480 Legend Series

Digital Weight Indicator
Version 1.06

Operation Manual

February 27, 2025

RICE LAKE WEIGHING SYSTEMS

PN 163374 Rev E

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www.ricelake.com

Revision History

This section tracks and describes manual revisions for awareness of major updates.

Revision	Date	Description
E	February 27, 2025	Implemented revision history; updated warning/note icons; added battery disposal information for CE compliance

Table i. Revision Letter History

Contents

1.0 Introduction

The 480 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 in, 20 mm), six-digit, seven-segment LED display and
seven-button keypad.

Manuals are available from Rice Lake Weighing Systems at **www.ricelake.com/manuals**

Warranty information is available at **www.ricelake.com/warranties**

1.1 Safety

Safety 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.

WARNING: Failure to heed could result in serious injury or death.

Ensure every individual who operates or works with this unit has read and understands all safety information.

Do not transport the scale while someone is on the scale.

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

Do not use in the presence of flammable materials.

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

Do not use near water.

Do not use the scale on slippery surfaces, such as a wet floor.

Do not use this scale when a person's body or feet are wet, such as after taking a bath.

Do not place fingers into slots or possible pinch points.

To avoid cross contamination, the scale should be cleaned regularly.

Prior to cleaning, make sure the scale is disconnected from the power source.

People with disabilities, or who are physically frail, should always be assisted by another person when using this scale.

IMPORTANT

Do not drop the scale or subject it to violent shocks.
Do not jump on the scale.
For accurate weighing, the scale must be placed on a flat, stable surface.
Operating at voltages and frequencies other than specified could damage the equipment.
Avoid contact with excessive moisture.
Do not make alterations or modifications to the scale.
Rice Lake Weighing Systems offers optional AC adapters; utilizing an adapter not supplied by Rice Lake Weighing Systems voids all warranties and approvals.
Weight exceeding the maximum capacity may damage the scale.

DO NOT open the indicator, all procedures that require work inside the indicator enclosure 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.
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.

IMPORTANT: All included batteries intended for sale in the EU market are classified as "Portable Batteries for General Use" and comply with European Battery Regulation (EU) 2023/1542.

1.2 Disposal

Product Disposal

The product must be brought to appropriate separate waste collection centers at the end of its life cycle.

Proper separate collection to recycle the product helps prevent possible negative effects on the environment and to health, and promotes the recycling of the materials. Users who dispose of the product illegally shall face administrative sanctions as provided by law.

Battery Disposal

Dispose of batteries at appropriate waste collection centers at the end of their life cycle in accordance with local laws and regulations. Batteries and rechargeable batteries may contain harmful substances that should not be disposed of in household waste. Batteries may contain harmful substances including but not limited to: cadmium (Cd), lithium (Li), mercury (Hg) or lead (Pb). Users who dispose of batteries illegally shall face administrative sanctions as provided by law.

WARNING: Risk of fire and explosion. Do not burn, crush, disassemble or short-circuit lithium batteries.

Features

- Auto switching AC power supply 115 VAC to 230 VAC, 50-60 Hz.
- Drives up to ten 350Ω or twenty 700Ω 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.

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.

1.3 Operating Modes

The 480 has two modes of operation:

Weigh Mode

The indicator displays gross or net weights as required, using the annunciators described in Section 1.4.2 on page 11 to indicate scale status and the type of weight value displayed.

User Menu Setup Mode

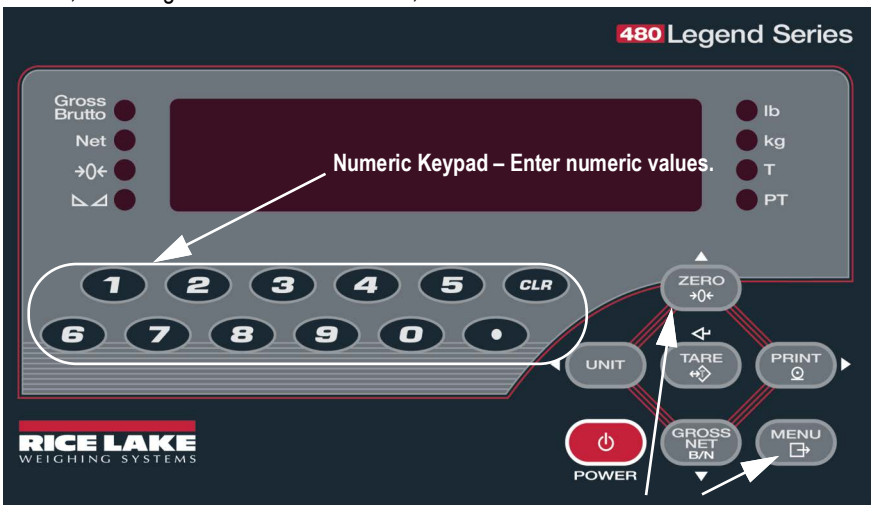
The user menu setup mode is used to access the Accumulator Functions, Audit Trail, display the Tare, Unit ID, Time & Date, Setpoints, Serial Communications parameters, Print Formats, and view the Firmware Version.

