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482 Legend Series

*Digital Weight Indicator
Version 1.05*

Operation Manual



REVOLUTION
SCALE SOFTWARE

RICE LAKE
WEIGHING SYSTEMS

October 7, 2019

PN 165358 Rev C

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1.0 Introduction

This manual is intended for operation of the 482 Legend Series digital weight indicators. This manual applies to indicators using Version 1.05 of the 482 Legend Series software.



Manuals and additional resources are available from the Rice Lake Weighing Systems website at www.ricelake.com

Warranty information can be found on the website at www.ricelake.com/warranties

1.1 Safety

Safety Signal Definitions:



DANGER Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. Includes hazards that are exposed when guards are removed.



WARNING Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death. Includes hazards that are exposed when guards are removed.



CAUTION Indicates a potentially hazardous situation that, if not avoided, could result in minor or moderate injury.



IMPORTANT Indicates information about procedures that, if not observed, could result in damage to equipment or corruption to and loss of data.

General Safety



Do not operate or work on this equipment unless this manual has been read and all instructions are understood. Failure to follow the instructions or heed the warnings could result in injury or death. Contact any Rice Lake Weighing Systems dealer for replacement manuals.



Failure to heed could result in serious injury or death.

Some procedures described in this manual require work inside the indicator enclosure. These procedures are to be performed by qualified service personnel only.

Do not allow minors (children) or inexperienced persons to operate this unit.

Do not operate without the enclosure completely assembled.

Do not use for purposes other than weight taking.

Do not place fingers into slots or possible pinch points.

Do not use this product if any of the components are cracked.

Do not exceed the rated specification of the unit, See

Do not make alterations or modifications to the unit.

Do not remove or obscure warning labels.

Do not submerge.

Before opening the unit, ensure the power cord is disconnected from the outlet.

1.2 Overview

The 482 is a single-channel digital weight indicator housed in a NEMA Type 4X/IP66-rated stainless steel enclosure. The indicator front panel consists of a large (.8 inch/20 mm), six-digit, seven-segment backlight LCD display, with a seven-button keypad (482) or an 18-button full numeric keypad (482 Plus).

1.2.1 Features

- Auto switching AC power supply 115 VAC to 230 VAC, 50-60 Hz
- Drives up to ten 350 Ω or twenty 700 Ω load cells
- Supports four and six wire load cell connections
- Two communications ports with Demand or Continuous outputs
- Optional analog output module provides 0–10/2–10 VDC or 0–20/4–20 mA tracking of gross or net weight values
- Optional digital I/O card, four outputs/two inputs for setpoints and key functions
- Unit ID up to six numeric, operator entered.
- Accumulator with report and clear
- Time and date
- Audit trail tracking
- Configurable LCD backlight

1.2.2 Supported Applications

- Custom Ticket Printing: Gross, Net & Setpoint format can be customized up to 300 characters and print Time and Date, Unit ID, and Consecutive Ticket Number.
- Basic Weighing: Gross or net mode with operator menu to other functions.
- Accumulation: Weights are totaled, with armed print function.
- Batching: Up to eight batch steps with latched or continuous outputs for Gross, Net, Delay setpoint; actions include trip high or low, wait for standstill, print, accumulate and tare
- Keyed Tare: Preset tare value can be entered when the gross weight is at zero
- Local/Remote: Remote unit displays weight and transmits key press commands to the local unit.

Please leave this manual with the indicator when installation and configuration are complete.

1.3 Operating Modes

The 482 has two modes of operation.

Normal (Primary) Weigh Mode

Normal mode is the default mode of the indicator. The indicator displays gross or net weights as required, using the annunciators described in [Section 1.6 on page 4](#) to indicate scale status and the type of weight value displayed.

User Menu Setup Mode

The user menu setup mode is used to access the accumulator functions, audit trail, display the tare, unit ID, time & date, setpoints, data communications parameters, print formats, and view the firmware version.

It is accessible by pressing the **Menu** key on the front panel.

1.4 Front Panel Keypad

See [Table 1-1](#) for information about using the front panel keys in configuration mode.

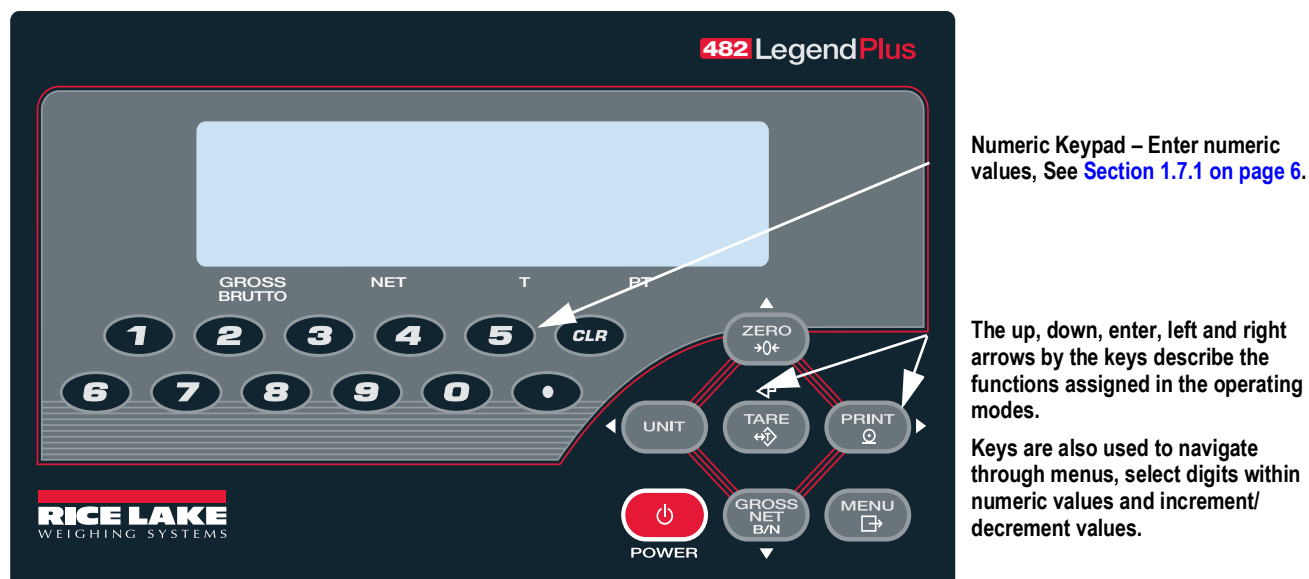


Figure 1-1. 482 Front Panel, Key Functions (482 Plus)

1.5 Keypad Functions

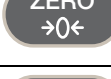
Key	Function
 POWER	Turns the unit on/off NOTE: If power mode is set to manual, the Power key must be used to turn the unit on and off. If power mode is set to auto, the unit will automatically power on when it's plugged in and the only way to turn it off is to unplug power, See Section 2.1.7 on page 19 .
 MENU	The Menu key is used to access the User Setup menu
 ZERO →0←	Sets the current gross weight to zero, provided the amount of weight to be removed or added is within the specified zero range and the scale is not in motion; the zero band is defaulted to 2% of full scale, but can be configured for up to 100% of full scale; also used as a move up key to navigate to different menu levels or used to increment a number when editing a value
 UNIT	Switches the weight display to an alternate unit; the alternate unit is defined in the Configuration menu and could be kg, g, lb, oz, tn, or t; also used as a scroll left key to navigate to different menus or to toggle to another digit when editing a value
 PRINT	Sends an on-demand print format out the serial port, provided the conditions for standstill are met; PRINT may be displayed while printing; also used as a scroll right key to navigate to different menus or to toggle to another digit when editing a value
 TARE	Performs one of several predetermined tare functions dependent on the mode of operation selected in the TAREFN parameter; to view a stored tare, See Section 1.8.5 on page 7 ; also acts as an Enter key for numeric or parameter entry
 GROSS NET B/N	Switches the display mode from gross to net, or from net to gross. If a tare value has been entered or acquired, the net value is the gross weight minus the tare; gross mode is displayed by the Gross/Brutto annunciator; net mode is displayed by the Net annunciator; also used as a move down key to navigate to different menu levels or to decrement a number when editing a value
 CLR	During a numeric entry, sets the currently select digit to zero then selects one digit to the right

Table 1-1. Keypad Functions



Note See the **482 Series Technical manual (PN 165124)** for more information.

