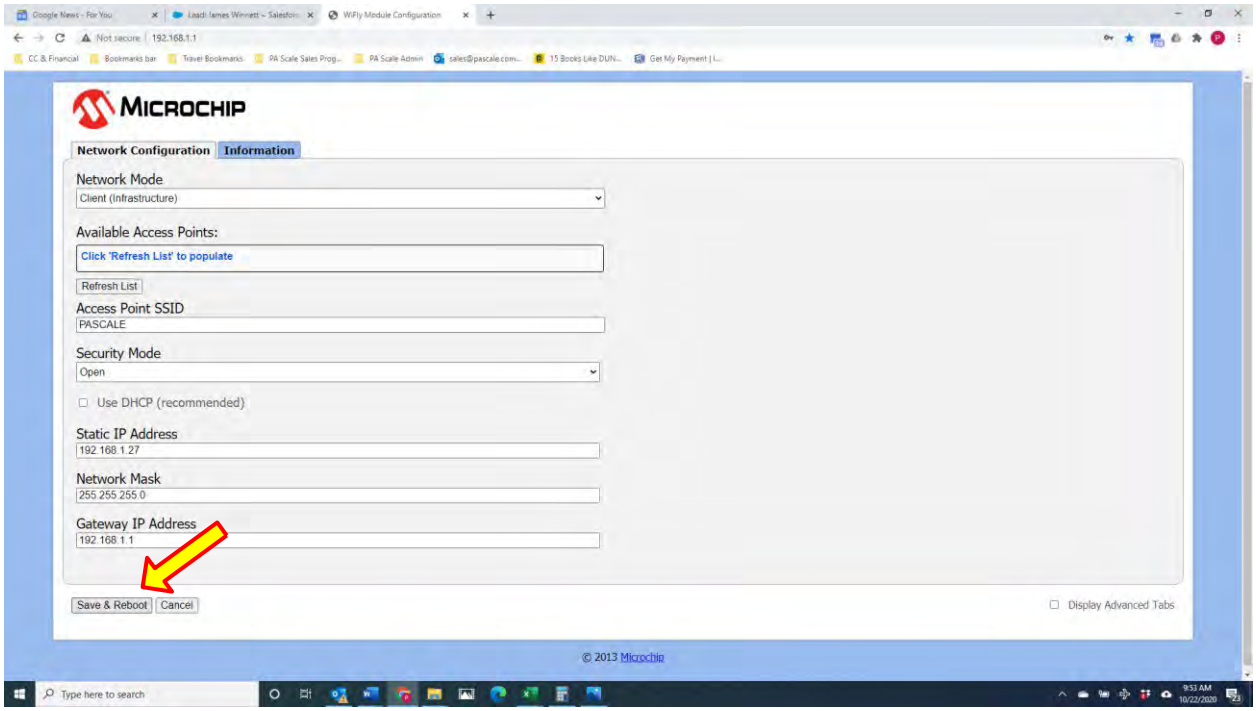
- DHCP or Static IP Address



- Selecting the INFORMATION tab will show the unit's MAC address, Module Type and Battery Strength



- When configuration and setup is complete click on the SAVE & REBOOT button



- Then Wi-Fi option will save the changes, reboot, and attempt to connect to the Network SSID programmed.

