



Industrial Weighing Systems

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This document shows calibration instructions extracted from Manuals we have on file that may not necessarily match your current model.

For your reference only.

IWSystems provides repair services to instruments and load cells

On site calibrations

For additional information please contact us.

Top Level of 127 Menu

The top level menu items of the 127 menu are shown in Figure 13.

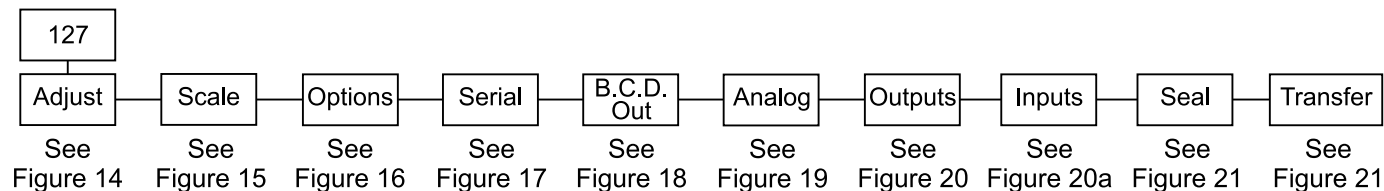


Figure 13
127 Menu

*To exit back to normal weighing mode, press the **SELECT** key and save changes as needed by pressing **ENTER** with **SAVE?** displayed.*

Adjust	Use this submenu for calibration of the scale.
Scale	Use this submenu for configuring units, capacity, divisions, zero, stability, A.Z.T., update rate, averaging, filtering, and overload.
Options	Use this submenu to configure the buttons on the front panel.
Serial	Use this submenu to setup the baud rate, data bits, parity and stops of the serial ports.
B.C.D. Out	Use this submenu to configure the output of an optional B.C.D. board. This menu will not appear if the optional board is not installed.
Analog	Use this to configure the analog output option board.
Outputs	Use this to configure the WI-127's outputs.
Inputs	Use this to configure the WI-127's hardwired inputs (ie. PB Tare).
Seal	Use this submenu to setup a custom password and to set the sealing choices for the unit.
Transfer	Use this submenu to setup the WI-127 to receive or send print formats from the WI-127 downloader software package in your PC.

127 Adjust Menu

Be sure the correct capacity and division sizes have been selected before calibrating.

*A step-by-step description of calibrating the WI-127 and using the Adjust menu can be found in the section titled **Calibrating the WI-127.***

*Press the **ZERO** key to delete a displayed calibration point.*

***Reset** is very helpful if you get confused and would like to put working values back in the WI-127 calibration menu.*

```

12/31/99  10:39 AM
      lb      mV/V
-----  -----
          0    0.00000
          5000  2.00000
Serial No. -----
    
```

Below is the Adjust submenu for the 127. If the factory calibration has become corrupt, the word **AdJUST** will flash on and off. To correct this you must send it to the factory. You may use the indicator under this condition by calibrating with real weights, not by entering previously recorded count values. See note at left.

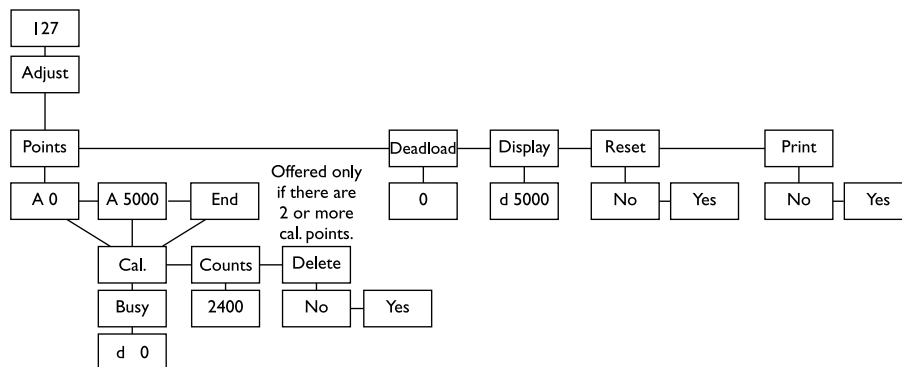


Figure 14
127 Adjust menu

Points

See the section *Calibrating the WI-127* for in-depth instructions.