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

1.4 Front Panel Display

Figure 1-1 shows the 480 LED annunciators, keypad and key functions.

The symbols shown by the keys (representing up, down, enter, left, right) describe the key functions assigned in the operating modes. The keys are used to navigate through menus, select digits within numeric values, and increment/decrement values.



The up, down, enter, left and right arrows by the keys describe the functions assigned in the operating modes.

Keys are also used to navigate through menus, select digits within numeric values, and increment/decrement values.

Figure 1-1. 480 Front Panel, Showing LED Annunciators and Key Functions

1.4.1 Key Functions

Key	Function
POWER	Turns the unit on/off. ***Note: If power mode is set to manual, the POWER button 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.***
MENU	The MENU key is used to access the User Setup menu.
ZERO	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.
UNIT	Switches the weight display to an alternate unit. In numeric entry mode used as a "clear" key.
PRINT	Sends "on-demand" print format out the serial port, provided the conditions for standstill are met. PRINT may be displayed while the unit prints.
TARE	Performs one of several predetermined Tare functions dependent on the mode of operation s. To view a stored tare, see Section 1.6.6 on page 15. Also acts as an "enter" key for numeric or parameter entry.
GROSS NET B/N	Toggles the display 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 is shown by the Gross/Brutto annunciator; net mode is shown by the Net annunciator.
CLR	During a numeric entry, sets the currently select digit to 0, then selects one digit to the right.

Table 1-1. Key Functions

NOTE: See the* 480 Legend Series Technical *manual (PN 119201) for more information.

1.4.2 Annunciator Functions

The 480 display uses a set of eight LED annunciators to provide additional information about the value being displayed.

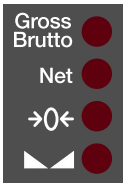
LED	Description
	**Gross/Brutto** Gross weight display mode (or Brutto in OIML mode) **Net** Net weight display mode **→0← (Center of Zero)** The Center of Zero LED indicates that the current gross weight reading is within +/- 0.25 display divisions of the acquired zero, or is within the center of zero 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. **◣ ◢ (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 LED is on.
	**lb/kg** Displays which unit of measure is being used. lb and kg annunciators indicate the units associated with the displayed value: lb = pounds, kg = kilograms. The displayed units can also be set to short tons (tn), metric tons (t), ounces (oz), grams (g), NONE (no units information displayed). The lb and kg LEDs function as primary and secondary units annunciators. If neither primary nor secondary units are lb or kg, the lb annunciator is lit for primary units and kg is lit for secondary units. **T** Indicates that a push-button tare weight has been acquired and stored in memory. **PT** Indicates that a preset tare weight has been keyed in or entered and stored in memory.

Table 1-2. LED Annunciators

NOTE: See the* 480 Legend Series Technical *manual (PN 119201) for more information.

1.5 Front Panel Key Functions

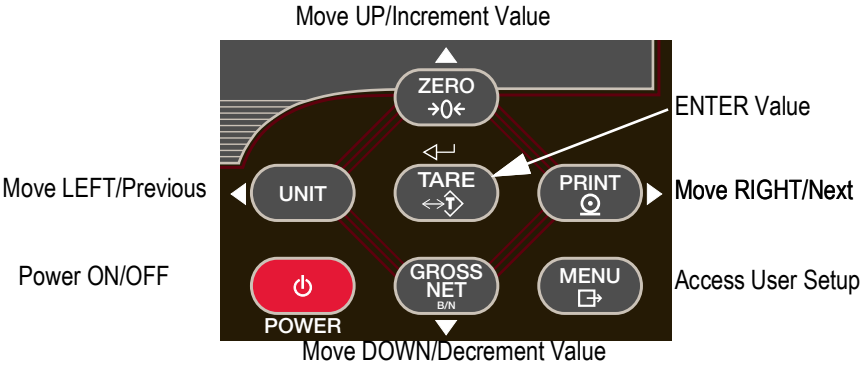


Figure 1-2. Front Panel Key Functions

Four front panel keys are used as directional keys to navigate through the menus (see Figure 1-2).

