

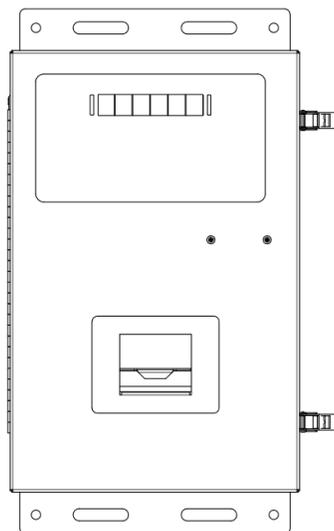
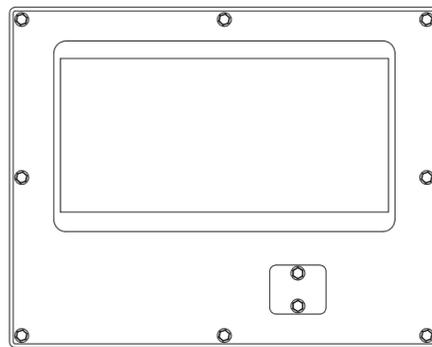
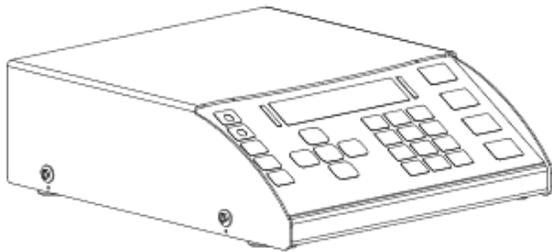
TS600 Series Instrumentation

TS611 In/Out/ GTN Intalogix® Desktop Instrument

TS612 In/Out/ GTN Intalogix® NEMA 4X Wall Mount Instrument

TS613 In/Out/GTN Intalogix® Panel Mount Instrument

TS613 Intalogix® Driver Assist Terminal





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AMENDMENT RECORD

TS600 Series Instrumentation

- TS611** IN/OUT/ GTN Intalogix Desktop Instrument (**36173**)
- TS612** IN/OUT/ GTN Intalogix NEMA 4X Wall Mount Instrument (**36182**)
- TS613** IN/OUT/GTN Intalogix Panel Mount Instrument (**36183**)
- TS613** Intalogix Driver Assist Terminal (**37568**)

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Manufactured by

Thurman Scale
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Revision #	Created	Update
Revision 1	12/17	Released Manual
Revision 2	07/19	Added Appendix IV; Updated Web Interface; Power Supply; User Operations
Revision 3	06/20	Updated User Operations

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SECTION 1: GENERAL INFORMATION

1.1. Instrument Description

The **TS611/612/613 Instrument** is a Basic, Inbound, Outbound, and GTN instrument. The instrument may be enhanced by adding either a 4-20mA or Relay module to the unit.

- Only one (1) module may be added to provide either a 4-20mA output or a Relay module interface to control traffic lights.

The **TS611/612/613 Instrument** is designed for a wide variety of truck, floor, hopper, and tank scale applications.

- The load cells interface with the Instrument through the **Scale Interface Card (SIC)**.
- An RS-232 interface allows for the transfer of data from the Instrument to a computer and vice versa.
 - The three TS600 Series instrument models are the **Desktop (TS611)**, **NEMA 4X Wall Mount (TS612)**, **Panel Mount (TS613)** and the **Driver Assist Terminal (TS613)**.

1.1.1. Standard Features

- 0.8" LED alphanumeric display
- One (1) Ethernet Port
- Three (3) USB Ports
- Choice of either One (1) 4-20mA port or one (1) Analog Relay Board.
- External Display COM Port 4
- Three (3) RS232 serial ports
- Capable of formatting tickets
- Keypad Buttons, including the following:
 - 0-9 keys, Enter, Red (stop), Green (go), Tare, In, Out, Units, B/G/Net, Zero and Print.

1.1.2. Accessories

PART NO.	DESCRIPTION
30919	4-20mA Analog Kit *
30920	Relay PCB Assy Kit *
25498	Mini USB Keyboard (87 key)
31036	Standard USB Keyboard (104 key)
15892	SVP/ Uninterruptable Power Supply

* Only one or the other of these accessories may be used in the TS611/2/3 series instrument.



1.2. Technical Specifications

PARAMETER	SPECIFICATION
Model	Desktop TS611; NEMA 4X Wall Mount TS612; Panel Mount TS613
Load Cell Interface	Up to 16 ~ 1000Ω load cells max, Or up to 10 ~ 350Ω load cells max
Cell Capacity	1 thru 999,999
Cell Units	lbs, kgs, tons, tonne
No. of Scales	One (1) only
Resolution	10000d commercial 20000d non-commercial
Scale Capacity	100-999,999
Division Size	0.0001 thru 50
Units	lbs, kgs, tons, tonne
Serial Input/ Output	Three (3) RS232 COM Ports, one (1) Console Port, three (3) USB Ports
Storage	Up to 100,000 transactions
Auto Zero Tracking	Selectable – Off, 0.5d, 1.0d, 3.0d
Motion Band	Selectable – Off, 0.5d, 1.0d, 3.0d
Zero Range	Selectable – 2%, 100%

ENVIRONMENTAL	SPECIFICATION
Enclosure	NEMA 12 desk mount and Panel mount; NEMA 4X wall mount
Operating Temperature	14°F to 104°F, (-10°C to 40°C).
Operating Humidity	NEMA 12 non-condensing, not suitable for wash-down conditions.

POWER REQUIREMENTS	SPECIFICATION
Incoming Voltage Requirement	Instrument has an Auto-switching power supply. 100 VAC to 130 VAC, 50Hz\ 60Hz 200 VAC to 260 VAC, 50Hz\ 60Hz It is recommended to install a separate circuit from the circuit panel to the outlet used. There must not be more than 0.2VAC between AC neutral and ground
Ground Requirements	For proper performance, the ground should have no more than 3.0 Ω resistance to true earth ground.
Power Consumption	Less than (<) 40 watts
ETL Listed	Conforms to UL STD 60950-1. CAN/CSA C 22.2 NO.60950-1-03.
Approvals	CC# 12-099 MC# AM-5878



1.3. Levels of Security

There are three security levels for accessing the TS611/2/3 programs.

