# R-30

*Price Computing Retail Scale*

*Version 2*

# Installation and Service Manual

# Contents

# About This Manual

This manual contains operating procedures for the R-30 price computing retail scale scale and provides the user with all the information necessary for set up and operation.

This manual is organized based on the procedures you will likely follow when setting up and using your counting scale.

When using this manual, keypad keys are shown in **bold** characters.

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

Authorized distributors and their employees can view or download this manual from the Rice Lake Weighing Systems distributor site at www.rlws.com.

# 1.0 Introduction

The R-30 retail scale offers practical solutions for a full range of point of sale weighing and price computing applications. Its compact design makes it easy to transport and the customer display on the rear of the R-30 offers extra convenience.

Standard features of the R-30 include:

- NTEP certified, legal-for-trade
- Customer display on rear of unit
- Operates on 12 Vdc adapter or 6 "D" size alkaline batteries
- Configurable for lb or kg

## 1.1 Start-up Self Check

When the operator turns on the scale with the **ON** button, the main program provides the following checks:

- Display check. The display turns on all the segments (display scrolls through various figures) for a few seconds.
- Calibration parameters check. The R-30 stores calibration values in the EPROM along with a checksum value for verification of the stored value. When the operator turns on the scale, the scale calculates a new checksum from the EPROM and compares it to the stored checksum. If the two checksums are not equal, the scale displays an error message. If the two checksums are equal, the display shows all zeros.

## 1.2 Power Supply

The R-30 can use power supplied by either a plug-in 120 VAC to 12 Vdc wall transformer unit, or 6 "D" size batteries.

- Use alkaline batteries for longer life.
- If AC power is available, use the plug-in transformer unit.
- When using the plug-in transformer, the batteries are automatically disconnected.

In battery mode, the R-30 automatically shuts itself off after 5 minutes of inactivity (no weight changes or keyboard activity). To restart, press **ON**. When using the plug-in transformer, the scale automatically disables the shut off feature.

To turn on the scale, press the **ON** button.

To turn off the scale, press and hold **>0<** for three seconds.

## 1.3 Battery Replacement

To replace batteries, open the battery compartment cover at the bottom of the scale by removing the two locking screw. Insert six "D" size alkaline batteries according to the diagram in the compartment.

⚠️ **Caution** *Installing batteries with wrong polarity will damage the scale.*

# 2.0    Setup and Calibration

Setup defines the functional parameters that can be set by the user in the field. These parameters include full scale limit, zero tracking, and tare modes.

Setup is managed by four keys as shown in Table 2-1.

| Key | Function | Description |
|-----|----------|-------------|
| + | Next | Scroll to next menu/submenu/option |
| T | Previous | Scroll to previous menu/submenu/option |
| ✷ | Enter/Select | Select menu/option |
| C | Continuous | Enter setup mode |

*Table 2-1. Setup Key Functions*

To enter the setup mode, press C continuously until the display shows SEL 9.

The setup and calibration process is composed of six submenus, shown in Table 2-2. The submenus allow the user to perform various functions of the R-30. They can be accessed by scrolling using the + key or the T key, then pressing ✷ to enter into the submenu.

| Sub-Menu | Function |
|----------|----------|
| SEL 1 | Weighing function parameters |
| SEL 2 | Display and software filter parameters |
| SEL 3 | Calibration |
| SEL 6 | Euro currency handling, tare options, weight unit and gravity parameters |
| SEL 8 | Communication parameters |
| SEL 9 | Save configuration data |

*Table 2-2. Sub Menu Functions*

## 2.1　SEL 1 Menu

SEL 1 menu sets the weighing parameters, weighing type (retail / industrial), and enables calibration. Table 2-3 shows the parameters and options available. To enter this menu, press ✦.