- **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.

1.5.1 Navigating Through Levels

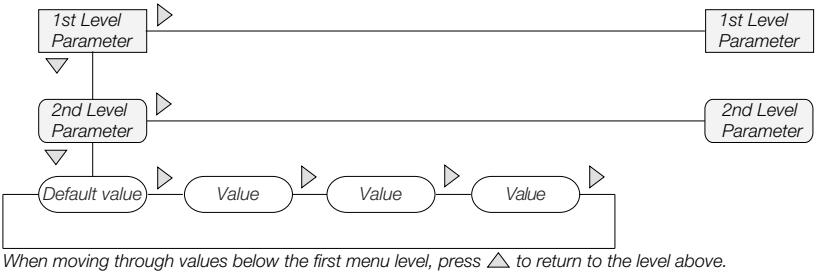


Figure 1-3. Menu Navigation

To select a parameter, press ◁ or ▷ to scroll left or right until the desired menu group appears on the display, then press ▽ to move down to the sub-menu or parameter you want. When moving through the menu parameters, the present value appears first on the display.

1.5.2 Edit Parameter Values

To change a parameter value, scroll left or right to view the values for that parameter. When the desired value appears on the display, press **ENTER** (**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 1-4. Editing Procedure for Numeric Values

1.5.3 Numeric Keypad - Editing Procedure (480Plus Only)

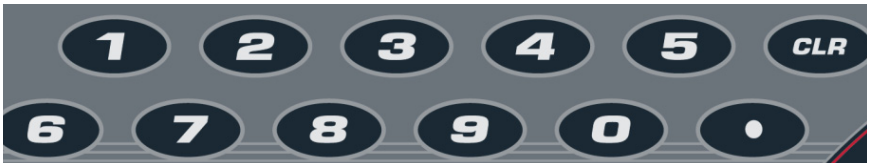


Figure 1-5. Numeric Keypad for the 480Plus

With the numeric keypad option, the method for editing numeric values relies on the numbers which are embossed on the keypad in oppose to using the arrows.

1. When editing numeric values, insert the required value using the numeric keypad.
2. Press ◁┘ to save the value entered and return to the level above.

- Press CLR to set the currently selected digit to 0.
- 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.

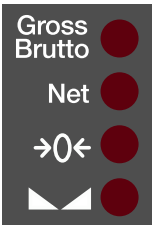
1.6 Indicator Operations

Basic 480 operations are summarized below.

NOTE: See the 480 Legend Series Technical manual (PN 119201) for more information.

1.6.1 Status Lights While in Various Menus

Sub-menu levels are indicated by the LEDs as shown below.



First sub-menu level

Second sub-menu level

Third sub-menu level

Fourth sub-menu level

Figure 1-6. Status Lights

1.6.2 Zero Scale

1. In gross mode, remove all weight from the scale and wait for the ◣ ◢ LED to light.
2. Press ZERO →0←. The →0← LED lights to indicate the scale is zeroed.

1.6.3 Toggle Units

1. Press UNIT to toggle between primary and secondary units. The current unit LED will be lit.

1.6.4 Acquire Tare

1. Place container on scale and wait for the ◣ ◢ LED to light.
2. Press TARE to acquire the tare weight of the container. Net weight is displayed and the ***T*** LED lights to show the tare value was entered and stored in memory.

See Section 3.2 on page 28 for Regulatory Mode Functions.

1.6.5 Preset Tare (Keyed Tare)

1. With the scale empty and display showing zero weight, press TARE.
2. Display will show (000000); the focused digit will flash.
3. Edit the value using the following method; or with the *480PLUS*, use the keypad.

• Press ◁ or ▷ to select the digit.