1.6 LCD Annunciators

The 482 LCD display uses a set of eight LCD annunciators to provide additional information about the value being displayed.

Number	Name	Function
1	Battery Level	The battery icon indicates the level of the battery
2	Gross/Brutto	Gross weight display mode (or Brutto in OIML mode)
3	Net	Net weight display mode
4	Zero (Center of Zero)	The Center of Zero annunciator indicates that the current gross weight reading is within ± 0.25 display divisions of the acquired zero, or is within the center of zero band; a display division is the resolution of the displayed weight value, or the smallest incremental increase or decrease that can be displayed or printed
5	Standstill	Scale is at standstill or within the specified motion band; some operations, including zero, tare and printing, can only be done when the standstill annunciator is on
6	T	Indicates a push-button tare weight has been acquired and stored in memory
7	PT	Indicates that a preset tare weight has been keyed in or entered and stored in memory
8	lb / kg / g / oz / t	Displays which unit of measure is being used: lb = pounds kg = kilograms g = grams oz = ounces t = for either short tons and metric tons

Table 1-2. LCD Annunciators



Note See the 482 Series Technical manual (PN 165124) for more information.

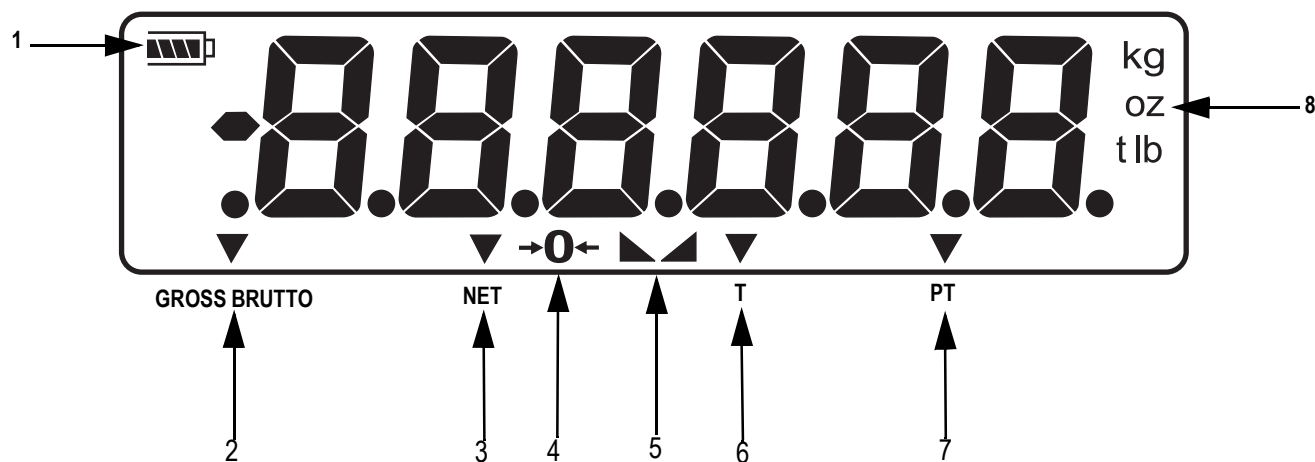


Figure 1-2. LCD Annunciators

1.7 Front Panel Navigation

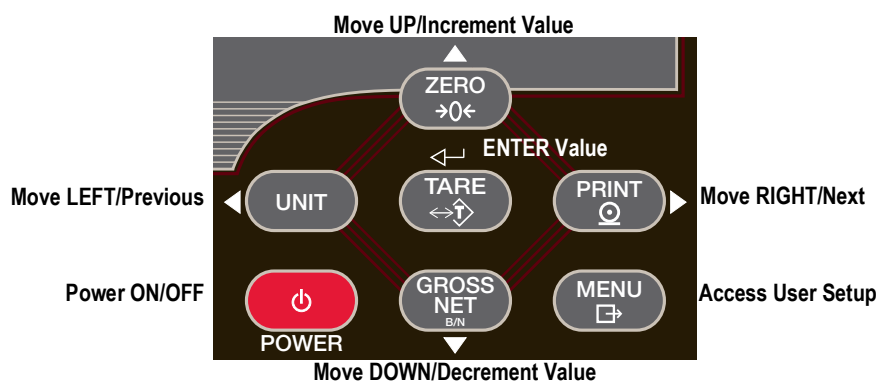


Figure 1-3. Front Panel Key Functions

Four front panel keys are used as directional keys to navigate through the menus, See [Figure 1-3](#).

- **Unit** (◀) and **Print** (▶) scroll left and right on the same menu level
- **Zero** (▲) and **Gross/Net** (▼) move up and down to different menu levels
- The **Tare** key serves as an **Enter** key (↔) for selecting parameter values within the menus
- The **Menu** key allows front panel access to user setup and configuration mode
- **Navigating Through Levels**

Navigating Through Levels

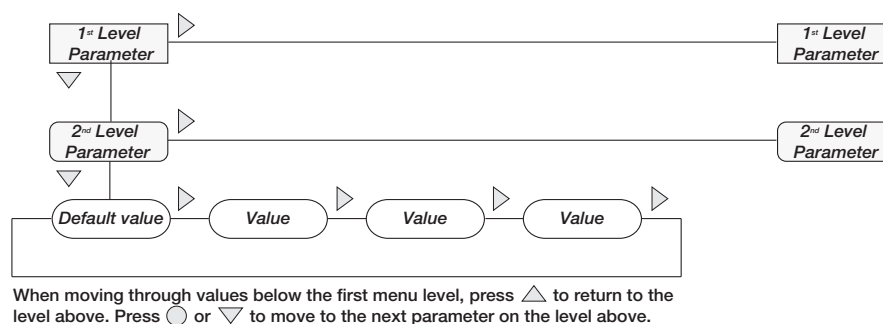


Figure 1-4. Menu Navigation

To select a parameter, press ◀ or ▶ to scroll left or right until the desired menu group displays then press ▼ to move down to the desired sub-menu or parameter. When moving through the menu parameters, the present value displays.

Edit Parameter Values

To change a parameter value, scroll left or right to view the values for that parameter. When the desired value displays, press **Tare** (↔) to select the value and move back up one level. To edit numerical values, use the navigation keys to select the digit and to increment or decrement the value.

0 0 0 0 0 0

When editing numeric values, press ◀ or ▶ to change the digit selected. Press ▲ or ▼ to increment or decrement the value of the selected digit. Press ↔ to save the value entered and return to the level above.

Figure 1-5. Editing Procedure for Numeric Values

1.7.1 Numeric Keypad - Editing Procedure for Numeric Values (482 Plus Only)



Figure 1-6. Numeric Keypad for the 482 Plus

With the numeric keypad option, the method for editing numeric values relies on the numbers which are embossed on the keypad rather than using the navigation arrows.

1. When editing numeric values, insert the required value using the numeric keypad.
2. Press **Tare**  to save the value entered and return to the level above.
 - i. Press  to set the currently selected digit to 0
 - ii. Press  to enter a decimal point



Note

When editing fractional numeric values, the decimal point must be positioned in accordance with the primary units formatting, otherwise the keyed number may be rejected by the software.

1.8 Indicator Operations

Basic 482 operations are summarized below.



Note

See the 482 Series Technical manual (PN 165124) for more information.

1.8.1 Zero Scale

1. In Gross mode, remove all weight from the scale and wait for the  annunciator to light.
2. Press . The  annunciator lights to indicate the scale is zeroed.

1.8.2 Toggle Units

Press  to toggle between primary and secondary units. The current unit annunciator will be lit.

1.8.3 Acquire Tare

1. Place container on scale and wait for the  annunciator to light.
2. Press  to acquire the tare weight of the container. Net weight is displayed and the **T** annunciator lights to display the tare value was entered.

1.8.4 Preset Tare (Keyed Tare)

1. With the scale empty and display zeroed, press . **000000** is displayed with the focused digit flashing.
2. Edit the value using the following method; or with the 482 PLUS, use the keypad
 - i. Press  or  to select the digit
 - ii. Press  or  to increment or decrement the value
3. Press  when the value is correct. The display will change to the Net mode and the **PT** annunciator lights to display the preset tare was entered.