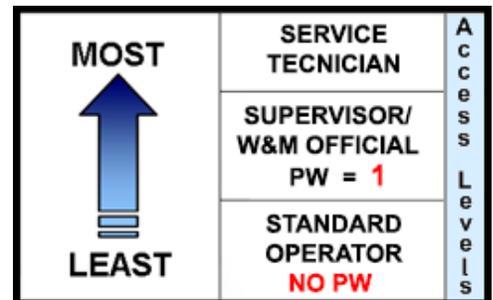
- **Security Levels One thru Three (1 – 3)** configures the hierarchy of the management functions, and limits privilege accesses from unauthorized employees.
- When making the employee hierarchy, employee duties should determine their security level.
- Each access level includes all of the rights of any access level(s) below it.

FIRST LEVEL: OPERATOR ACCESS

- Accesses the Operator Menu and the Audit Trail Menu.
- **No Password** is necessary for this level of instrument access.

SECOND LEVEL: SUPERVISOR ACCESS

- All of the Operator Access privileges.
- Supervisor Password is required.
- The *default first time use* password for the **Supervisor Access** is
 - *It is strongly recommended to change this password.*
- Second Level Users can also access the **Configuration Menu**.



THIRD LEVEL: SERVICE TECHNICIAN ACCESS

- Fully responsible for installing and programming all components of the Instrument.

In addition to needing the correct password to access the different user levels, using some menu selections will access other programming options.

- One example of this is when configuring the **Attach Device** to a **Com Port**. Each device has different settings and menu options specific to its programming needs.
 - Selecting a printer offers numerous choices different from those of programming **Command PC**, for example.



14. Users' Responsibility

- ✓ All electronic and mechanical calibrations and/or adjustments required for making this equipment perform to accuracy and operational specifications should be performed by trained service personnel.
- ✓ Absolutely no physical, electrical or program modifications other than selection of standard options and accessories are to be made to this equipment.
- ✓ Electrical connections other than those specified may not be performed, and physical alterations (holes, etc.) are not allowed.

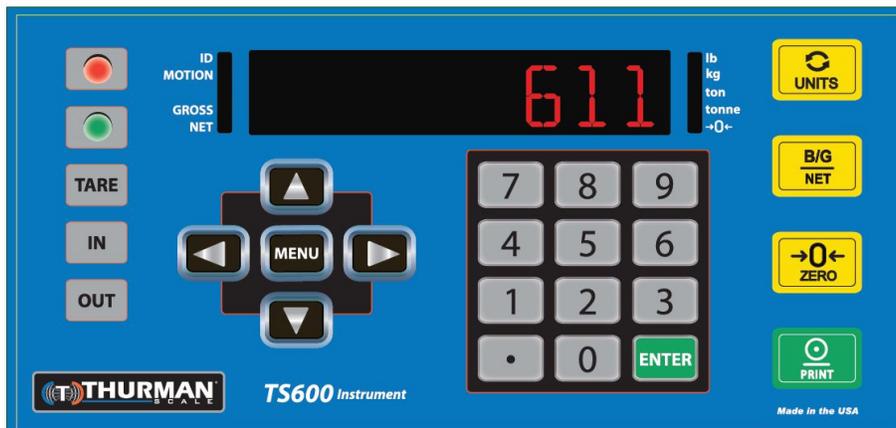


Please call your local
THURMAN SCALE REPRESENTATIVE
For any question, problems, or comments.

SECTION 2: USER OPERATIONS

2.1. Front Panel Key Functions

KEYS	FUNCTION
RED & GREEN LIGHT BUTTONS	<ul style="list-style-type: none"> Activates the Traffic Light function, if one is installed. When in the Programming Mode, pressing the RED button returns to the Weight Display (except when modifying an entry). The GREEN button deletes the Ticket Format, when in the Ticket Format menu.
TARE	Performs an AutoTare function.
IN & OUT BUTTONS	<ul style="list-style-type: none"> Manually selects the INBOUND or OUTBOUND mode. The OUT button prints the current Ticket Format, when in the Ticket Format menu.
UP & DOWN Arrows	Navigates through the menu selections.
MENU	<ul style="list-style-type: none"> The basic HOME button. Initiates the programming process into the different menus. Backs up one level on the Menu Tree. If the actions are not saved, pressing the MENU button voids this input..
NUMERIC Keys	<ul style="list-style-type: none"> Enters values for passwords, weight amounts, and configuration inputs. These keys can shortcut to desired entries in a selection item See 4.1.2. Short-cut Method for Menu Navigations.
ENTER	Activates and saves data input.
UNITS	<ul style="list-style-type: none"> Toggles and sets the unit types for the weight displayed. When programming, it inserts data if additional items are needed. Data-insert function happens before the item that is currently being viewed, while in the Format Menu.
B/G/NET	<ul style="list-style-type: none"> Toggles active display between GROSS and TARE, in the GTN mode. Deletes one character in text/number.
ZERO	<ul style="list-style-type: none"> ZEROs the scale. When editing numbers or text, this clears the data.
PRINT	<ul style="list-style-type: none"> Initiates a PRINT cycle. Toggles between editing and showing the name of the current menu choice. Prints a sample ticket while in the Layout Menu.





2.2. Operational Procedures

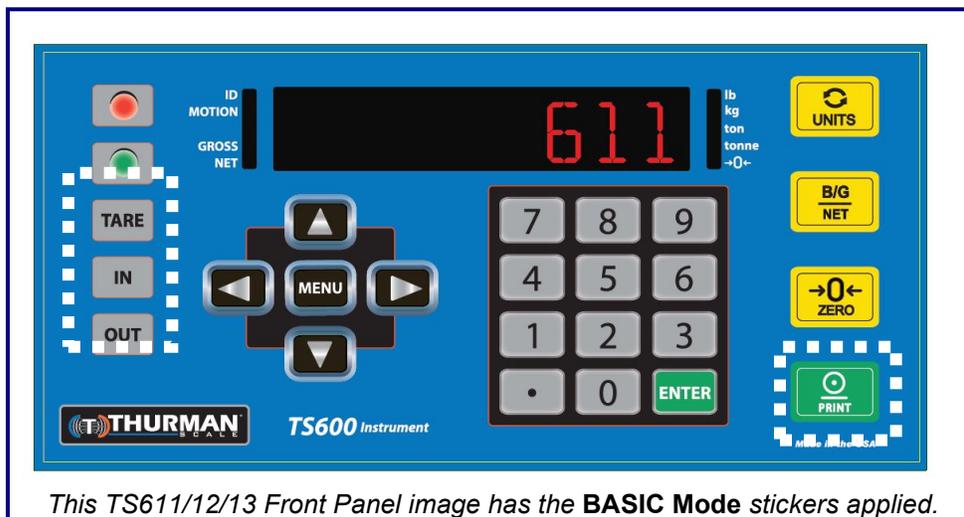
2.2.1. Startup Procedures

1. Plug the unit in. The following sequence should occur.
 - a. **TS600** will scroll across the display, followed by the display driver and revision number.
 - b. **BOOT *** will appear
 - c. **LOAD *** will appear
 - d. **START *** will appear
 - e. The current weight on the scale will display.