• Press △ or ▽ to increment or decrement the value.

4. Press TARE when the value is correct. The display will change to the Net mode and the ***PT*** LED lights to show the preset tare was entered.

1.6.6 Display Tare

When a stored Tare value is displayed, the Gross and Net LEDs will be off and the **→0←** will be lit. To display a stored tare:

1. Press MENU.
2. Press ▽ to AUDIT.
3. Press ▷ to **TARE** and press ▽.
4. Press △ repeatedly to return to weighing mode.

If there is no tare in the system, the value displayed will be zero and the Gross and Net LED will be turned off.

See Section 3.2 on page 28 for more information.

1.6.7 Print Ticket

1. Press PRINT to print either the Gross or Net format.
2. Wait for ◣ ◢ LED to light.
3. Press PRINT to send data to the serial port.

If ◣ ◢ LED is not lit and the **PRINT** key is pressed, the print action will take place only if the scale comes out of motion within 3 seconds. If the scale stays in motion for over 3 seconds, the PRINT key press is ignored.

1.6.8 Toggle Gross/Net Mode

1. Press GROSS NET B/N 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*** LED is lit.
Net mode — ***Net*** LED is lit.

1.6.9 View Audit Trail

1. Press MENU.
2. Press ▽ to AUDIT.
3. Press ▽. The audit trail CALIB is displayed.
4. Press ▽ then ◁ or ▷ to CNT, TIME or DATE.
5. Press ▽ to view selected parameter.
6. Press △ twice to return to CALIB.
7. Press ▷ to the audit trail CONFIG and repeat steps 5 and 6 to view configuration number.
8. Press △ repeatedly to return to weighing mode.

1.6.10 Enter New Unit ID

1. Press MENU.
2. Press ▽ to AUDIT.
3. Press ▷ until display reads UNIT ID.
4. Press ▽ to view the current value.
5. Edit the value using the following method; or with the *480PLUS*, use the keypad.

• Press ◁ or ▷ to select the digit.

• Press △ or ▽ to increment or decrement the value.

6. Press TARE when the value is correct.
7. Press △ repeatedly to return to weighing mode.

1.6.11 Display Accumulator

1. Press MENU.
2. Press ▽ to AUDIT.
3. Press ▷ until display reads ACCUM.
4. Press ▽ to display VIEW.
5. Press ◁ or ▷ to select desired parameter (VIEW, TIME, DATE, PRINT, CLR Y).

• For VIEW, TIME or DATE, press ▽ to view the value. Press △ or TARE to return to selected parameter.

• To PRINT or CLEAR, press ▽, then press TARE to print or clear the accumulator. Press △ to return to selected parameter

6. Press △ repeatedly to return to weighing mode.

NOTE: If the accumulated value exceeds 999999, display show "EE ACC". The value will still be correct and will print correctly up to 1,000,000,000.

1.6.12 Display or Change Time and Date

To set the date and time:

1. Press MENU.
2. Press ▽ to AUDIT.
3. Press ▷ until display reads TIMDAT (TIME/DATE).
4. Press ▽ and select Time or Date with ◁ or ▷.
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.

- Press ◁ or ▷ to select hours, minutes, or seconds – the selected value will be flashing
- Press △ or ▽ to increment or decrement the value.

7. Press TARE when the value is correct.

   Use the same procedure to enter the date in the same format configured for the indicator.
8. Press △ 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 LED indicates pm setting.

1.6.13 Display, Edit and Set Setpoint Value

1. Press MENU.
2. Press ▽ to AUDIT.
3. Press ▷ until display reads **SETPNT**.
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.

• To edit Value, use the following method; or with the *480PLUS*, use the keypad.

- Press ◁ or ▷ to select the digit.
- Press △ or ▽ to increment or decrement the value.
- Press TARE when the value is correct.

• To edit ***ENABLE***:

- Press ◁ or ▷ to select ON/OFF.
- Press TARE when the value is correct.

8. Press △ repeatedly to return to weighing mode.

1.6.14 View Firmware Version

1. Press MENU.
2. Press ▽. AUDIT is displayed.
3. Press ▷ until display reads VERS.
4. Press ▽. FIRMW is displayed.
5. Press ▽ to view version.
6. Press △ repeatedly to return to weighing mode.

