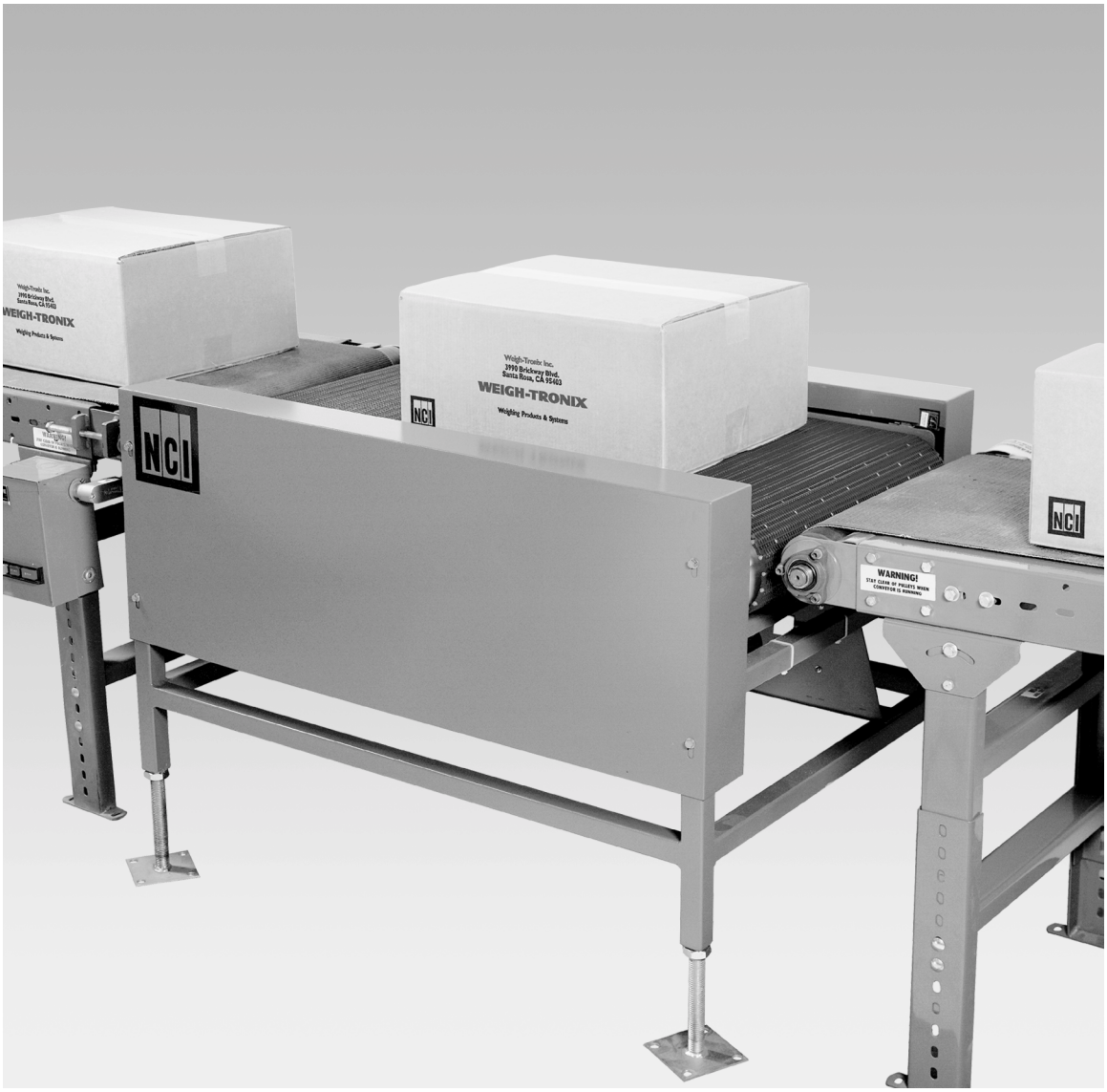
MODEL 7550

In Motion Conveyor Scale



INSTALLATION MANUAL

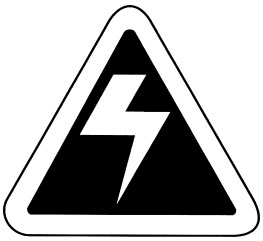
UNITED STATES

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CANADA

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the radio Interference Regulations of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits radioelectroniques depassant les limites applicables aux appareils numeriques de la Class A prescrites dans le Reglement sur le brouillage radioelectrique que edicte par le ministre des Communications du Canada.



CAUTION

Risk of electrical shock. Do not remove cover.

No user serviceable parts inside. Refer servicing to qualified service personnel.

Weigh-Tronix reserves the right to change specifications at any time.

05/30/01 PN 7424-16952A Printed in USA

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7550 Description

Description

The Weigh-Tronix conveyor scale is a freestanding, self-contained and self-powered, flat-belt weighing system that can be incorporated into new or existing production facilities. The scale operates while the conveyor is in motion and is intended for the weighing of individual boxes, cartons or packaged products. It is ideally suited for shipping applications.

This manual covers the installation and setup of the conveyor. Specific information on the operation of the Weigh-Tronix indicator with the conveyor scale can be found in this manual.

Weight Indicator – The conveyor scale comes equipped with the WI-127 indicator in a NEMA-IV stainless steel housing for washdown environments.

Weight Capacity – 150 lb x .1 lb

Construction Materials – The conveyor scale is available as a carbon steel model for general industrial applications.

The conveyor scale uses a USDA approved acetal polymer, flush grid belt. The belt material is very durable and has excellent wear and friction characteristics. The grid pattern results in a 31% open area which facilitates cleaning procedures. Since the belt is made of individual strips, damaged portions of the belt can be replaced quite easily. This eliminates the need to replace an entire belt if only a small area is damaged.

Motor Size – The conveyor belt is driven by a 1/3 horsepower electric motor. The standard motor uses a 115VAC, 60Hz, single phase motor.

Belt Speed – A variable speed control unit provided with this conveyor scale requires a 115VAC, 60Hz, single phase power supply. It rectifies the current from AC to DC to drive a DC motor. The control unit is equipped with a rheostat that allows the belt speed to be regulated between 0 fpm and 150 fpm.

Options

Belt Size – Belt lengths of 36", 48", and 60" are available. Widths of 18" to 36", in 6" increments are available.

Height Adjustment – Three height range options are available: 18" to 28," 27" to 37," and 36" to 46." You can raise or lower the unit in 1/32" inch graduations.

Features

The scale component of the conveyor scale is suspended by means of chains from four Weigh Bars.® The Weigh Bar outputs feed into a junction box which is connected to the scale indicator by an interface cable. The chain link suspension of the belt assembly allows some movement, thus helping to absorb the adverse effects of vibration or jolts. The scale also has four overload stops that help prevent damage to the Weigh Bars.

The conveyor scale has two NEMA IV rated photoelectric eyes, and two reflectors—one at each end of the scale. When the product to be weighed enters the scale, it breaks the beam of the first photocell. As soon as the product clears the first photocell, the indicator starts recording weight readings until the product breaks the beam of the second photocell. Once the second beam is broken, the indicator averages the recorded weights and transmits this average to the computer. This weight averaging technique results in much more accurate weighments. Weigh-Tronix conveyor scales are accurate to within ±.1% of scale capacity provided the entire item being weighed remains on the scale for at least one second.

Installing the Conveyor Scale

Installation Recommendations

Lift each corner of the belt assembly and remove the shipping material under each overload stop. The following recommendations will prevent problems which can affect weighing performance. They are not intended to replace or suggest that local or national electrical codes be ignored or deviated from.

Orientation – The conveyor belt must travel in the right direction for the conveyor scale to function properly. **Be sure the belt moves towards the end where the electric motor is located.** If not, the belt will be pushed rather than pulled which causes the belt to run less smoothly, noisier, and will reduce the weighing accuracy achievable by the conveyor scale system.