2.2.2. Basic Mode Weighing

BASIC MODE weighs the vehicle, then prints a ticket displaying the **Time, Date** and **Weight Amount** (either **Tare** or **Gross**). *This is its only function.*

- This mode **does not** have In/Out or Tare functions, (including storing Tares).
 - This mode requires specialized **keypad overlay stickers**.
1. With a **loaded vehicle** on the scale, press the **GROSS / PRINT** key
 - This is the **IN key**, before the template sticker was added.
 2. With an **empty vehicle** on the scale, press the **TARE / PRINT** key.
 - This is the **Out key**, before the template sticker was added.





2.2.3. Gross-Tare-Net Mode Weighing AutoTare Operation

1. Press the **ZERO** key.
2. Drive the empty vehicle to be weighed on the platform.
3. Press the **TARE** button.
 - The weight is the captured **Tare Weight**.
4. Exit the scale and load the vehicle with product.
5. Drive back onto the scale.
6. Once the display stabilizes, press the **PRINT** key and a Gross-Tare-Net Ticket will be printed.

OR...

Manual Tare Operation

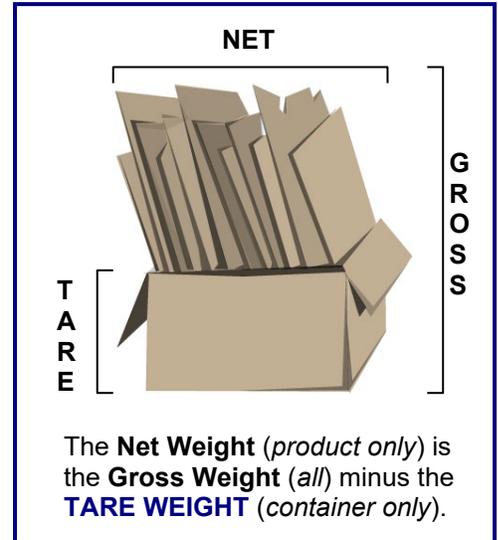
1. With the scale unloaded, press the **ZERO** key.
2. Drive the loaded vehicle to be weighed on the platform.
3. When the display stabilizes, press the **PRINT** key.
4. When **KEY IN TARE AND PRESS ENTER** displays, enter a known **TARE amount** from an earlier weighment using the numeric keypad, then press **ENTER**.
 - A **GTN Ticket** will be printed.

OR...

Gross Only Operation

The truck drives on the scale and the operator prints the result.

1. Press the **ZERO** key.
2. Drive the vehicle to be weighed on the platform.
3. Once the display stabilizes, press the **PRINT** key.
 - Enter ZERO (0) when prompted to enter a Tare amount
 - A **Gross Only Ticket** will be printed.





2.2.4. Inbound/Outbound Mode Weighing

Noted below are a few tips for the Inbound/Outbound Weighing Mode.

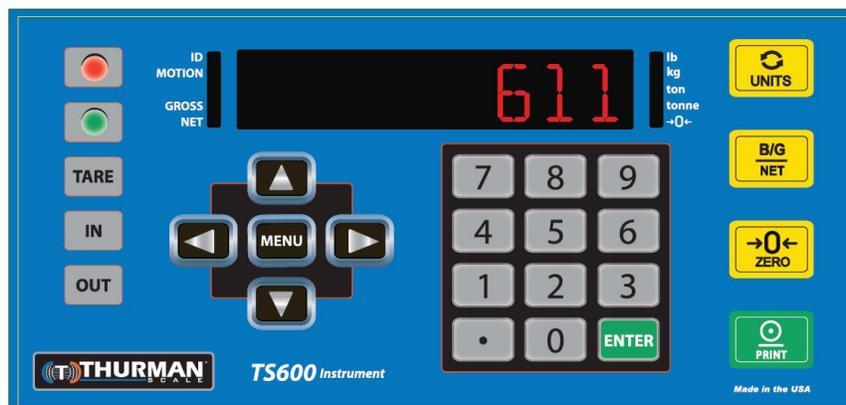
- The **Loop ID** input varies depending on the installed software:
- **Revision 2.2.0 software** and lower, Loop ID is limited to **3 numeric characters**.
- **Revision 2.4.2 software** and higher, supports up to **15 alphanumeric characters**.
- The **Loop ID** is replaced by saving a new tare, or a saving a new keyboard tare ID.

Inbound Operation

1. Press the **ZERO** key.
2. Drive the vehicle onto the platform, whether it is either full or empty.
3. Once the display stabilizes, press the **IN** (Inbound) key.
4. When the **Loop ID** legend text displays, enter the **Loop ID number** using the QWERTY keyboard or keypad, then press **ENTER** or have the instrument auto-assign a **Loop ID number** by pressing **ENTER**.
 - An **Inbound Ticket** will print, if so configured.
5. Drive off the scale and process the trailer, by either filling or emptying it.

Outbound Operation

1. The vehicle returns to the scale, either full or empty.
2. Once the display stabilizes, press the **OUT** (Outbound) key.
3. When the **Loop ID legend text** displays, enter the **LOOP ID Number** from an Inbound Transaction, then press **ENTER**.
 - An **Outbound Ticket** will print.





2.2.4. Inbound/Outbound Weighing, Continued

GTN Operation

1. With the scale unloaded, press the **ZERO** key.
2. Drive the loaded vehicle to be weighed on the platform.
3. When the display stabilizes, press the **PRINT** key.
4. When **KEY IN TARE AND PRESS ENTER** displays, enter a known **TARE amount** from an previous weighment, then press **ENTER**.
 - A **GTN Ticket** will print.

NOTE: For **Gross Weight** only to be printed, enter **ZERO (0)** when prompted to enter a **Tare amount**.

