PENNSYLVANIA
SCALE ▲ COMPANY

7800 Touchscreen Count Weigh Scale and Indicator Technical Manual

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.
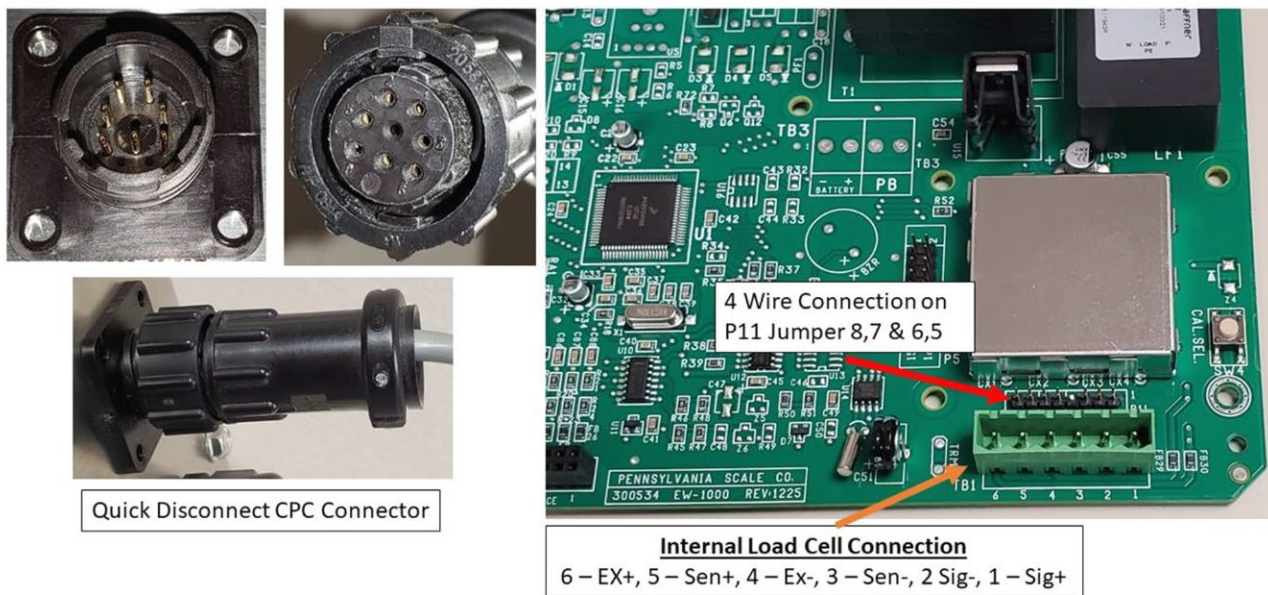- Plug the scale into 110/120 VAC

SPECIFICATIONS

- **LOAD CELL A/D CONVERTER**

- **TYPE:** 24-bit delta sigma (1:16,777,216)

- **EXCITATION**: 5 VDC, 120 mA max.

- **SIGNAL INPUT**: 16 mv

- **SENSITIVITY**: 0.1 Uv/grad

- **UPDATE RATE**: 30 update/second

- **DISPLAY:** TOUCH SCREEN, high-impact glass, 800x320-dot resolution and 4.6" full-color LCD display with resistive touch panel

- **KEYPAD:** Full Alphanumeric plus controls

- **POWER INPUT**: 117/217 VAC, 50-60 HZ, 20 watts, fuse 0.50 A Slo-Blow.

- **SERIAL PORTS:** 2 Bi-directional RS232C

- **ENCLOSURE**: Cast Aluminum Chassis and Load Cell Spider, Stainless Steel Platter.

- **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, USB HID/Keyboard Emulation and Bluetooth®
  - Analog output, 4-20ma or 0-10vdc
  - Custom label design and setup
 - Custom engineering for unique applications

Connections:

INTERNAL LOAD CELL AND REMOTE BASE CONNECTIONS

Quick Disconnect CPC Connector

4 Wire Connection on P11 Jumper 8,7 & 6,5

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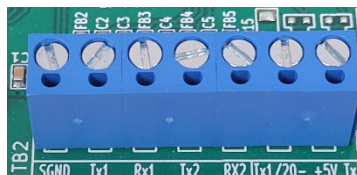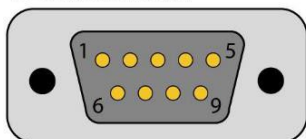
7800 Scale				7800 Indicator			
Com 1	**PIN#**	**Com 2**	**PIN#**	**Com 1**	**PIN#**	**Com 2**	**PIN#**
TXD Transmit	2	TXD Transmit	2	Ground	1	Ground	1
RXD Receive	3	RXD Receive	3	TXD Transmit	2	TXD Transmit	4
Ground	5	Ground	5	RXD Receive	3	RXD Receive	5
+5VDC	6 & 8	+5VDC	6 & 8	+5VDC	7	+5VDC	7

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

GROSS STABLE			15 35	UNITS
	7.800 lb			
NET 6.800 lb		TARE 1.000 lb		ZERO
ID: 7800 TOUCH SCREEN WEIGH COUNT				
MENU	MODE	ID	TARE	KEYPAD TARE

COUNTING MODE

COUNT STABLE			15 35	SAMPLE SET
		10		PIECE WEIGHT
APW 0.67661 lb		ACCURACY 99.95 %		ZERO
ID: 7800 TOUCH SCREEN WEIGH COUNT				
MENU	MODE	ID	TARE	KEYPAD TARE

CHECKWEIGHING MODE

GROSS STABLE			15:03	SET POINT
	7.800 lb			UNITS
NET 6.800 lb		SPT 7.800 lb		ZERO
MENU	MODE	TARE		KEYPAD TARE

SETPOINT RELAY MODE

GROSS STABLE			15:34	SET POINT
	7.800 lb			UNITS
	100%			
NET 6.800 lb		SPT 7.800 lb		ZERO
MENU	MODE	TARE		KEYPAD TARE

Weighing Mode, ID Function Enabled

```
GROSS STABLE                    MEM 13:44        UNITS
         7.800 lb
NET      6.800 lb    TARE    1.000 lb            ZERO
        ID: 7800 TOUCH SCREEN WEIGH COUNT

MENU    MODE    ID    DATA    TARE    KEYPAD
                      OUT             TARE
```

Weighing Mode, ID Function Disabled

```
GROSS STABLE                    MEM 13 46        UNITS
         7.800 lb
NET WEIGHT                    6.800 lb           ZERO
TARE WEIGHT                   1.000 lb

MENU    MODE    DATA    TARE    KEYPAD
                OUT             TARE
```

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 **TARE WEIGHT** **Or** **ACTIVE ID** When ID, Description or Custom Defined Data Fields are enabled in ID Database Active ID is displayed	**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

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Counting Mode, ID Function Enabled

COUNT STABLE	MEM 13 45	SAMPLE SET
	10	PIECE WEIGHT
APW 0.67661 lb	ACCURACY 99.95 %	ZERO
ID: 7800 TOUCH SCREEN WEIGH COUNT		

MENU	MODE	ID	DATA OUT	TARE	KEYPAD TARE

Counting Mode, ID Function Disabled

COUNT STABLE	MEM 13 42	SAMPLE SET
	10	PIECE WEIGHT
PIECE WEIGHT	0.67661 lb	ZERO
PERCENT ACCURACY	99.95 %	

MENU	MODE	DATA OUT	TARE	KEYPAD TARE

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

GROSS STABLE	🖵13:46	SET POINT
	7.800 lb	UNITS
		ZERO

ID: 7800 TOUCH SCREEN WEIGH COUNT

MENU	MODE	ID	DATA OUT	TARE	KEYPAD TARE

Checkweigh Mode, ID Function Disabled

GROSS STABLE	🖵13:46	SET POINT
	7.800 lb	UNITS
NET 6.800 lb	SPT 7.800 lb	ZERO

MENU	MODE	DATA OUT	TARE	KEYPAD TARE

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

GROSS STABLE   MEM 13 45

7.800 lb

100%

ID: 7800 TOUCH SCREEN WEIGH COUNT

SET POINT   UNITS   ZERO

MENU   MODE   ID   DATA OUT   TARE   KEYPAD TARE

Set Point/Relay Mode, ID Function Disabled

GROSS STABLE   MEM 13 42

7.800 lb

100%

NET   6.800 lb   SPT   7.800 lb

SET POINT   UNITS   ZERO

MENU   MODE   DATA OUT   TARE   KEYPAD TARE

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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

AUDIT TRAIL					
PARM 013	CAL 011			14 06 43 July 17, 2022 Sunday	

OPTIONS CONFIGURATION	DATA OUTPUT CONFIGURATION	METROLOGICAL SETTINGS	USER	
COUNTING MODES	TIME & DATE	PASSWORD	INFO	
COMMUNICATION CONFIGURATION	ID DATABASE	SET POINT CONFIGURATION	EXIT	

PARM	NAME	VALUE	UNIT	
51	PIECES PRESET 1	10	PCS	EDIT
52	PIECES PRESET 2	20	PCS	
53	PIECES PRESET 3	50	PCS	SAVE & EXIT
54	PIECES PRESET 4	100	PCS	
55	APW MULTIPLIER	NONE		
56	TWO-SW APW SAMPLE	NO		CANCEL & EXIT
57	PERCENT MODE	ACCURACY		
59	NEGATIVE COUNT	NO		
	COUNTING MODES			

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

BASE1 STABLE	MEM 13 08
▬ ▬ ▬ ▬ ▬ ▬ ▬	
APW ─ ─ ─ ─ ─ ─ lb ACCURACY ─ ─ ─ ─ ─ %	
ID: 123456ABCDEF	

SAMPLE SET · PIECE WEIGHT · ZERO

MENU · MODE · ID · DATA OUT · TARE · KEYPAD TARE

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

BASE1 STABLE	MEM 11:45
ADD 10	EXIT
PLACE SAMPLE ON SCALE	

10 · 20 · 50 · 100 · PIECE SET

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.

1	2	3
4	5	6
7	8	9
0	CLEAR	

QUANTITY
ENTER SAMPLE COUNT
25 PCS
RANGE: 1 TO 50000

ENTER · EXIT

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

BASE1 STABLE	MEM 11 44	
ADD	**10**	EXIT
TARING SCALE		
10	20	50	100	PIECE SET

BASE1 STABLE	MEM 11:45	
ADD	**10**	EXIT
PLACE SAMPLE ON SCALE		
10	20	50	100	PIECE SET

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

BASE1 MOTION	MEM 13 55	
ADD	**10**	EXIT
CALCULATING APW		
10	20	50	100	PIECE SET

BASE1 STABLE	MEM 13 54	SAMPLE SET
COUNT	**10**	PIECE WEIGHT
ENHANCE		ZERO
APW 0.38965 lb	ACCURACY 99.94 %	
ID: 123456ABCDEF		
MENU	MODE	ID	DATA OUT	TARE	KEYPAD TARE

Place any additional items to be counted on the scale platform. Repeat 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

| AUDIT TRAIL					PARM	NAME	VALUE	UNIT	
PARM 013	CAL 011	🔓	14 06 43 July 17, 2022 Sunday	▲	51	PIECES PRESET 1	10	PCS	EDIT
					52	PIECES PRESET 2	20	PCS	
OPTIONS CONFIGURATION	DATA OUTPUT CONFIGURATION	METROLOGICAL SETTINGS	USER		53	PIECES PRESET 3	50	PCS	SAVE & EXIT
					54	PIECES PRESET 4	100	PCS	
COUNTING MODES	TIME & DATE	PASSWORD	INFO	▼	55	APW MULTIPLIER	NONE		
					56	TWO-SW APW SAMPLE	YES		
COMMUNICATION CONFIGURATION	ID DATABASE	SET POINT CONFIGURATION	EXIT		57	PERCENT MODE	ACCURACY		CANCEL & EXIT
					59	NEGATIVE COUNT	NO		
						COUNTING MODES			

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

BASE1 STABLE	MEM 14 06	ACCEPT COUNT
ADD	**10**	
PERCENT ACCURACY — — — — — — — %		EXIT
TARING SCALE		
10	20	50	100	PIECE SET

BASE1 STABLE	MEM 14 06	ACCEPT COUNT
ADD	**10**	
PERCENT ACCURACY 99.95 %		EXIT
PLACE SAMPLE ON SCALE		
10	20	50	100	PIECE SET

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

BASE1 STABLE	MEM 14 06	ACCEPT COUNT
ADD	**10**	
PERCENT ACCURACY 99.95 %		EXIT
PLACE SAMPLE ON SCALE		
10	20	50	100	PIECE SET

BASE1 STABLE	MEM 14:07	SAMPLE SET
COUNT	**10**	PIECE WEIGHT
ENHANCE		
APW 2.60945 lb ACCURACY 99.96 %		ZERO
ID: 123456ABCDEF		
MENU	MODE	ID	DATA OUT	TARE	KEYPAD TARE