| Display | Function | Option/Key Operation |
|---------|----------|----------------------|
| CLC | Calibration | Yes/No.  (Always Yes to maintain NTEP compliance)<br>To disable calibration change – set to Y<br>Press + to scroll (n/Y)<br>Press ✦ to select |
| Ind | Retail/Industrial application | Yes/No.<br>Press + to change<br>Press ✦ to select<br>Preset from factory, select NO |
| UnS | Unit selection<br>Do Not Change | 1 – kg, 2 – g, 3 – lb<br>Press + to change<br>Press ✦ to select<br>Preset from factory, do not change |
| AGn | Gain | 1 (low gain) to 6 (high gain)<br>Press + to change<br>Press ✦ to select |
| AA | Averaging mode (number samples averaged) | 1 to 90<br>Press + or T to scroll<br>Press ✦ to select |
| AF | Sample rate | 50 to 200. The digit selected is marked by the decimal point to its right.<br>Press + to select the digit to be modified<br>Press T to change the value of the selected digit<br>Press ✦ to select the value |
| Ar | Internal resolution setting (1000 internal counts) | 32, 64, 128, 250<br>Press + to scroll<br>Press ✦ to select |
| FS | Full scale weight value (in units selected before) | Press ✦ to enter this submenu. The display shows the full scale weight (example 00020 for FS=20kg or .0300 = 30lb).<br>The digit selected is marked by the decimal point to its right<br>Press + to select the digit to be modified<br>Press T to change the value of selected digit<br>Press ✦ after entering the FS value<br>The display shows the internal counts<br>Press ✦ to end the process |
| SEL1 | End of SEL 1 menu | Press ✦ to exit SEL 1 menu option |

*Table 2-3. SEL 1 Menu Parameters*

## 2.2  SEL 2 Menu

SEL2 menu sets the display parameters. Table 2-4 shows the parameters and options available.

| Display | Function | Option/Key Operation |
|---|---|---|
| dP | Decimal point position | Press + to select field (weight, price, total)<br>Press **T** to define the DP position (example 3 = three digits to right of decimal point)<br>Press ✱ to select the current position<br>Note: To set the decimal point:<br>    Choose the position of the decimal point for the **Weight Display** press ✱<br>    Choose the position of the decimal pont for the **Price Display** press ✱<br>    Choose the position of the decimal point for the **Total Display** press ✱ |
| rnGn | Single/multi interval operation | 1 – Single interval. *(Always single interval to maintain NTEP compliance)*<br>2 – Two intervals<br>Press + to scroll<br>Press ✱ to select<br>Setting ranges: Preset from factory, do not change ranges |
| Dd | Display by factor | 1, 2, 5, 10, 20, 50<br>Press + to scroll<br>Press ✱ to select |
| iS | Stability window size (internal counts) | 1 to 20. The digit selected is marked by the decimal point to its right<br>Press + to select digit to be modified<br>Press **T** to modify the digit<br>Press ✱ to select |
| rS | Number of consecutive readings to declare stable weight | 1 to 20<br>Press + to scroll<br>Press ✱ to select |
| rT | Number of readings to declare motion condition | 1 to 20<br>Press + to scroll<br>Press ✱ to select |
| Prt | Wind filter enable | yes/no.<br>Press + to scroll<br>Press ✱ to select |
| PrtAL | Wind filter value in weight units (kg/g/lb) | Press + or **T** as in IS field<br>Press ✱ to select |
| totSH | Minimum weight to clear total value | Press + or **T** as in IS field<br>Press ✱ to select |
| Or | Zero setting and zero tracking limit (% of full scale) | Press + or **T** as in IS field<br>Press ✱ to select |
| rS | Initial zero setting limit (% of full scale) | 2% for OIML application. Available only for non-OIML applications.<br>Press + or **T** to scroll<br>Press ✱ to select |
| Ot | Zero tracking range (% of display division) | Press + or **T** as in IS field<br>Press ✱ to select |
| tL | Tare limit (% of full scale) | 1 to 99<br>Press + or **T** as in IS field<br>Press ✱ to select<br>Preset from factory, do not change |
| LOFFL | Low offset limit (in internal counts) | Press + or **T** as in IS field<br>Press ✱ to select<br>Preset from factory, do not change |

*Table 2-4. SEL 2 Menu Parameters*

| Display | Function | Option/Key Operation |
|---------|----------|----------------------|
| HOFFL | High offset limit (in internal counts) | Press + or T as in IS field<br>Press ✶ to select<br>Preset from factory, do not change |
| SEL 2 | End of SEL 2 menu | Press + or T to exit SEL 2 |

*Table 2-4. SEL 2 Menu Parameters (Continued)*

## 2.3   SEL 3 Menu

The SEL 3 menu option controls the calibration process of the R-30 retail scale. The first step is zero calibration. This reading is taken immediately after entering the menu. Make sure the platter is free of any load before entering this menu. To enter lb calibration mode, follow steps 1-12 below:

1.  Turn scale off.

2.  Turn scale over and remove two bottom front screws.

3.  Set scale upright and lift off the scale platter. Remove the top four screws.

4.  Facing the scale, carefully lift the left side of the cover to reveal the CPU board. *Do not detach the two ribbon cables from the right side of the CPU board.* Prop the cover open with the cables still attached.