Height – The height of the conveyor should be adjusted such that the conveyor height is the same as the entrance conveyor and the exit conveyor. This should be done as accurately as possible to ensure as smooth a transition as possible.

Motor Connections – The motor is part of the "live" part of the scale so the electrical connection to the motor can have a significant impact on the weighing performance. Avoid very short or very rigid connections.

Photocell Programming – The photocells used on the conveyor scale have programming modules in them, and the entrance photocell is programmed differently than the exit photocell. The entrance photocell is programmed to trigger only after the back edge of the item clears the entrance photocell. The exit photocell is programmed to trigger as soon as

the front edge blocks it. See Figure 2 for photocell module proper programming information. Typically, if they are not programmed properly, the system will weigh properly when tested statically, but the weights will be light when weighing in motion. Photocell operation can be tested by blocking the entrance photocell and then clearing the photocell path. The indicator should not begin averaging (WI-127 will go to dashes) until after the photocell is cleared. The exit photocell should cause the indicator to display the averaged weight as soon as it is blocked.

Photocell Synchronization – Whenever the indicator is first powered up, or the entrance photocell has been triggered without the exit photocell being triggered, the system needs to be synchronized. This is done by momentarily blocking the exit photocell. If you do not do this, the first item through will resynchronize the indicator, but that weight will not be averaged or transmitted.

Checking Scale Function

The conveyor scale should be checked for weighing accuracy after it is installed. Follow these procedures to check the weighing accuracy. **DO NOT RUN THIS TEST WITH THE BELT RUNNING.**

1. Power up the indicator and press **ZERO**...
   "O" is displayed on the indicator.

2. Place a test weight not greater than 25% of scale capacity on a corner of the conveyor belt....
   Weight is displayed on the indicator. Check this for accuracy.

3. Repeat step two for all four corners. There are three possibilities:
   A. The four weight readings are identical and correct.
   B. The four weight readings are identical and incorrect.
   C. The four weight readings do not agree.

If A occurs, the scale is ready for use.
If B occurs, recalibrate the indicator following the instructions in the indicator calibration section (Calibrating the WI-127) of this manual.
If C occurs, proceed to step 5 under **Balancing Weigh Bars Routed Through a Junction Box**, then repeat this test.

Operating the Conveyor Scale

1. Power up the conveyor scale...
   Make sure all portions of the system are working properly, especially the two sensors.

2. Power up the indicator and press **ZERO...**
   "0" is displayed on the indicator.

3. Start the conveyors leading to and from the scale...
   Material should move toward the scale.

4. Material passes entry photocell...
   Dashes are displayed while weighing is in process.

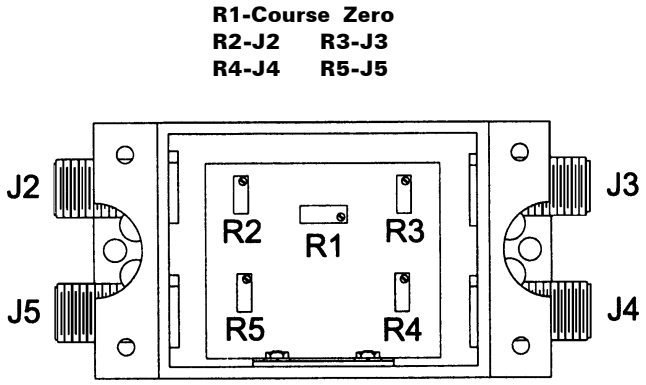
5. Material breaks beam of exit photocell…
   Weight is displayed and transmitted to a peripheral device.

Balancing Weigh Bars Routed Through a JunctionBox

This scale uses a junction box (J-Box) where the outputs of multiple Weigh Bars of matching capacities are added together. The J-Box then sends a single signal to the indicator. These multiple signals must be balanced for the scale to function properly. This is done at the factory, but these instructions are provided in case they are needed. Figure 1 illustrates the type of J-Box in the conveyor scale. Each potentiometer affects one weight sensor. Balance the weight sensors by adjusting potentiometers in the J-Box as follows:

1. Remove J-Box cover to access potentiometers.
2. Use R1 to set the zero value required by the indicator.
3. Use a test weight that does not exceed the capacity of one weight sensor, usually 1/4 scale capacity, and obtain a displayed weight value for the test weight applied to each weight sensor in the scale system, like this:

Figure 1
Weigh Bar J-Box



   a. Place certified test weight directly above first weight sensor.
   b. Record displayed weight value.
   c. Remove test weight and verify the display returns to zero before reloading another weight sensor.
   d. Repeat Steps a through c for each weight sensor in the scale system.

4. If displayed weight value for any weight sensor varies from the others by less than ±1 division, proceed to calibration of the WI-127 if necessary.

5. If displayed weight value for any weight sensor varies from the others by more than ±1 division, adjust J-Box potentiometers by turning them the number of 360° turns indicated by this formula:

$$\frac{\text{Certified Test Weight Value - Displayed Weight Value}}{\text{Certified Test Weight Value x 0.0028}} = \text{Number of Turns}$$

If **Number of Turns** is positive value, turn potentiometers clockwise. If **Number of Turns** is a negative value, turn potentiometers counterclockwise.

6. Repeat Steps 3a through 3c, checking all weight sensors with test weights, to make sure you have properly adjusted J-Box potentiometers.

   If displayed weight value for any weight sensor varies from the others by more than ±1 scale division, then repeat Steps 3 through 5 until you achieve equal readings.

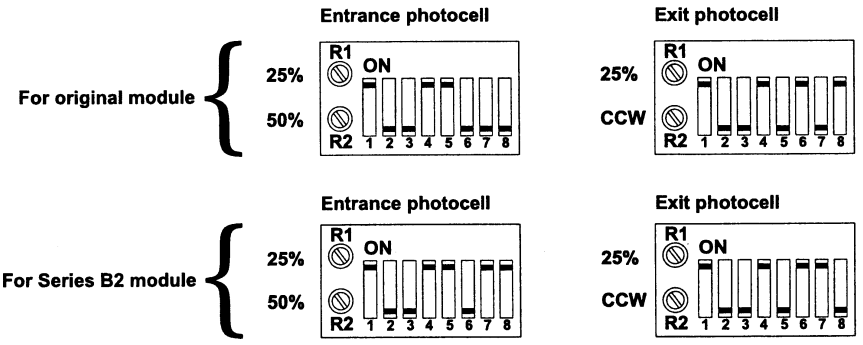
Photocell Programmable Modules

The photocells contain programmable modules. Remove the back cover of the photocell case. The programming switches on the modules need to be positioned correctly for the photocells to function properly. See Figure 2 for programming switch positions. R1 and R2, as seen in Figure 2, are one-turn potentiometers. Turn them as labeled for proper function. (CCW means fully counterclockwise and 50% means turned halfway between the fully CCW and fully CW positions, etc.)

Use the first set of illustrations in Figure 2 if you have the original (non-B2 series) photocell. Use the second set of illustrations if the photocells are the Series B2 type. Note that the only difference between the two types is the position of switches 7 and 8. Switches 1-6 remain the same.

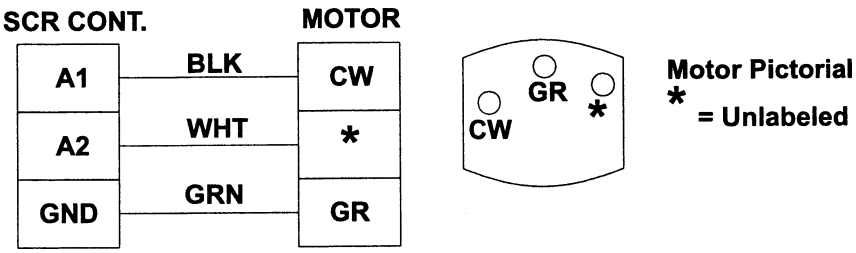
Figure 2 Photocell Module Programming

IMPORTANT: If you have a photocell with a Series B2 designation on the cover label, be sure to use the appropriate illustration of your module.