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

Configuration of Weighing Settings

From any of the main operating screens:
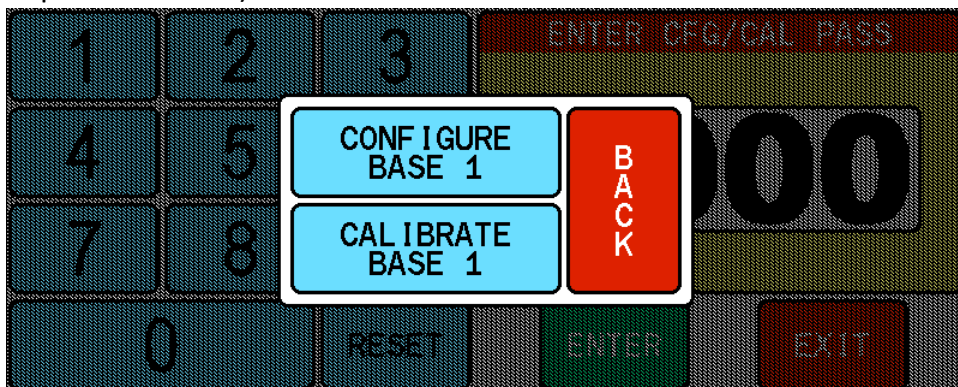
Select the MENU button
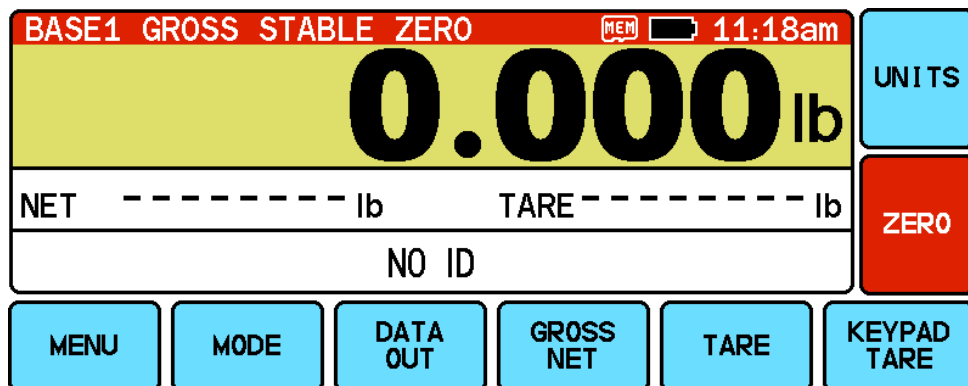
In the main menu select the METROLOGICAL SETTINGS button
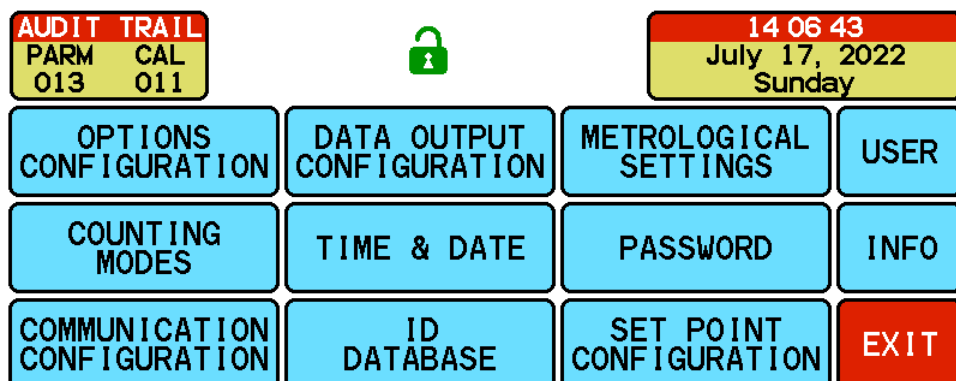
Enter Password if prompted. Default password is 0000
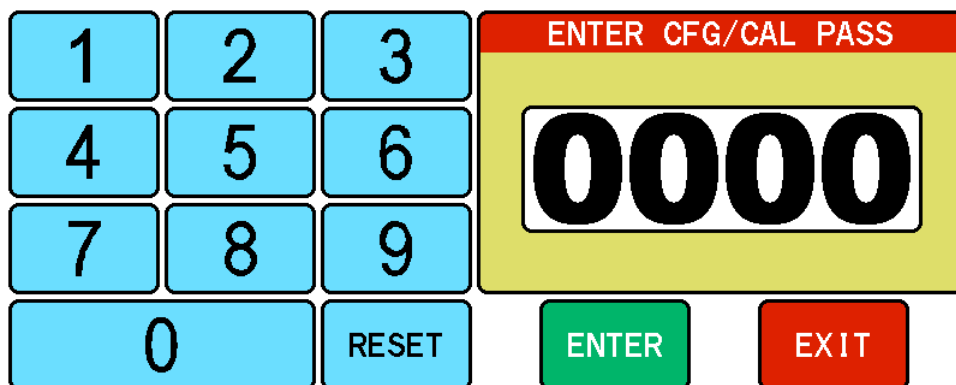
To configure or check the weight configuration of the system select CONFIGURE BASE 1 (Or BASE 2 if option installed)

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

PARM	NAME	VALUE	UNIT	
11	SCALE CAPACITY	50.000	lb	EDIT
41	DISPLAY UD RATE/AVG	7.5/s		
12	AUTO CONFIGURE	NO		SAVE & EXIT
13	ZERO ON POWER-UP	NO		
24	PRIMARY UNITS	lb		
22	PRIMARY RESOLUTION	0.005	lb	
31	SECONDARY UNITS	g		CANCEL & EXIT
32	SECONDARY RESOLUTION	2	g	
	SCALE BASE ONE			

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

PARM	NAME	VALUE	UNIT	
31	SECONDARY UNITS	g		EDIT
32	SECONDARY RESOLUTION	2	g	
26	CANADA	NO		SAVE & EXIT
23	ZERO RANGE	99.0	%	
27	ZERO TRACKING (AZM)	0.25	GRAD	
28	STABLE (MOTION)	1		
100	KEYPAD TARE ENABLE	YES		CANCEL & EXIT
101	MAIN WEIGHT DSP	G/N SELECT		
	SCALE BASE ONE			

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 cycle through available selections.	Primary UOM
25	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 cycle through available selections.	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
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 weigh 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	
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.	

Calibration Procedure
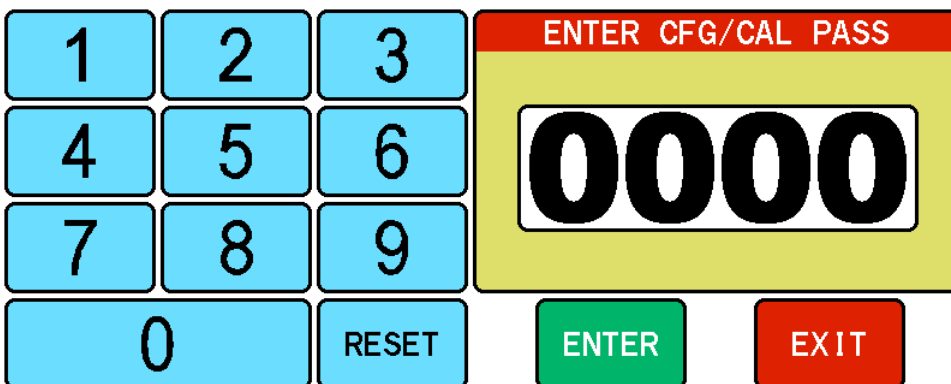
From any of the main operating screens:
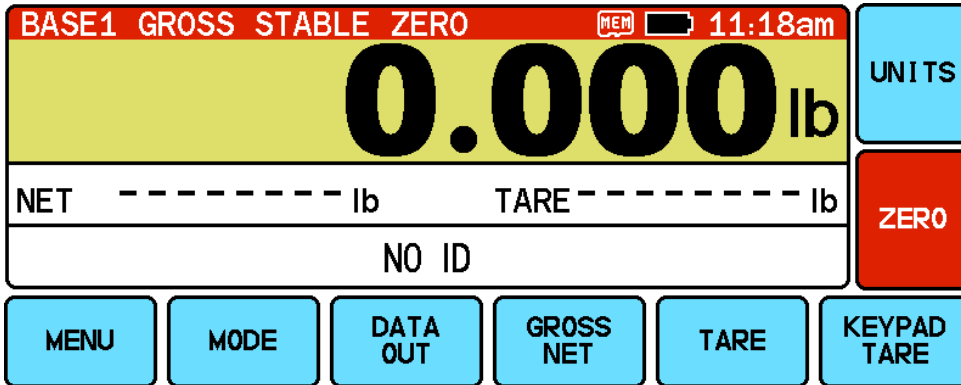
Select the MENU button

BASE1 GROSS STABLE ZERO	MEM	11:18am

0.000 lb

UNITS

NET - - - - - - - - lb   TARE - - - - - - - - lb

ZERO

NO ID

MENU	MODE	DATA OUT	GROSS NET	TARE	KEYPAD TARE

In the main menu select the METROLIGICAL SETTINGS button

AUDIT TRAIL		10 52 28am
PARM 004	CAL 002	March 21, 2022 Monday

OPTIONS CONFIGURATION	DATA OUTPUT CONFIGURATION	METROLOGICAL SETTINGS	USER
COUNTING MODES	TIME & DATE	PASSWORD	INFO
COMMUNICATION CONFIGURATION	ID DATABASE	DISPLAY CONFIGURATION	EXIT

Enter Password if prompted. Default password in 0000

1	2	3
4	5	6
7	8	9
0	RESET	

ENTER CFG/CAL PASS

0000

ENTER   EXIT
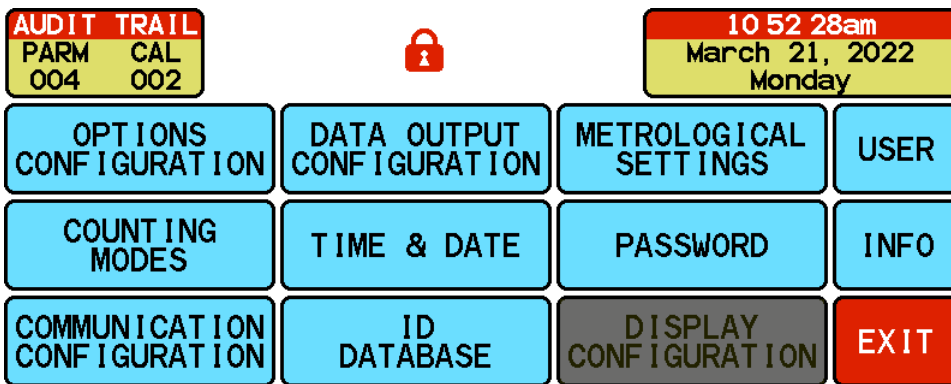
To calibrate the system select CALIBRATE BASE 1 (Or BASE 2 if option installed)
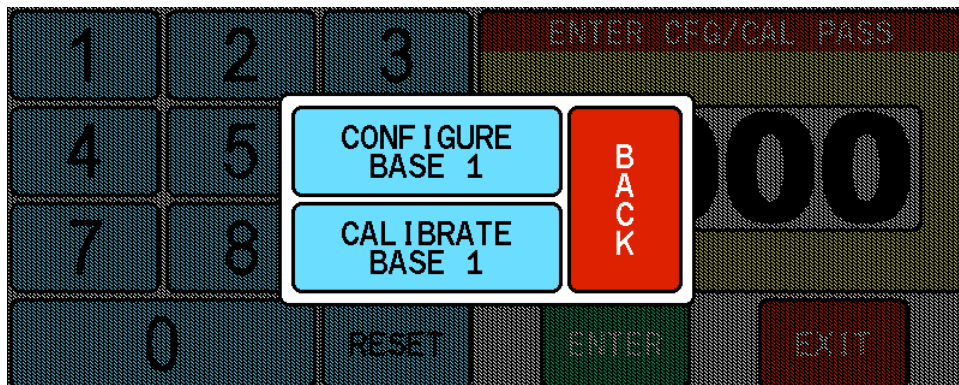
Zero Calibration, with no weight or items on the weighbridge select the ZERO button
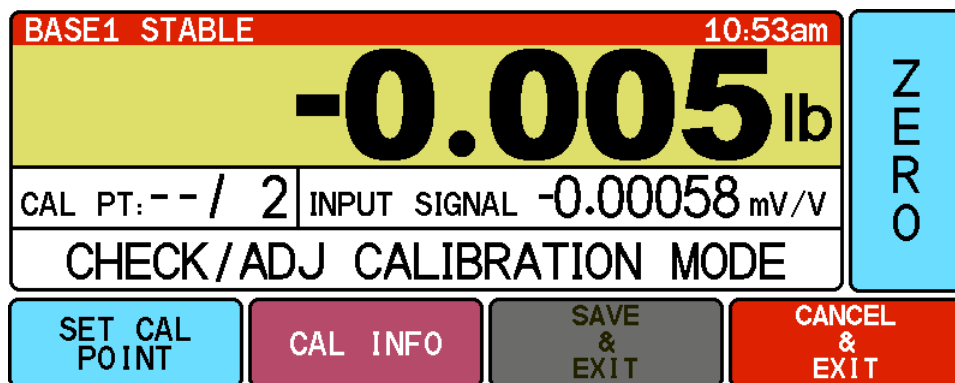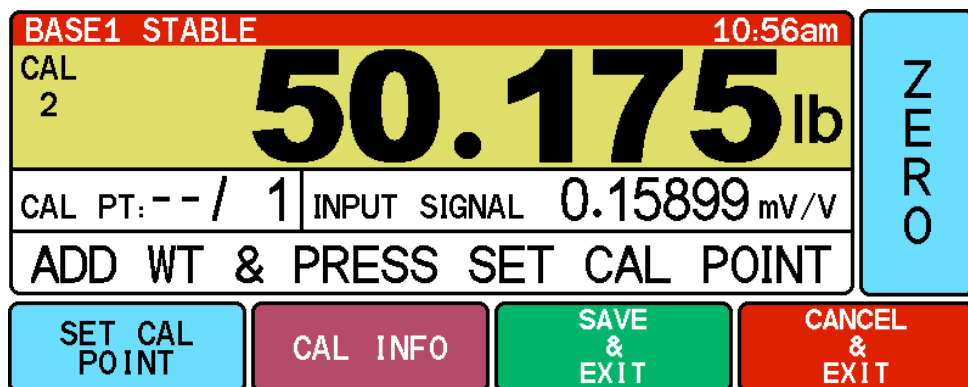
Place a known calibration weight on the scale to perform span calibration point 1. In this example a 25 lb. weight is used.
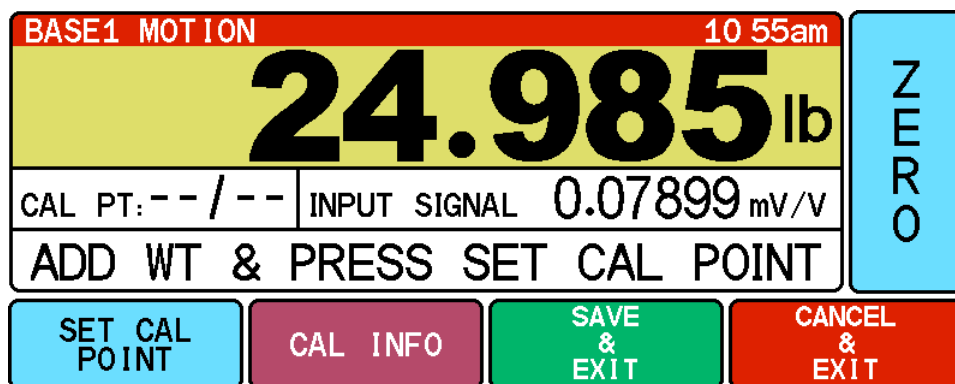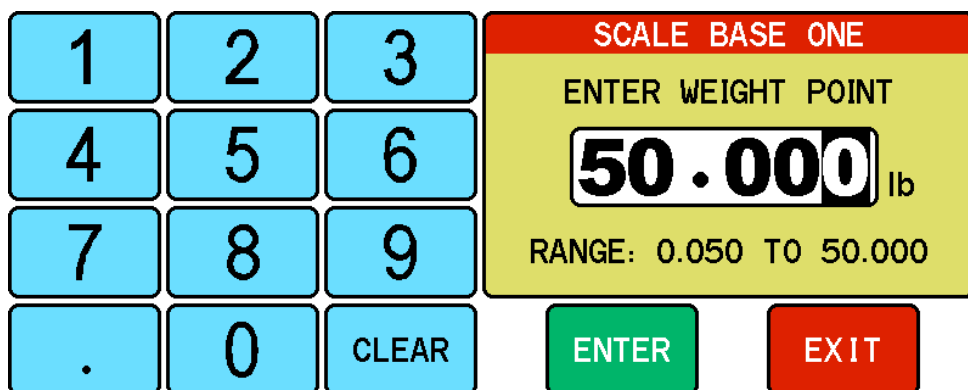
Select the SET CAL POINT and key in the calibration weigh value (25 lb. in this example)

```
┌─────┬─────┬─────┐     ┌────────────────────────────┐
│  1  │  2  │  3  │     │      SCALE  BASE  ONE       │
├─────┼─────┼─────┤     │   ENTER  WEIGHT  POINT      │
│  4  │  5  │  6  │     │   ┌──────────────┐          │
├─────┼─────┼─────┤     │   │  25.000 │ lb         │
│  7  │  8  │  9  │     │   └──────────────┘          │
├─────┼─────┼─────┤     │  RANGE: 0.050  TO  50.000   │
│  .  │  0  │CLEAR│     └────────────────────────────┘
└─────┴─────┴─────┘        [ENTER]        [EXIT]
```
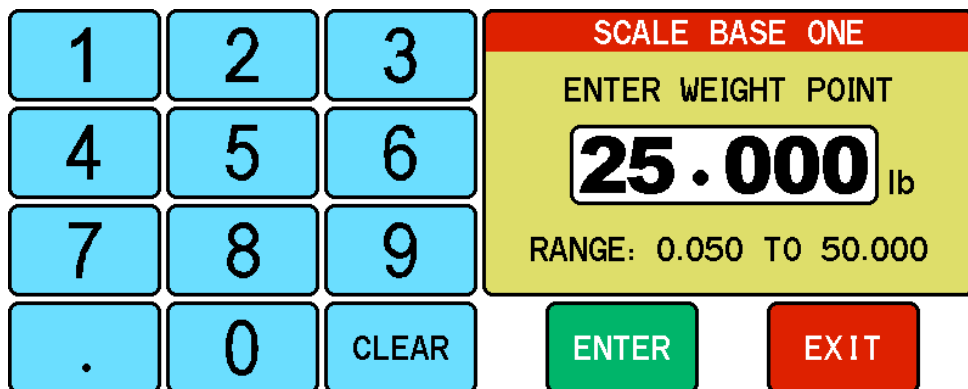
Place a known calibration weight on the scale to perform span calibration point 2. In this example a 50 lb. weight is used.

```
┌──────────────────────────────────────────┬──────┐
│ BASE1 STABLE              10:56am         │  Z   │
│ CAL                                       │  E   │
│  2    50.175 lb                           │  R   │
│                                           │  O   │
│ CAL PT: --/ 1 │INPUT SIGNAL 0.15899 mV/V  │      │
│ ADD  WT  &  PRESS  SET  CAL  POINT        │      │
├──────────┬──────────┬──────────┬──────────┴──────┤
│ SET CAL  │ CAL INFO │  SAVE    │  CANCEL          │
│  POINT   │          │   &      │    &             │
│          │          │  EXIT    │   EXIT           │
└──────────┴──────────┴──────────┴─────────────────┘
```