1.8.5 Display Tare

When a stored tare value is displayed, the Gross and Net annunciators will be off and the $\rightarrow 0 \leftarrow$ annunciator will be lit. To display a stored tare:

1. Press .
2. Press ∇ to **AUDIT**.
3. Press $\triangleright$ to **TARE**.
4. Press ∇ .
5. Press $\triangle$ repeatedly to return to weighing mode.

If there is no tare in the system, **0** will displayed and the gross and net annunciators will be off.



Note See the 482 Series Technical manual (PN 165124) for more information.

1.8.6 Print Ticket

1. Press  to print either the gross or net format.
2. Wait for the   annunciator to light.
3. Press  to send data to the serial port.

If the   annunciator is not lit and  is pressed, the print action will take place only if the scale comes out of motion within three seconds. If the scale stays in motion for over three seconds, the  press is ignored.

1.8.7 Toggle Gross/Net Mode

Press  to switch the display mode between gross and net. If a tare value has been entered or acquired, the net value is the gross weight minus the tare.

Gross mode — **Gross/Brutto** annunciator is lit.

Net mode — **Net** annunciator is lit.

1.8.8 View Audit Trail

1. Press .
2. Press ∇ to **AUDIT**.
3. Press ∇ . The audit trail **CALIB** is displayed.
4. Press ∇ then $\triangleleft$ or $\triangleright$ to **CNT**, **TIME** or **DATE**.
5. Press ∇ to view selected parameter.
6. Press $\triangle$ twice to return to **CALIB**.
7. Press $\triangleright$ to the audit trail **CONFIG** and repeat [Step 5](#) and [Step 6](#) to view configuration number.
8. Press $\triangle$ repeatedly to return to weighing mode.

1.8.9 Enter New Unit ID

1. Press .
2. Press ∇ to **AUDIT**.
3. Press $\triangleright$ until display reads **UNIT ID**.
4. Press ∇ to view the current value.
5. Edit the value using the following method; or with the 482 PLUS, use the keypad, See [Section 1.4 on page 3](#).
 - i. Press $\triangleleft$ or $\triangleright$ to select the digit
 - ii. Press $\triangle$ or ∇ to increment or decrement the value
6. Press  when the value is correct.
7. Press $\triangle$ repeatedly to return to weighing mode.

1.8.10 Display Accumulator

1. Press .
2. Press ∇ to **AUDIT**.
3. Press $\triangleright$ until display reads **ACCUM**.
4. Press ∇ to display **VIEW**.
5. Press $\triangleleft$ or $\triangleright$ to select desired parameter (**VIEW**, **TIME**, **DATE**, **PRINT**, **CLR Y**).
 - i. For **VIEW**, **TIME** or **DATE**, press ∇ to view the value; press $\triangle$ or  to return to selected parameter
 - ii. To print or clear, press ∇ then press  to print or clear the accumulator; press $\triangle$ to return to selected parameter
6. Press $\triangle$ repeatedly to return to weighing mode.



Note *If the accumulated value exceeds 999999 then EE ACC displays. The value will still be correct and will print correctly up to 1,000,000,000.*

1.8.11 Display or Change Time and Date

To set the date and time:

1. Press .
2. Press ∇ to **AUDIT**.
3. Press $\triangleright$ until display reads **TIMDAT** (Time/Date).
4. Press ∇ and select time or date with $\triangleleft$ or $\triangleright$.
5. Press ∇ to view the current setting.
6. To edit the value of the time, in 24 hour or 12 hour format (hh.mm.ss), use the following method.
 - i. Press $\triangleleft$ or $\triangleright$ to select hours, minutes, or seconds – the selected value will be flashing
 - ii. Press $\triangle$ or ∇ to increment or decrement the value
7. Press  when the value is correct. Use the same procedure to enter the date in the same format configured for the indicator.
8. Press $\triangle$ repeatedly to return to weighing mode.



Note

The time and date are backed up with an internal battery. If the main power is interrupted, time and date will not be lost. When in 12 hour format, the PT annunciator indicates pm setting.

1.8.12 Display, Edit and Set Setpoint Value

1. Press .
2. Press ∇ to **AUDIT**.
3. Press $\triangleright$ until display reads **SETPNT**; See [Section 2.1.1 on page 11](#) for the **SETPNT** menu layout.
4. Press ∇ and navigate across to desired setpoint number (1-8).
5. Press ∇ and navigate across to select **USER**.
6. Press ∇ and navigate across to select **VALUE** or **ENABLE**.
7. Press ∇ to view and edit the value.
 - i. To edit Value, use the following method or with the 482 PLUS, use the keypad, See [Section 1.4 on page 3](#)
 - a. Press $\triangleleft$ or $\triangleright$ to select the digit
 - b. Press $\triangle$ or ∇ to increment or decrement the value
 - ii. Press  when the value is correct
 - iii. To edit **ENABLE**:
 - a. Press $\triangleleft$ or $\triangleright$ to select **ON/OFF**
 - b. Press  when the value is correct
8. Press $\triangle$ repeatedly to return to weighing mode.

1.8.13 View Firmware Version

1. Press .
2. Press ∇ . **AUDIT** is displayed.
3. Press $\triangleright$ until display reads **VERS**.
4. Press ∇ . **FIRMW** is displayed.
5. Press ∇ to view version.
6. Press $\triangle$ repeatedly to return to weighing mode.

1.8.14 Enter User Password

1. Press ◀ or ▶ until **PASWRD** is displayed.
2. Press ▽. **CNFG** is displayed.
3. Press ▶ to **USER**.
4. Press ▽. **000000** is displayed.
5. To edit the password, use the following method; or with the 482 PLUS, use the keypad, See [Section 1.4 on page 3](#)
 - i. Press ◀ or ▶ to select the digit
 - ii. Press △ or ▽ to increment or decrement the value
 - iii. Press  when the value is correct
6. Press △ to return to **PASWRD**.
7. Press ▶ to **CONFIG**.
8. Press △ to return to weighing mode.

When entering a user function, the operator will be required to enter the password.

IMPORTANT

Enter 999999 to reset password, this will also reset the configuration back to default values.

2.0 User Menus

2.1 User Menu Setup

Press the **Menu** key to access the menu parameters.

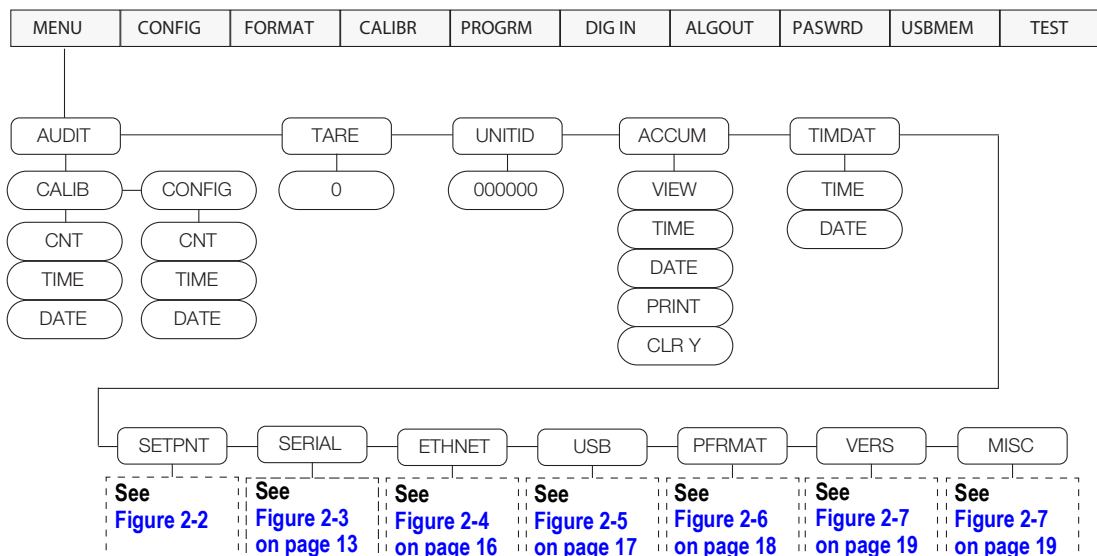


Figure 2-1. Menu Key User Menu

2.1.1 Setpoint Menu

The SETPNT menu is used to access and modify setpoint data.