Optional DC Motor Speed Control Wiring

Below are diagrams for wiring the optional speed controller to the DC motor.



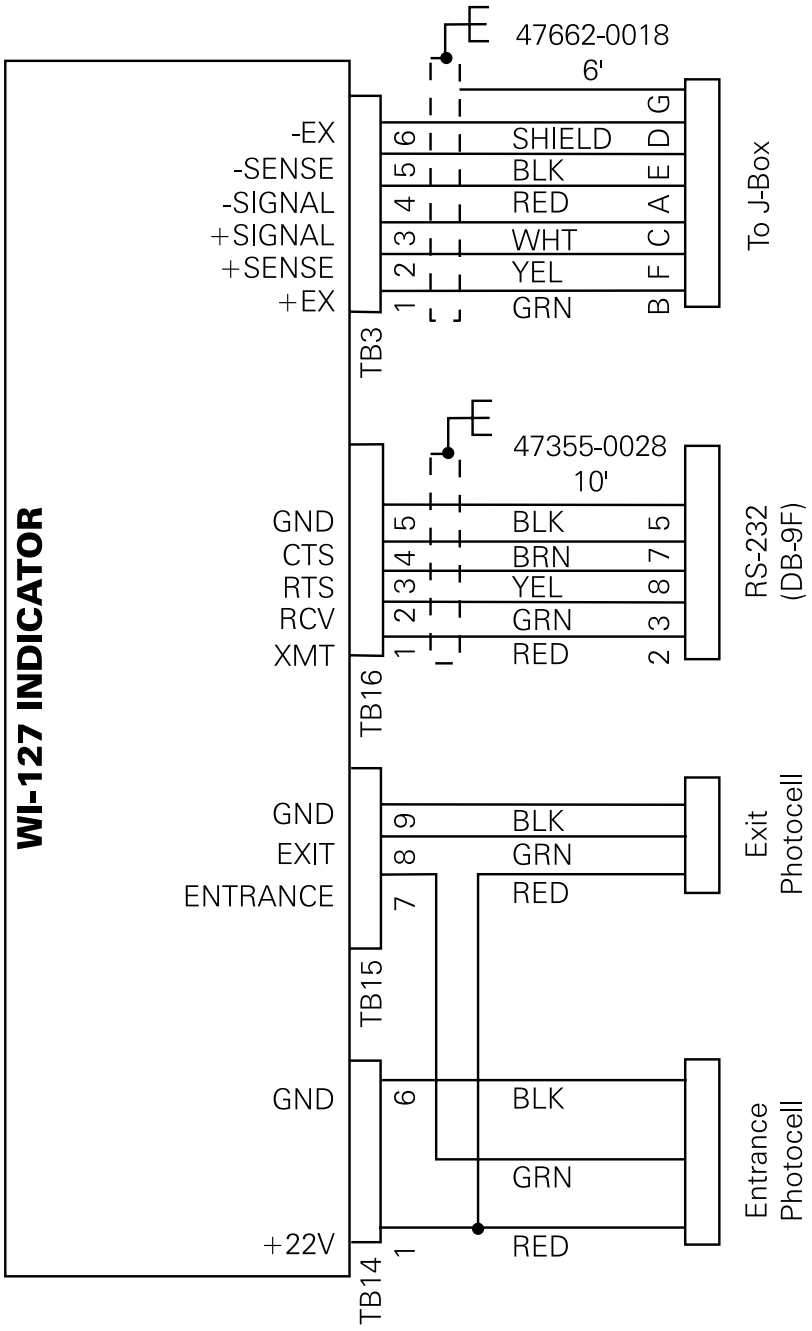
WI-127 In-Motion Wiring

When installing the WI-127, the power socket outlet must be nearby and easily accessible.

The wiring information to connect a WI-127 indicator to the photocell is shown below.

Wire Color	WI-127	Function
Green	TB15-8	Set input (exit trigger)
Red	TB14-1	+22 VDC Power
Black	TB14-6 & TB15-9	Logic Gnd
Green	TB15-7	Reset input (entrance trigger)

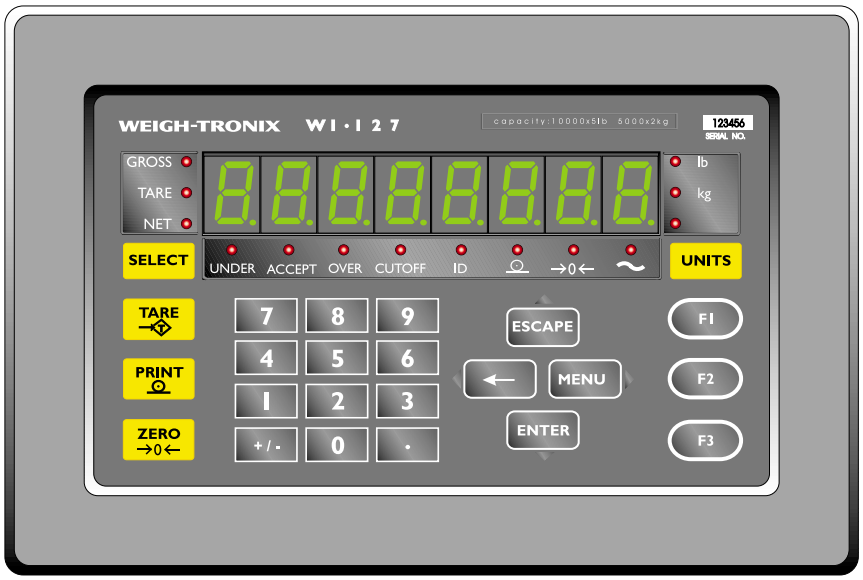
Model 7550 System Wiring Diagram



WI-127 Indicator Introduction

Figure 3
WI-127 Front Panel

The WI-127's front panel consist of 24 keys and 14 annunciators.



Keys

The WI-127's keys are divided into four primary groups:

Standard Scale Keys – These yellow keys are common to a majority of weighing applications and include **SELECT**, **TARE**, **PRINT**, **ZERO**, and **UNITS**.

SELECT – Used to switch between the gross, tare, and net display modes. **SELECT** can also be used to accept a current selection and return to weighing mode from within any menu.

TARE – Enters a push button tare in the display mode. Can be configured to accept values entered through the numeric keypad.

PRINT – Used to initiate manual data transmission.

ZERO – Zeros the scale in the display mode. Also clears values in numeric entry.

UNITS – Switches the units of measure in the display mode. Up to three units of measure are selectable.

Operation of these keys changes with the software installed in the WI-127 (standard, in-motion).

Function Keys – These oval keys along the right side of the display face are configurable and are labeled F1, F2, and F3. The default configurations for these keys are:

F1 Accesses tare registers
F2 Views and edits ID
F3 Accesses cutoff registers

Keypad Keys – These are the twelve square keys which support numeric entry. The keyboard keys are labelled 0-9, plus/minus (+/-), and decimal point (.) and are located near the center of the display face.

Directional Keys – The directional keys are used to navigate through the WI-127's menus. These keys are labeled **ESCAPE** (up), **ENTER** (down), ← (left), and **MENU** (right) and are positioned in a compass-like cluster on the display face. These directional keys are denoted by the small transparent arrows located next to them. **ESCAPE**, **ENTER**, and ← also support numeric entry.

ESCAPE – Exits a menu parameter without saving any changes.

ENTER – Used to end digit entry, accept a change made, or select an item from a function list.

← – Backspaces (deletes the last digit or punctuation mark entered) while in numeric entry and moves left within a menu.

MENU – Accesses menus and moves right within a menu.

Annunciators

The WI-127 has fourteen annunciators.

GROSS – Illuminates when indicator is in gross weighing mode.

TARE – Illuminates when viewing tare values in the various tare registers.

NET – Illuminates when indicator is in net weighing mode.

LB, KG, OTHER – Illuminates the active unit of measure in weighing mode.

PRINT – Illuminates when the indicator is transmitting data.