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

```
┌─────┬─────┬─────┐     ┌────────────────────────────┐
│  1  │  2  │  3  │     │      SCALE  BASE  ONE       │
├─────┼─────┼─────┤     │   ENTER  WEIGHT  POINT      │
│  4  │  5  │  6  │     │   ┌──────────────┐          │
├─────┼─────┼─────┤     │   │  50.000 │ lb         │
│  7  │  8  │  9  │     │   └──────────────┘          │
├─────┼─────┼─────┤     │  RANGE: 0.050  TO  50.000   │
│  .  │  0  │CLEAR│     └────────────────────────────┘
└─────┴─────┴─────┘        [ENTER]        [EXIT]
```

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

BASE1 STABLE		10 56am
	50.000 lb	Z E R O

CAL PT: 2/ 2	INPUT SIGNAL 0.15895 mV/V

ADD WT & PRESS SET CAL POINT

SET CAL POINT	CAL INFO	SAVE & EXIT	CANCEL & EXIT

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

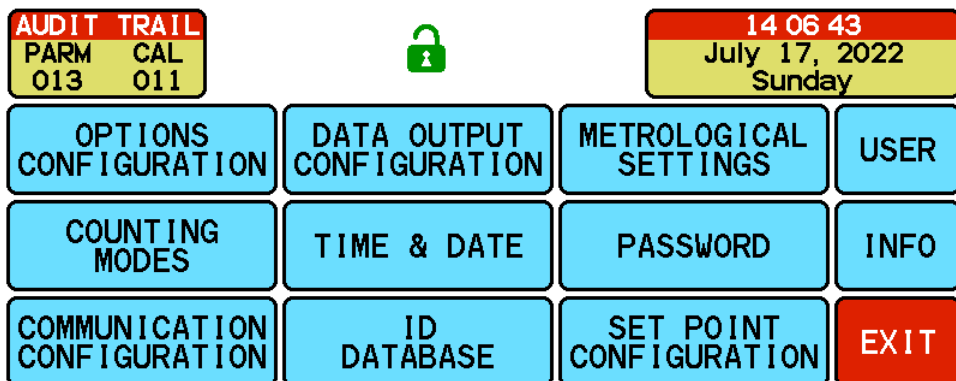When Calibration is complete select SAVE & EXIT to save and return to main menu. To exit without saving select CANCEL & EXIT

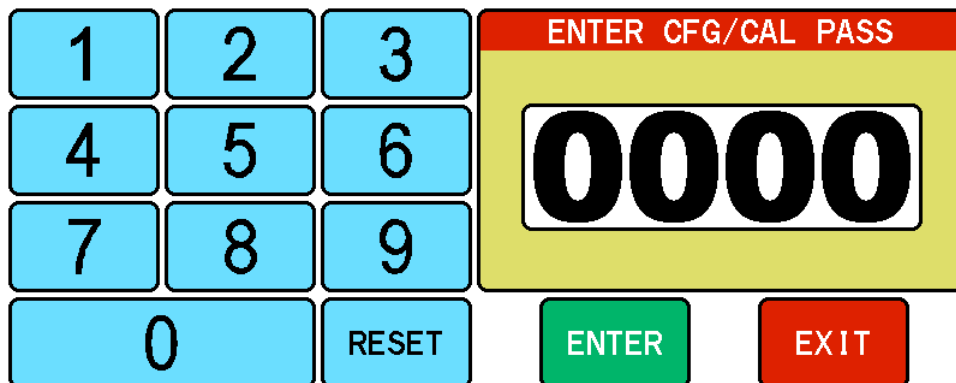## Configuration of Counting Modes

From any of the main operating screens:
Select the MENU button
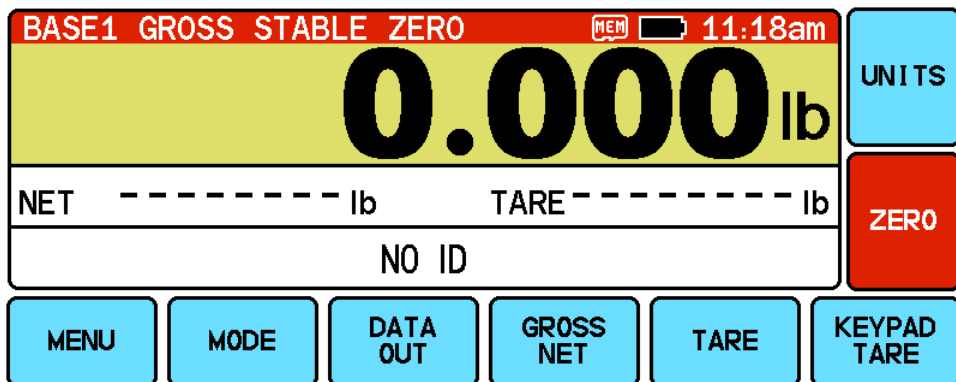
In the main menu select the COUNTING MODES
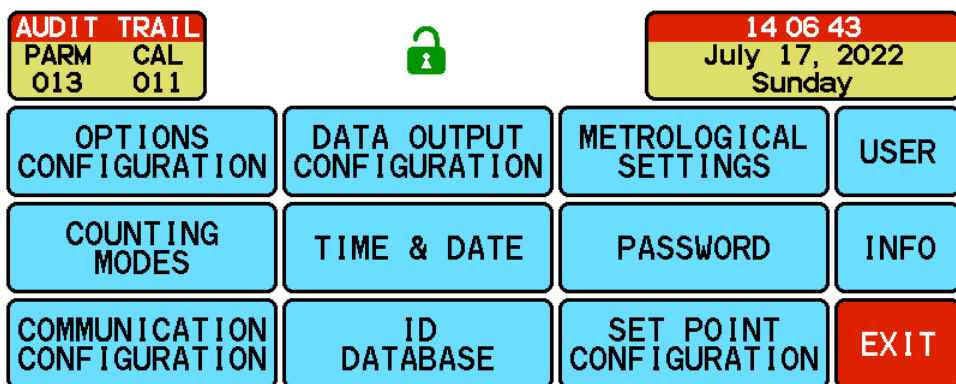
Enter Password if prompted. Default password in 0000
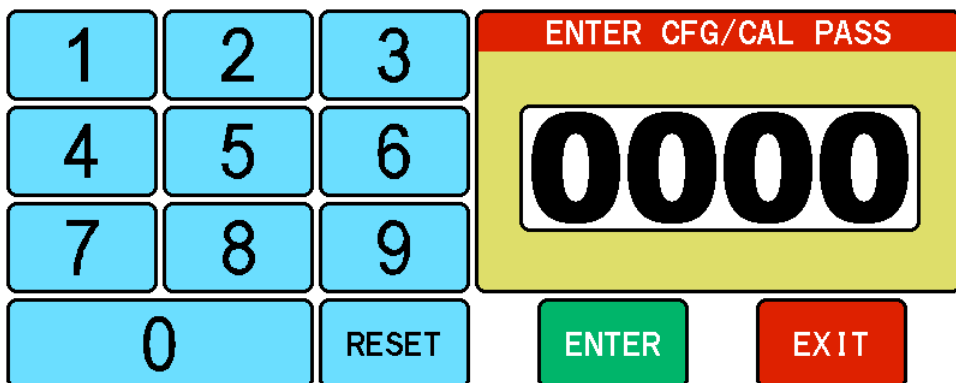
This will open the counting modes configuration menu. Visible on page 1

PARM	NAME	VALUE	UNIT
14	COUNT ENABLED	YES	
15	ENHANCE APW	YES	
51	PIECES PRESET 1	10	PCS
52	PIECES PRESET 2	20	PCS
53	PIECES PRESET 3	50	PCS
54	PIECES PRESET 4	100	PCS
55	APW MULTIPLIER	NONE	
56	TWO-SW APW SAMPLE	NO	
	COUNTING MODES		

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

PARM	NAME	VALUE	UNIT
51	PIECES PRESET 1	10	PCS
52	PIECES PRESET 2	20	PCS
53	PIECES PRESET 3	50	PCS
54	PIECES PRESET 4	100	PCS
55	APW MULTIPLIER	NONE	
56	TWO-SW APW SAMPLE	NO	
57	PERCENT MODE	ACCURACY	
59	NEGATIVE COUNT	NO	
	COUNTING MODES		

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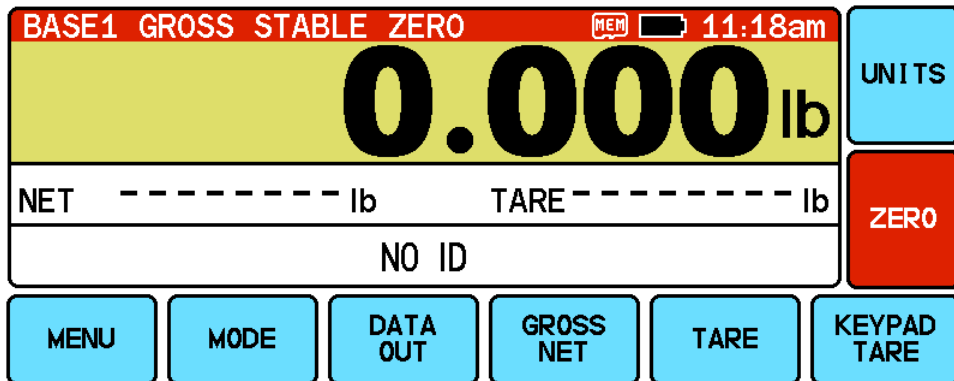
Selecting the Green SAVE & EXIT button will save and exit, Red CANCEL & EXIT will exit without saving

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 Sample Update function • Select the EDIT button to cycle through available selections.	
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:
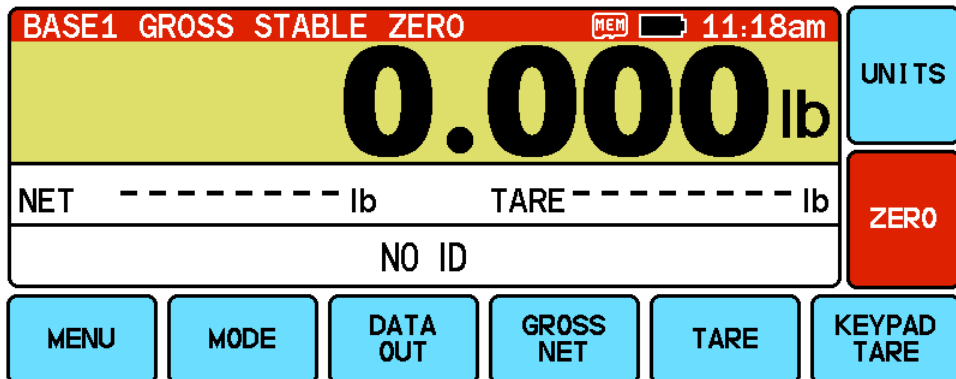
Select the MENU button

BASE1 GROSS STABLE ZERO	MEM	11:18am

0.000 lb

NET – – – – – – – – lb	TARE – – – – – – – – lb

NO ID

UNITS

ZERO

MENU	MODE	DATA OUT	GROSS NET	TARE	KEYPAD TARE

In the main menu select the DATA OUTPUT CONFIGURATION

AUDIT TRAIL		14 06 43
PARM CAL		July 17, 2022
013 011		Sunday

OPTIONS CONFIGURATION	DATA OUTPUT CONFIGURATION	METROLOGICAL SETTINGS	USER
COUNTING MODES	TIME & DATE	PASSWORD	INFO
COMMUNICATION CONFIGURATION	ID DATABASE	SET POINT CONFIGURATION	EXIT

Enter Password if prompted. Default password in 0000

1	2	3	ENTER CFG/CAL PASS
4	5	6	**0000**
7	8	9	
0	RESET	ENTER	EXIT

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

PARM	NAME	VALUE
16	APW DATABASE	ON
16.7	STORE SET POINTS	YES
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	SKU
220	CUSTOM DATA FIELD 2	ALPHA-NUMERIC
	ID & DATABASE	

EDIT · SAVE & EXIT · CANCEL & EXIT

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

PARM	NAME	VALUE
190	DATABASE ID TYPE	ALPHA-NUMERIC
200	DESCRIPTION	ON
210	CUSTOM DATA FIELD 1	ALPHA-NUMERIC
211	CDF 1 LABEL	SKU
220	CUSTOM DATA FIELD 2	ALPHA-NUMERIC
221	CDF 2 LABEL	EMPLOYEE ID#
230	CUSTOM DATA FIELD 3	ALPHA-NUMERIC
231	CDF 3 LABEL	PROD.ORDER #
	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
216	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	STOE SET POITS	• 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.