1.6.15 Enter User Password

1. Remove the setup switch access screw from the back of the enclosure.
2. Insert a non-conductive tool into the access hole and press the configuration switch. Indicator display changes to show ***CONFIG***.
3. Press ◁ or ▷ until PASWRD is displayed.
4. Press ▽. CNFG is displayed.
5. Press ▷ to USER.
6. Press ▽. 000000 is displayed.
7. To edit the password, use the following method; or with the *480PLUS*, use the keypad.

- Press ◁ or ▷ to select the digit.
- Press △ or ▽ to increment or decrement the value.
- Press TARE when the value is correct.

8. Press △ to return to PASWRD.
9. Press ▷ to CONFIG.
10. Press △ to return to weighing mode.

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

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

2.0 User Menus

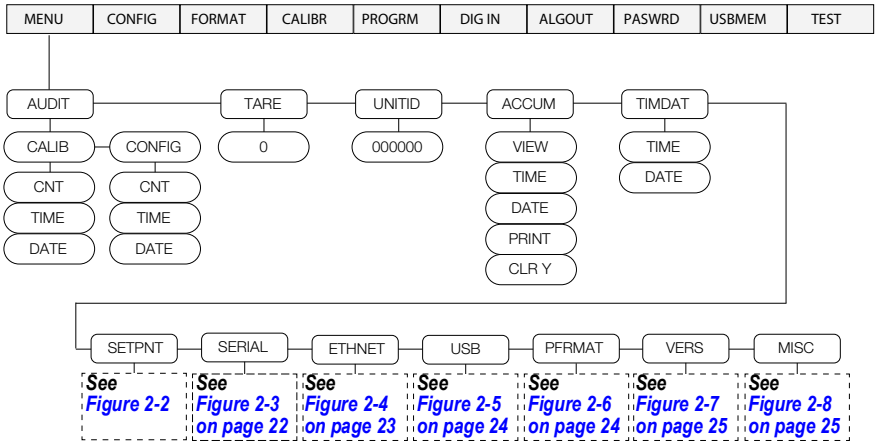


Figure 2-1. Menu Key User Menu

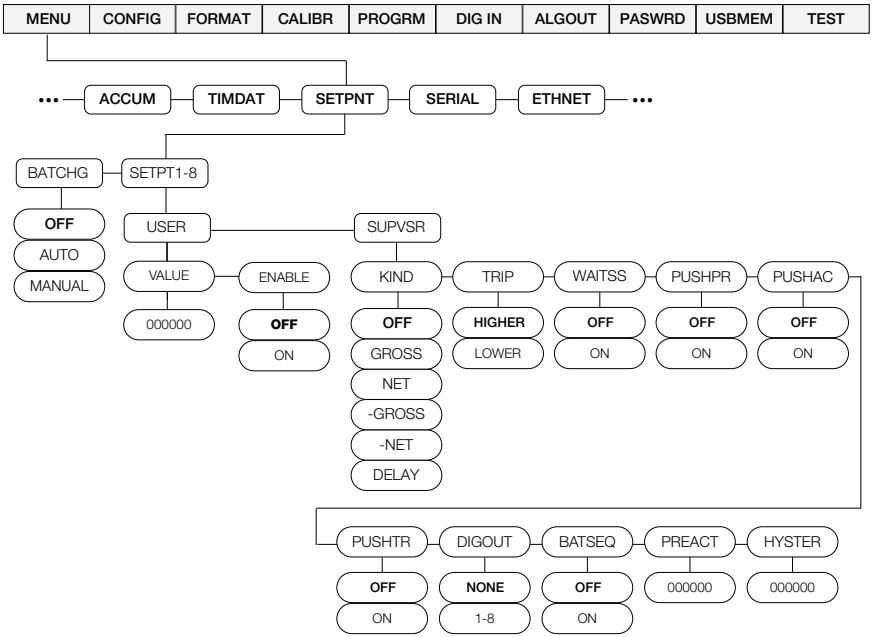


Figure 2-2. Setpoint Setup Menu

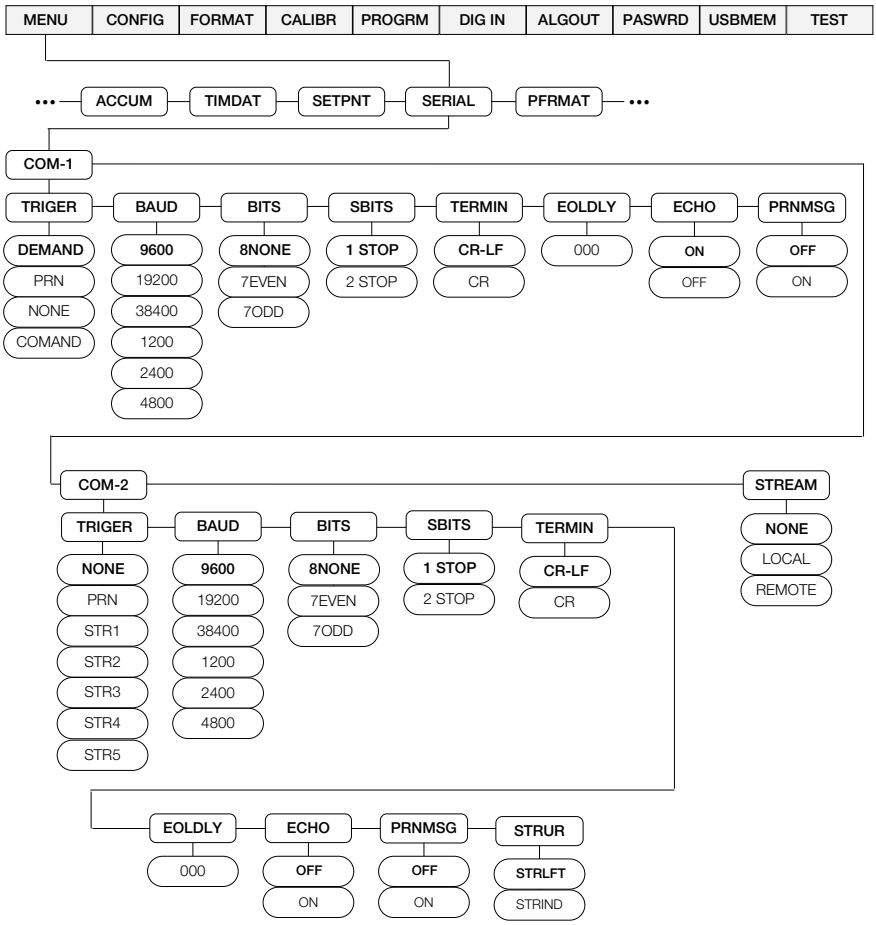


Figure 2-3. Serial Menu