ZERO – Illuminates when the scale is within the configured center of zero.

MOTION – Illuminates when the scale detects motion (within configured motion window).

UNDER, ACCEPT, OVER, CUTOFF, ID – Specific application annunciators.

WI-127 Indicator Specifications

Indicator Specifications

Power Requirements:
115 Volts AC, +10% to -15% @ 0.3Amp maximum

Excitation:
10 Volts DC
Supports up to twelve 350-ohm weight sensors

Operational Keys:
Five yellow standard scale keys: Zero, Tare, Print, Units, Select
Four directional keys: Escape, ←, Menu, Enter
Three function keys: F1, F2, F3
Numeric keys: 0-9

Operational Annunciators:
Gross, Tare, Net, Print, Zero, Motion
Under, Accept, Over, Cutoff, ID,
Three units of measure

Display:
Eight digit, seven segment, 0. 8-inch high LED

Display Update Rate:
Selectable (1, 2, 5, 10) Per Second

Analog to Digital Conversion Rate:
60 times per second

Unit of Measure:
Independently programmable:
Pounds, kilograms, user selectable

Capacity Selections:
150 lb x .1 lb

Programmable Selections:
Zero range, motion detection, automatic zero tracking, five-point linearization.

Time and Date :
Battery backed up real time clock is standard

Harmonizer™ Digital Filtering:
Fully programmable to ignore noise and vibration

Standard Inputs:

Seven configurable logic level inputs for functions such as PB tare, print, zero, units, select, gross, net, entrance and exit photoeye.

Standard Outputs:

Three outputs, open collector design
Relay power supply, 24 VDC at 150mA
Bi-directional serial port (RS-232 or RS-422/485 or 20mA current loop)

Serial Command Inputs:

Programmable serial response to ASCII character input

Self Diagnostics:

Display, keys, inputs, outputs, serial port,
A to D converter, load cell output display, voltages

Circuitry Protection:

RFI, EMI, and ESD protection

Operating Temperature:

-40 to 140° F (-40 to 60° C)
100% relative humidity including washdown

Enclosure:

NEMA 4X stainless steel enclosure

Dimensions:

12" W x 8" H x 4" D (without mounting bracket)
12.3" W x 11.0" H x 5.3" D (with mounting bracket)

Weight:

12.5 lb, 5.7 kg

Agencies:

NTEP Class III/IIIL:10,000d, COC #96-140.A1
Consumer and Corporate Affairs, Canada, #AM-5167
UL/CUL/CSA
FCC Class A

Error Messages

The following are displays you may see if problems occur, or if invalid operations are attempted with your WI-127:

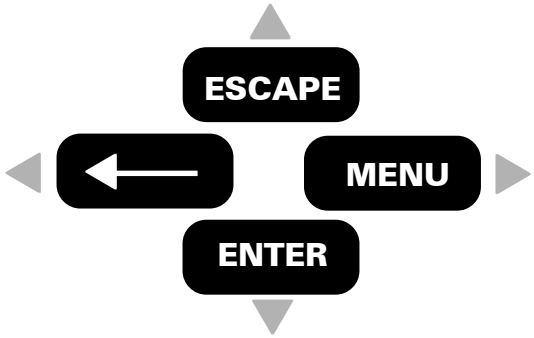
Display	Description
O.LoAd	Overrange weight
– – – – –	Underrange weight
– – – – –	Recovering from lockup or out of range condition
Loc' up	A-D converter is not functioning
L.C. Error	A-D converter subjected to an input signal beyond ±5 mV/V
Can't	The unit cannot perform a function. Displayed only while key is held down.
Flashing *	Corrupted data in the reset menus. See the *Reset Menu/Master Clear* section. (* = RESET, SETUP, or CAL).
Sealed	Displayed while a key is pressed when attempting to modify a sealed selection without edit privileges.
Auto. 0	Displayed while waiting for a stable, valid weight to use as a zero reference on power-up.
Lo. Volt	Displayed when input voltage to excitation regulator drops below 10.5 VDC. Will clear when input voltage rises above 11.5 VDC.

Service Menu Structure

Moving through the Menus

Configuring, calibrating and testing of the WI-127 is done using a menu structure which you move through using a directional key menu structure on the front panel. The directional keys are shown below:

Figure 1
Directional key



Press this key to exit a menu parameter without saving any changes. Use to move “up” in the menus.

Press this key to end digit entry, accept a change made, or select an item from a function list. Use to move “down” in the menus.

Press this key to access menus. Use to move “right" in the menus.

Press this key to backspace (deletes the last digit entered) while in numericentry. Use to move “left” in the menus.

Accessing the Service Menu

Entering the service menu disables all standard outputs and inputs, and disables the serial output.

To enter the service menu structure, key in the default password (127) then press and hold the **ESCAPE** key for two seconds. If you do not know the password, you may remove the nylon plug on the back of the WI-127 and press the SEAL switch inside. If you do not want to make any changes in the service menu but want to view the items, enter the menu without keying in a password.

If the password has been changed, enter the current password instead of the default.

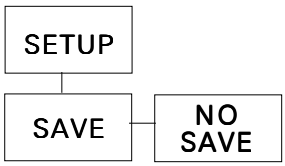
The display should show **"ABOUT."** This is the first item in the menu structure.

Exiting the Service Menu

Warning:
If you do not press ***SELECT*** *with* ***"SAVE"*** *displayed, none of your configuration changes will be saved.*

You may exit the service menu and return to weight display mode at any time by pressing **SELECT**.

If changes are made to the menu, the indicator will display **"SAVE"** (asking you if you wish to save your changes) before returning directly to weight display mode.



1. To exit and save menu changes:

   With **"SAVE"** displayed, press **SELECT**...
   The indicator will return to weight display mode and the changes are saved.

2. To exit without saving changes:
   With **"SAVE"** displayed, press **ESCAPE**...

   With **"SAVE"** displayed, press **MENU**...
   "NO SAVE" is displayed, then press **SELECT**...
   Indicator returns to weight display mode without saving any changes.

Calibrating the WI-127

Any changes made within the Calibration Menu will be immediately implemented.