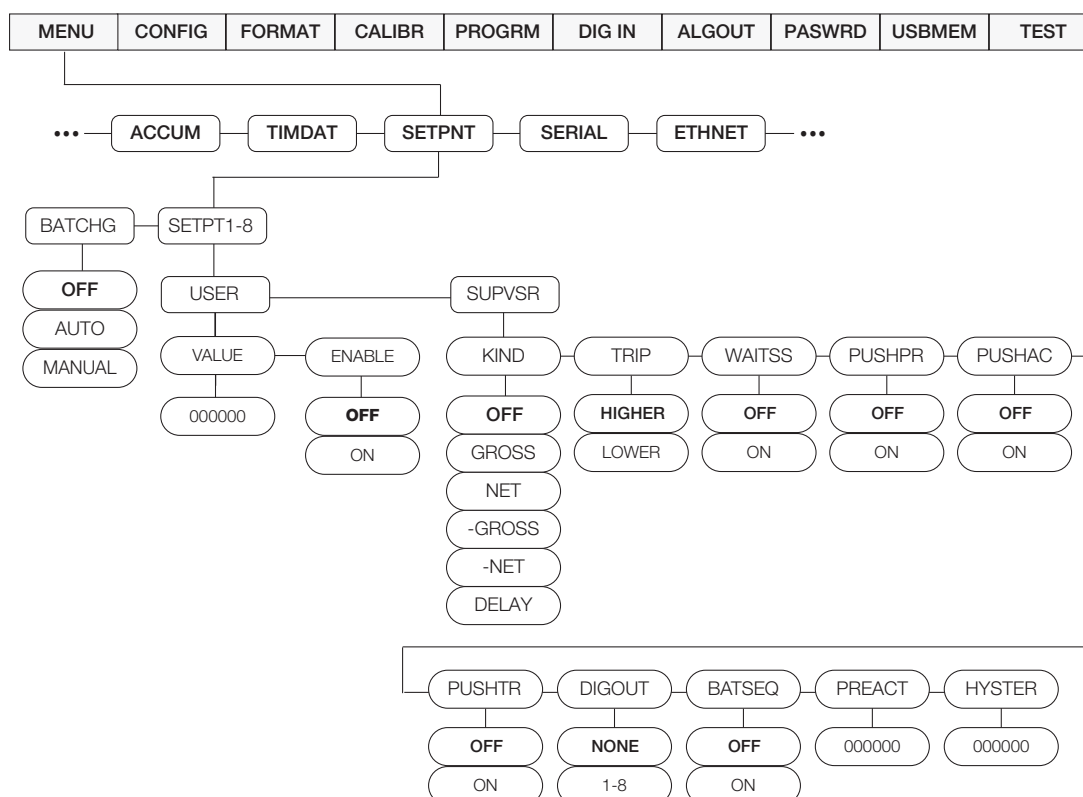


Figure 2-2. Setpoint Setup Menu

Parameter	Choices	Description
SETPT1-8	USER SUPVSR	Setpoint options that do not require a user password, see sub-menu below; setpoint options that require a user password, see Supervisor Sub-menu below
BATCHG	OFF AUTO MANUAL	Set to OFF batching is disabled; set to AUTO or MANUAL to allow a batch sequence to run; MANUAL requires a batch start signal (BATSTRT digital input or BATSTART serial command) before the batch sequence runs; AUTO allows batch sequences to repeat continuously after receiving a batch start signal
User Sub-menus		
VALUE	number	Display and edit the setpoint target value: - For weight-based setpoints: specifies the target weight value, 0–999999 - For time-based setpoints (delay): specifies, in 0.1-second intervals, a time value in the range 0–65535
ENABLE	OFF ON	Enable or disable the setpoint
Supervisor Sub-menus		
KIND	--	Specifies the setpoint kind and determines whether function is based on GROSS or NET weight or based on time value for delay
	OFF	Setpoint turned off/ignored
	GROSS	Gross setpoint; performs functions based on the gross weight; the target weight entered is considered a positive gross weight
	NET	Net setpoint; performs functions based on the net weight; the target weight entered is considered a positive net weight value
	-GROSS	Negative gross weight; performs functions based on the gross weight; the target weight entered is considered a negative gross weight
	-NET	Negative net weight; performs functions based on the net weight; the target weight entered is considered a negative net weight value
	DELAY	Delays the batch sequence for a specified time; the length of the delay (in tenths of a second) is specified by the VALUE parameter
TRIP	HIGHER LOWER	Trips the setpoint when the weight is higher or lower than the setpoint value: If batch sequence is off (Continuous Setpoint) with: - TRIP = HIGHER – the associated digital output will become active when the weight value is higher than the setpoint value - TRIP = LOWER – the output is active when the weight is below the setpoint value If batch sequence is on (Batching Setpoint) with: - TRIP = HIGHER – the associated digital output is active until the setpoint value is reached or exceeded - TRIP = LOWER – the output is active until the weight goes below the setpoint value
WAITSS	OFF ON	Wait for Standstill – value must be stable to satisfy this action
PUSHPR	OFF ON	Push Print – specify ON to perform a print operation when the setpoint is satisfied; this action does not wait for standstill, it prints as soon as the setpoint is satisfied; to wait for standstill before printing, set the WAITSS parameter to ON ; this action uses the Setpoint Print Format
PUSHAC	OFF ON	Push Accumulator – specify ON to update the accumulator when the setpoint is satisfied; this action does not wait for standstill, it accumulates as soon as the setpoint is satisfied; to wait for standstill before accumulating, also set the WAITSS parameter to ON
PUSHTR	OFF ON	Push Tare – specify ON to perform an acquire tare operation when the setpoint is satisfied; this action does not wait for standstill, it tares the weight as soon as the setpoint is satisfied; to wait for standstill before performing the tare, also set the WAITSS parameter to ON NOTE: PUSHTR acquires the tare regardless of the value specified for the REGULAT parameter on the PROGRAM menu.
DIGOUT	NONE 1-8	Digital Output – specify the digital output associated with this setpoint NOTE: To use outputs 1-4 and inputs 1-2, short jumper A1 (JP2). To use outputs 5-8 and inputs 3-4, short jumpers A0 (JP1) and A1 (JP2).
BATSEQ	OFF ON	Determines if the setpoint is a continuously running setpoint (OFF), or part of a batch sequence (ON)
PREACT	number	Allows a setpoint to shut off before the setpoint is satisfied to allow for material in suspension
HYSTER	number	Specifies a band around the setpoint value that must be exceeded before the setpoint, once off, can trip on

Table 2-1. Setpoint Setup Menu Parameters

2.1.2 Serial Menu

The SERIAL menu is used to access the serial settings of the device.