In this submenu you may view, edit, insert or delete calibration points in a list. The WI-127 allows calibration using up to five calibration points.

The WI-127 comes from the factory with two calibration points: 0 and 5000 lbs. (These weight values may differ depending on your unit of measure.)

These points may be calibrated in two ways: 1) by standard weight calibration or 2) by entering count values. Counts are calibrated to a 1 mV/V signal from the factory.

A 0

When you access the Points submenu the first item is **A 0**. This stands for **Apply 0** weight. This is the zero calibration point.

A 5000

The next calibration point in the default list is the calibration point for full capacity. Your indicator is factory calibrated to 5000 lbs (1 mV/V). You may keep this value or key in a new value for full capacity.

Deadload

Lets you view the count value for the current deadload. Press the **UNITS** key to change the display to mV/V.

Display

Shows the weight display without having to exit the menus. An example of what is shown—**d 5000**. The **d** indicates a live display of weight and reminds you that the unit is in calibration. The value you see depends on the selected unit of measure, the calibration and the weight applied. The **UNITS** key works in this mode.

Reset

Use this item to reset the calibration points to factory default values. If you choose **yES** the values are set to 0 lbs at 0 mV/V and 5000 lbs at 1 mV/V.

Print

Use this item to print the calibration information shown in the left column from port 1 by choosing yes. These numbers can be valuable if you have an indicator failure.

127 Scale Menu

The next item in the 127 menu structure is Scale. In this group of submenus you set scale related parameters. Figure 15 shows the Scale menu.