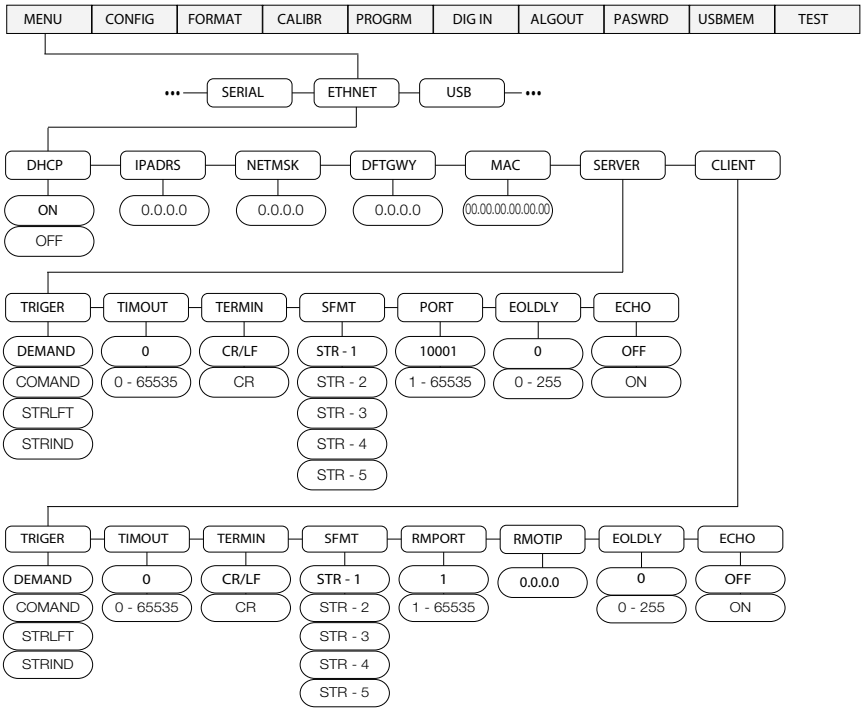


Figure 2-4. Ethernet Menu Layout

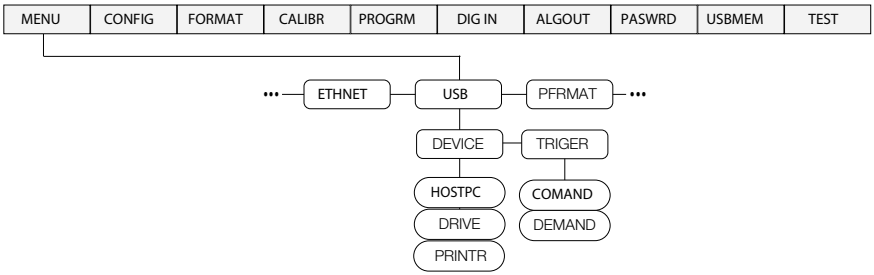


Figure 2-5. USB Menu Layout

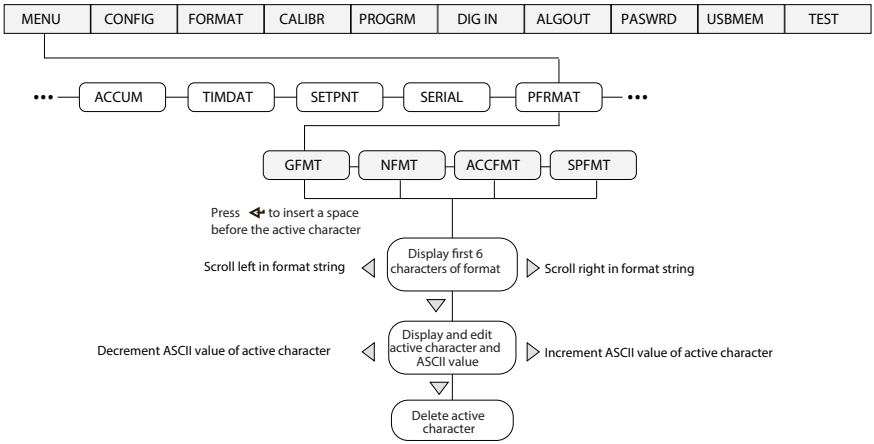


Figure 2-6. Print Format Menu

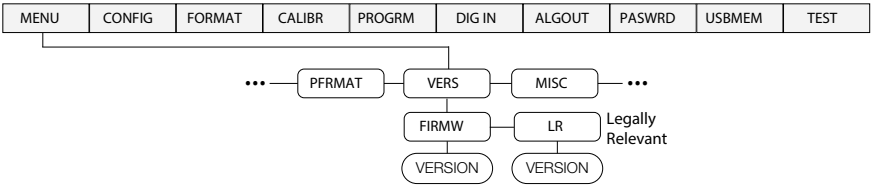


Figure 2-7. Version User Menu

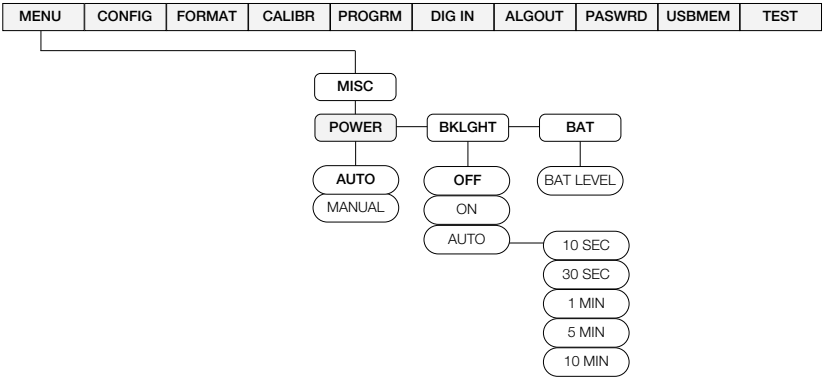


Figure 2-8. Misc. Menu

3.0 Appendix

3.1 Error Messages

The 480 provides a number of front panel error messages to assist in problem diagnosis. Table 3-1 lists these messages and their meanings.