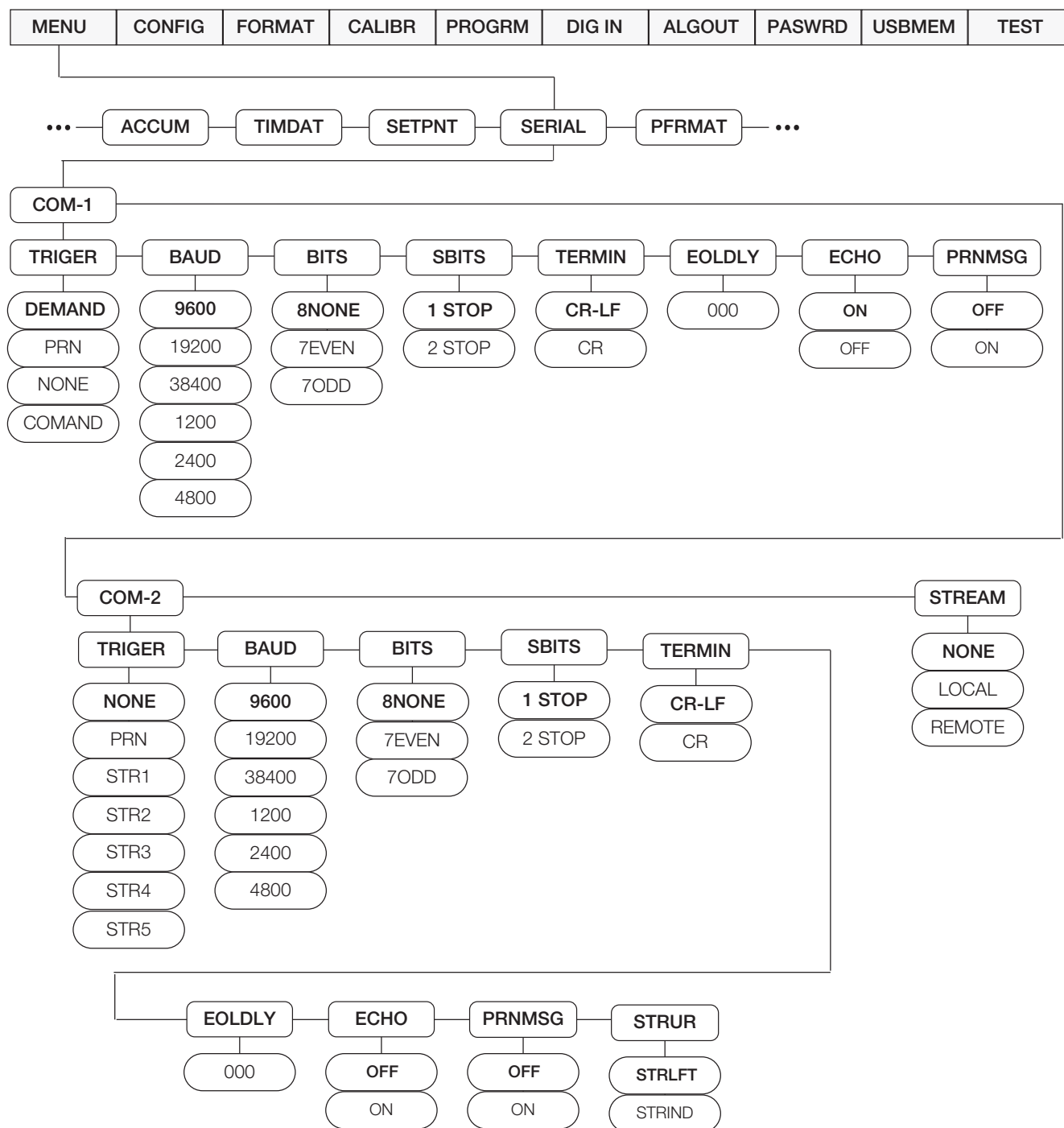


Figure 2-3. Serial Menu

Parameter	Choices	Description
COM-1	TRIGER BAUD BITS SBITS TERMIN EOLDLY ECHO PRNMSG	Specifies settings for COM-1
COM-2	TRIGER BAUD BITS SBITS TERMIN EOLDLY ECHO PRNMSG STRUR	Specifies settings for COM-2
STREAM	--	Specifies the operating mode of the indicator
	NONE	Indicator operates normally, COM-2 will not stream, even if the TRIGER is set to a streaming parameter (STR1-5)
	LOCAL	Indicator operates normally, data streaming occurs on COM-2 if the TRIGER is set to stream data (STR1-5)
	REMOTE	Indicator acts as a Serial Data scale, displaying values based on a received stream of Serial Data into COM-2; it also sends key press commands back through COM-2 to the Local indicator
Submenus COM-1 and COM-2		
TRIGER (COM-1)	--	Specifies the ports mechanism for triggering a transmission of data
	DEMAND	Demand port – printing is performed by pressing the Print key or when a KPRINT EDP command is received; this port will also allow operation and EDP commands
	PRN	Printer Port – printing is performed by pressing the Print key; the port does not allow operation of EDP commands
	NONE	Port is inactive
	COMAND	Command port – allows operation of EDP commands, but will not print
TRIGER (COM-2)	NONE	Port is inactive
	PRN	Printer Port – printing is performed by pressing the Print key; the port does not allow operation of EDP commands
	STR1	Port is used to transmit a continuous stream of data according to RLWS stream format**
	STR2	Port is used to transmit a continuous stream of data according to Toledo8142 stream format*
	STR3	Port is used to transmit a continuous stream of data according to Cardinal738 stream format*
	STR4	Port is used to transmit a continuous stream of data according to Weightronix WI-120 stream format*
	STR5	Port is used to transmit a continuous stream of data according to consolidated stream format*
	*STREAM must be set to local to enable streaming NOTE: See the 482 Series Technical Manual (PN 165124) for more information. Com-2 streams simultaneously on both the RS-232 and 20mA outputs.	
BAUD	9600 19200 38400 1200 2400 4800	Baud rate. Selects the transmission speed of data
BITS	8NONE 7EVEN 7ODD	Selects number of data bits and parity of data

Table 2-2. Serial Menu Parameters

Parameter	Choices	Description
SBITS	1 STOP 2 STOP	Stop bits – sets the number of stop bits to 1 or 2
TERMIN	CR/LF CR	Termination character – selects line termination character(s) for data sent
EOLDLY	000000 0–255	End-of-line delay – specifies, in 0.1 second intervals, the delay between transmitted lines of data NOTE: An end-of-line delay may be required for continuous transmission at slower baud rates to ensure the receiving buffer is empty before another string is transmitted.
ECHO	ON OFF	Specifies whether characters received by the port are echoed back to the sending unit NOTE: Port 1 default is ON, Port 2 default is OFF.
PRNMSG	OFF ON	Print displays when a demand print is performed
STRUR	--	Com 2 only – defines the stream data update rate when one of the stream formats is selected
	STRLFT	Stream Legal for Trade – the weight information in the data stream is updated at the same rate as the indicator's display
	STRIND	Stream industrial – the weight information in the data stream is updated at up to the A/D sample rate

Table 2-2. Serial Menu Parameters (Continued)

2.1.3 Ethernet Menu

The ETHNET menu is used to view and edit device address information.