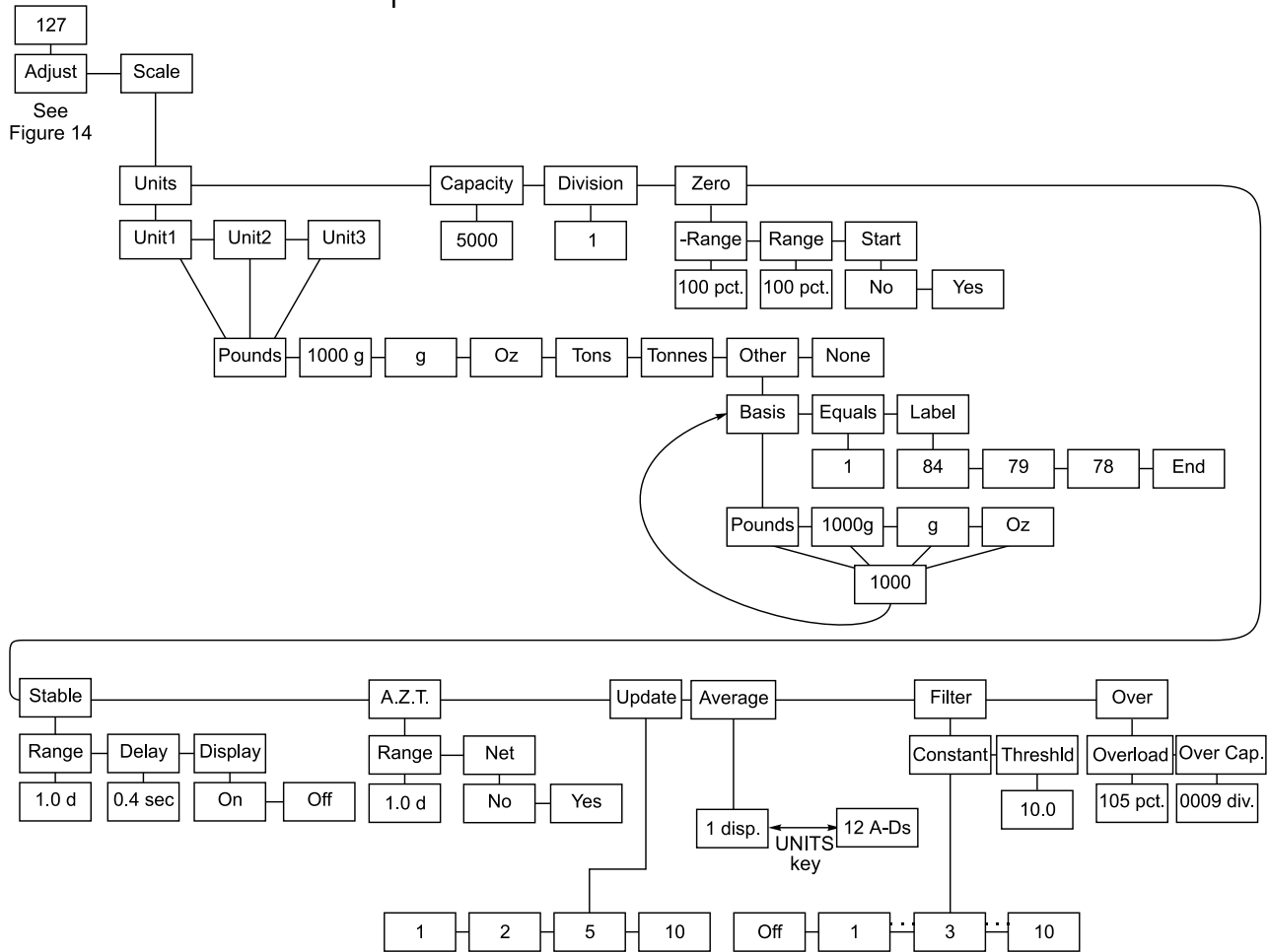


Figure 15
127 Scale menu

Units

This submenu lets you select what unit of measure will be assigned to the three annunciators on the front panel.

Unit 1

The unit of measure you choose for this item will be assigned to the annunciator labeled "lb" on the front panel. You can choose from the following list of units of measure:

- Pounds = pounds
- 1000g = kilograms
- g = grams
- Oz = ounces
- Tons = tons
- Tonnes = tonnes (metric tons)

Other = This allows you to enter the information to create a custom unit of measure. You need to enter the ratio values for the custom unit based upon another unit of measure and a string of text to use in serial output.

Under **Basis** choose the unit and amount upon which the custom unit is based. Under **Equals** enter the equivalent custom unit value.

To exit back to normal weighing mode, press the **SELECT** key and save changes as needed by pressing **ENTER** with **SAVE?** displayed.

Refer to the ASCII character chart located in the section Customizing the Serial Output.

Custom label can be a maximum of 16 characters in length.

Don't forget to re-calibrate your system after you change capacity.

Example 1: To create a 'stone' unit of measure, the **Basis** would be 14 pounds and **Equals** should be 1 stone.

Example 2: To create an ounce unit of measure, the **Basis** would be 1 pound and **Equals** should be 16 ounces.

Example 3: To create a kg unit of measure, the **Basis** would be 10 pounds and **Equals** should be 4.5359237 kilograms. Ten pounds is used so all eight digits can be entered as the **Equals** value.

Under **Label** you create the serial label for the custom unit of measure. With the first ASCII value displayed you can use the keys to do the following:

- ENTER** key - accepts the displayed value and returns to **Label** display.
- MENU** key - accepts the displayed value and moves to the next ASCII character value.
- ESCAPE** key - exits the display without making a change.
- +/-** key - Inserts a new ASCII value before the currently displayed ASCII value. Key in the ASCII value and continue by pressing another key.
- ZERO** key - deletes the currently displayed ASCII value.

Continue editing, inserting, and deleting until you are done. Press **ESCAPE** \blacktriangle to exit the label entry.

None = no unit of measure is assigned.

Unit 2 The unit of measure you choose for this item will be assigned to the annunciator labeled "kg" on the front panel. You can choose a unit of measure from the same list as above.

Unit 3 The unit of measure you choose for this item will be assigned to the annunciator labeled "oz" on the front panel. You can choose a unit of measure from the same list as above.

Capacity The next scale menu item is capacity. Use this item to view or edit the capacity of the unit in any unit of measure configured under **Units**. With **CAPACity** displayed, press the **ENTER** \blacktriangledown key. The current capacity is displayed. Use the numeric keypad to key in a new value and press **ENTER** \blacktriangledown to accept it and return to the **CAPACity** display.

You can view the capacity in other units of measure by pressing the **UNITS** key. The number is stored in the resolution you enter but is displayed in the division size stored in **Division**.

If you change capacity or division size in any unit of measure, this automatically changes all the other enabled units of measure as well.

If you want leading zeroes in your printouts or broadcast and autosend information, key in leading zeroes when setting division size.

This feature keeps the indicator from functioning at power up in an unstable environment.



To exit back to normal weighing mode, press the **SELECT** key and save changes as needed by pressing **ENTER** with **SAVE?** displayed.