16.1	APW AQUIRE	• When APW DATABASE is ON this determines how new piece weights are entered into the DB by sampling on scale or manually entering the APW • Selections are SCALE or MANUAL • Select the EDIT button to cycle through available selections.
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

Configuration of Communication Protocols

From any of the main operating screens:

Select the MENU button

BASE1 GROSS STABLE ZERO	MEM	11:18am

0.000 lb

| NET | - - - - - - - - lb | TARE | - - - - - - - - lb |

NO ID

UNITS

ZERO

| MENU | MODE | DATA OUT | GROSS NET | TARE | KEYPAD TARE |

In the main menu select the COMMUNICATION CONFIGURATION

AUDIT TRAIL	14 06 43
PARM CAL	July 17, 2022
013 011	Sunday

OPTIONS CONFIGURATION	DATA OUTPUT CONFIGURATION	METROLOGICAL SETTINGS	USER
COUNTING MODES	TIME & DATE	PASSWORD	INFO
COMMUNICATION CONFIGURATION	ID DATABASE	SET POINT CONFIGURATION	EXIT

Enter Password if prompted. Default password in 0000

1	2	3
4	5	6
7	8	9
0	RESET

ENTER CFG/CAL PASS

0000

ENTER   EXIT
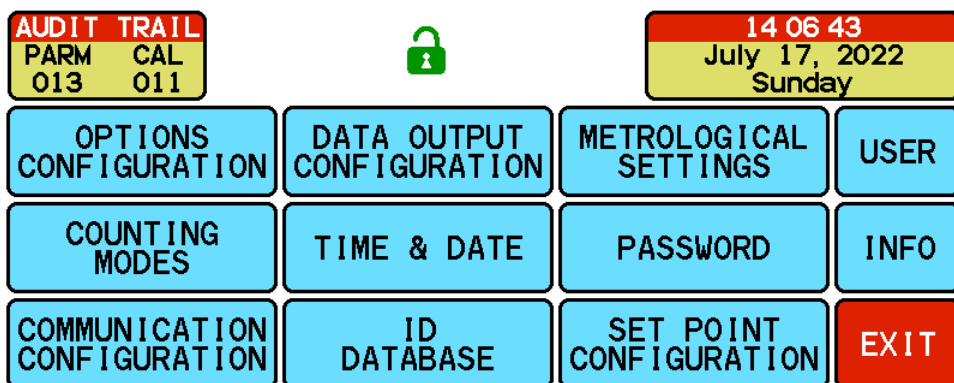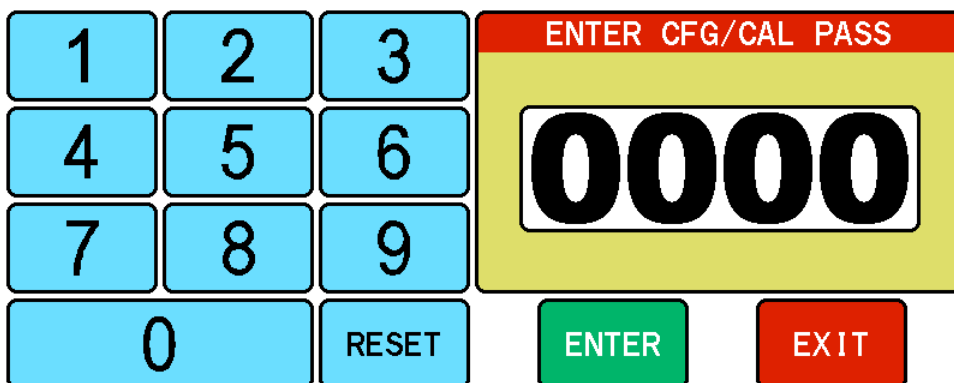
Select COM1 or COM 2
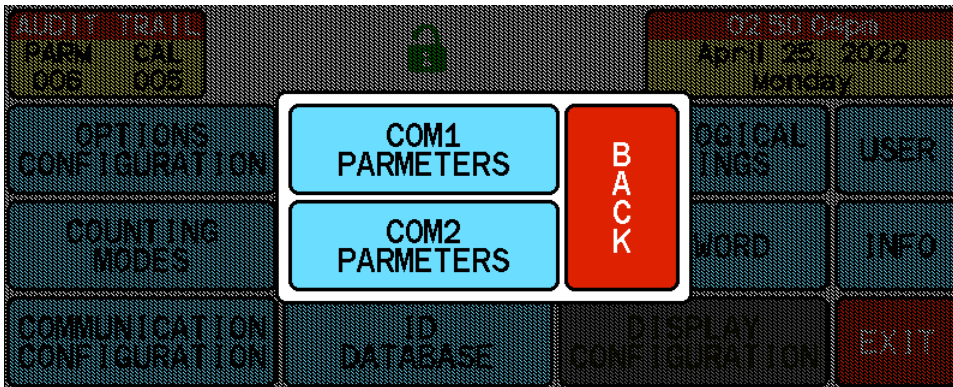
This will open the communication configuration menu for the port selected.

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, NCI, BARCODE. See appendix below for details • Select the EDIT button to cycle through available selections.
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.

PARAMETER (PARM)	NAME	VALUE/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.

PARM	NAME	VALUE	
5.2	PROTOCOL SELECT	BARCODE	EDIT
67.1	BAUD RATE	9600	
67.2	DATA LENGTH	8	SAVE & EXIT
67.3	STOP BITS	1	
67.4	PARITY BIT	NONE	CANCEL & EXIT
	COM2		

COM 2 Communication Configuration Menu

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.
67.1	BAUD RATE	• Select the baud rate • Available: 300, 600, 1200, 2400, 4800, 9600, 19200 & 38400. • Select the EDIT button to cycle through available selections.
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.

Barcode

Configures the comport for use with the barcode option, part number "7800-XXX BC". The Pennsylvania remote commands embedded in the barcode will allow for scanning in of scale data settings and in certain operations a barcode with scale data only may be scanned in without the remote command embedded.

This would include:

ID, Description Custom Data Fields 1,2 and 3 when prompted on the scale display

Selecting the keypad tare or piece weight and scanning a barcode with those values.

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 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:
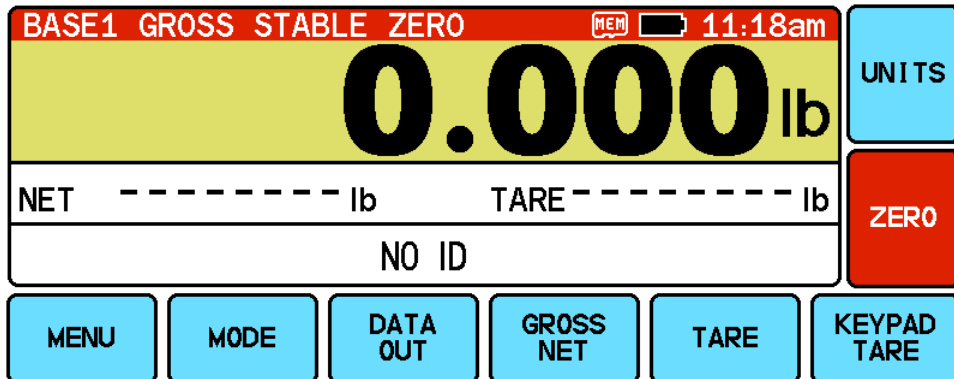
Select the MENU button

BASE1 GROSS STABLE ZERO	MEM	11:18am
	0.000 lb	UNITS
NET – – – – – – – – lb	TARE – – – – – – – – lb	
NO ID		ZERO
MENU	MODE	DATA OUT	GROSS NET	TARE	KEYPAD TARE

In the main menu select the DATA OUTPUT CONFIGURATION

AUDIT TRAIL		14 06 43
PARM 013 CAL 011	🔓	July 17, 2022 Sunday
OPTIONS CONFIGURATION	DATA OUTPUT CONFIGURATION	METROLOGICAL SETTINGS	USER
COUNTING MODES	TIME & DATE	PASSWORD	INFO
COMMUNICATION CONFIGURATION	ID DATABASE	SET POINT CONFIGURATION	EXIT

Enter Password if prompted. Default password in 0000

1	2	3	ENTER CFG/CAL PASS
4	5	6	**0000**
7	8	9	
0	RESET	ENTER	EXIT
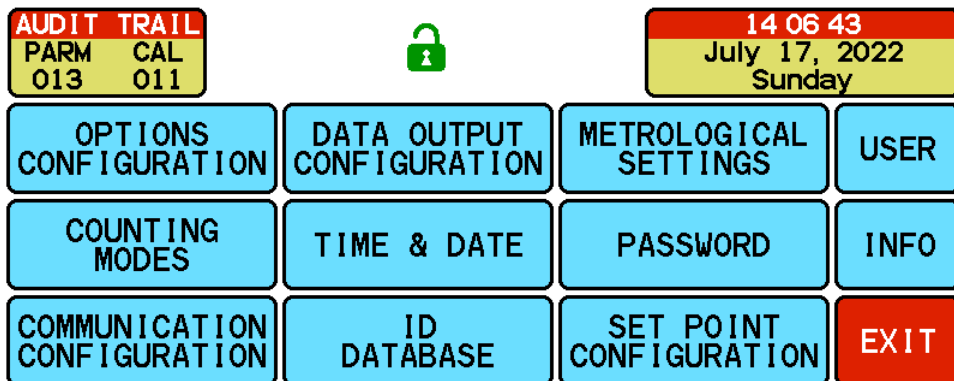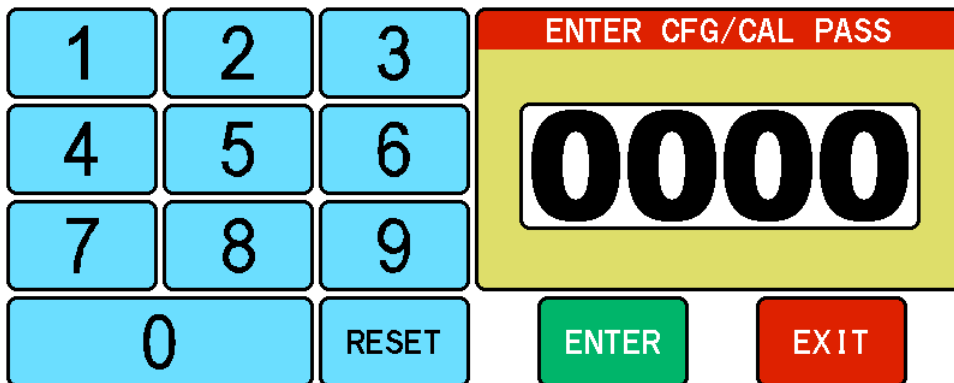
In this menu are the data output selections and set up. Setup functions explained:

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 Delete 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	60 <SPACE>
	2	TIME: hh:mm:ss ap	
	3	DATE: mm/dd/yy	65 <CR> <LF>
	4	UNIT	
SELECT	5	"Gross" Prefix	
	6	"Tare" Prefix	99 [END]
	7	"Net" Prefix	
▼	8	"Count" Prefix	
	9	"APW" Prefix	EXIT
		CHOOSE DATA OUTPUT	

This screen shows the top of the list of available data out put 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

ID	DESCRIPTION
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	• Barcode Printer Prologue. This sends the following data to recall and print barcode labels: • <LF><FR"F1"<LF><?><LF> • The string ? for use in barcode label printing application
16	• BC Printer Epilogue • The string <P1> for use in barcode label printing application
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

ID	DESCRIPTION
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)
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 % ERR/ACC • Outputs: % OF ERROR OR ACCURACY (% VALUE) • To select if the scale displays and outputs % of accuracy or error go to the COUNTING MODES menu to setup
37	• PREFIX BASE # • Outputs: BASE (NUMBER) that is the active base 1 or optional 2
39	• PREFIX ID • Outputs: ID(ID NAME)
40 – 49	• USER DEFINED STATIC DATA FIELD

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

▲	#	ID	DESCRIPTION	INSERT DELETE
	1	40	{undefined}	
▼	2	99	** END OF FORMAT **	EDIT TEXT
EDIT				SAVE EXIT
ENTER CODE			SERIAL FORMAT	CANCEL EXIT

Select EDIT TEXT and key in the data

STR(40) `TEST USER DEFINED STATIC FIELD`

| Q | W | E | R | T | Y | U | I | O | P |

| A | S | D | F | G | H | J | K | L |

| ⇧ | Z | X | C | V | B | N | M | DEL | INS |

| 123 SYM | ◀ | ▶ | SPACE | CLR | ENTER | EXIT |
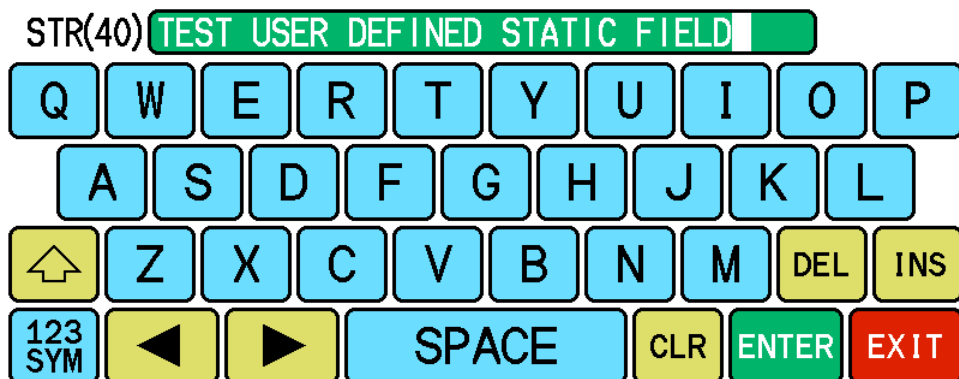
The scale will now out put the data entered at this point in the data output string

▲	#	ID	DESCRIPTION	INSERT DELETE
	1	40	"USER DEFINED STATIC DATA OUTPUT"	
▼	2	99	** END OF FORMAT **	EDIT TEXT
EDIT				SAVE EXIT
ENTER CODE			SERIAL FORMAT	CANCEL EXIT
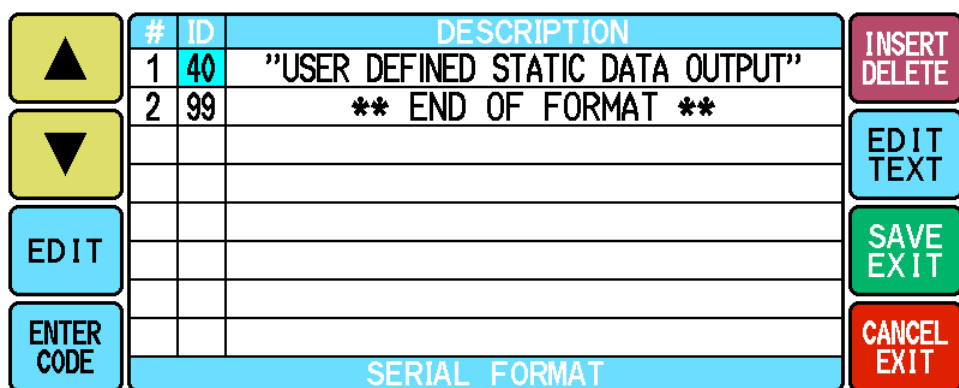
ID	DESCRIPTION
52	• STATUS CHARACTER • Outputs status character to show scale condition
53	• ABO CS • Outputs ABO Checksum for data validation
54	• LEADING ZERO EN • Outputs all weight values with leading zeros (0) instead of spaces
55	• LF DELAY 1S • Delays the LINE FEED command by 1 second
56	• LF DELAY 2S • Delays the LINE FEED command by 2 seconds
57	• LF DELAY 3S • Delays the LINE FEED command by 3 seconds

ID	DESCRIPTION
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
72	• <STX> • Outputs START OF TEXT command
73	• <EXT> • 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

ID	DESCRIPTION
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
95	• {ESC FUNCTION} • Outputs ESCAPE command
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
101-102	• 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