Stored Tare Operation

1. With the scale unloaded, press the **ZERO** key.
2. Drive the loaded vehicle to be weighed on the platform.
3. When the display stabilizes, press the **IN** or **OUT** key.
4. When the **Loop ID legend text** displays, enter a **Tare ID number** from a stored **NEW TARE** or stored **NEW KEYBOARD TARE**, then press **ENTER**.
 - The transaction is processed and the Outbound ticket format is printed.

2.3. Programming the Operator Menu

Each Operator Menu programming option is fully defined within this section.



2.3.1. Format Time & Date

Use the **UP/DOWN** Arrows, **Numeric** keys, **MENU** and **ENTER** buttons to format the Time and Date.

1. While in the **OPERATOR MENU**, select the **TIME AND DATE** option, then press **ENTER**.
2. When **FORMAT TIME AND DATE** display, use the **UP/Down Arrow** keys to select one of the following options, then press **ENTER**.
 - **H-M** • **H-M-S**
 - **HH-MM** • **HH-MM-SS**
3. When **AM/PM** display, press **ENTER**.
4. Using the **DOWN** arrow, select **12 HOUR** or **24 HOUR** format, then press **ENTER**.
5. When **DATE FORMAT** displays, Press **ENTER**.
6. Using the **UP/DOWN** arrows, select the best format for the customer's needs, then press **ENTER**.
7. When **DATE SEPERATOR** displays, press **ENTER**.
8. Using the **DOWN** arrow, select one of the available formats, (which include a **(SPACE)**, **/**, and **-**), then press **ENTER**.

2.3.2. Set Time & Date

Use the **Arrow**, **Numeric** and **ENTER** Keys to set the time and date.

1. While in the **TIME and DATE MENU**, select the **SET TIME AND DATE** option, then press **ENTER**.
2. **YEAR** is displayed. Press **ENTER**. Input the year and then press **ENTER**.
3. **MONTH** is displayed. Press **ENTER**. Input the month and then press **ENTER**.
4. **DAY** is displayed. Press **ENTER**. Input the month and then press **ENTER**.
5. **HOUR** is displayed. Press **ENTER**. Input the month and then press **ENTER**.
6. **MINUTE** is displayed. Press **ENTER**. Input the month and then press **ENTER**.
7. When **SAVE TIME AND DATE** displays, press **ENTER**.

NOTE: To set a **PM** time in the **12 hour** format, enter it using the **24 hour** format.
• i.e. Enter **13** to set the Instrument for **1PM**.



2.3.3. Ticket Number

Follow these steps to access a specific ticket by entering the **Ticket Number**.

1. While in the **OPERATOR MENU**, select the **TICKET NUMBER** option, then press **ENTER**.

Option 1 (Steps 2-4)

2. When **NUMBER** displays press **ENTER**.
3. Using the numeric keypad, in the **Ticket Number**, press **ENTER**.
 - Allows a maximum entry of **six (6) digits**.
 - This sets the value for the **Ticket Number** to be used in the next printing transaction.
4. Press the **DOWN arrow** until the **LAST TICKET - PRINT** option displays, then press **ENTER**.
 - This prints a duplicate of the last ticket transaction.

OR...

Option 2 (Steps 2-3)

2. Press the **DOWN arrow** until the **DUPLICATE -- PRINT** option displays, then press **ENTER**.
3. When **ENTER TICKET NUMBER** appears, enter the desired ticket number, then press **ENTER**.
 - This option prints a duplicate ticket for the number as input by the operator.)

2.3.4. Load Cell Diagnostics

Load Cell Diagnostics gives a quick snapshot of how each load cell is performing, used for easier troubleshooting capabilities.

Follow these steps to access the **Load Cell Diagnostics option**.

1. While in the **OPERATOR MENU**, select the **LOAD CELL DIAGNOSTICS** option, then press **ENTER**.
2. When **ID** displays, press **ENTER**.
3. When **CELL OUTPUTS** displays, press **ENTER**.

Option 1 (Steps 4-10)

4. When **DISPLAY** appears, press **ENTER**.



5. When **COUNTS** displays, press **ENTER**.
6. Using the **DOWN/UP arrows**, select the desired load cell (**CELL1** thru **CELL 16**), then press **ENTER**.
The counts for the selected load cell will be displayed.
7. Press **ENTER** to return to **Cell Selection**.
8. Press **MENU** to return to **DISPLAY MENU**.
9. Press **DOWN** arrow until **ERRORS** displays, then press **ENTER**.
 - If **NONE** appears, then there are no errors to display.
10. If errors do occur, use the **DOWN arrow** to select one of the listed Cell numbers that have recorded an error, then press **ENTER**.
 - The **ERROR TYPE**, **DATE**, and **GHOST STATUS** for the recorded error will be displayed.
 - Press **ENTER** three times to return to **Cell Outputs Menu**.

OR...

Option 2 (Steps 4-7)

4. Press the **DOWN arrow** until **PRINT** displays, then press **ENTER**.
5. When **PRINTER** displays, press **ENTER**.
6. Press the **DOWN arrow** to select a printer if multiple printers are configured, then press **ENTER**.
7. When **COUNTS** displays, press **ENTER** to print the **Cell Counts**.

*The following categories are noted on the **COUNTS** print-out.*

CELL NUM – Identifies the load cell in the scale platform.

CAL COUNTS – the zero load cell count stored at calibration.

CURRENT – the current load cell counts.

WEIGHT – the current weight value.

2.3.5. New Tare

*Follow these steps to store a **New Tare**, using the weight on the scale platform, then recalled later as a saved **Tare Weight**.*

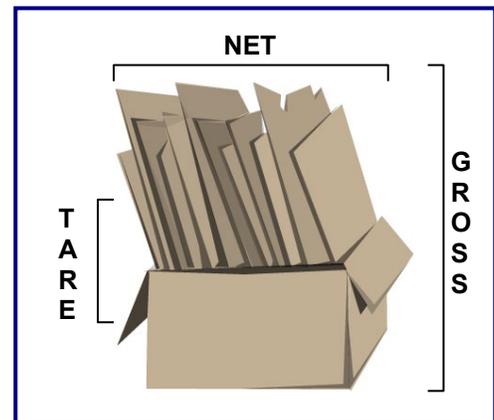


2.3.5. New Tare, Continued

1. In the **Operator Menu**, press the **DOWN arrow** until **NEW TARE** displays, then press **ENTER**.
2. When **ID (TARE)** displays, Press **ENTER**.
3. When the last stored Tare ID number displays, input the new tare number, then press **ENTER**.
4. When **WEIGHT (TARE)** displays, press **ENTER**.
5. The current weight on the platform is displayed with annunciator on front panel lit to identify active units; press **ENTER** to capture the weight.
 - If there is motion on the platform at that time; **"Motion - Please Wait"** displays until the scale settles, and then the weight can be captured.
6. When **Vehicle Description** displays, press **ENTER**.
7. When the current **Vehicle Description** displays. input the new **Vehicle Description** , then press **ENTER**.
 - This can be the truck drivers' plate number, the vendor ID, or another designated identifying number.
8. When **SAVE** displays, press **ENTER**.