Division	This selection allows you to view and edit the division size of the enabled units of measure. You can enter any division size. The indicator will use the closest division size for each enabled unit of measure. You can view the division in other units of measure by pressing the UNITS key. The number is stored in the resolution you enter but is displayed in the closest valid division size. Any additional resolution is used in calculating division size in the other units of measure.
Zero	Use this menu item to set zero related options. Zero range is specified as a percent of capacity referenced from the deadload. There are three items in the submenu: -Range , Range and Start .
-Range	Use this to set the negative range (below reference zero) within which the unit may be zeroed. 100% is the default value.
Range	Use this to set the positive range (above reference zero) within which the unit may be zeroed. 100% is the default value.
Start	Use this parameter to determine whether or not the indicator must reach a stable reading within the above range before it will exit the start-up sequence, automatically zero the scale and begin weighing. While trying to acquire a stable zero the unit displays Auto. 0 . Select No if you want no start-up zero restrictions. Choose Yes if you want the start-up zero restriction.
Stable	Use this menu item to set the motion detection parameters. There are three items in the submenu: Range , Delay and Display .
Range	Use this to specify the number of \pm divisions for the motion window. Default is 1.0 division.
Delay	Use this to specify the number of seconds during which the weight must be within range (described above) before a no-motion condition is displayed. Default value is 0.4 seconds.
Display	Choose ON to if you want the display on while the indicator senses scale motion. Choose OFF to blank the display while there is scale motion. Default is ON.
A.Z.T.	This stands for Automatic Zero Tracking. There are two items in this submenu; Range and Net .
Range	A.Z.T. adjusts the zero balance towards zero at the rate of .1 divisions per second after being within the range given for at least 2 seconds.
Net	You may also enable or disable automatic zero tracking of net weight.
Update	Use this to set the display update rate from these choices: 1 One update per second. 2 Two updates per second 5 Five updates per second 10 Ten updates per second.

Changing the update rate changes the *x disp.* or *x a-ds* value based on the new update rate.

Harmonizer® filter is used only if the average value will not filter out the vibration by itself. See **Tips on setting up and using the Harmonizer filtering** on the next page.

Values change with unit of measure.



When using overload or over capacity alone, set the other menu item to its maximum value to disable any conflicts.

Average

The next menu item is **Average**. This can be entered in one of two methods: *x disp.* or *x a-ds*. Press the **UNITS** key to switch back and forth between the two choices.

The suggested method of setting the average is by picking a value for *x disp.* Doing this insures that a multiple of the display rate is always being averaged. This results in a steadier weight display.

Use *x a-ds* if you need an exact number of A-D conversions for your particular situation.

x disp.

1 disp. is the default display when you access this item. *x* is the number of display interval(s) over which the data is internally averaged prior to being displayed. The number of A-Ds averaged is based on the display update rate you set under the **Update** menu item. Default is **1 disp.**

x a-ds

x is the number of a-d conversions to average for each display.

The A-D weight conversion happens 60 times per second in this indicator. **Average** is the number of conversions you want to average for the weight that is displayed. Default is **12 a-ds** when **Update** is at default of 5 and *x disp.* is at default value of 1.

Filter

Use this menu item to configure the Harmonizer filter settings. **Constant** and **Threshld** are the two items you can configure in this submenu.

Constant

This number represents the amount of filtering. Choose a setting between 1 and 10. Choose 1 for the least amount of filtering but the fastest response. Choose 10 for the most filtering but the slowest response. Choose Off to disable the Harmonizer functions and default to the lowest filtering.

Threshld

This is the window, in the current unit of measure, within which weight changes are altered according to the constant. **10.0** is the default value shown in Figure 15. You should set the threshold value between 130 and 150% of the total weight oscillations that need to be suppressed. If weight changes are +20 lbs and -10 lbs, set this value to 130 to 150% of 30 lbs.

Over

This submenu lets you setup the overload and capacity setting which cause the **O. load** error message.

Overload

This value is expressed as a percent of capacity referenced from the deadload determined by calibration. Overload is restricted to 200% or lower. 105% is the default value.

Over Cap.

This value expressed as a number of divisions over the capacity referenced from the zero value. A value of 9 satisfies UK requirements. Configurable from 0 to 999999 divisions. Default is 9 divisions.