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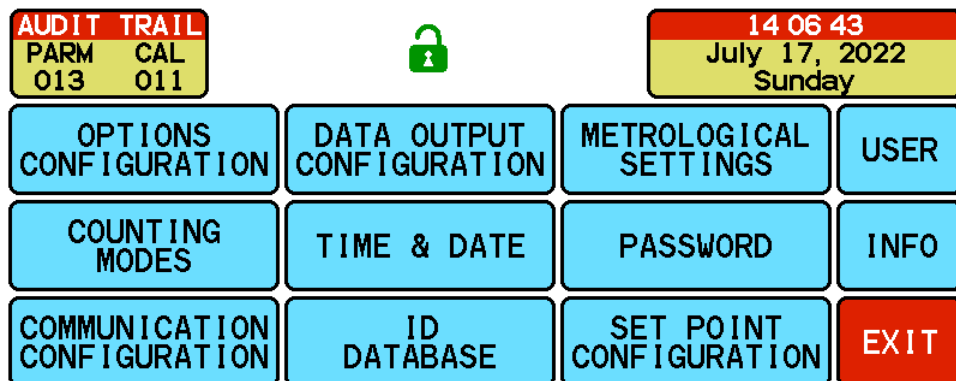| ID	DESCRIPTION
110	• DESC TEXT • Outputs the data entered in the DESCRIPTION FIELD • Can be enabled or disabled in the ID DATABASE menu
11-113	• CDF1(2 or 3) TEXT • Outputs the data entered in the custom data fields 1 through 3. Can be enabled or disabled in the ID DATABASE menu

Configuration of Time and Date
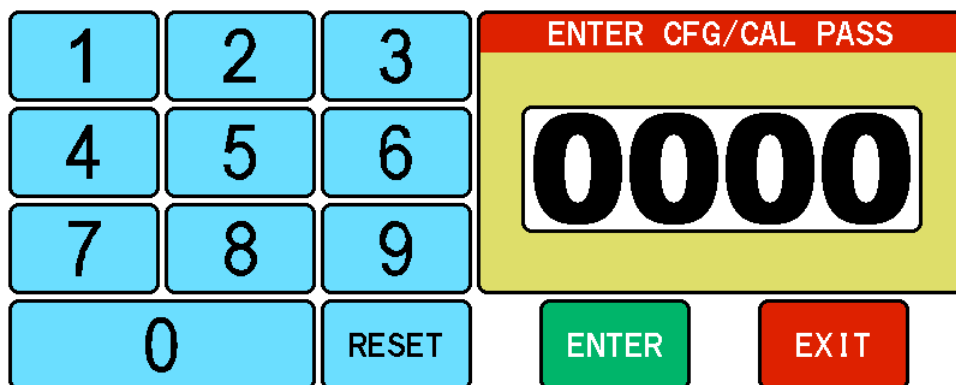
From any of the main operating screens:
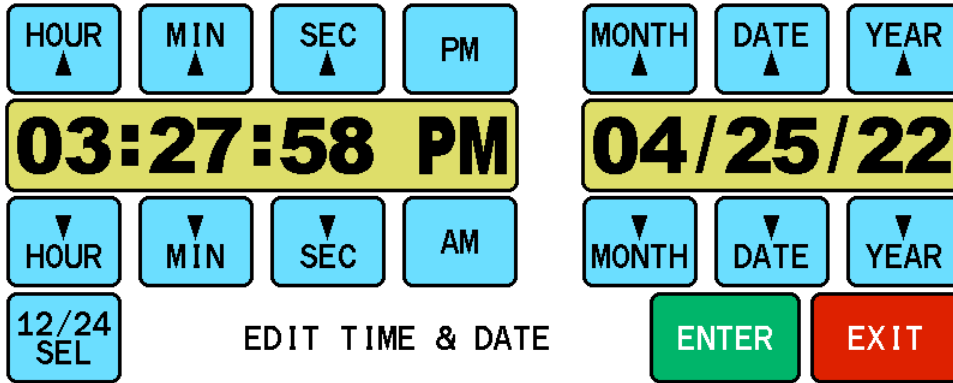
Select the MENU button

BASE1 GROSS STABLE ZERO	MEM	11:18am	UNITS

0.000 lb

NET - - - - - - - lb   TARE - - - - - - - lb

NO ID

ZERO

| MENU | MODE | DATA OUT | GROSS NET | TARE | KEYPAD TARE |
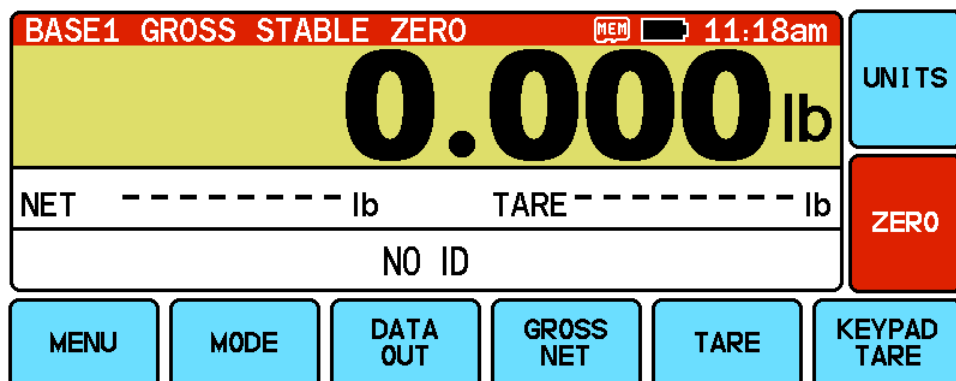
In the main menu select the TIME & DATE

AUDIT TRAIL
PARM CAL
013   011

14 06 43
July 17, 2022
Sunday

OPTIONS CONFIGURATION	DATA OUTPUT CONFIGURATION	METROLOGICAL SETTINGS	USER
COUNTING MODES	TIME & DATE	PASSWORD	INFO
COMMUNICATION CONFIGURATION	ID DATABASE	SET POINT CONFIGURATION	EXIT

Enter Password if prompted. Default password in 0000

1	2	3	ENTER CFG/CAL PASS
4	5	6	**0000**
7	8	9	
0	RESET	ENTER	EXIT

PENNSYLVANIA
SCALE ▲ COMPANY

This will open the time and date menu.

| HOUR ▲ | MIN ▲ | SEC ▲ | PM | | MONTH ▲ | DATE ▲ | YEAR ▲ |

03:27:58 PM   **04/25/22**

| HOUR ▼ | MIN ▼ | SEC ▼ | AM | | MONTH ▼ | DATE ▼ | YEAR ▼ |

12/24 SEL   EDIT TIME & DATE   ENTER   EXIT

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

BASE1 GROSS STABLE ZERO	MEM	11:18am
0.000 lb		UNITS
NET – – – – – – – lb	TARE – – – – – – – lb	ZERO
NO ID		

| MENU | MODE | DATA OUT | GROSS NET | TARE | KEYPAD TARE |
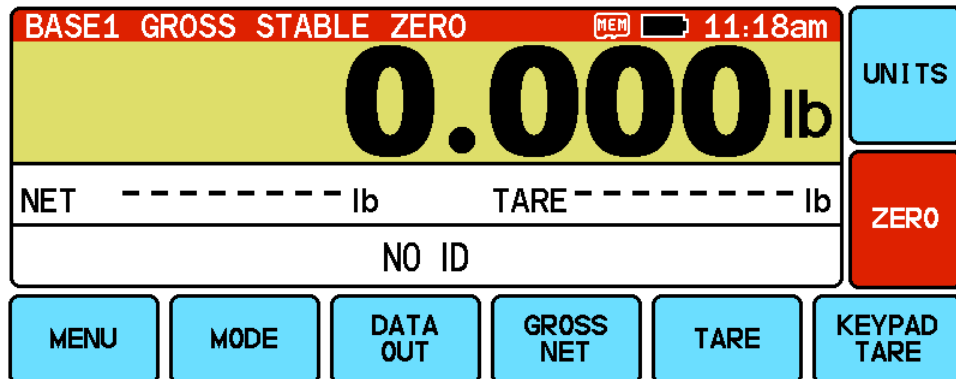
In the main menu select the OPTIONS CONFIGURATION

AUDIT TRAIL	🔓	14 06 43
PARM CAL 013 011		July 17, 2022 Sunday

OPTIONS CONFIGURATION	DATA OUTPUT CONFIGURATION	METROLOGICAL SETTINGS	USER
COUNTING MODES	TIME & DATE	PASSWORD	INFO
COMMUNICATION CONFIGURATION	ID DATABASE	SET POINT CONFIGURATION	EXIT

Enter Password if prompted. Default password in 0000

1	2	3	ENTER CFG/CAL PASS
4	5	6	**0000**
7	8	9	
0	RESET	ENTER	EXIT
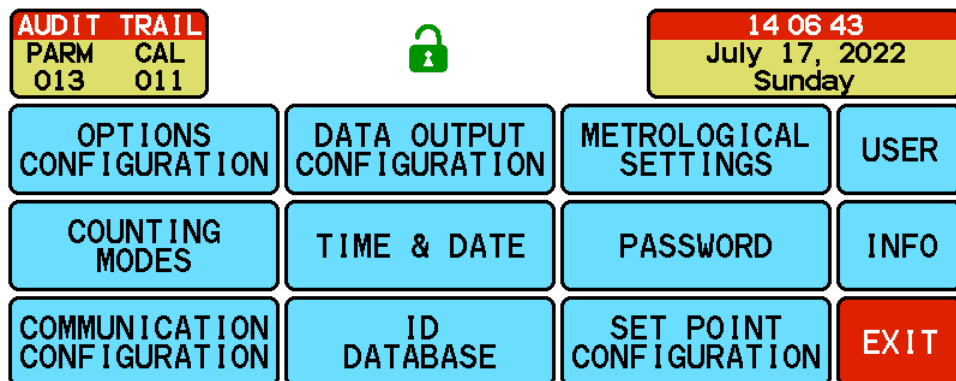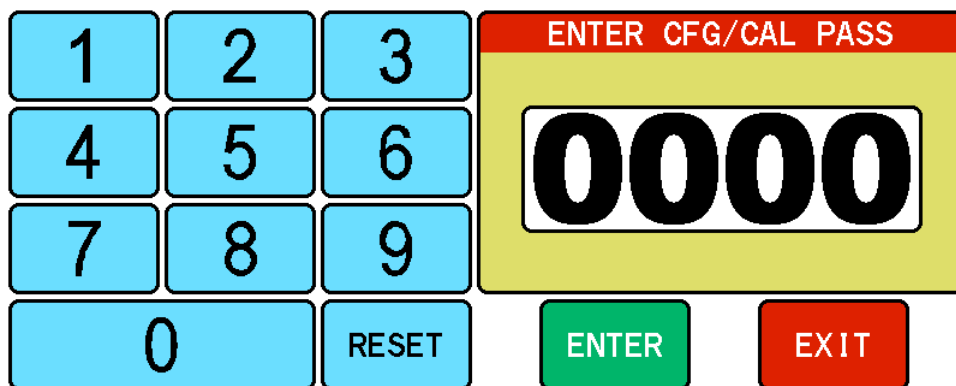
This will open the Options Configuration Menu.

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:

PARM	NAME	VALUE	UNIT	
1	BATTERY ENABLE	OFF		EDIT
2	MULTI-RANGE MODE	25/5 50/2	%/x	
2.1	MUTLI-RNG PT 1 OVERRIDE	0	%	SAVE & EXIT
2.2	MUTLI-RNG PT 2 OVERRIDE	0	%	
3	PEAK/HOLD MODE	OFF		
6	ACCUMULATOR MODE	OFF		CANCEL & EXIT
OPTIONS				

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

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

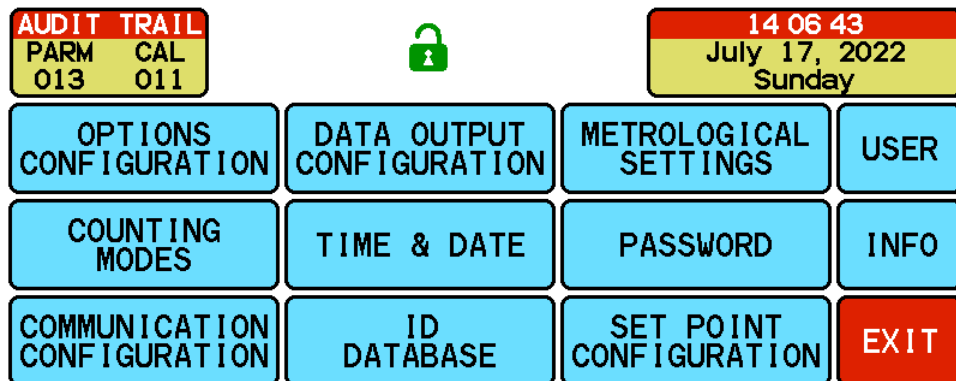| Scale Capacity 100		RES 22 (Displayed resolution 0.01)		
DTR Setting	High Resolution Up To lbs.:	High Resolution at This Setting:	Medium Resolution Up To lbs.:	Medium Resolution at This Setting:
0				
1	50	0.005		
2	50	0.002		
3	25	0.005		
4	25	0.002		
5	20	0.005		
6	20	0.002		
7	20	0.001		
8	10	0.005		
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
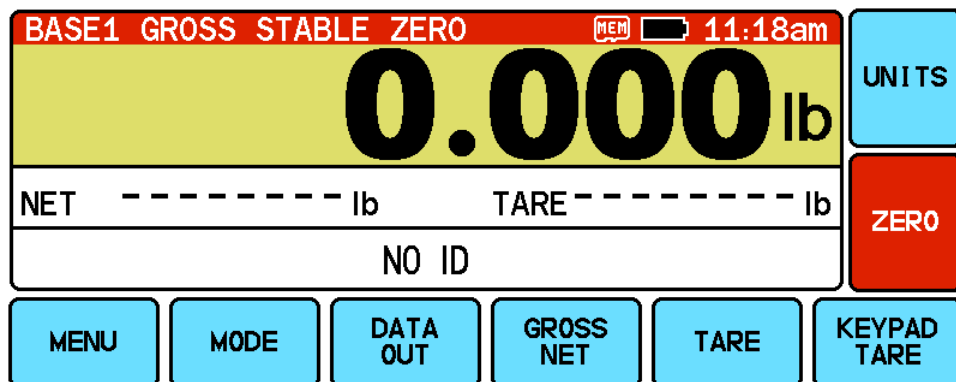
From any of the main operating screens:

Select the MENU button

BASE1 GROSS STABLE ZERO	🖬 🔋 11:18am	UNITS
0.000 lb		
NET – – – – – – – lb TARE – – – – – – – lb		ZERO
NO ID		

MENU	MODE	DATA OUT	GROSS NET	TARE	KEYPAD TARE

In the main menu select the USER

AUDIT TRAIL
PARM   CAL
013   011

🔓

14 06 43
July 17, 2022
Sunday

OPTIONS CONFIGURATION	DATA OUTPUT CONFIGURATION	METROLOGICAL SETTINGS	USER
COUNTING MODES	TIME & DATE	PASSWORD	INFO
COMMUNICATION CONFIGURATION	ID DATABASE	SET POINT CONFIGURATION	EXIT

Enter Password if prompted. Default password in 0000

1	2	3	ENTER CFG/CAL PASS
4	5	6	**0000**
7	8	9	
0	RESET	ENTER	EXIT
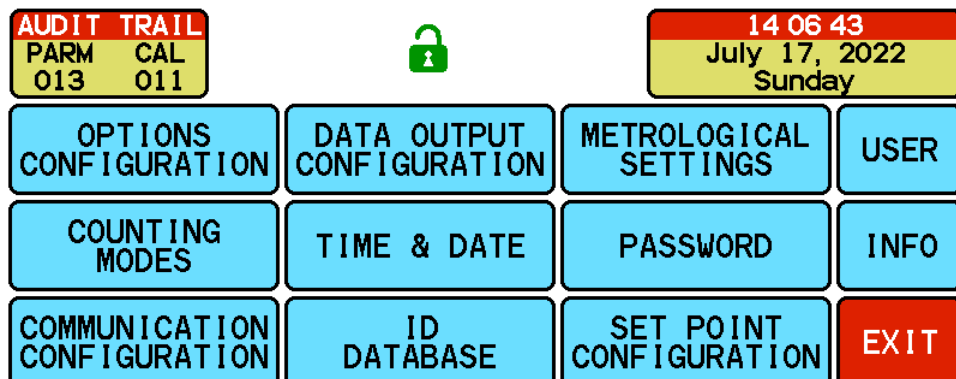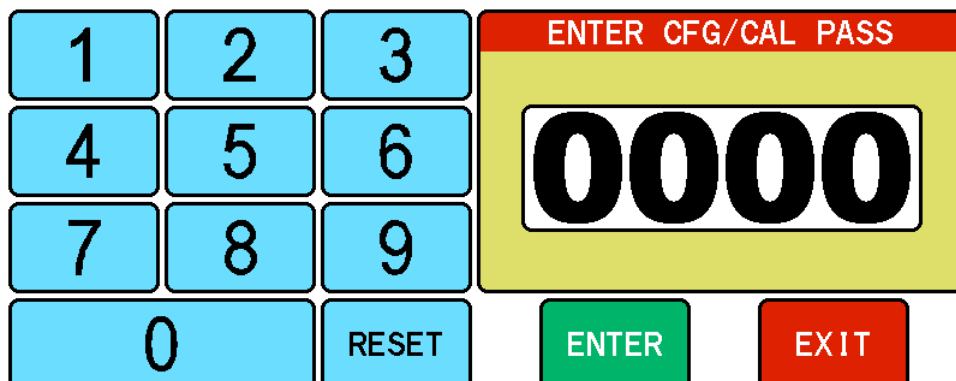
This will open the USER Menu.