While in the Calibration Menu, you may print the calibration data out of port #1 by selecting YES from the "Print" menu.

```
12/31/99   10:39 AM
   lb         MV/V
---------  --------
    0      0.00000
  150      1.00000
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 7550 Conveyor Scale comes from the factory with two calibration points: 0 and 150 lbs. (These weight values may differ depending on your unit of measure.) To perform linearization, 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

- 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.

Entering the Calibration Menu

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

To calibrate the 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 127)...
   The code number is displayed.

2. Press and hold **ESCAPE** ▲ for two seconds...
   "ABOUT" is displayed, or

3. Press ◄← ...
   "SETUP" is displayed.

4. Press **ENTER** ▼...
   "110" or **"127"** is displayed. Select **"127."**

5. Press **ENTER** ▼...
   "ADJUST" is displayed.

6. Press **ENTER** ▼...
   "POINTS" is displayed. You are now in the calibration menu.

Weight Calibration

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

*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.*

Note: Pressing Escape any time "Busy" is displayed, will abort the calibration and the indicator will return to the previous display.

1. With **"POINTS"** displayed, press **ENTER** ▼...
   "A 0" is displayed. This is the zero calibration point.

2. To calibrate the scale's zero point, press **ENTER** ▼...
   "CAL." is displayed.

3. Remove all weight from the scale and press **ENTER** ▼. . .
   "BUSY" is displayed momentarily while the unit obtains a stable value, then **"d 0"** is displayed.

4. Press **ENTER** ▼...
   "A 0" is displayed.

5. Press **MENU** ►. . .
   "A 150.0" is displayed. This is the full capacity calibration point. Full capacity is factory calibrated at 1 mV/V input..

6. You may use 150 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.

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

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

7. Place the appropriate weight calibration value on the scale and press **ENTER ▼**...
   "BUSY" is displayed momentarily while the unit obtains a stable value, then **"d XXXX"** is displayed.

8. Press **ENTER ▼**. . .
   "A XXXX" is displayed. The two standard calibration points have now been calibrated using live weights.

9. Press **SELECT** to save the calibration.

Count Calibration

To calibrate the scale using count calibration, follow these steps:

1. With **POINTS** displayed, press **ENTER ▼**...
   "A 0" is displayed. This is the zero calibration point.

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

2. Press **ENTER ▼**...
   "CAL." is displayed.

3. Press **MENU ▶**...
   "COUNTS" is displayed.

4. Press **ENTER ▼**...
   Current count value is displayed. Press **UNITS** to view and edit the count in mV/V.

5. Key in the count value for the zero calibration point...
   "VALUE" is displayed.

6. Press **ENTER ▼**...
   Value is accepted and **"COUNTS"** is displayed.

7. Press **ESCAPE ▲**. . .
   "A 0" is displayed.

8. Press **MENU ▶**...
   "A 150" is displayed. This is the full capacity calibration point. Full capacity is factory calibrated at 1 mV/V input..

9. You may leave this point at 150 lbs, or change the value for this calibration point. To change this calibration point, key in the new weight value and press **ENTER ▼**....
   "CAL." is displayed.

10. Press **MENU ▶**...
    "COUNTS" is displayed.

11. Press **ENTER ▼**...
    Current count value is displayed. Press **UNITS** to view and edit the count in mV/V.

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

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

12. Key in the count value for the **A XXXXX** calibration point....
    "VALUE" is displayed.

13. Press **ENTER ▼**...
    Value is accepted and **"COUNTS"** is displayed.

14. Press **ESCAPE ▲**...
    "A XXXX" is displayed. The standard two calibration points have now been calibrated using count calibration.

15. Press **SELECT** to save the calibration.

Adding Calibration Points

You have the option of adding one, two or three additional calibration points for linearization. You may add these points at the same time you are calibrating the zero load and full capacity points. Points do not have to be inserted in the correct order. The WI-127 will automatically order the points based on count values.