Led Status codes

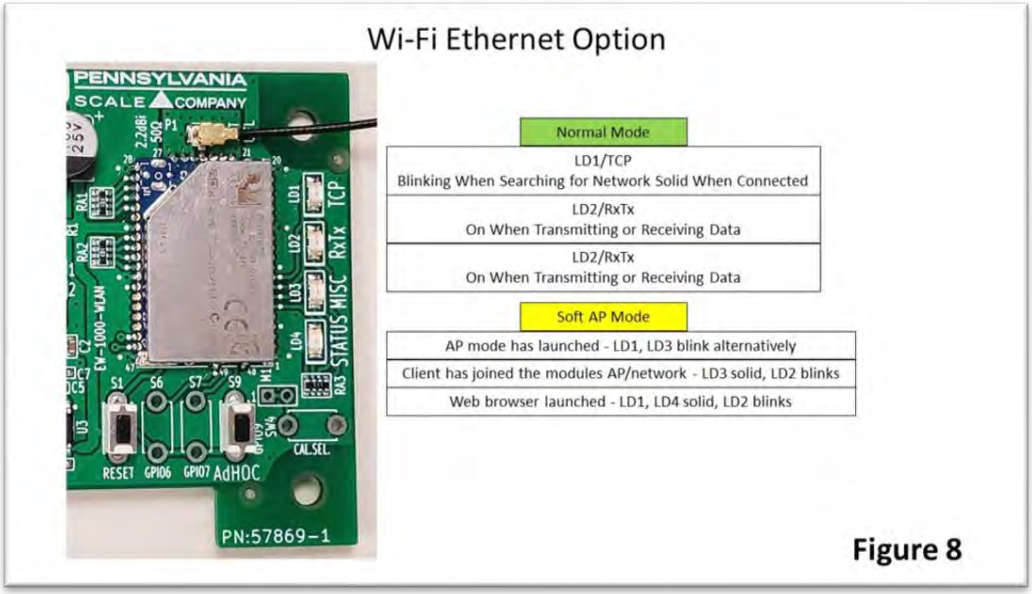


Figure 8

7800 Scale Parts List

Main PCB Assembly	
Part Number	**Description**
61200	7800 Scale Standard AC powered main board. Includes expansion connections for all options except AC/DC Operation.
61201	7800 Scale Standard AC/DC powered main board for scales with built in battery operation Includes expansion connections for all options
Option PCB Assembly	
Part Number	**Description**
57811	AO Analog Output option PC board, jumper select 4 – 20 mA or 0 – 10 VDC proportionate output 2-post screw terminals for connections – ALL MODELS. Requires (3) 57833 snap standoffs – n/c
57869	Wired Ethernet TCP-IP Option REPLACEMENT BOARD ONLY
57869-1	WiFi Ethernet TCP/IP Replacement Kit, Includes cable and antenna. FACTORY INSTALLED ONLY
57808	Bluetooth Option - Virtual Comport or HID\Keyboard Emulation (Specify when ordered). FACTORY INSTALLED ONLY
57834	DB Dual Base KIT OF PARTS for 7600 Indicators and Scales; 7600E 2-base summing applications Kit of parts complete including board, standoffs, jumpers, and all components for field installation
57810	DB Dual Base BOARD only for field replacement applications Requires (3) 57833 snap standoffs – n/c
57818	SSR AC – RELAY OPTION BOARD for 7400, 7600E, and other applications Requires (2) 57856 aluminum standoffs – n/c.
57880	SSR DC – RELAY OPTION BOARD for 7400, 7600E, and other applications Requires (2) 57856 aluminum standoffs – n/c.
Display Board	
Part Number	**Description**
57579	7800 Display Assembly. Includes Display PCB Assembly, LCD Display and Touchscreen
Keypad Overlay	
Part Number	**Description**
57589	7800 Display overlay
Connectors	
Part Number	**Description**
57894	USB Bulkhead connector A to B Connector
57892	Wired Ethernet Bulkhead Connector RJ-45
57893	Bulkhead Port Sealing Cap for USB OR Ethernet bulkhead Connector
48445	Field Load Cell Connector Kit Pins, shell, body, strain relief in field install kit – all quick disconnect applications. For assembly with 20’ home run cable see 48817-5

7800 Scale Parts List

Leveling Feet	
Part Number	**Description**
10402-20	Leveling Foot, 7X00 series
Load Cells	
Part Number	**Description**
57403-5A	2 and 5 lbs. capacity models replacement cell (2.5 kg)
57403-10A	10 lbs. capacity replacement (10 kg)
57403-20A 57403-25A	20 and 25 lbs. capacity models replacement cell (15 kg)
57403-50A	50 lbs. capacity (30 kg)
57403-100A	100 lbs. capacity (50 kg)
57403-150A 57403-200A	150 and 200 lbs. capacity models replacement cell (100 kg)
49667	Load Cell Spacer
Cables	
Part Number	**Description**
57836-1	AC/DC 7X00 Wiring Harness
57847-2	RS-232 6' Male Cable Scale to printer interface cable
57675	CPC-to-Main PCB Cable for remote base option. Load cell jumper cable ASSY
61203	Display Cable Assembly 10" for 7800 Indicator
AC Power Line Cord	
Part Number	**Description**
57434	10' AC Heavy Duty Line Cord
44766	2-Pin Power connector, nylon
Fuses	
Part Number	**Description**
57827	1/2A Slow Blow 110/120 VAC Only
57826	1/8A 220-240 VAC Slow Blow
Scale Chassis and Platform Spider and Covers	
Part Number	**Description**
57830	Bench Scale Top Plate 7500, 7600 & 7800
57560A	7800 Casting Assembly
48105-11	8 x 8” Platform, 7800 2 & 5 lbs. Capacity Only
49892-1	8” Sub Platform 2 & 5 lbs. Capacity Only
57566A	Display Casting, 7800 scale, Remote display
57575	Keypad Backing Plate Fits all 7500, 7600 & 7800 bench scales
57583	Platform, SS, 7X00, 12 x 14” 10 lbs. and greater capacity
57563	12 x 14” Sub Platform, 7X00 10 lbs. and greater capacity
48230	Fish eye Level