5.  Carefully remove the CPU board by pressing lightly on the two plastic retaining clamps at the top edge of the board. Lift the board up slightly and turn board over.

6.  Locate jumper JP1 located next to R5 on the CPU board as shown in Figure 2-1. Remove the jumper from one pin and place it on both pins.

7.  Carefully replace the CPU board. Put the cover back in place and replace the platter.

8.  Turn the scale on. After the display check, the scale should display zero. **Note: Display will flash Err 1 because JP1 is installed**. Press and hold the C key for a few seconds until SEL 9 displays.

9.  Press the + key until SEL 3 displays. Press ✶ to display lb-Y. Press ✶ again until display reads Put. Add test weights and press ✶ again four times until the display shows SEL 3.

10. Press + until display reads SEL 9. Press ✶ and wait for scale to turn off.

11. Remove weights from platter. Reinstall the jumper back on one pin.



*Figure 2-1.  Jumper Location*

12. Reinstall the CPU board. Reinstall the screws into the cover on top and bottom. Replace the platter. The scale should now be ready for use.
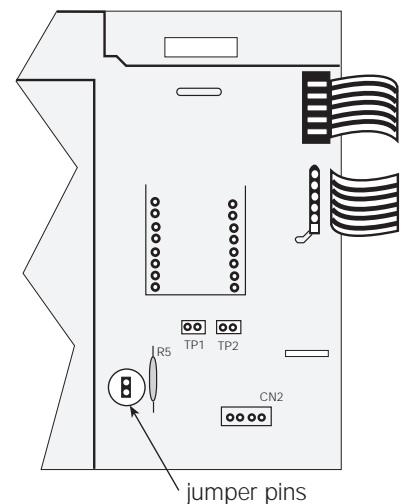
Table 2-5 shows the submenus and options available.

| Display | Function | Option/Key Operation |
|---|---|---|
| lb | Toggles between lb/kg defines the calibration weight unit | Press + to select<br>Press ✴ to continue |
| CALib | Calibration process and zero point setting | Press ✴ to select<br>At this step the zero point is taken. Make sure the scale platter is free of any load |
| Put | Calibration of load point | Put the calibration weight on the platter for a few seconds<br>Press ✴ when the load is set |
| CALCA | Enter the load value for calibration | Press ✴ to select<br>Enter the calibration load in the weight units selected (lb/kg). Example .0300 = 30 lb<br>The digit selected is marked by the decimal point to its right<br>Press + or T as in IS field<br>Press ✴ to continue |
|  | Calculating the gain and zero setting and the calibration factors |  |
| End | End of calibration process | Press ✴ to continue |
| SEL 3 | End of calibration menu | To save the calibration data, press + or T until SEL 9 appears<br>Press ✴ to enter |

*Table 2-5. SEL 3 Menu Parameters*

At this time remove the weights from the platter and the unit turns off.

**Note: Calibration steps cannot be reversed. To redo any of the above calibration steps, you must turn the scale off and start again.**

## 2.4 SEL 6 Menu

SEL 6 menu sets the Euro (€) function exchange rate, three tare options, and the weight unit and gravity parameters of the R-30.

The Euro process supports four phases:

- Phase 0 – Local currency support only. No Euro conversion support.
- Phase 1 – Local currency is the main mode. The prices and totals are displayed in local currency. Pressing the Euro key causes the display to momentarily show the price (or total) value in Euro €.
- Phase 2 – Euro is the main mode. The prices and totals are displayed in Euro €. Press the Euro € key to momentarily show the price (or total) value in the local currency.
- Phase 3 – Euro is the only mode. All prices and total values are displayed in Euro €.

Table 2-6 shows the submenus and options available.

| Display | Function | Option /Key Operation |
|---|---|---|
| lb | Toggles between lb/kg | Toggle between Yes/No<br>Press + to select<br>Press ✶ to continue |
| onoF | On/Off switch | Press + to select yes or no. If the scale switch is hardware only choose no<br>If the scale switch is software controller key on the keyboard choose yes<br>Press ✶ to continue |
| Eur | Enable Euro (€) | Yes/No<br>Press + to scroll<br>Press ✶ to continue |
| rAt | Enable Euro rate display | Yes/No<br>Press + to scroll<br>Press ✶ to continue |
| tArE | Select tare mode | Press ✶ to continue<br>Press + to select:<br>    1 = permanant<br>    2 = automatic<br>    3 = additive<br>Press ✶ to continue |
| FASE | Euro implementation phase selection | 0-3<br>Use the numeric keys to define the phase as described above<br>Press ✶ to select |
| PrFAS | Change to Euro previous phase | 0-3<br>Use the numeric keys to define the phase as described above<br>Press ✶ to continue |
| Euro | Set Euro rate | 1 to 999.999<br>Use numeric keys to enter the Euro rate<br>Press ✶ to continue |
| Sourc ALtit | Local altitude | Use the numeric keys to define the local altitude<br>Press ✶ to continue |
| dESti ALtit | Destination altitude | Use the numeric keys to define the destination altitude<br>Press ✶ to continue |
| Sourc LAtit | Local latitude | Use the numeric keys to define the local latitude<br>Press ✶ to continue |
| dESti LAtit | Destination latitude | Use the numeric keys to define the destination latitude<br>Press ✶ to continue |
| SEL 6 | End of SEL 6 menu | Press + or T to exit SEL 6 menu |