Calibrating the WI-127

Any changes you make within the calibration menu will be immediately implemented, so take care when recalibrating your system.

While in the Calibration menu, you may print the calibration data out of port #1 by selecting YES. See sample below.

```
12/31/99  10:39 AM
  lb      mV/V
-----
      0    0.00000
     5000  2.00000
Serial No. -----
```

The WI-127 allows calibration using up to five calibration points. These points can be any weight value in any unit of measure. Standard calibration generally uses two calibration points; for linearization, more than two may be used.

The WI-127 comes from the factory with two calibration points: 0 and 5000 lbs. (These weight values may differ depending on your unit of measure.) To perform linearization, you can insert more calibration points (up to a total of five points). These points appear in a list and may be inserted and deleted. The unit will order the points based on increasing count values.

These points may be calibrated in two ways: 1) by standard weight calibration or 2) by entering count values. Counts are calibrated to a 1 mV/V signal from the factory. This allows you to view the deadload, calibration point counts, and loadcell test in our standard count value (200,000 counts per mV/V) or press **UNITS** to view and edit the real mV/V. There are benefits to this feature:

- You can enter these values into a new indicator hooked up to the same scale. This is useful if the old indicator needs servicing and a quick turnaround is needed.
- Another benefit is the ability to enter the profile of a weight sensor without having to calibrate the indicator conventionally. This profile is used mostly in batching bars and force measurement devices, which have a standard or known output and are more difficult to calibrate in the field.

Entering the Calibration Menu

Be sure the correct capacity and division sizes have been selected before calibrating.

To exit back to normal weighing mode, press the **SELECT** key and save changes as needed by pressing **ENTER** with **SAVE?** displayed.

To calibrate your indicator you must enter the calibration menu. See note at left before following these instructions:

1. From weight display mode, key in the security code (default code is 1 2 7) . . . The code number is displayed.
- 2a. Press and hold **ESCAPE** \blacktriangle for two seconds. . . **About** is displayed.
- OR
- 2b. Press the SEAL switch inside the WI-127. . . **About** is displayed.
3. Press \blacktriangleleft . . . **SEtUP** is displayed.
4. Press **ENTER** \blacktriangledown . . . **110** or **127** is displayed.
5. Press **ENTER** \blacktriangledown . . . **AdJuSt** is displayed.
6. Press **ENTER** \blacktriangledown . . . **PointS** is displayed. You are now in the calibration menu.

Weight Calibration

To view or edit the weight in another configured unit of measure, press the **UNITS** key at any time during calibration.

If the scale is too unstable, **BUSY** will be displayed for several seconds. Correct the filtering and recalibrate.

After your system is fully calibrated, write down and save the **COUNT** values for each calibration point. If your indicator ever needs replacing you can key these values into your new indicator and be assured the calibration will be correct.

To exit back to normal weighing mode, press the **SELECT** key to save changes.

To calibrate your scale using live weight calibration, follow these steps:

1. With **PointS** displayed, press **ENTER** ▾. . . **A 0** is displayed. This is the zero calibration point.
2. To calibrate your scale's zero point, press **ENTER** ▾. . . **CAL.** is displayed.
3. Remove all weight from the scale and press **ENTER** ▾. . . **bUSy** is displayed for at least ½ second while the unit obtains a stable value, then **d 0** is displayed. Note: Pressing **ESCAPE** ▲ while **bUSy** is displayed will abort the calibration and the indicator will return to the previous display.
4. Press **ENTER** ▾. . . **A 0** is displayed.
5. Press **MENU** ▸. . . **A 5000** is displayed. This is the full capacity calibration point. Full capacity is factory calibrated at 1 mV/V input..
6. You may use 5000 lbs to calibrate this point, or you may change the value for this calibration point. To change this calibration point, key in the new value now and press **ENTER** ▾ or to use the current value, press **ENTER** ▾. . . **CAL.** is displayed.
7. Put the appropriate weight calibration value on the scale and press **ENTER** ▾. . . **bUSy** is displayed for at least ½ second while the unit obtains a stable value, then **d XXXX** is displayed. Note: Pressing **ESCAPE** ▲ while **bUSy** is displayed will abort the calibration and the indicator will return to the previous display.
8. Press **ENTER** ▾. . . **A XXXX** is displayed. You have now calibrated the two standard calibration points using live weight.
9. Press **SELECT** to save your calibration.