GROSS WEIGHT – TARE WEIGHT = NET WEIGHT

9. Using the **DOWN ARROW**, select either **YES** or **NO**, then press **ENTER**.
 - **YES** saves the captured TARE Weight Value, ID, and Vehicle Description.
 - **NO** does not save the Tare Data.



NOTE: If the Tare ID entered in **Step 3** is a duplicate of an existing Stored Tare, then **OVERWRITER - NO** will display.

10. To abort saving the tare, press **ENTER**.



11. To overwrite the existing tare data with the new tare data, press the **DOWN arrow** until **OVERWRITE? - YES** displays, then press **ENTER**
 - **NEW TARE** displays.

2.3.6. New Keyboard Tare

Follow these steps to store a New Tare, using the keyboard, to be recalled later as a saved tare weight.

1. In the **Operator Menu**, press the **DOWN arrow** until **NEW KEYBOARD TARE** displays, then press **ENTER**.
2. When **ID (TARE)** displays, press **ENTER**.
3. The last stored Tare ID number is displayed, input the new tare number, then press **ENTER**.
4. When **WEIGHT (TARE)** displays, press **ENTER**.
5. The last tare entry weight is displayed; enter a new tare value via the keyboard, then press **ENTER**.
6. When **UNITS** displays, press **ENTER**.
7. When the current **Units** setting displays, use the **UP/DOWN arrows** to select the correct one, then press **ENTER**.
 - lb, kg, ton, or tonne
8. When **VEHICLE DESCRIPTION** displays, press **ENTER**.
9. When the current **Vehicle Description** displays; input the new **Vehicle Description**, then press **ENTER**.
 - This can be the truck drivers' plate number, the vendor ID, or another designated identifying number.
10. When **SAVE** displays, press **ENTER**.
11. Using the **DOWN arrow**, select either **YES** or **NO**, then press **ENTER**.
 - Selecting **YES** saves the **Tare**.
 - Selecting **NO** does not save the **Tare**.

NOTE: If the Tare ID entered in Step 3 is a duplicate of an existing Stored Tare, then **OVERWRITE? - NO** will display.

12. To abort saving the tare, press **ENTER**.



2.3.6. New Keyboard Tare, Continued

13. To overwrite the existing tare, press the **DOWN ARROW** until **OVERWRITE?** displays, then press **ENTER** when **YES** displays.
 - **NEW KEYBOARD TARE** displays when the process is complete.

2.3.7. Tare Delete

This option displays a list of all the stored **New Tare** and **New Keyboard Tare** entries.

Follow these steps to delete a stored Tare.

1. While in the **OPERATOR MENU**, press the **DOWN arrow** and select the **TARE DELETE**, then press **ENTER**.
2. Press the **DOWN/UP arrows** to scroll through the stored tares.
3. To delete a tare, press the **ZERO** key.

2.3.8. Tare Report

This option displays each of the stored New Tares and New Keyboard Tares, then prints a Report as selected by the operator.

Follow these steps to set the Tare Report.

1. While in the **OPERATOR MENU**, press the **DOWN** arrow and select the **TARE REPORT**, then press **ENTER**.

Option 1 (Steps 2-4)

2. When **DISPLAY** appears, press **ENTER**.
 - This shows the Stored Tares, listing the Tare ID Number, Weight, Date, and the Tare Description.
3. Use the **UP/DOWN arrows** to scroll through the list.
4. Press **MENU** to return to the **Tare Menu**.

OR...

Option 2 (Steps 2-6)

2. Use the **DOWN arrows** to select **PRINT**, then press **ENTER**.
3. Press **ENTER** when **PRINTER** displays.
4. Select an available **PRINTER**.
5. Press **ENTER** when **PRINT OUT** displays for the **Tare Report**.



6. Press **MENU** when **PRINTING COMPLETE --- MENU TO CONTINUE** displays.

2.3.9. Utility – Set Display Intensity & Key Pad Beep

SET DISPLAY INTENSITY

1. While in the **OPERATOR MENU**, press the **DOWN arrow** and select the **UTILITY** option, then press **ENTER**.
2. Press **ENTER** when **Set Display Intensity** appears.
3. Select **LOW**, **MEDIUM** or **HIGH**, then press **ENTER**.

KEY PAD BEEP

1. In the **UTILITY MENU**, press the **DOWN arrow** and select the **KEY PAD BEEP** option, then press **ENTER**.
2. Select **ON** or **OFF**, then press **ENTER**.

SET VOLUME

3. In the **UTILITY MENU**, press the **DOWN arrow** and select the **SET VOLUME** option, then press **ENTER**.
4. Adjust the **BEEP volume** to the desired level.

MUTE

5. In the **UTILITY MENU**, press the **DOWN arrow** and select the **MUTE** option, then press **ENTER**.
 - This silences the **Key Pad Beep** until it is reversed.

2.3.10. Options (Operator)

1. While in the **OPERATOR MENU**, press the **DOWN arrow** and select **OPTIONS (OPERATOR)**, then press **ENTER**.
2. Press the **DOWN arrow** and press **ENTER** to select one of these options.
 - **OUTBOUND AUTO SUGGEST** – When processing Inbound Loops, this selection displays the next available one.
 - **AUTO INCREMENT INBOUND ID** – If enabled, the instrument will suggest a Loop ID one value higher than the last inbound ID used. Otherwise, it will use the lowest available ID.



- **SHOW LOOPING ID TEXT** – This selection displays *all* the stated information about the Loop, including the ID number, truck description, or any related text.
- **VIEW BLIND COUNT** – Track number of blind count events.
- **WEB TIMEOUT** – Select web timeout value.

SECTION 3: WEB INTERFACE

The configuration of all TS6XX series scales with **software version 2.0.1** or higher can now be performed through the instrument **OR** through the *Web Interface*.