Error Message	Description	Solution
E A/D	A/D physical error	Call Rice Lake Weighing Systems (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 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.
RNGERR	GRADS > 100,000 WVAL > 100,000	Only shows up in Config mode.
EEPERR	EEPROM error	Call Rice Lake Weighing Systems for service at 800-472-6703.
HINOFF?	High offset	Zero load at powerup is more than initial zero range (INIZR) setting of calibration zero – remove the extra load.

Table 3-1. 480 Error Messages

Error Message	Description	Solution
LINOFF	Low offset	Zero load at power up 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 AUDUT functions will fail to get time and date.
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. Example: Primary units set for lb or oz.
EE-ACC	Accumulator error	Error with the accumulator such as attempting to display an accumulated value greater than six digits.

Table 3-1. 480 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 REGULAT Parameter Settings

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

3.3 Compliance

EU DECLARATION OF CONFORMITY

EU-KONFORMITÄTSERKLÄRUNG
DÉCLARATION UE DE CONFORMITÉ

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.

Francais Nous déclarons sous notre responsabilité que les produits auxquels se rapporte la présente déclartion, sont conformes à la/aux norme/s suivante ou au/aux document/s normatif/s suivant/s.

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

Signature: Richard Shipman

Place: Rice Lake, WI USA

Type Name: Richard Shipman

Date: May 3, 2019

Title: Quality Manager

UK CA

UK DECLARATION OF CONFORMITY

Rice Lake Weighing Systems
230 West Coleman Street
Rice Lake, Wisconsin 54868
United States of America

RICE LAKE WEIGHING SYSTEMS

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).

UK Regulations	Certificates	Standards Used / Approved Body Involvement
2016/1101 Low Voltage	-	EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
2016/1091 EMC	-	EN 55022:2010, EN 61000-3-2:2006+A1(09)+A2(09), EN 61000-3-3:2008, EN 55024:2010
2017/1206 Radio	-	EN 50581:2012

Signature: Brandi Harder

Name: Brandi Harder

Title: Quality Manager

Place: Rice Lake, WI USA

Date: December 30, 2021

Form 0291 New 07/2021

Approved by: Quality Department

3.4 Specifications

Model Numbers

United States	480-2A/480Plus-2A (NEMA Type 5-15)
International	480-2A/480Plus-2A (CEE 7/7)

Power – AC

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

Analog Specifications

Full Scale Input Signal	Up to 35 mV
Excitation Voltage	5 ± 0.1VDC
Sense Amplifier	Differential amplifier with 4- and 6-wire sensing
Analog Signal	
Input Range	Up to 7 mV/V
Analog Signal	
Sensitivity	0.1 μV/graduation minimum 0.5 μV/grad recommended
Local Resistance	35-1140 Ω
Noise (ref to input)	0.5 μV 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/°C
Span Stability	13 ppm/°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 to Excitation +0.3 V
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	1KΩ minimum
Current output	0–20 mA or 4–20 mA
Current loop resistance	1200Ω 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	2 or 4 inputs, Opto isolated, 5 to 24 VDC input, active high
Digital Outputs	4 or 8 dry-contact relays Up to 30VDC at 2A current

Serial Communications

Port 1	Full duplex RS-232
Port 2	Full duplex RS232, or output only Active 20mA current loop.
Both Ports	1200 to 38400 bps; 7 or 8 data bits; even, odd, or no parity; 1 or 2 stop bits

Operator Interface

Display	6-digit LED display. 7-segment, 0.8 in (20 mm) digits
LED annunciators	Gross, net, center of zero, standstill, lb/primary units, kg/secondary units, T, PT
Keypad	7-key flat membrane panel

Environmental

Operating Temperature	–10 to +40°C (legal); –10 to +50°C (industrial)
Storage Temperature	–25 to +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-NL1-15.24

European Test Certificate TC8322

Accuracy Class III n_{max} : 10 000

Measurement Canada Approved

Measurement Canada

Approval AM-5892

Accuracy ClassIII/IIIHD n_{max}: 10 000

UL

File Number: 151461

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

230 W. Coleman St. • Rice Lake, WI 54868 • USA USA: 800-472-6703 • International: +1-715-234-9171

www.ricelake.com

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