*Table 2-6. SEL 6 Menu Parameters*

**Notes:**

- The R-30 supports three types of tare functions.

  Permanent

  The tare value is kept after the weight and the tare are removed from the scale. When the tare weight is removed, the display shows the tare weight with the negative sign. To cancel the tare, press T again. The scale erases the negative reading.

  Automatic

  The tare value is canceled as soon as the load is removed from the scale. When the tare weight is removed the display will zero. Pressing T twice will activate the tare as in the permanent tare described above.

  Additive

  Works like a permanent tare but the tare value may also be increased during operation. To increase the tare, add more weight and press T again.

- In order to use the source altitude, destination altitude, source latitude, and desitination latitude parameters, all four values must be specified. The calculation uses the difference between the source and the destination parameters.

## 2.5 SEL 8 Menu

SEL 8 menu controls the communications parameters of the R-30. The serial communications option is currently not supported.

## 2.6 SEL 9 Menu

Press ✶ to save all data entered in menus 1-8 and turn the scale off before using.

# 3.0    Operation

## 3.1    R-30 Keypad

The following section describes the front panel keys, annunciators, and display functions of the R-30.

Key functions are described in Table 3-1 below. To turn on the scale, press the **ON** button. To turn off the scale, press and hold >0< for three seconds

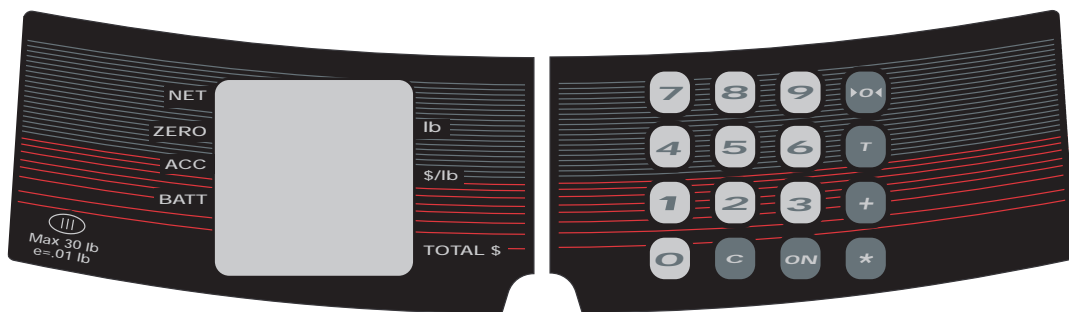| Key | Function/Description |
|-----|---------------------|
| >0< | Zero. The zero key has two functions.<br>  • Zeroing the scale. The zero annunciator turns on.<br>  • Turn off the scale by pressing the zero key for three seconds. |
| T | Tare. The R-30 supports three types of tare: permanent, automatic, and additive, which are selected through SEL 6 setup menu in Table 2-6 on page 7. Refer to tare descriptions on page 8. |
| + | Accumulation. Adds the current total to the accumulator. The ACC annunciator turns on. |
| ✶ | Total. Display the total of the bill. Press to ✶ display the total price to pay. Press ✶ again to clear the accumulator display but does not clear the accumulator memory.<br>To clear the total, press **C** while the total is displayed. |
| ON | Switches on the R-30. |
| C | Clear. The clear key has three functions:<br>  • Clears a numeric entry.<br>  • Clears total reading and memory.<br>  • Enter setup and calibration menus by pressing the **C** key for a few seconds. |
| 0-9 | Use the numeric keys to enter price per unit weight. |