NOTE: *At this time, scale calibration can **ONLY** be performed through the TS6XX instrument and **NOT** the **Web Interface**.*

The Web Interface can be accessed through most browsers (Internet Explorer, Firefox, Google Chrome) that is connected to a TCP/IP network **OR** by using an Ethernet crossover cable connected to a PC or tablet.

The first step in connecting remotely is to determine the connection address (IP address) of the instrument.

3.1. How to Connect Remotely to the TS6XX Series:

There are two (2) connection types used with the TS6XX.

- **DHCP (Dynamic Host Configuration Protocol)** – Automatically addresses each node the first time it connects to the company’s Intranet. A **DHCP** connection may change every few weeks so if you are not able to connect, re-verify the IP address on the instrument (see **To obtain the current IP address of the TS6XX**)
- **STATIC** – Dedicated addresses assigned by the IT Department that are specific to each node, and do not change.

3.1.1. To obtain the current IP address of the TS6XX:

1. Login to the TS6XX
2. Scroll *down* to **CONFIGURATION**, press **ENTER**
3. Scroll *up* to **NETWORK**, press **ENTER**
4. Scroll down to **DHCP Options**, press **ENTER**
5. **MY IP** is displayed, press **ENTER**
6. The TS6XX IP address is displayed (**XXX.XXX.XXX.XXX**)
Write down the IP address
7. Press the **RED** Traffic light button twice to return to the weigh screen

*Follow these steps to display, or to enter the **Static addresses** in the **NETWORK option**.*

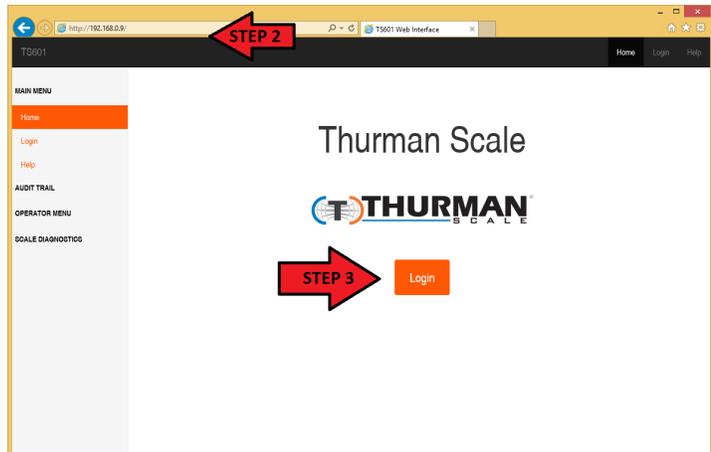


3.2. Logging In to the Web Interface

1. Locate the **IP Address** of the TS6XX Series Instrument
(See also To obtain the current IP address of the TS6XX)

NOTE: *In order to login to the Web Interface, you **MUST** logout of the TS6XX instrument. If you are **NOT** logged out, you will receive the message “**Front Panel in Use**” until you log out.*

2. Input the correct **IP Address** of the TS6XX into the Address Bar of the web browser, then press **ENTER** on the remote computer.



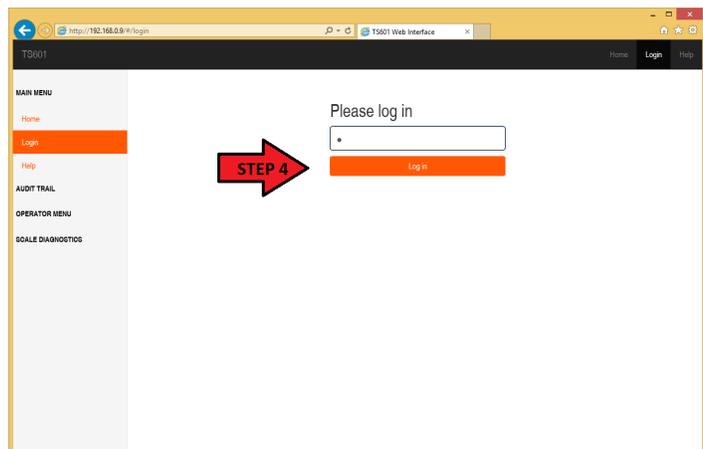
3. Click on the **LOGIN** link.

4. Input the Default **Service Password**, then press the **LOGIN** button.

Operator Password = 1.

The **Web Interface Home** screen appears.

After you are logged in successfully, the message “**Remote Config in Process**” will appear on the screen of the instrument.