To add linearization points:

1. With **"A XXXX"** displayed, press **+/-** ...
   "A __" is displayed.

2. Key in the calibration value for the new point...
   "A XXXX" is displayed.

3. Press **ENTER ▼**. . .
   "CAL." is displayed.

4a. **To perform a live weight calibration:**

1. Put the correct weight 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.

2. Press **ENTER ▼**...
   "A XXXX" is displayed.

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

4b**. To perform a count calibration:**

1. Press **MENU ▶**...
   "COUNTS" is displayed. Press **UNITS** to view and edit the count in mV/V.

2. Key in the correct count and press **ENTER ▼**...
   "COUNTS" is displayed.

3. Press **ESCAPE ▲**...
   "A XXXX" is displayed.

5. To add more calibration points, repeat steps 1-4 above.

6. Press **SELECT** to save changes.

Deleting Calibration Points

There are two methods of deleting calibration points. NOTE: You may not have less than two calibration points.

Method A:

1. With the point you wish to delete displayed…
   "A XXXX"

2. Press **ZERO**…
   Point is deleted.

Method B:

1. With the point you wish to delete displayed…
   "A XXXXX"

2. Press **ENTER ▼**. . .
   "CAL." is displayed.

3. Press **MENU ▶**. . .
   "COUNTS" is displayed.

4. Press **MENU ▶** again. . .
   "DELETE" is displayed.

5. Press **ENTER ▼**…
   "NO" is displayed.

6. Press **MENU ▶**…
   "YES" is displayed.

7. Press **ENTER ▼**…
   The point is deleted and **"A XXXX"** (next calibration point) is displayed.

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

8. Press **SELECT** to save changes.

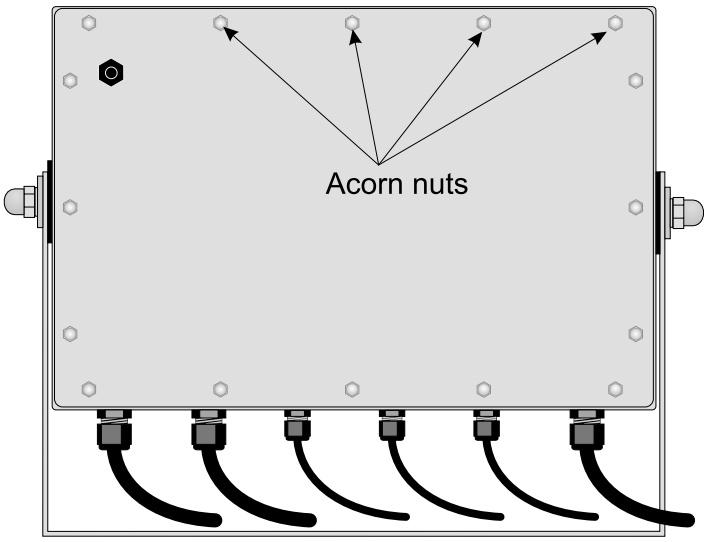
WI-127 Assembly and Disassembly

Follow the instructions in this section to disassemble the WI-127.

1. Unplug the WI-127 from the power source.

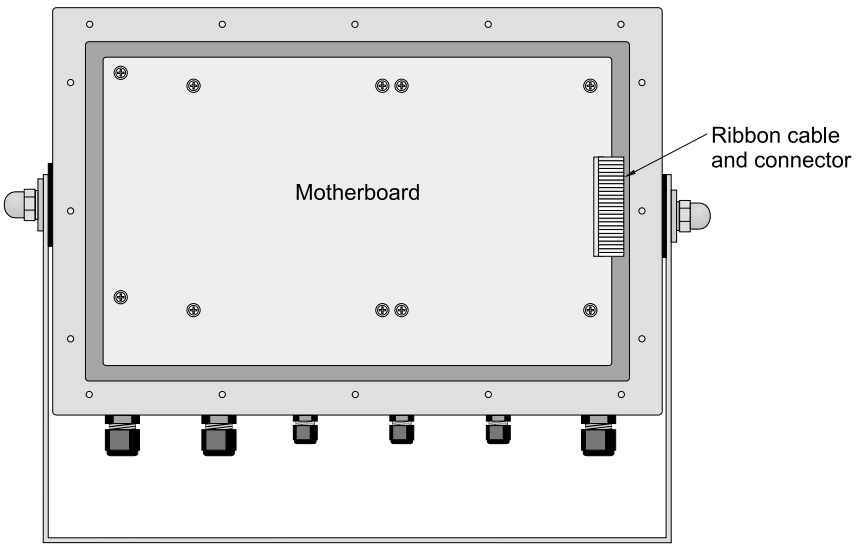
2. Remove the back of the WI-127 by removing the sixteen acorn nuts and pulling the back cover from the case. See Figure 4.

Figure 4
Back view of the WI-27



3. If you need to remove the motherboard disconnect all the wires and the ribbon cable leading to the motherboard and remove the ten hold-down screws shown in Figure 5.

Figure 5



Hold-down screws on the motherboard.

Viewing and Setting Time and Date

Viewing and Setting Time

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

If you enter an incorrect digit, press ◄— to clear the display one digit at a time.

1. From display mode, press **MENU** twice…
   "HOUR" is displayed.

2. Press **ENTER**…
   The current time is displayed.

   In the 12-hour clock configuration, time is displayed as hours, minutes, and **A** for A.M. and **P** for P.M. (e.g. **09 40 A**).

   In the 24-hour clock configuration, time is displayed as hours, minutes, and seconds (e.g., **09 40 30**).

3. Press **UNITS** to toggle between the 12-hour and 24-hour clocks.

4. **To set the 12-hour clock:**
   a. Key in the time as hh mm.
   b. Press the **+/-** key to toggle between A.M. and P.M.
   c. After the correct time is entered, press **ENTER** to accept the new time.

   To set the 24-hour clock:
   a. Key in time as **hh mm ss**.
   b. After the correct time is entered, press **ENTER** to accept the new time.

5. Press **ENTER** to view the new time…
   The new time is displayed.

6. Press **ESCAPE** to return to display mode…
   Indicator returns to display mode.

Viewing and Setting the Date

If you enter an incorrect digit, press ◄—

1. From display mode, press **MENU** three times…
   "DAY" is displayed.

2. Press **ENTER**…
   The date is displayed as month-day-year.

3. To change the date, key in the new date using the numeric keypad (the entire date must be entered), then press **ENTER**…
   The new date is accepted and **"DAY"** is redisplayed.

4. Press **ENTER** again to view the new date, or press **ESCAPE** to return to display mode…
   Indicator returns to display mode.

7550 In-Motion Software

Conveyor

This section of the Installation Manual covers the optional in-motion software for Model 7550. This software has the following additions made to the service menus. The complete service menus are included at the end of this manual. Below are descriptions of each additional item.