PARM	NAME	VALUE	UNIT
990	BACKLIGHT LEVEL	70	%
991	BACKLIGHT TIMER	10	min
992	SCREEN SAVER	YES	
993	TOUCH SCREEN BEEP DUR	OFF	

USER SETTINGS

EDIT | SAVE & EXIT | CANCEL & EXIT

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 the amount of display back light • Selections are OFF, SHORT, MEDIUM, LONG • Select the EDIT button to cycle through available selections	

SET POINT Configuration Menu

From any of the main operating screens:

Select the MENU button

BASE1 GROSS STABLE ZERO	🖬 🔋 11:18am	UNITS

0.000lb

NET - - - - - - - - lb	TARE - - - - - - - - lb	ZERO

NO ID

MENU	MODE	DATA OUT	GROSS NET	TARE	KEYPAD TARE

In the main menu select the USER

AUDIT TRAIL	🔓	14 06 43
PARM 013 CAL 011		July 17, 2022 Sunday

OPTIONS CONFIGURATION	DATA OUTPUT CONFIGURATION	METROLOGICAL SETTINGS	USER
COUNTING MODES	TIME & DATE	PASSWORD	INFO
COMMUNICATION CONFIGURATION	ID DATABASE	SET POINT CONFIGURATION	EXIT

Enter Password if prompted. Default password in 0000

1	2	3	ENTER CFG/CAL PASS
4	5	6	**0000**
7	8	9	
0	RESET	ENTER	EXIT

7800 Technical Manual
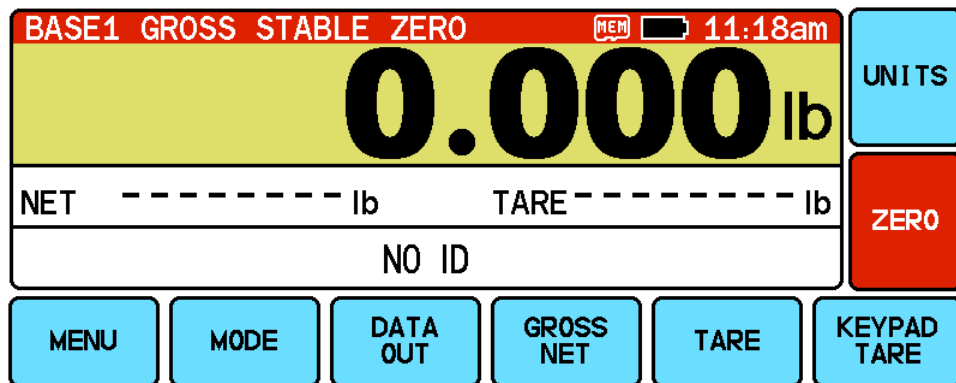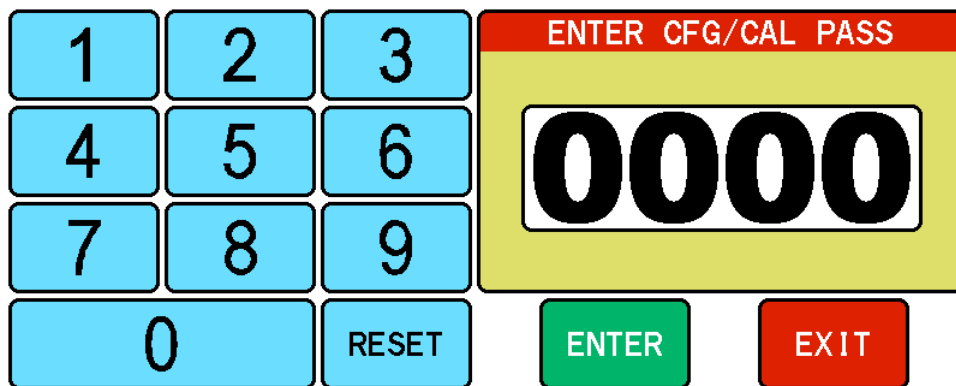
This will open the SET POINT CONFIGURATION Menu.

PARM	NAME	VALUE
8	SET POINT ENABLE	CHECK WEIGH
8.01	SOURCE	WEIGHT
8.11	RELAY OUTPUT	DIO
8.12	WEIGHT SOURCE	NET

EDIT **SAVE & EXIT** **CANCEL & EXIT**

SET POINTS

Set Point Configuration Menu

PARAMETER (PARM)	NAME	VALUE/SELECTIONS
8	SET POINT ENABLE	• Enable or disable the battery option • 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.
8.11	RELAY OUTPUT	• Select relay output • Selections are NONE, DIO, CHARGE or CHARGE-NC • Select the EDIT button to cycle through available selections.
8.02	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.
8.12	WEIGHT SOURCE	• Only available when SOURCE is set to WEIGHT • Selections are NET, GROSS or DISPLAY

PASSWORD Configuration Menu

From any of the main operating screens:

Select the MENU button

BASE1 GROSS STABLE ZERO	MEM 11:18am

0.000 lb

UNITS

NET − − − − − − − − lb   TARE − − − − − − − − lb

ZERO

NO ID

| MENU | MODE | DATA OUT | GROSS NET | TARE | KEYPAD TARE |
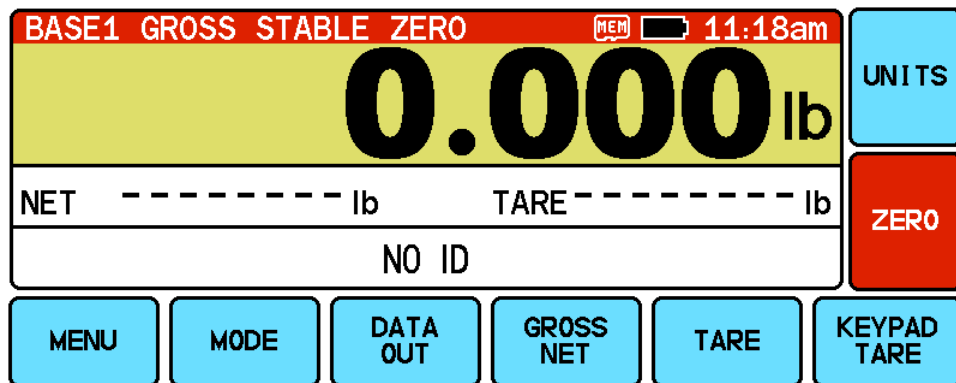
In the main menu select the PASSWORD

AUDIT TRAIL		🔓	14 06 43
PARM 013	CAL 011		July 17, 2022 Sunday

OPTIONS CONFIGURATION	DATA OUTPUT CONFIGURATION	METROLOGICAL SETTINGS	USER
COUNTING MODES	TIME & DATE	PASSWORD	INFO
COMMUNICATION CONFIGURATION	ID DATABASE	SET POINT CONFIGURATION	EXIT

Enter Password if prompted. Default password in 0000

1	2	3	ENTER CFG/CAL PASS
4	5	6	**0000**
7	8	9	
0	RESET	ENTER	EXIT
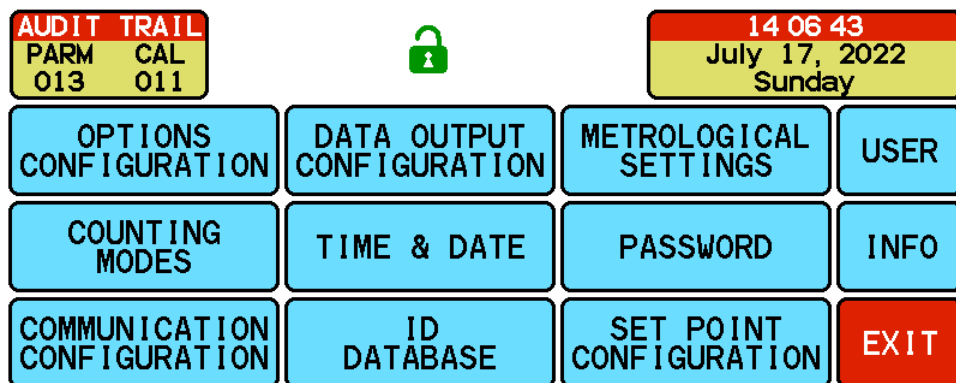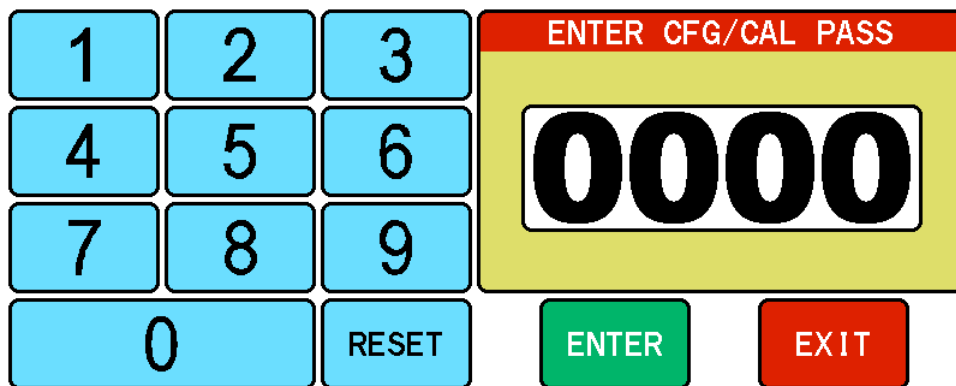
This will open the PASSWORD Menu.

1	2	3	**NEW CFG/CAL PASS**
4	5	6	????
7	8	9	
0	RESET	ENTER	EXIT
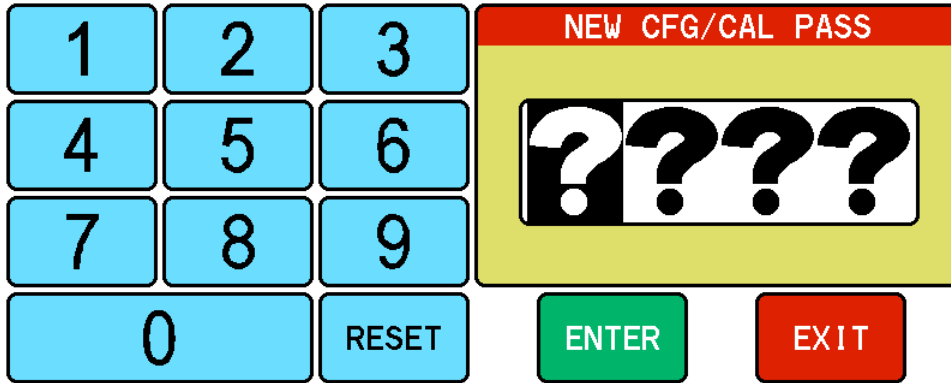
Key in the new password and ENTER.

1	2	3	**NEW CFG/CAL PASS**
4	5	6	1234
7	8	9	
0	RESET	ENTER	EXIT

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	Command	Description
ATW	Acquire Tare Weight	CHK	Initiate self-diagnostics Check
LCK	Lock Out Keypad	RES	Reset, clears tare weight and count information
SCM	Selects Count Mode	SCI	Output Configuration
SSS	Selects Sample Size	SWM	Selects Weigh Mode
UCK	Unlocks Keypad	UNP	Select Primary Weighing Unit
UNS	Select Secondary Weighing Unit	ZRO	Zero the Scale