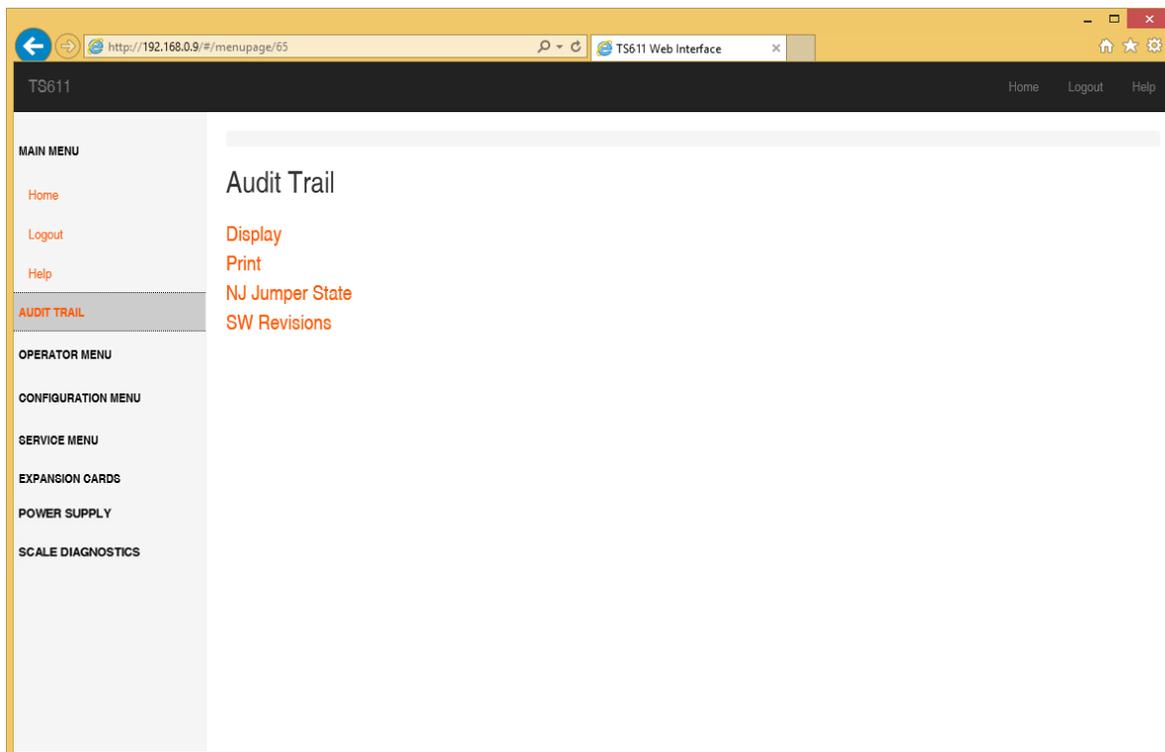
3.3. Navigating the Web Interface

After successfully logging into the TS6XX Web Interface, the additional options of **Configuration Menu**, **Service Menu** and **Expansion Cards** will appear in the left-hand navigation. Additional options also will appear under **Operator Menu** and **Power Supply**.

NOTE: As stated previously, the Scale calibration can **NOT** be performed through the Web Interface but only through the instrument. All other settings are identical between the Web Interface and the instrument.

3.3.1. Audit Trail

The following options will appear in the Web Interface under **Audit Trail**:



Display: Displays all configuration changes made to each scale with drop-down menus for **Audit Report**, **number of items per page** and an available **Search**.

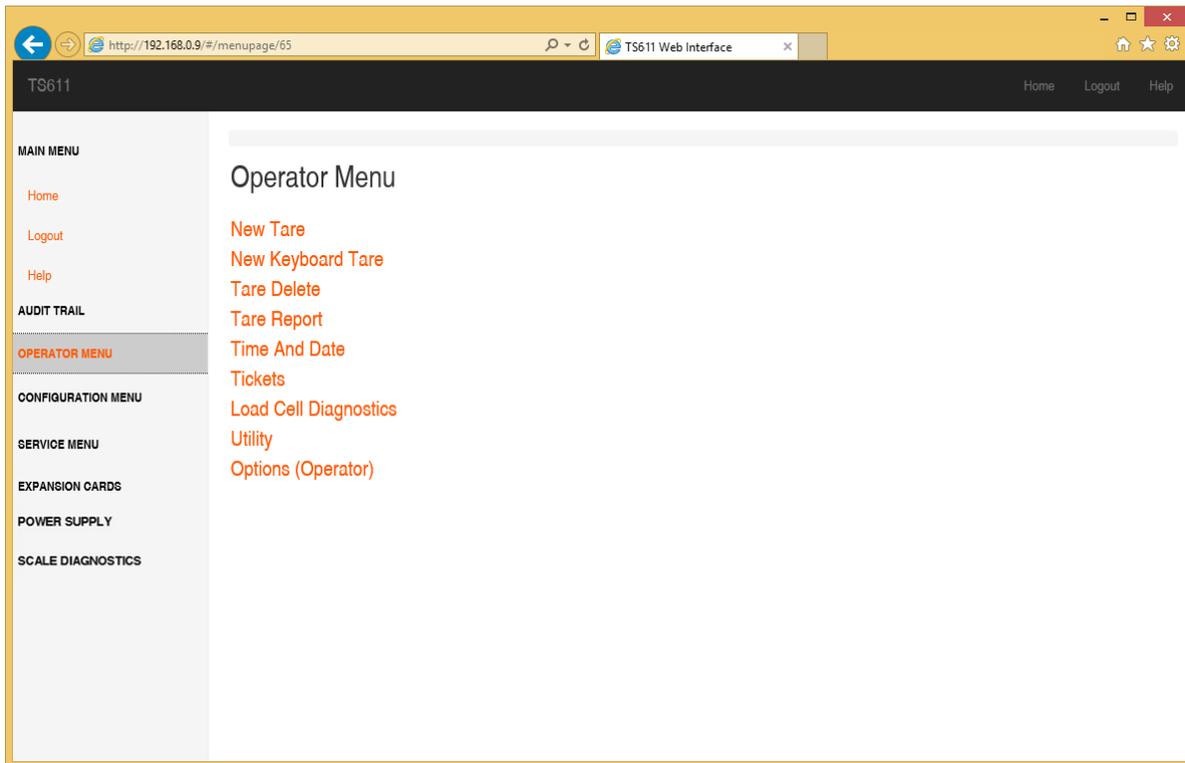
Print: Print the records from the Audit Report with options for number of items to print and a drop-down menu of available printers.

NJ Jumper State: Lets you know if this feature is active or inactive.

SW Revisions: Provides **Image**, **Model**, **Main**, **Drivers**, **Interpreter**, **Webconfig** information.



3.3.2. Operator Menu



New Tare: Add a new tare from the scale.

New Keyboard Tare: Manually enter a new tare.

Tare Delete: Provides the same options of **New Tare**, **New Keyboard Tare** and deleting a tare. A drop-down menu of all the existing tares and a **Search** is available.

Tare Report: Provides the same options as **Tare Delete** and a **Print** option with a drop-down list of available printers.

Time And Date: Provides the options of **Format Time and Date** and **Set Time and Date**.

Tickets: Set the starting value of tickets under **Number**, print the last created ticket under **Print Last Ticket** or add the ticket number of a ticket you wish to re-print under **Print Duplicate Ticket**.

Load Cell Diagnostics: Provides a live count of the **Cell Outputs** and **Errors**.