No Choose this if you want the indicator to operate as normal. The inputs used for in-motion weighing are ignored.

Yes Choose this to use the indicator for in-motion weighing. The indicator uses the built in reset/set inputs to start and stop averaging weight readings. An in-motion weighment is the average of all these weight readings. Every time an in-motion weighment is calculated, the indicator does the following:

Factory Default Setting is Yes.

- Updates the gross and net variables with the new weighment.
- Triggers an auto print, if enabled.
- Displays the new weighment for 7 seconds, or until the next weighment begins (dashes), or an error occurs.

Tare

It is always possible to enter tare to any resolution, but this selection determines how gross, tare, and net are displayed, printed, and calculated.

0.1 d* The net weight is calculated internally to 10 times the resolution, but displayed and printed to the nearest division. Tare values are printed and displayed at 0.1 division.

1 d Allows no extra resolution on the tare value. The net weight is calculated as on a standard indicator.

Default Setup Modifications

Scale
Capacity: 150 lb
Division: .1 lb
AZT: 3 divisions
Update: 1 Update/Second
Filter/Threshold: Filter constant = 3

The default filter settings for the in-motion operation is a filter time constant of 3 and a threshold equal to full scale capacity.

Getting Weight – There are two (2) ways to get weight from the NCI 7550 In-Motion Conveyor Scale. "Standard" or poll method requires a command to be sent from a PC to the scale to get weight, or "Burst" method which requires that the PC is always ready to catch the weight automatically when a package exists the scale conveyor. In case of error, the scale can be commanded to return the last harmonized weight, units and status in either standard or burst mode. Refer to Weigh-Tronix Serial Communications Protocol Document SCP-16.

Standard / Poll Mode – With "standard" selected in the indicator as the interface method, the in-motion scale requires a "P" command be sent to request weight. The scale then returns the next harmonized weight, units and status. "L" command will return the last harmonized weight, units and status.

Burst Mode – While in the in-motion mode, autoprint changes functionality to automatically print each time an in-motion weighment is made through the in-motion logic. The default group for Autoprint is 1. (Displayed weight). While in in-motion mode, the autoprint functions in the background.

Active X Control – This is a special purpose serial communications control. It allows access to weight and status information from an NCI Model 7550 In-Motion Conveyor Scale from within the application. It does this by handling all of the interface requirements defined in the NCI 7550 serial communications protocol. Connect the scale to an available serial port on your computer, set the required properties in the control and immediately have access to weight, status and other scale functions.

This control provides an event-driven method of handling serial communications from the scale. Each control used corresponds to one serial port and is used to access data from one scale.

Within the event-driven method, the application will be notifed the moment an event takes place, such as when a complete weight message has been received from the scale. In such a case, you can use the On-ScaleComm event to determine which event occurred and then handled it in your application program.

Since the WTComIM control uses Microsoft MSComm as a constituent control, a lot of the details usually necessary to handle scale communications are hidden and taken care of. This includes such items as synchronizing received messages, parsing message strings, extracting and converting weight and status information, handling communication errors and detecting scale disconnect.

Dynamic Weighment Serial Output – The gross and net weights in the layout menus follow the in-motion weighments while in the in-motion mode. Each time the indicator calculates a new average, the gross and net weights are calculated based on the new weighment. The gross and net change from the last in-motion weighment value when the indicator returns to live weight display. Dashes are printed if "no" is selected for "inhibited" for that group and dashes are on the display to indicate in-motion sampling.