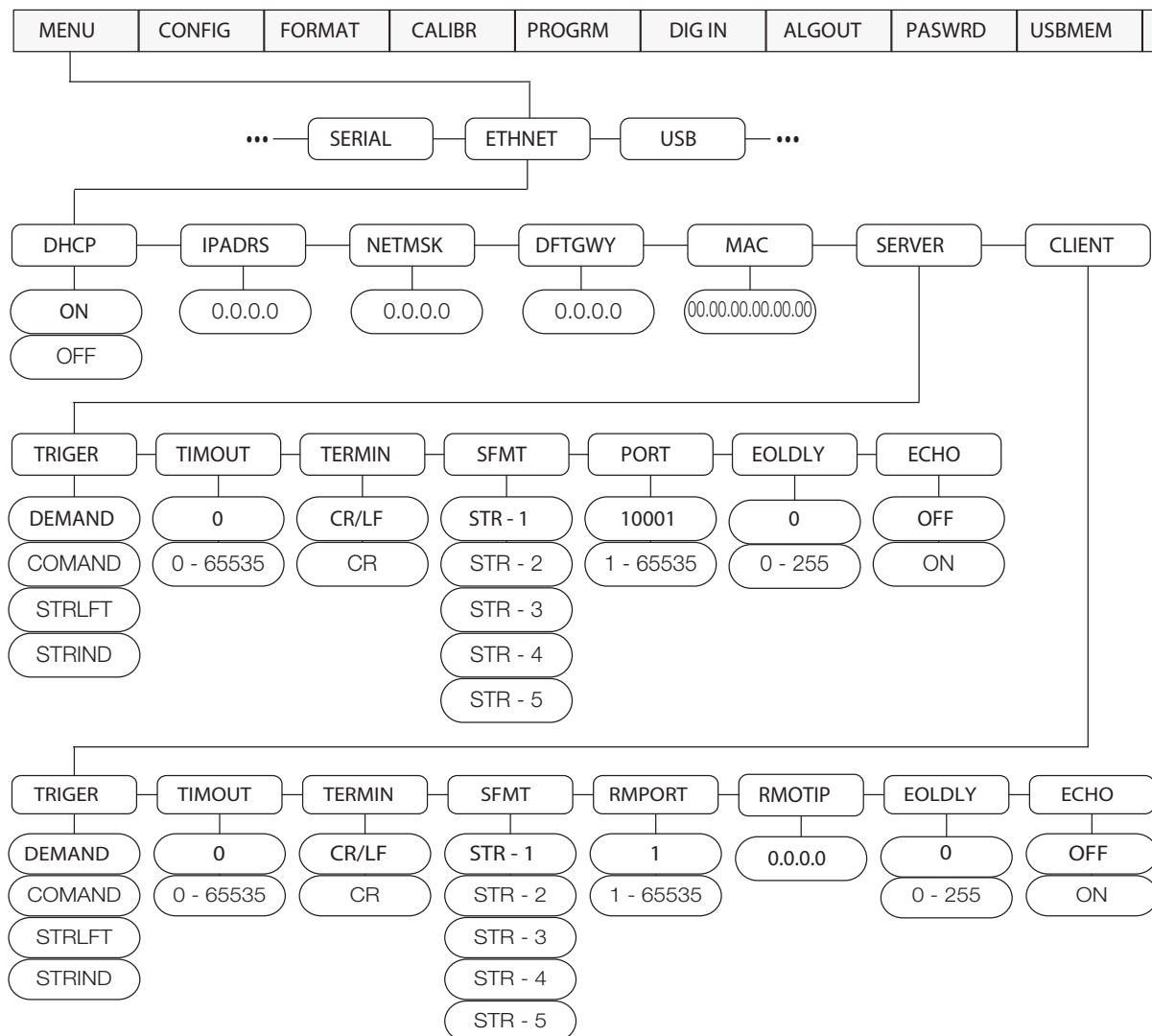


Figure 2-4. Ethernet Menu Layout

Parameter	Choices	Description
DHCP	ON OFF	Dynamic Host Configuration Protocol (DHCP) ON – Dynamic allocation of IP address OFF – Static allocation of IP address
IPADRR	0.0.0.0	IP address, a four field value, the range of each field is 0-255
NETMSK	0.0.0.0	SUBNET mask, a four field value, the range of each field is 0-255
DFTGWY	0.0.0.0	Default gateway, a four field value, the range of each field is 0-255
MAC	00.00.00.00.00.00	View the MAC Address in hexadecimal base (read only)
SERVER	--	See Sub-menu below
CLIENT	--	See Sub-menu below

Table 2-3. Ethernet Menu Parameters

2.1.4 USB Menu

The USB menu is used to change the device and language format.

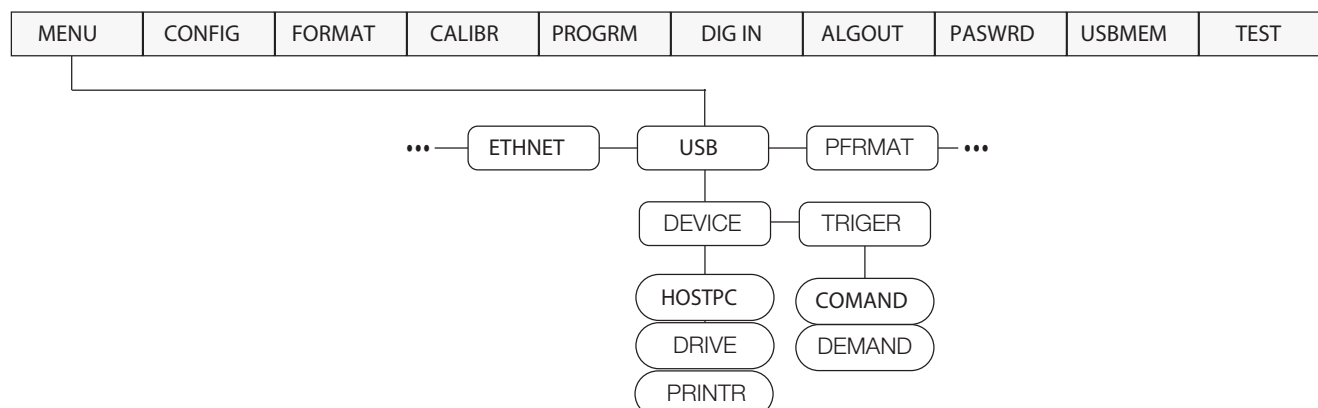


Figure 2-5. USB Menu Layout

Parameter	Choices	Description
DEVICE	HOSTPC	The port is assigned to a HOSTPC, the protocol is a demand type similar to serial communications demand mode, meaning that the port supports EDP commands and Printing
	DRIVE	The port is assigned to a flash drive, the data is written in a FAT32 system, no special driver is required; use the USBMEM Load and Save functions, found in the Configuration Menu to load configuration data to or from a flash drive
	PRINTR	When set to PRINTR mode, the USB port can be connected to a USB printer using an appropriate USB cable
TRIGER	COMAND	Allows operation of EDP commands and prints
	DEMAND	Allows operation of EDP commands only; does not print

Table 2-4. USB Menu

2.1.5 Print Format Menu

The PFORMAT menu is used to change the print format.

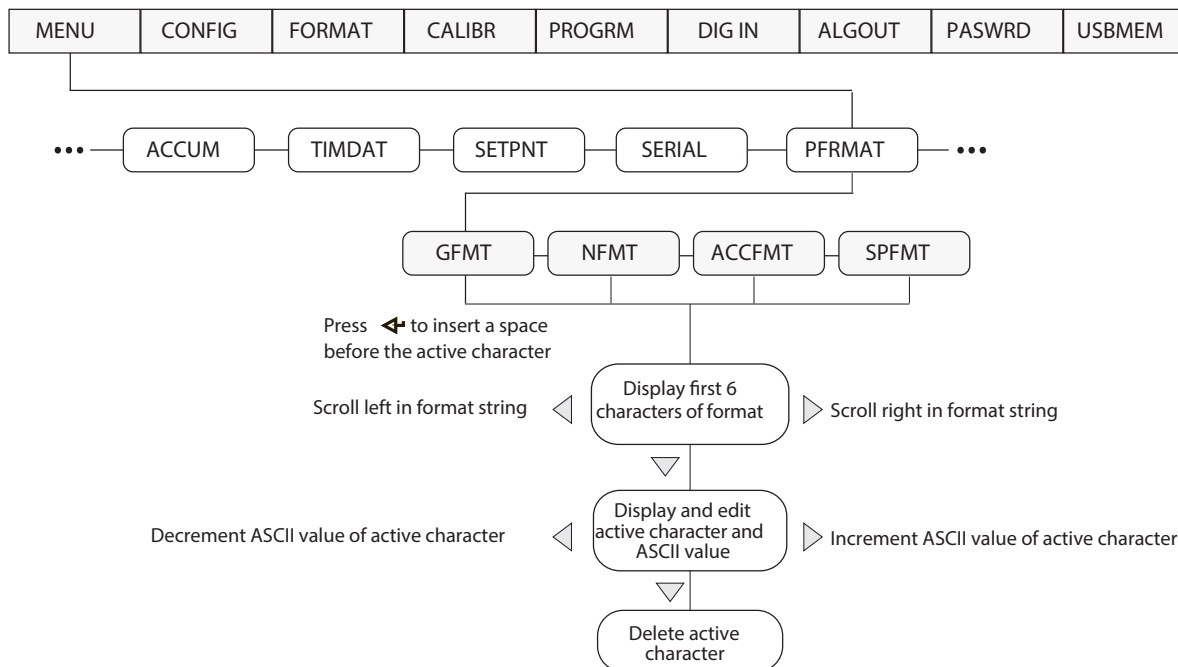


Figure 2-6. Print Format Menu

Parameter	Description
GFMT	Gross demand print format string Default – GROSS<G><NL2><TD><NL>
NFMT	Net demand print format string Default – GROSS<G><NL>TARE<SP><T><NL>NET<SP2><N><NL2><TD><NL>
ACCFMT	Accumulator demand print format string Default – ACCUM <A><NL><DA><SP><TI><NL>
SPFMT	Setpoint print format Default – <SCV><SP><SPM><NL>

Table 2-5. Print Format Parameters



Note Format strings are case sensitive and must be entered in upper case.

2.1.6 Version Menu

The VERS menu is used to view the firmware version.