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 15 Alphanumeric Characters and Hyphen (-).	IID(sp)XXXXXXXXX(cr) XXXXXXXXX = 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)XXXXXXXXX(cr) = XXXXXXXXX = 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)XXXXXXXXXXXXXXXX(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.
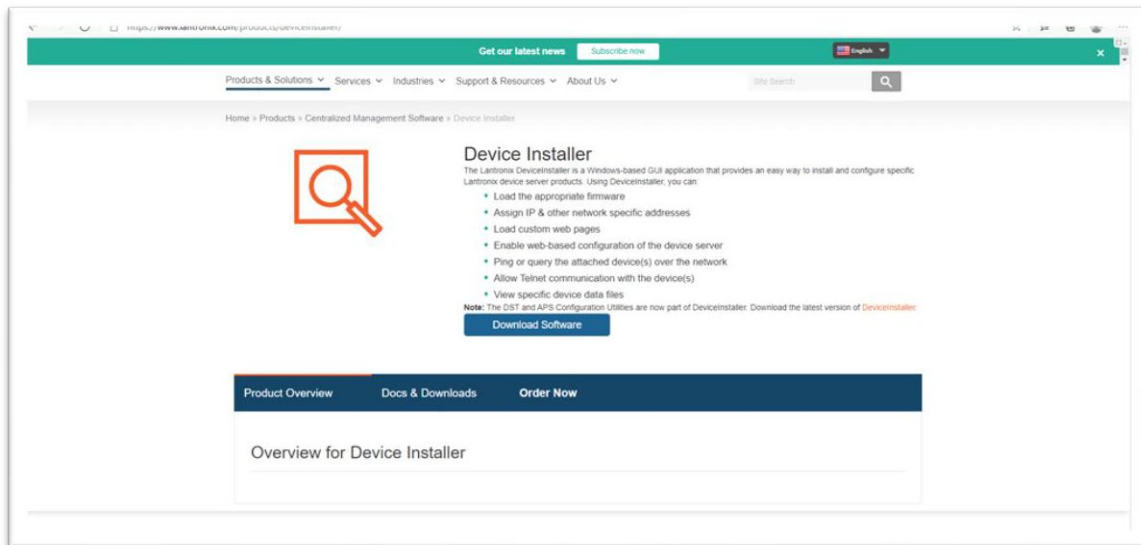
Install and run the Device Installer program and connect the scale and PC to the network. Click on the SEARCH function to discover Pennsylvania Scale Ethernet options that are on the network.
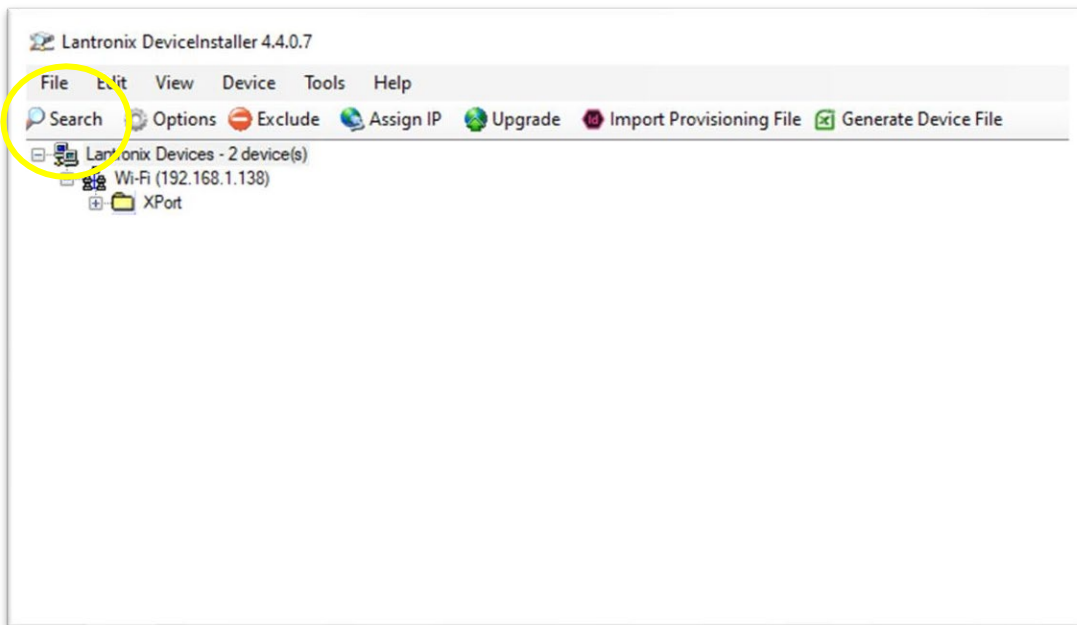
Any Pennsylvania Scale Ethernet Options that are reachable on the network will be shown on the Device Installer program.
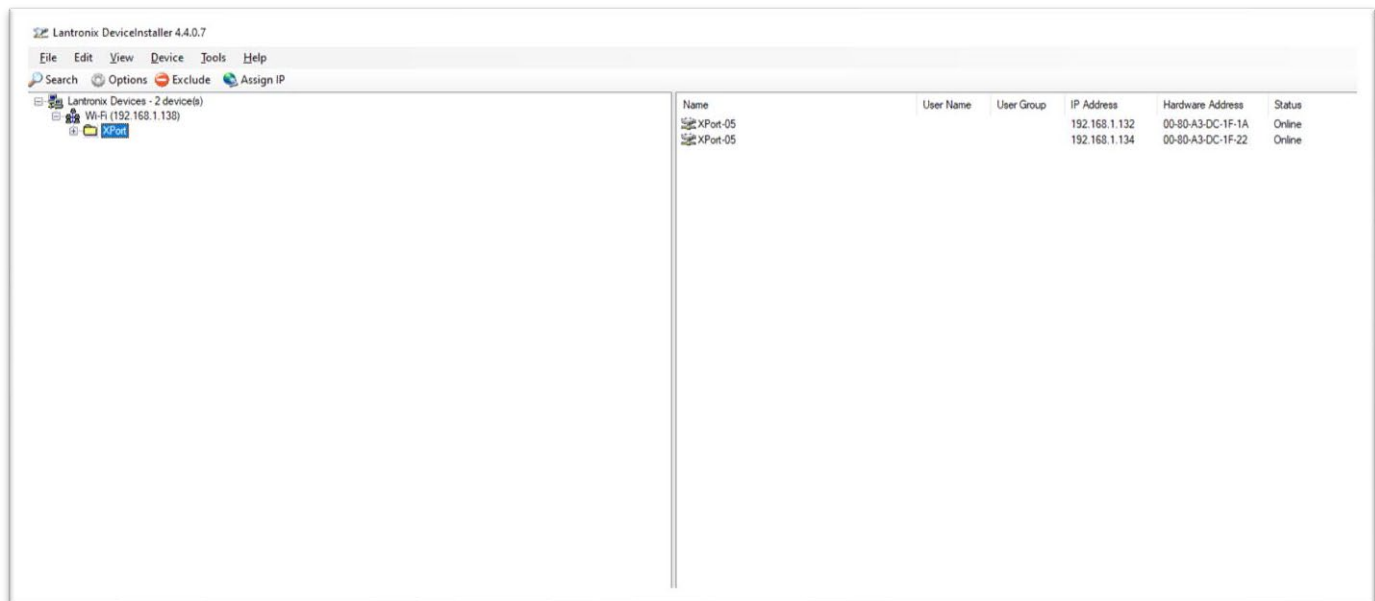
Note the factory default network protocol is DHCP, IP Address, Subnet and Default Gateway are assigned by the server. The Default port is 10001

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
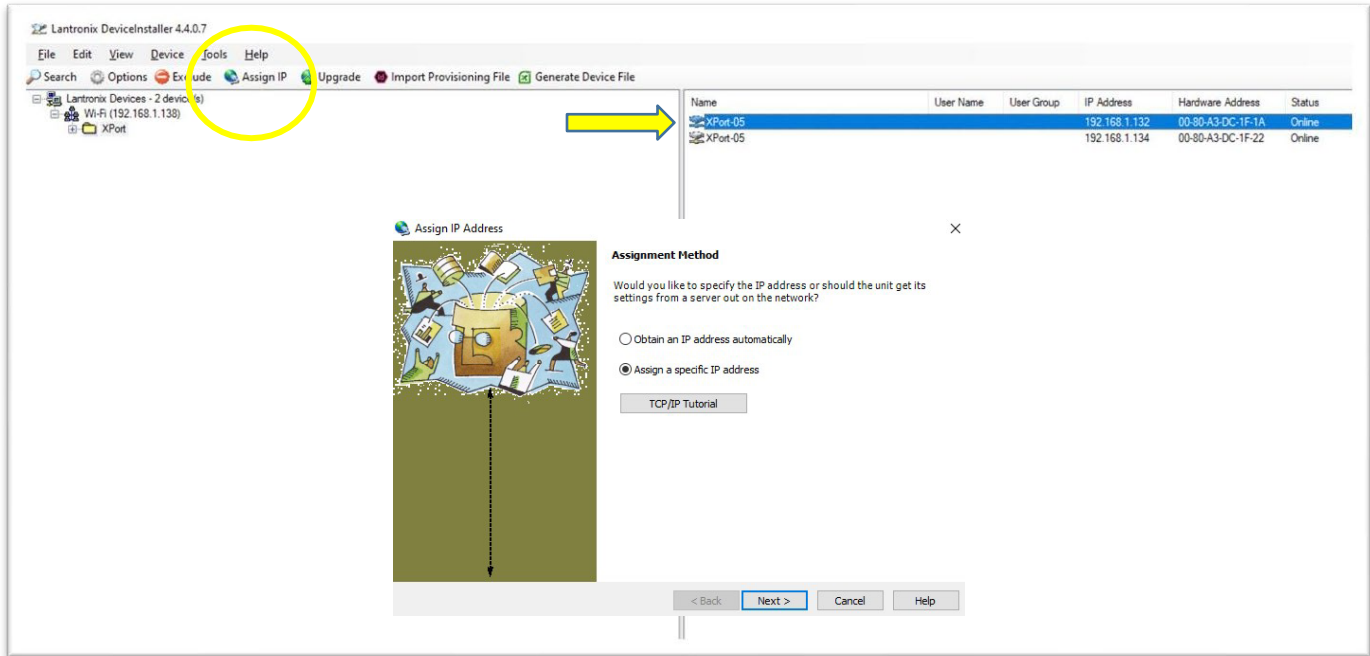
Wired Ethernet Board
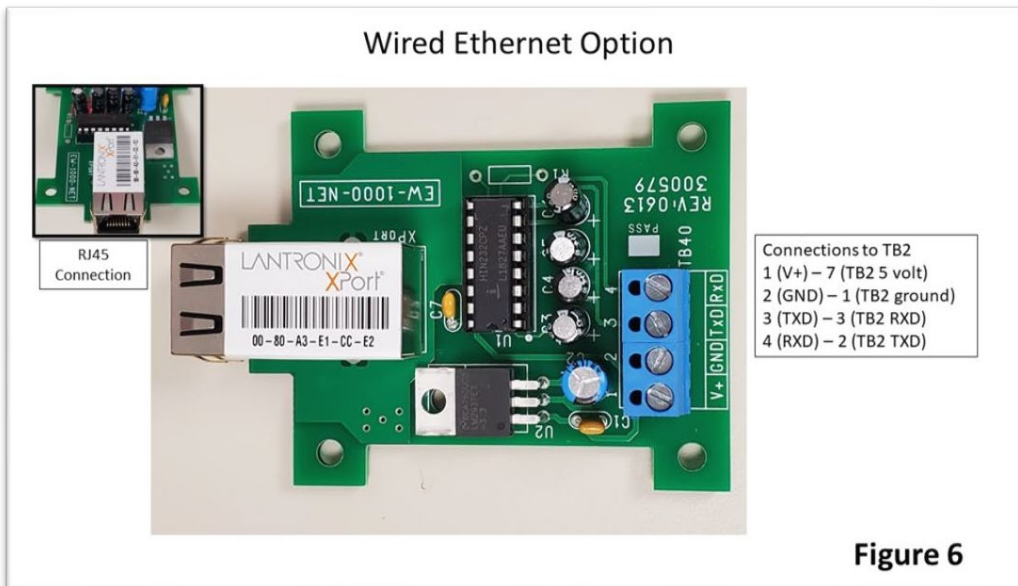
Figure 6

Enter the static IP Address, Subnet Mask and Default Gateway, then click NEXT, then ASSIGN.
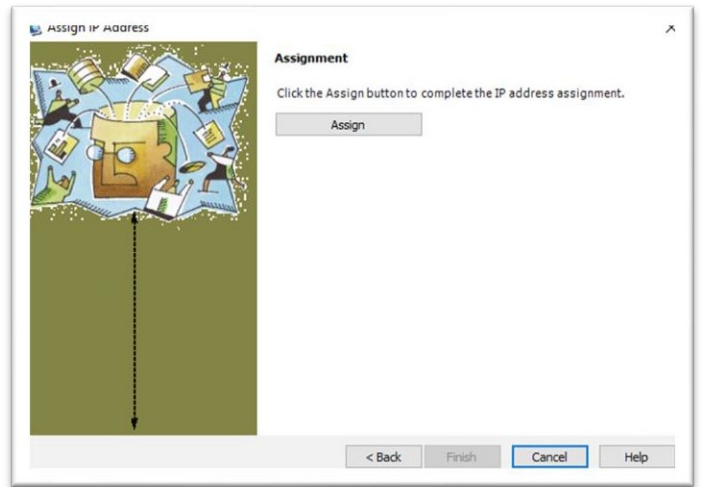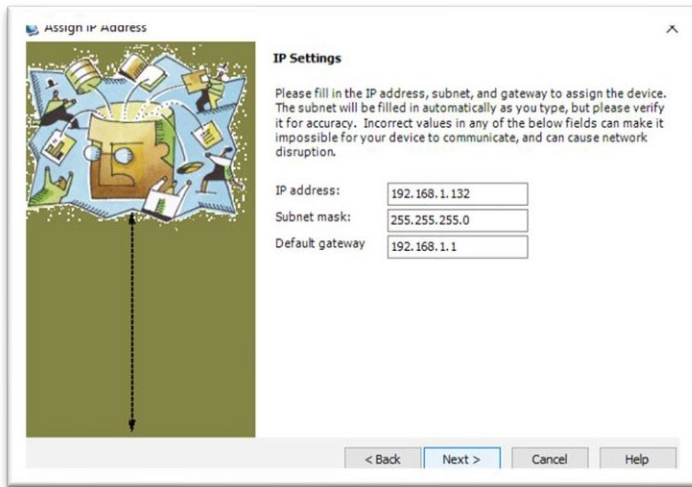
The Pennsylvania Scale Ethernet Option will be configured with these IP Settings and reboot.

If the IP address is known you can also login into the device and configure 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
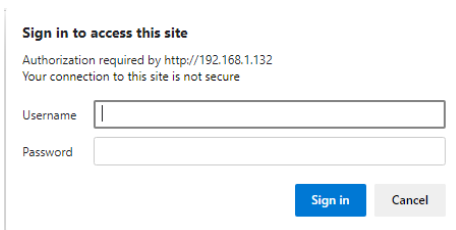
The Lantronix Xport program will open and more advanced settings can be accessed for configuring the Pennsylvania Scale ethernet option.
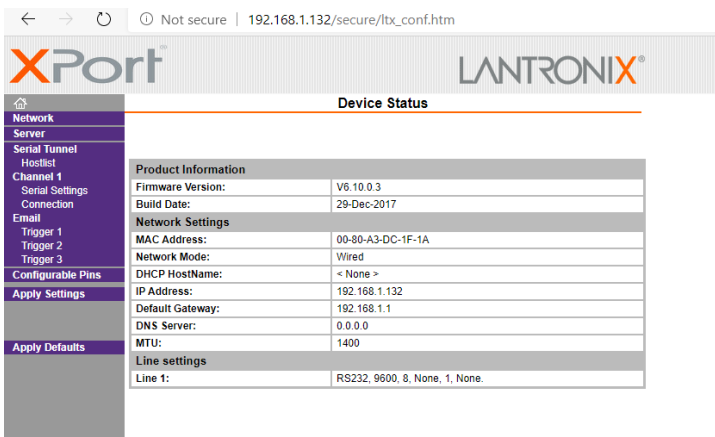
Wireless Ethernet Option - Wi-Fi