*Table 3-1. Function Keys*

## 3.2    Display Annunciators



*Figure 3-1. R-30 Front Panel*

| Display | Explanation |
|---------|-------------|
| Net | Resets the scale weight to net. |
| Zero | Resets the scale gross weight to zero. |
| Acc | Displays the current weight from the accumulator register. |
| Batt | Low battery display. |
| lb/ $lb | Gives the total lb and the price per lb. |

*Table 3-2. Annunciator Display*

## 3.3    Display Messages

Table 3-3 describes error messages that may be shown on the R-30 display.

| Display | Description | Corrective Action |
|---------|-------------|-------------------|
| ERR 1 | Calibration is enabled | To disable calibration:<br>1. Remove CALIB jumper on the scale CPU board.<br>2. Set CALC parameter in SEL 1 setup menu to Y. |
| ERR 2 | Hardware failure | Replace module |
| LOFF | Load cell input is below limit | 1. Check if the load cell is connected correctly to the CPU board.<br>2. Enter SEL 1 menu by pressing **C** for a few seconds.<br>    Press ✱ until display shows FS  0 Press ✱ again twice. The display shows the internal counts of the scale (0 to 250000).<br>    Press **T** a few times until the display shows a number between 3000 to 4000.<br>3. Change the LOFFL parameter in SEL 2 menu to a lower value. |
| HOFF | Load cell input is above limit | 1. Check if the load cell is connected correctly to the CPU board.<br>2. Enter SEL 1 menu by pressing **C** for a few seconds.<br>    Press ✱ until display shows FS  0 Press ✱ again twice. The display will show the internal counts of the scale (0 to 250000).<br>    Press **T** a few times until the display shows a number between 3000 to 4000.<br>3. Change the HOFFL parameter in SEL 2 menu to a higher value. |
| Put n | The + key was pressed without any load on the platter | Put load on the platter. |
| tOtAL FULL | Total value > 999999 | Overflow of the total field.<br>Press **C** to clear the accumulator. |
| tOtAL 0 | The + key was pressed without any price entered | Enter a price using the numeric keys. |

*Table 3-3. Error Messages and Troubleshooting*

# R-30 Limited Warranty

Rice Lake Weighing Systems (RLWS) warrants that all RLWS equipment and systems properly installed by a Distributor or Original Equipment Manufacturer (OEM) will operate per written specifications as confirmed by the Distributor/OEM and accepted by RLWS. All systems and components are warranted against defects in materials and workmanship for one year.

RLWS warrants that the equipment sold hereunder will conform to the current written specifications authorized by RLWS. RLWS warrants the equipment against faulty workmanship and defective materials. If any equipment fails to conform to these warranties, RLWS will, at its option, repair or replace such goods returned within the warranty period subject to the following conditions:

- Upon discovery by Buyer of such nonconformity, RLWS will be given prompt written notice with a detailed explanation of the alleged deficiencies.

- Individual electronic components returned to RLWS for warranty purposes must be packaged to prevent electrostatic discharge (ESD) damage in shipment. Packaging requirements are listed in a publication, "Protecting Your Components From Static Damage in Shipment," available from RLWS Equipment Return Department.

- Examination of such equipment by RLWS confirms that the nonconformity actually exists, and was not caused by accident, misuse, neglect, alteration, improper installation, improper repair or improper testing; RLWS shall be the sole judge of all alleged non-conformities.

- Such equipment has not been modified, altered, or changed by any person other than RLWS or its duly authorized repair agent.

- RLWS will have a reasonable time to repair or replace the defective equipment. Buyer is responsible for shipping charges both ways.

- In no event will RLWS be responsible for travel time or on-location repairs, including assembly or disassembly of equipment, nor for repairs made by others.

**THESE WARRANTIES EXCLUDE ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NEITHER RLWS NOR DISTRIBUTOR WILL, IN ANY EVENT, BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.**

**RLWS AND BUYER AGREE THAT RLWS'S SOLE AND EXCLUSIVE LIABILITY HEREUNDER IS LIMITED TO REPAIR OR REPLACEMENT OF SUCH GOODS. IN ACCEPTING THIS WARRANTY, THE BUYER WAIVES ANY AND ALL OTHER CLAIMS TO WARRANTY.**

**SHOULD THE SELLER BE OTHER THAN RLWS, THE BUYER AGREES TO LOOK ONLY TO THE SELLER FOR WARRANTY CLAIMS.**

No terms, conditions, understanding, or agreements purporting to modify the terms of this warranty shall have any legal effect unless made in writing and signed by a corporate officer of RLWS and the Buyer.

RICE LAKE WEIGHING SYSTEMS • 230 WEST COLEMAN STREET • RICE LAKE, WISCONSIN 54868 USA