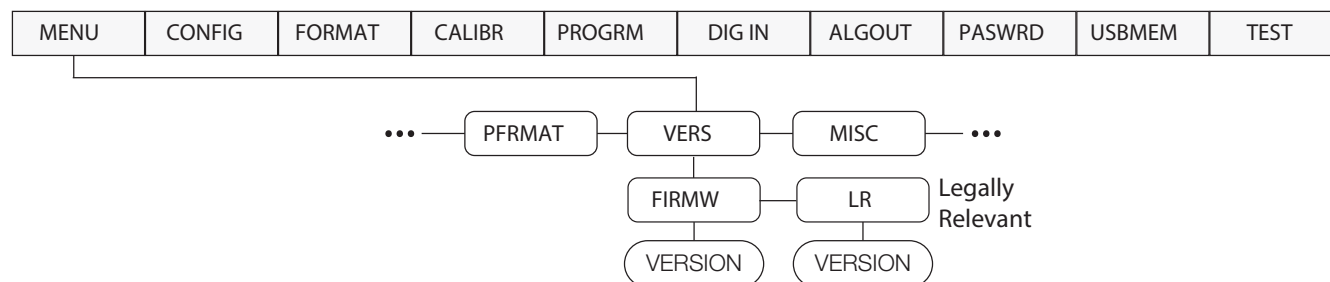


Figure 2-7. Firmware Version User Menu

Parameter	Description
FIRMW	Displays firmware version
LR	Displays legally relevant firmware version

Table 2-6. Firmware Version Menu Parameters

2.1.7 MISC Menu

The MISC menu is used to access the optional features of the device.

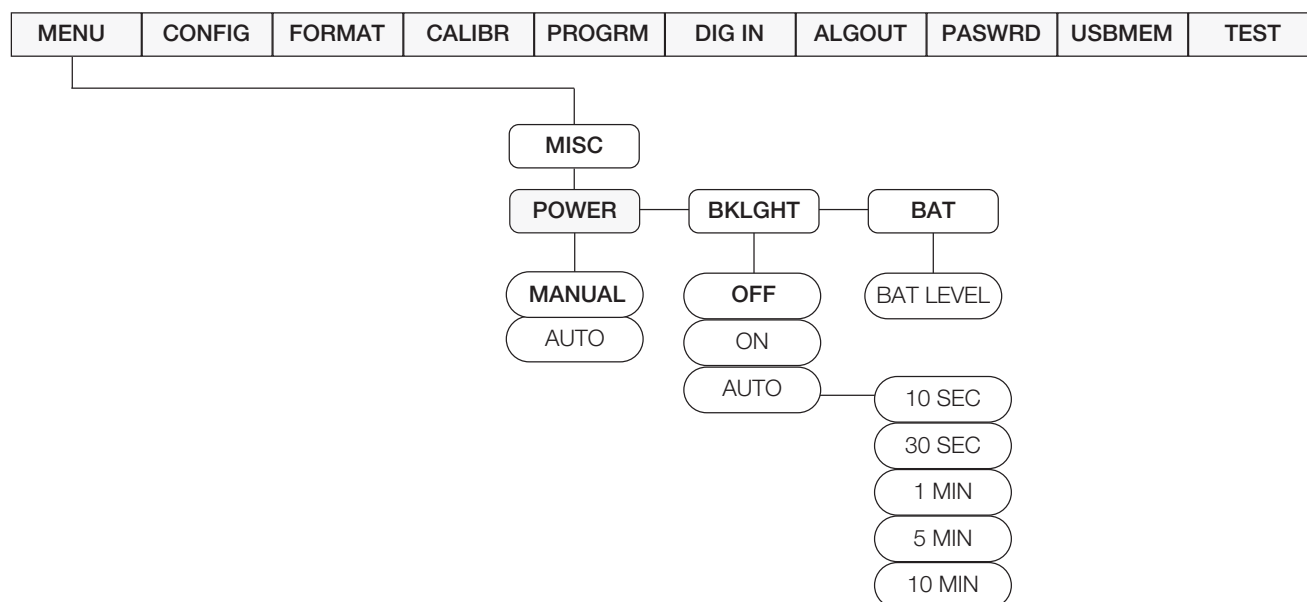


Figure 2-8. Misc. Menu

Parameter	Choices	Description
POWER	AUTO	The power up functionality depends on whether the battery option is installed: • If the battery option is not installed, the indicator turns on automatically when connected to AC power; it turns off by disconnecting the AC power or by pressing the Power key • If the battery option is installed, and CPU Jumper 4 is connected, the indicator turns on automatically when connected to AC power; it turns off by disconnecting the AC power or by pressing the Power key; this configuration is not recommended due to increased leakage current from the battery when the indicator is turned off • If the battery option is installed, and CPU Jumper 4 is disconnected, the indicator only turns on and off by pressing the Power key
	MANUAL	Indicator powers ON/OFF by pressing Power key
BKLIGHT	OFF ON AUTO	Allows control of the LCD backlight display OFF – backlight always off ON – backlight always on AUTO - backlight will turn off after the configured amount of time, if no buttons are pressed and there is no change in the weight; once either of these occurs, the backlight will turn on Auto time Options: 10 sec, 30 sec, 1 min, 5 min, 10 min
BAT	LEVEL	Allows reading the battery level in mV units NOTE: If there is not a battery option installed, NOBATT will display. When the battery is charging, CHRNG will display.

Table 2-7. MISC Menu Parameters

3.0 Appendix

3.1 Error Messages

The 482 indicator provides a number of error messages. When an error occurs, the message prompts on the indicator LCD display.

Error Messages	Description	Solution
E A/D	A/D physical error	Call Rice Lake Weighing Systems Service at 800-472-6703
EEEROM	EEPROM physical error	
EVIREE	Virgin EEPROM	Use TEST menu to perform DEFLT (restore defaults) procedure then recalibrate load cells
EPCKSM	Parameter checksum error	
EACKSM	A/D calibration checksum error	A/D converter requires recalibration. Call Rice Lake Weighing Systems Service
EFCKSM	Printer format checksum error	Call Rice Lake Weighing Systems Service at 800-472-6703
ELCKSM	Load cell calibration checksum error	Recalibrate load cells
EIDATA	Internal RAM checksum error	Call Rice Lake Weighing Systems Service at 800-472-6703
E REF	A/D reference error	A/D converter requires recalibration; call Rice Lake Weighing Systems Service
ERROR	Internal program error	Check configuration; call Rice Lake Weighing Systems Service if unable to clear error by cycling power or if error recurs
OVERFL	Overflow error	Weight value is too large to be displayed
=====	Gross > overload limit	Gross value exceeds overload limit; check configuration or signal input level; overload can be caused by input signal > 45 mV or common mode voltage > 950 mV
-----	Gross < 20d behind zero	Gross value is more than 20 divisions behind zero (OIML)
RNGERR	GRADS > 100,000 WVAL > 100,000	Only displays in configuration mode
EEPERR	EEPROM error	Call Rice Lake Weighing Systems for service at 800-472-6703
HINOFF	High offset	Zero load at startup is more than initial zero range (INIZR) setting of calibration zero—remove the extra load
LINOFF	Low offset	Zero load at startup is less than initial zero range (INIZR) setting of calibration zero—add the missing load
NOBATT	No battery	The RTC lost time/date tracking at previous power off state due to low battery or no battery condition; the printer, accumulator and audit functions will fail to get time and date NOTE: Refers to internal coin battery only, not the rechargeable battery option.
EUCKSM	Configuration checksum	The checksum value of configuration has changed from that stored in memory
OIMLER	OIML parameter error	Parameter set incorrectly for use in the OIML mode; <i>Example: Primary units set for lb or oz</i>
EE-ACC	Accumulator error	Error with the accumulator such as attempting to display an accumulated value greater than six digits

Table 3-1. 482 Error Messages



Note Shorting the excitation voltage shuts the excitation voltage off. The only way to restore excitation voltage is to cycle power.