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.
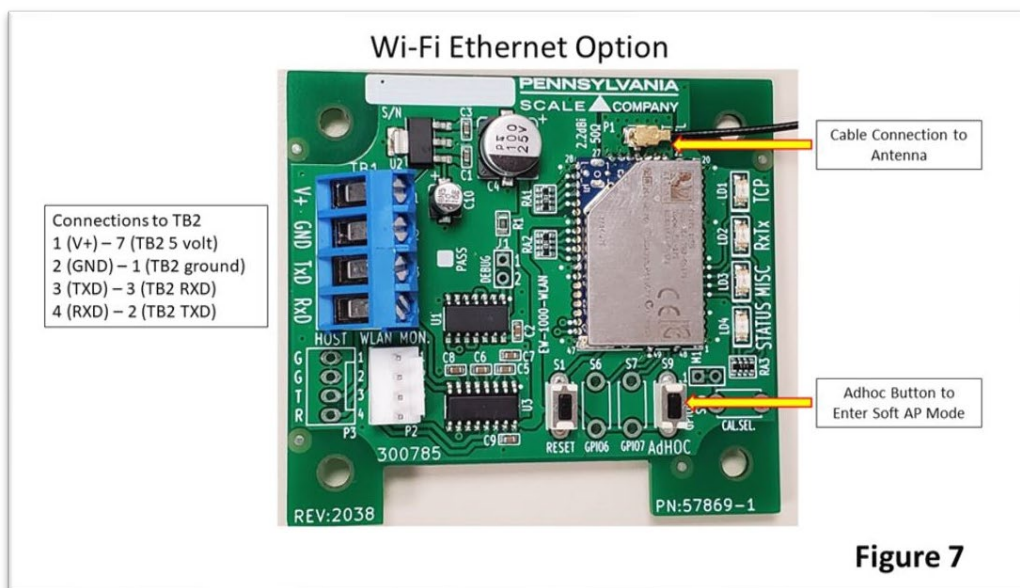
Figure 7

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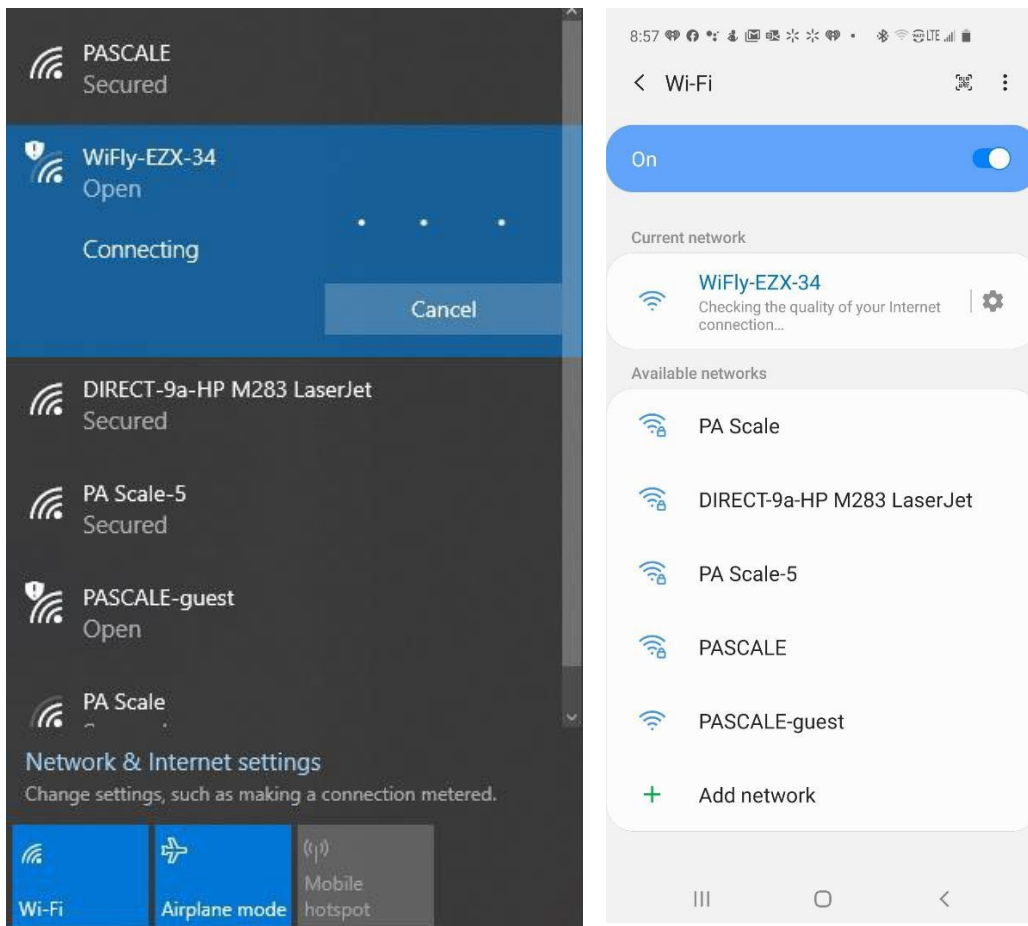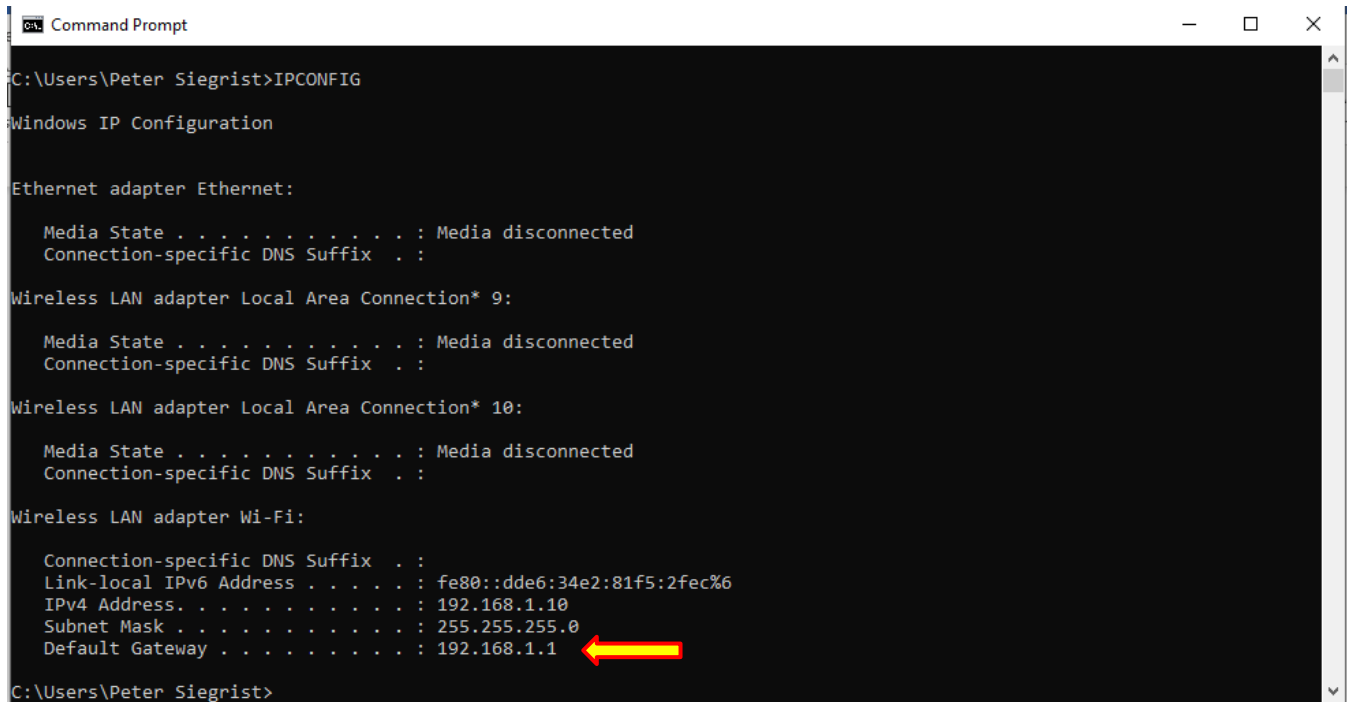
When the connection has been made the configuration webpage of the module can be opened by any web browser using the following methods.

- 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:
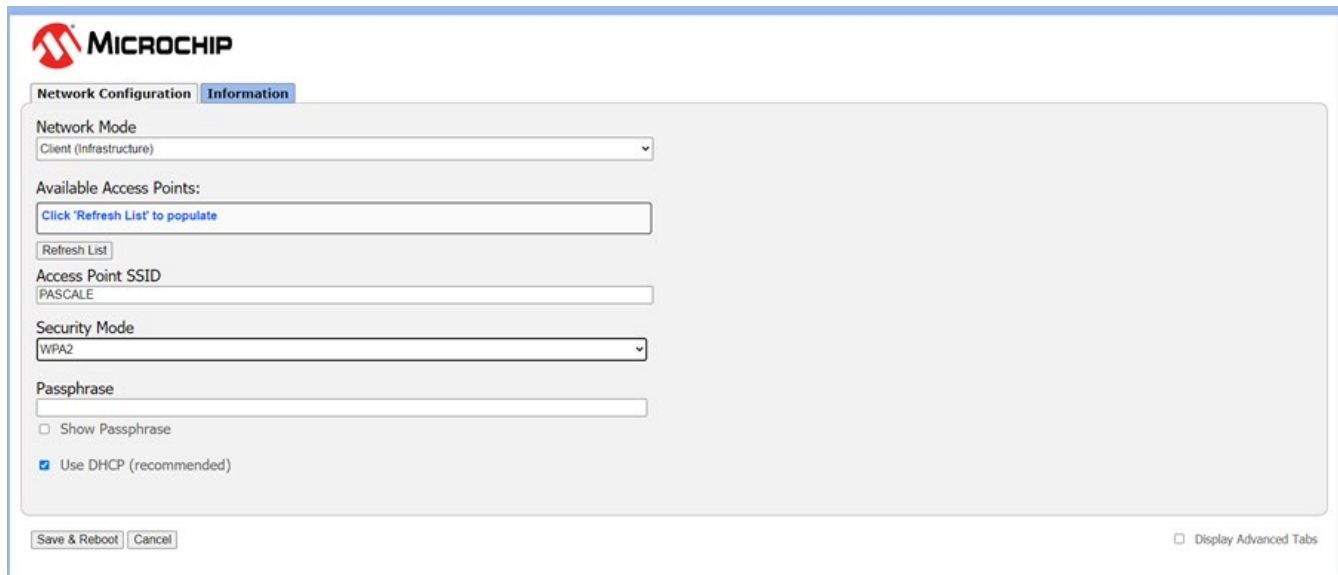
- In the "NETWORK CONFIGURATION" tab you can configure Access Point SSID, Security Mode

- DHCP or Static IP Address

- Selecting the INFORMATION tab will show the unit's MAC address, Module Type and Battery Strength
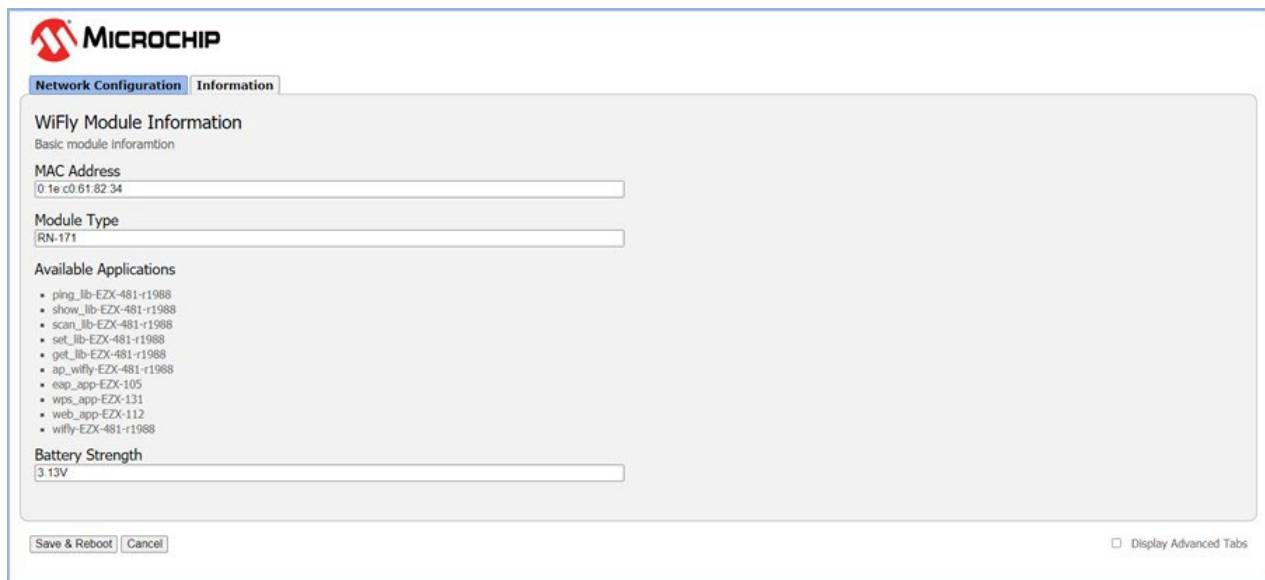
- When configuration and setup is complete click on the SAVE & REBOOT button
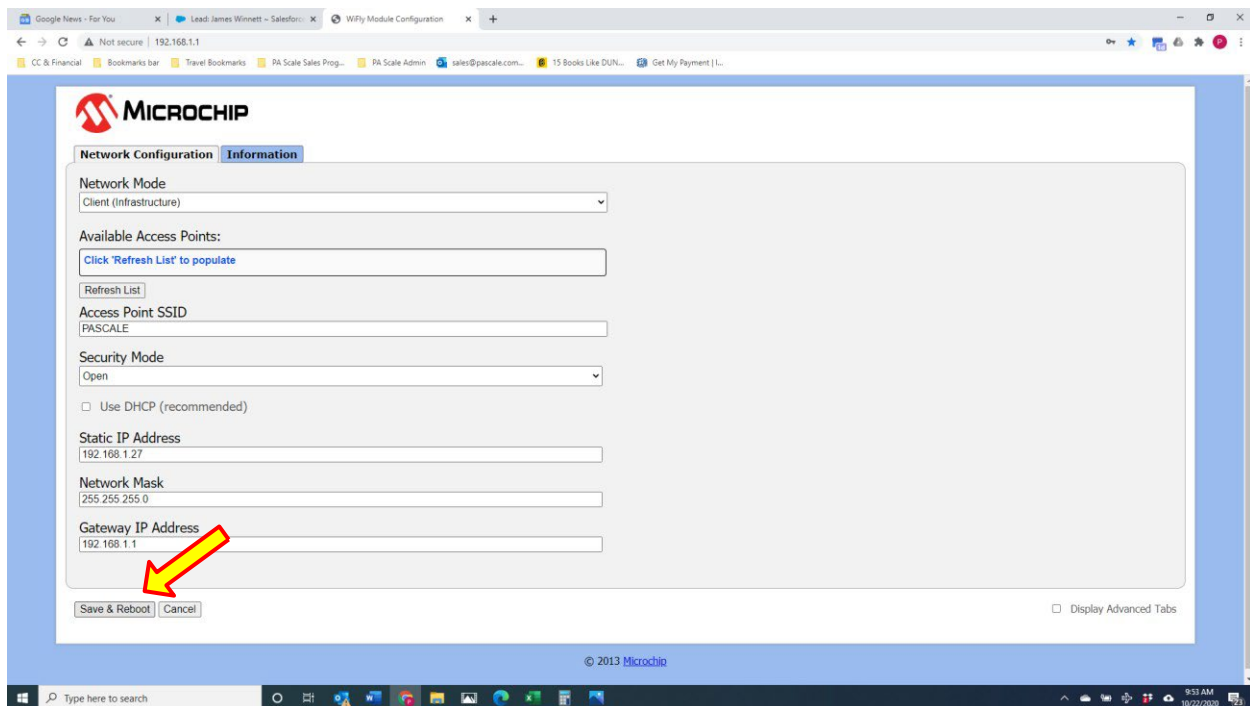
- Then Wi-Fi option will save the changes, reboot, and attempt to connect to the Network SSID programmed.

Led Status codes

Figure 8