7800 Scale Parts List

Batteries	
Part Number	**Description**
57513-1	Replacement Battery Pack New Design For all current design bench scales and indicators
57513-1	Replacement Battery Pack New Design For all current design bench scales and indicators
Shipping Cartons	
Part Number	**Description**
10657	Carton + Foam Inserts, 7500, 7600, 7300 and 7000 12" x 14" Complete shipping carton kit
Options	
Part Number	**Description**
56750-11	Ball Top Transfer Plate and 12" X 14" platform cover
56784-5	Roller Conveyor Option and 12" X 14" platform cover
57592	Rodent Cover to block opening at bottom of scale
DT2PRINTER-1	2" Direct thermal barcode label printer. Includes 6' scale to printer cable. For custom label program see part# CUSTLABEL below
DT4PRINTER-1	4" Direct thermal barcode label printer. Includes 6' scale to printer cable. For custom label program see part# CUSTLABEL below
DTR2PRINTER-1	2" Direct thermal receipt printer. Includes 6' scale to printer cable.
CUSTLABEL	Custom Label Programming. Design and set up of custom label for a plug and play system. See custom label worksheet
SAE-5122A	Replacement Alarm Stack light 3 Lights, Red, Green, Yellow and Buzzer Alarm. 2" Dia. 21" High. Includes Mounting hardware, cable and quick disconnect. Replacement part only for units purchased with 7600-XXX SLA3
SAE-5122B	Replacement Alarm Stack light 2 Lights, Red, Green and Buzzer Alarm. 2" Dia. 21" High. Includes Mounting hardware, cable and quick disconnect. Replacement part only for units purchased with 7600-XXX SLA2
SAE-5122C	Replacement Alarm Stack light 1 Lights, Red and Buzzer Alarm. 2" Diameter, 16" High. Replacement part only for units purchased with 7600-XXX SLA2
Please note: To upgrade an existing unit to Wired Ethernet, WiFi, USB, Bluetooth or Setpoint Relay Operation please contact the factory. These options are factory installed only	

7800 Indicator Parts List

Main PCB Assembly	
Part Number	**Description**
61200-1	7800 indicator standard AC Power main board
Option PCB Assembly	
Part Number	**Description**
57811	AO Analog Output option PC board, jumper select 4 – 20 mA or 0 – 10 VDC proportionate output 2-post screw terminals for connections – ALL MODELS. Requires (3) 57833 snap standoffs – n/c
57869	Wired Ethernet TCP-IP Option REPLACEMENT BOARD ONLY
57869-1	WiFi Ethernet TCP/IP REPLACEMENT BOARD ONLY
57808	Bluetooth Option - Virtual Comport or HID\Keyboard Emulation (Specify when ordered). REPLACEMENT BOARD ONLY
57834	DB Dual Base KIT OF PARTS for 7600 Indicators and Scales; 7600E 2-base summing applications Kit of parts complete including board, standoffs, jumpers, and all components for field installation
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57818	SSR AC – RELAY OPTION BOARD for 7400, 7600E, and other applications Requires (2) 57856 aluminum standoffs – n/c.
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Display Board	
Part Number	**Description**
57579	7800 Display Assembly. Includes Display PCB Assembly, LCD Display and Touchscreen
Keypad Overlay	
Part Number	**Description**
57589	7800 Display overlay
Connectors	
Part Number	**Description**
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57892	Wired Ethernet Bulkhead Connector RJ-45
57893	Bulkhead Port Sealing Cap for USB OR Ethernet bulkhead Connector
57675	CPC-to-Main PCB Cable for 7500/4 and 7600/4 Indicators. Load cell jumper cable ASSY

7800 Indicator Parts List

Cables	
Part Number	**Description**
57836-1	AC/DC 7800 Wiring Harness
57847	RS-232 6' Male Cable Scale to printer interface cable
57837	6’ RS-232 for 7X00 Indicators, Tinned leads to DB9F
57844	6’ RS-232 for 7X00/4, Tinned ends to Female DB9F
61203	Display Cable Assembly 10" for 7800 Indicator
57675	Load cell bulkhead quick disconnect connector and cable to Main PCB Cable for all 7500, 7600 and 7800 indicators
AC Power Line Cord	
Part Number	**Description**
57434	10' AC Heavy Duty Line Cord
44766	2-Pin Power connector, nylon
Fuses	
Part Number	**Description**
57827	1/2A Slow Blow 110/120 VAC Only
57826	1/8A 220-240 VAC Slow Blow
Indicator Enclosure	
Part Number	**Description**
57867	Knob, Dimco Gray 2-285-306 to attach "U" bracket to indicator enclosure
57912-4	7800 Aluminum indicator backplate cover
57919-1	7800 Die cast Aluminum Indicator Enclosure
57918-1	Indicator "U" Mounting Bracket
47451-1	Compression fitting for power cord #3214 Heyco w/nut Indicator Back Panel
48673-1	Compression fitting #3210 Heyco w/nut Indicator Back Panel
Batteries	
Part Number	**Description**
57513-1	Replacement Battery Pack New Design For all current design bench scales and indicators
Shipping Cartons	
Part Number	**Description**
22280	Complete Shipping Carton Kit for 7400, 7500/4, 7600/4 and 7800 indicators

Please note: To upgrade an existing unit to Wired Ethernet, WiFi, USB, Bluetooth or Setpoint Relay Operation please contact the factory. These options are factory installed only