3.2 Regulatory Mode Functions

Regulatory Parameter	Weight On Scale	Tare In System	Front Panel Key Tare	Front Panel Key Zero
NTEP	Zero	No	"000000"	Zero
		Yes	Clear Tare	Zero
	Negative	No	No Action	Zero
		Yes	Clear Tare	Zero
	Positive	No	Tare	Zero
		Yes	Tare	Zero
Canada	Zero	No	"000000"	Zero
		Yes	Clear Tare	Clear Tare
	Negative	No	No Action	Zero
		Yes	Clear Tare	Clear Tare
	Positive	No	Tare	Zero
		Yes	No Action	Clear Tare
OIML	Zero	No	"000000"	Zero
		Yes	Clear tare	Zero & Clear Tare
	Negative	No	No Action	Zero
		Yes	Clear Tare	Zero & Clear Tare
	Positive	No	"000000"	Zero
		Yes	Tare	Zero & Clear Tare
None	Zero	No	"000000"	Zero
		Yes	Clear Tare	Clear Tare
	Negative	No	No Action	Zero
		Yes	Clear Tare	Clear Tare
	Positive	No	Tare	Zero
		Yes	Clear Tare	Clear Tare

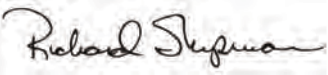
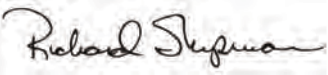
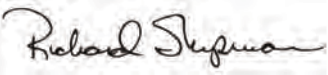
Table 3-2. Tare and Zero Key Functions for REGULA Parameter Settings



Note

At zero weight push-button tare will prompt for a keyed tare when the tare function is set to keyed or both.

3.3 Compliance

	EU DECLARATION OF CONFORMITY <i>EU-KONFORMITÄTSERKLÄRUNG DÉCLARATION UE DE CONFORMITÉ</i>	Rice Lake Weighing Systems 230 West Coleman Street Rice Lake, Wisconsin 54868 United States of America 												
Type/Typ/Type: 480 and 482 indicator														
English	We declare under our sole responsibility that the products to which this declaration refers to, is in conformity with the following standard(s) or other regulations document(s).													
Deutsch	Wir erklären unter unserer alleinigen Verantwortung, dass die Produkte auf die sich diese Erklärung bezieht, den folgenden Normen und Regulierungsbestimmungen entsprechen.													
Français	Nous déclarons sous notre responsabilité que les produits auxquels se rapporte la présente déclaration, sont conformes à la/aux norme/s suivante ou au/aux document/s normatif/s suivant/s.													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #cccccc;"> <th style="text-align: left; padding: 5px;">EU Directive</th> <th style="text-align: left; padding: 5px;">Certificates</th> <th style="text-align: left; padding: 5px;">Standards Used / Notified Body Involvement</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">2014/30/EU EMC</td> <td style="text-align: center; padding: 5px;">-</td> <td style="padding: 5px;">EN 55022:2010, EN 61000-3-2:2006+A1(09)+A2(09), EN 61000-3-3:2008, EN 55024:2010</td> </tr> <tr> <td style="padding: 5px;">2014/35/EU LVD</td> <td style="text-align: center; padding: 5px;">-</td> <td style="padding: 5px;">EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013</td> </tr> <tr> <td style="padding: 5px;">2011/65/EU RoHS</td> <td style="text-align: center; padding: 5px;">-</td> <td style="padding: 5px;">EN 50581:2012</td> </tr> </tbody> </table>			EU Directive	Certificates	Standards Used / Notified Body Involvement	2014/30/EU EMC	-	EN 55022:2010, EN 61000-3-2:2006+A1(09)+A2(09), EN 61000-3-3:2008, EN 55024:2010	2014/35/EU LVD	-	EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013	2011/65/EU RoHS	-	EN 50581:2012
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<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> Signature: <u></u> </td> <td style="width: 50%; vertical-align: top;"> Place: <u>Rice Lake, WI USA</u> </td> </tr> <tr> <td style="vertical-align: top;"> Type Name: <u>Richard Shipman</u> </td> <td style="vertical-align: top;"> Date: <u>May 3, 2019</u> </td> </tr> <tr> <td style="vertical-align: top;"> Title: <u>Quality Manager</u> </td> <td></td> </tr> </table>			Signature: <u></u>	Place: <u>Rice Lake, WI USA</u>	Type Name: <u>Richard Shipman</u>	Date: <u>May 3, 2019</u>	Title: <u>Quality Manager</u>							
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Type Name: <u>Richard Shipman</u>	Date: <u>May 3, 2019</u>													
Title: <u>Quality Manager</u>														

3.4 Specifications

Model Numbers

United States	482-2A/482Plus-2A (NEMA Type 5-15)
International	482-2A/482Plus-2A (CEE 7/7)

Power – AC

Line Voltages	115–230 VAC
Frequency	50 or 60 Hz
Power Consumption	70 mA @ 115 VAC (8 Ω) 35 mA @ 230 VAC (8 Ω)
Fusing	2.5 A 5 x 20 mm fuse

Power – Battery (Optional Internal Battery)

Battery Type:	Rechargeable Lithium-Ion
Nominal Voltage:	3.65v
Nominal Capacity:	5300mAh
Estimated Battery Life:	40 hours (350W load without backlight)) 15 hours (350W load with backlight))
Approx. Charge Time:	16 hours to achieve 100%

Analog Specifications

Full Scale Input Signal	Up to 35 mV
Excitation Voltage	5 $\pm$ 0.1VDC
Sense Amplifier	Differential amplifier with Four- and Six-wire sensing
Analog Signal Input Range	Up to 7 mV/V
Analog Signal Sensitivity	0.1 mV/graduation minimum 0.5 mV/grad recommended
Local Resistance	35-1140 Ω
Noise (ref to input)	0.5 mV p-p
Internal Resolution	523,376 counts
Display Resolution	100,000 dd
Measurement Rate	37 measurements/sec
Input Sensitivity	38 nV per internal count
System Linearity	Within 0.01% of full scale
Zero Stability	13 nV/ $^{\circ}$ C
Span Stability	13 ppm/ $^{\circ}$ C
Calibration Method	Software, constants stored in EEPROM
Common Mode	
Voltage	AGND + 250mV V min Excitation - 250 mV V max
Rejection	120 dB minimum @ 50 or 60 Hz
Normal Mode Rejection	100 dB minimum @ 50 or 60 Hz
Input Overload	-0.3 V–(Excitation)+0.3 V ⁷
RFI Protection	Signal, excitation, and sense lines protected by capacitor bypass and ESD suppressors

Analog Output (Optional)

Type	Fully isolated, voltage or current output, 16-bit resolution
Voltage output	0–10 VDC
Voltage load resistance	1K Ω minimum
Current output	0–20 mA or 4–20 mA
Current loop resistance	1200 Ω maximum

Digital Specifications

Microprocessor	ARM Cortex M3 STM32F103ZET6
Digital Filters	Adaptive Filter and Rolling Averaging Filter; software selectable

Digital I/O (Optional)

Type	Fully isolated
Digital Inputs	Two or four inputs, Opto isolated, 5–24 VDC input, active high
Digital Outputs	Four or eight dry-contact relays Up to 30VDC at 2A current

Serial Communications

Com 1	Full duplex RS-232
Com 2	Full duplex RS232, or output only Active 20mA current loop.
Both Ports	1200–38400 bps; seven or eight data bits; even, odd, or no parity; one or two stop bits

NOTE: Only Com 2 can be set to stream.

Operator Interface

Display	Six-digit LCD display. Seven-segment, 0.8 in (20 mm) digits
Annunciators	lb / kg / g / oz / t / center of zero / standstill
Keypad	Seven-key (19-key for Plus Model) flat membrane panel

Environmental

Operating Temperature	-10–+40°C (legal) -10–+50°C (industrial)
Storage Temperature	-25–+70°C
Humidity	0–95% relative humidity

Enclosure

Enclosure Dimensions	9.5 in x 6 in x 2.75 in 24 cm x 15 cm x 7 cm
Weight	6 lb
Rating/Material	4X

Certifications and Approvals



NTEP

CoC Number 12-123

Accuracy Class III/IIIL n_{max} : 10 000



OIML R76/2006-NL 1-15.24

European Test Certificate TC8322

Accuracy Class III n_{max} : 10 000

Measurement Canada

Approval AM-5892

Accuracy Class III/IIHD n_{max} : 10 000



UL

File Number: 151461

LISTED



FCC

The 480 complies with Part 15 of the FCC Rules. Operation is subject to the following conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Warranty

2-year limited warranty



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Rice Lake Weighing Systems is an ISO 9001 registered company.

230 W. Coleman St. • Rice Lake, WI 54868 • USA

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