In these display modes, the only function that is offered from the front panel is the entrance into the service menus. After entering the service menus, the indicator stops the in-motion functionality.

Display Modes

If the indicator is in a user menu or editing a register, these display modes do not appear on the display. In this case, the in-motion operations appear to occur in the background.

- - - - This indicates that the indicator is sampling the current item on the scale. As soon as the sampling is completed, the weight is calculated and displayed.

Annunciator 5 (ID) – This annunciator is used to indicate that the display is showing the current in-motion weighment. This display appears for seven seconds after each in-motion weighment is calculated. This mode can be interrupted by a new weighment (dashes).

Sampling occurs from leading edge to trailing edge of the reset/set input. The leading edge must correspond to the weight being entirely on the live rail, and the trailing edge must correspond to the weight just ready to begin leaving the live rail.

Weighing Errors

1) Six seconds maximum are allowed from arrival to exit. This supports a 12 inch package at a minimum speed of 30 ft/min on a 4 ft. conveyor scale. If 6 seconds elapse, an error message is displayed, and auto-print is not initiated. The error message persists until a new weighment is begun, but no longer than 7 seconds (unless retriggered by a subsequent weighment.) After 7 seconds, the display reverts to live weight.

2) At least two samples are required to be accumulated to consider a weighment to be valid. This corresponds to 1/30th of a second. This requirement is violated when boxes are too long or a conveyor is moving too fast. If less than 2 samples are accumulated, the weighment is considered to be in error and is handled in the same manner as (1) above.

3) Weighments less than the upper limit of the AZT window are considered to be in error and are handled in the same manner as (1) above.

7550 Operation

The in-motion system will only weigh and transmit data properly if there is only one package on the scale at a time with packages identical in size. This means front edge to front edge spacing of at least the length of the conveyor. With varying length package applications, there are two criteria which must be met:

1) With a package on the conveyor scale, the next one coming on the scale must not break the entrance photocell beam prior to the one on the scale breaking the exit beam.

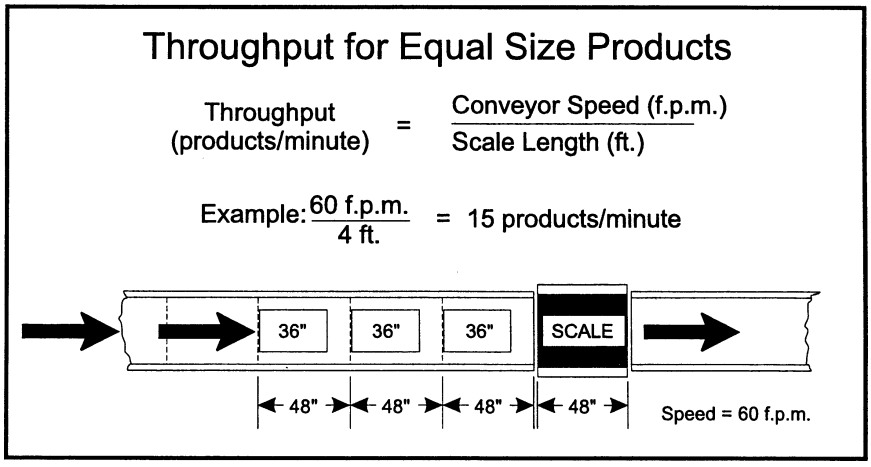
2) With a package on the conveyor scale, the exiting package must clear the exit beam prior to the package entering the scale clearing the entrance beam.

If either of these rules are violated, erroneous weights may be transmitted or weight values not transmitted at all.

This simple formula will help you figure the minimum package spacing needed for unequal package sizes.

Package Spacing
Unequal Package Spacing = Conveyor Length + (Longest Package - Shortest Package)
(Front Edge to Front Edge)

The following diagram shows a formula for figuring throughput of identically sized packages.



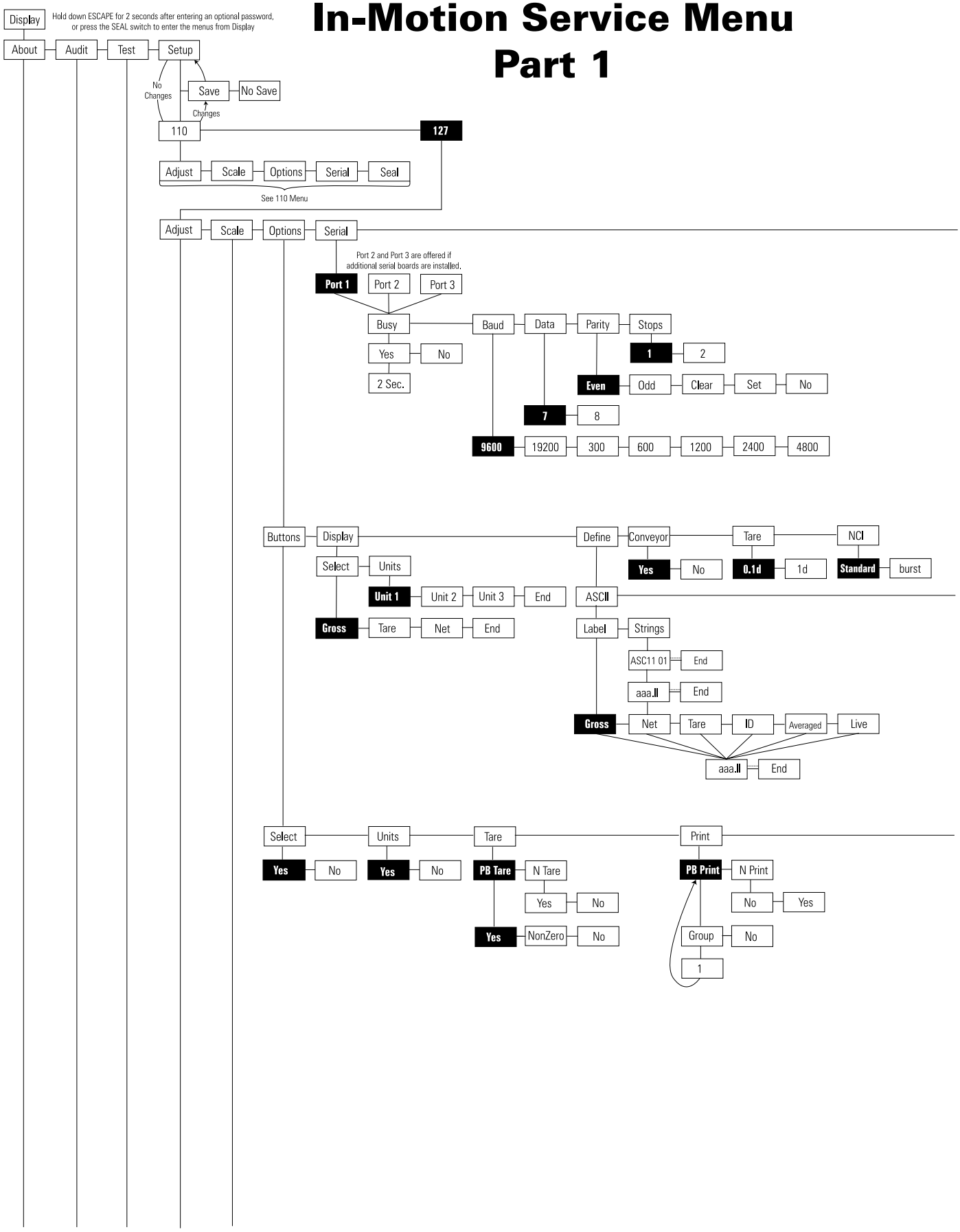
Throughput for Unequal Size Products

$$\frac{\text{Belt Speed} \times 12}{\text{Conveyor Length} + \text{Length of Longest Package}}$$

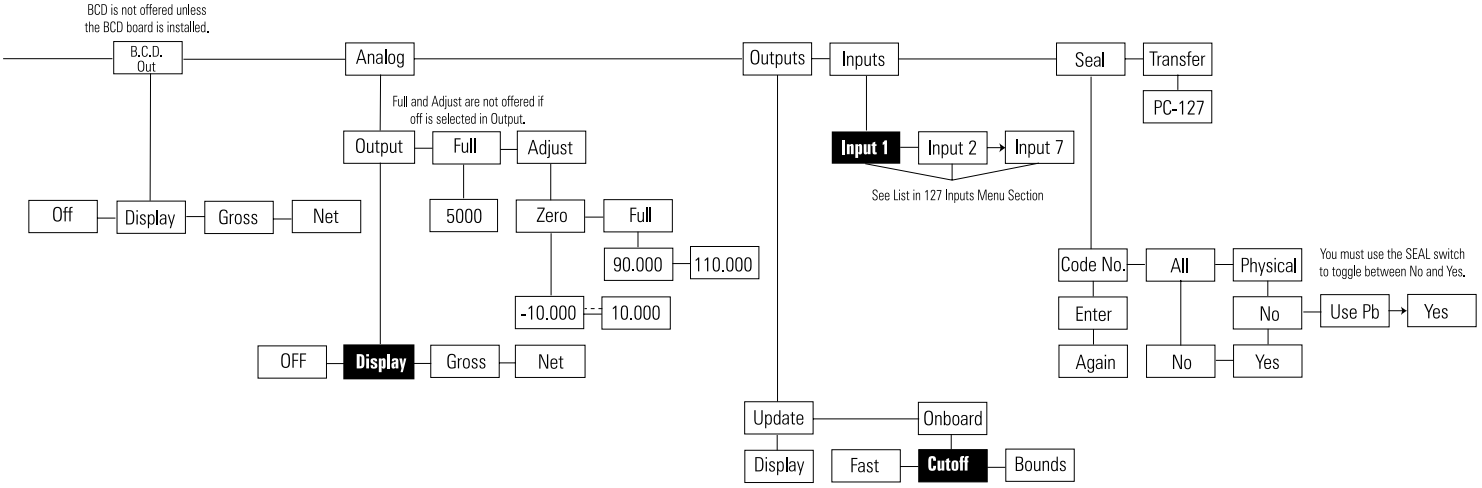
Length of shortest package

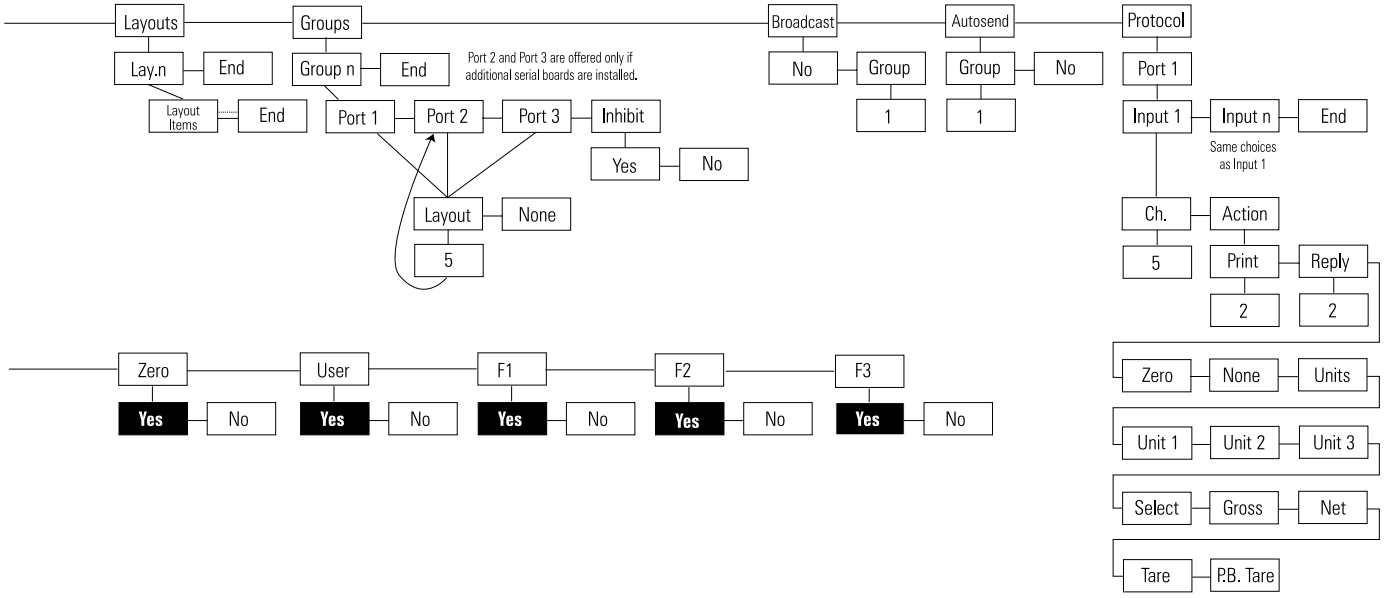
IN-MOTION SERVICE MENU

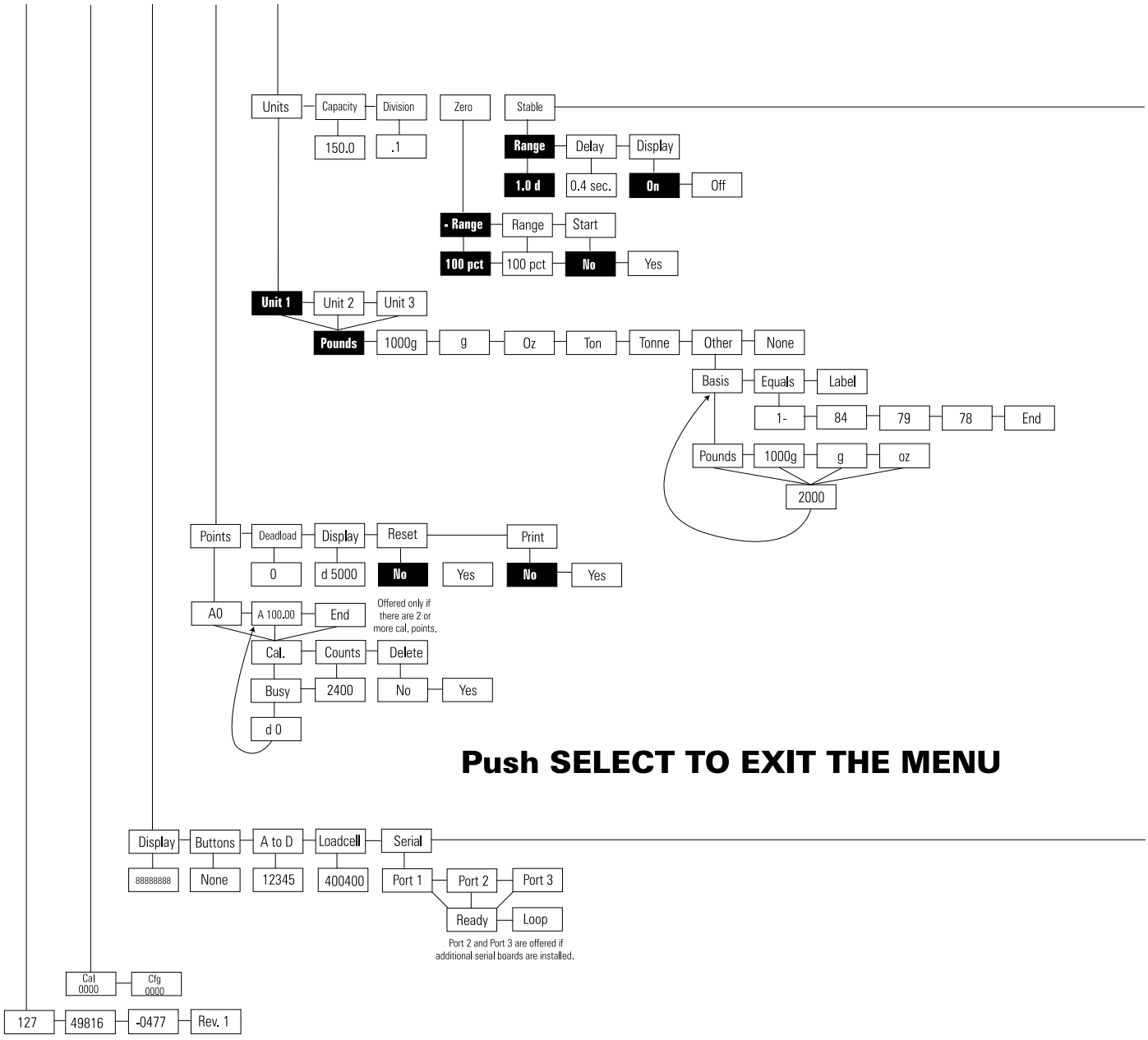
In-Motion Service Menu
Part 1

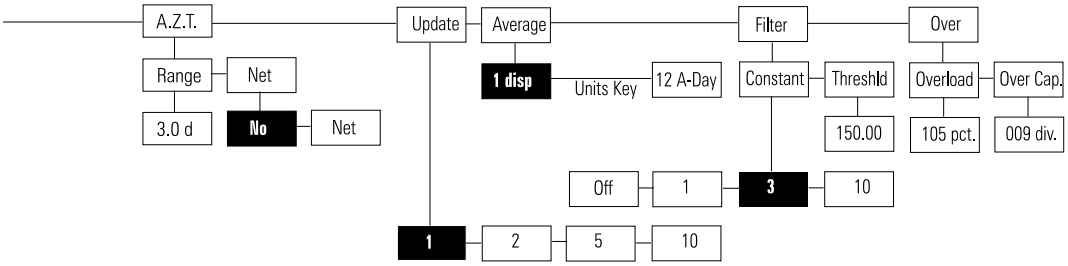


Push SELECT to exit the menu

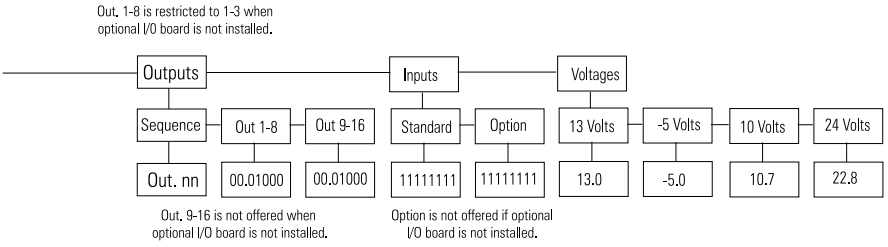





Units
Capacity
150.0
Division
.1
Zero
Stable
Range
1.0 d
Delay
0.4 sec.
Display
On
Off
- Range
100 pct
Range
100 pct
Start
No
Yes
Unit 1
Unit 2
Unit 3
Pounds
1000g
g
Oz
Ton
Tonne
Other
None
Basis
Equals
Label
1-
84
79
78
End
Pounds
1000g
g
oz
2000
Points
Deadload
0
Display
d 5000
Reset
No
Yes
Print
No
Yes
A0
A 100.00
End
Offered only if there are 2 or more cal. points.
Cal.
Counts
Delete
Busy
2400
No
Yes
d 0
Push SELECT TO EXIT THE MENU
Display
88888888
Buttons
None
A to D
12345
Loadcell
400400
Serial
Port 1
Port 2
Port 3
Ready
Loop
Port 2 and Port 3 are offered if additional serial boards are installed.
Cal
0000
Cfg
0000
127
49816
-0477
Rev. 1



In Motion Service menu Part 2



NOTES

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