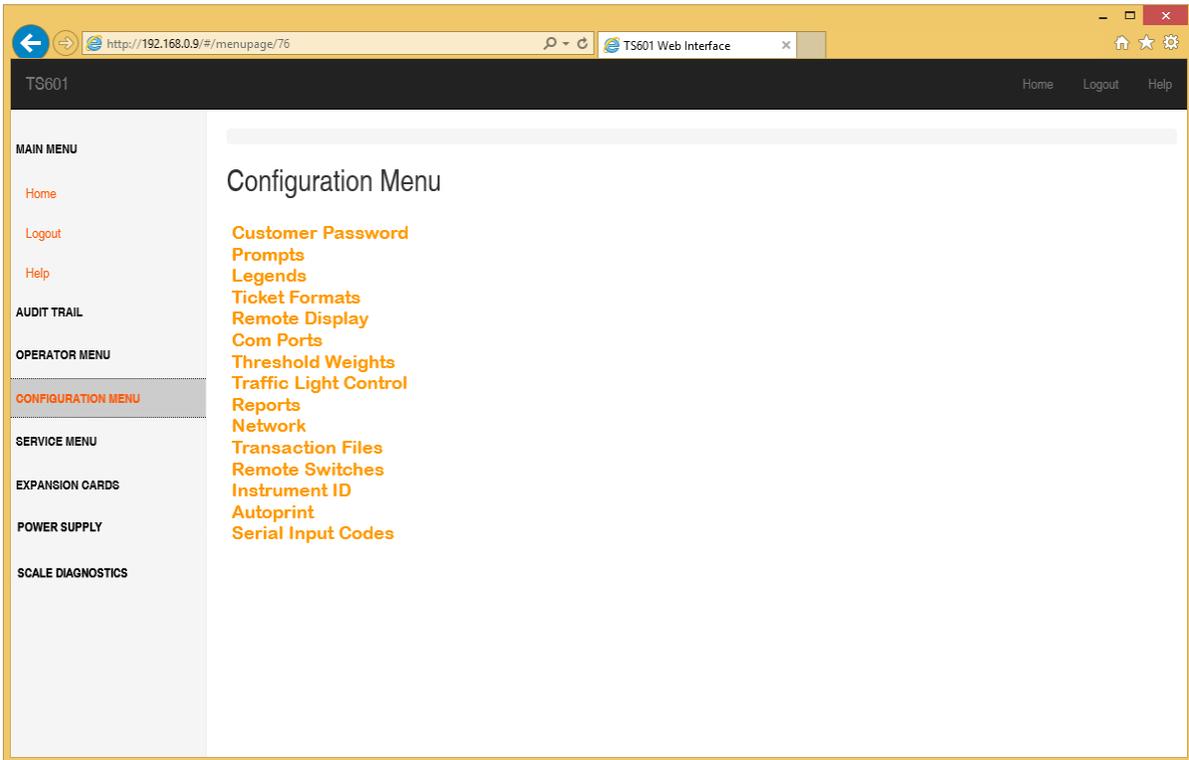
Utility: Provides drop-down menus for **Display Intensity**, **Keypad Beep**, scale **Volume** ranging from 10% (lowest volume) to 100% (highest volume) and **Mute**.

Options (Operator): When processing Inbound Loops, **Outbound Auto Suggest** displays the next available. When processing Inbound Loops, **Auto Increment Inbound ID** automatically uses the next available (without displaying it). **Show Looping ID Text** displays *all* the stated information about the Loop, including the ID number, truck description, or any related text.



3.3.3. Configuration Menu

The following options will appear in the Web Interface under **Configuration Menu**:



Customer Password (Configuration Menu Password): Change the login password of the instrument. This is highly recommended.

Prompts: Messages to the Operator that ask a question, offer a choice, or relay an instruction. The **Name** field is a text entry field for naming a prompt. “Prompt 1” is the name used by the system to identify the prompt. **GTN**, **Inbound**, **Outbound**, **Basic In**, and **Basic Out** are all drop-down menu items that may be enabled or disabled.

Legends: The **Loop ID** field is a text entry field if you wish add a custom name.

Ticket Formats: The connected printer displays in the **Printer** field. The **Mode** drop-down menu lets tickets print in **GTN**, **Inbound**, **Outbound**, **BasicIn**, or **Basic Out** formats.

NOTE: *If a printer does not display in the **Printer** field, no printer has been added to a COM port. See [6.2. COM Ports](#) to connect to an available printer.*

Remote Display: Provides a drop-down menu to adjust **Display Mode** to continuous or print, **Type (Output)** to display by ticket number, Active Gross or Net Wt. **Enable 1605T** set to Yes or No.



3.3.3. Configuration Menu, Continued

Com Ports: Provides options for configuring the three input com ports and the single outgoing port. See section [6.2. COM Ports](#) for further details.

Threshold Weights: **Initial Weight** option provides up and down arrows to set the minimum amount the truck must weigh to initiate a weighment.

- **Initial Weight** is the minimum weight value to initial a transaction, trigger automatic traffic light control, initiate the Blind Counter functions.
- **Maximum Weight** is the maximum allowable weight for processing transactions.
- **Allow Over Weight Transactions** can be set to YES to warn of an overweight condition or NO to prevent overweight transactions.

Traffic Light Control: **Control (Traffic Light)** either Automatic or Manual. The **Event to Signal** option lets the operator add a time to delay between 1-10 seconds to the signal. "Scale ID 1" is the name used by the system to identify the setting.

Reports: Provides options for displaying a report. **Type** provides an option for choosing Completed or Incomplete transactions. **Media** only shows "Jump Drive" in the drop-down menu. Reports must be generated to an inserted jump drive. **Sort By** provides the option of the report being sorted by Loop ID or Date/Time. **Delimiter** provides the option of generating a report in CSV or Tab format. See section [5.10. Reports](#) for more details.

Network: **DHCP Options** shows the network connectivity details of the instrument, **IP**, **Netmask**, **Gateway** and **DNS**. The **Network Output** provides an option for the **Type** output, of either Off or PC Continuous. The **Format** provides a choice of scale company output data. See also [Appendix 1 Data String Outputs](#) The **Local Port** provides up and down arrows to choose the correct port number on the outgoing PC.

- Network section under the **CONFIGURATION MENU** controls all network settings.
- Options include **DHCP** or **STATIC IP**
- **DHCP OPTIONS** or* **STATIC IP** Reports the IP address, Netmask, Gateway, Primary DNS

*Displayed value dependent on selected option of DHCP or STATIC.

- **Network Output:** If configured will send **NETWORK** continuous **SCALE** output.

Type is either OFF or PC Continuous

Format: Select from 5 factory **DEFINED** formats:

Thurman, Toledo, Cardinal, Weigh-Tronix, Condec

Local Port: default 5001, change only if requested by site.

Network Output

Type:

Format:

Local Port:



Speed: This controls the speed and if full or half duplex is used on the network device. Default is AUTO and in most cases is enough.

Network Output

Speed:

- AUTO
- 10/HALF
- 10/FULL
- 100/HALF
- 100/FULL

Transaction Files: This option allows for file deletion by five different options: **All Transactions, By Ticket Number, By Date Range, By Ticket Range** and **Incompletes**.

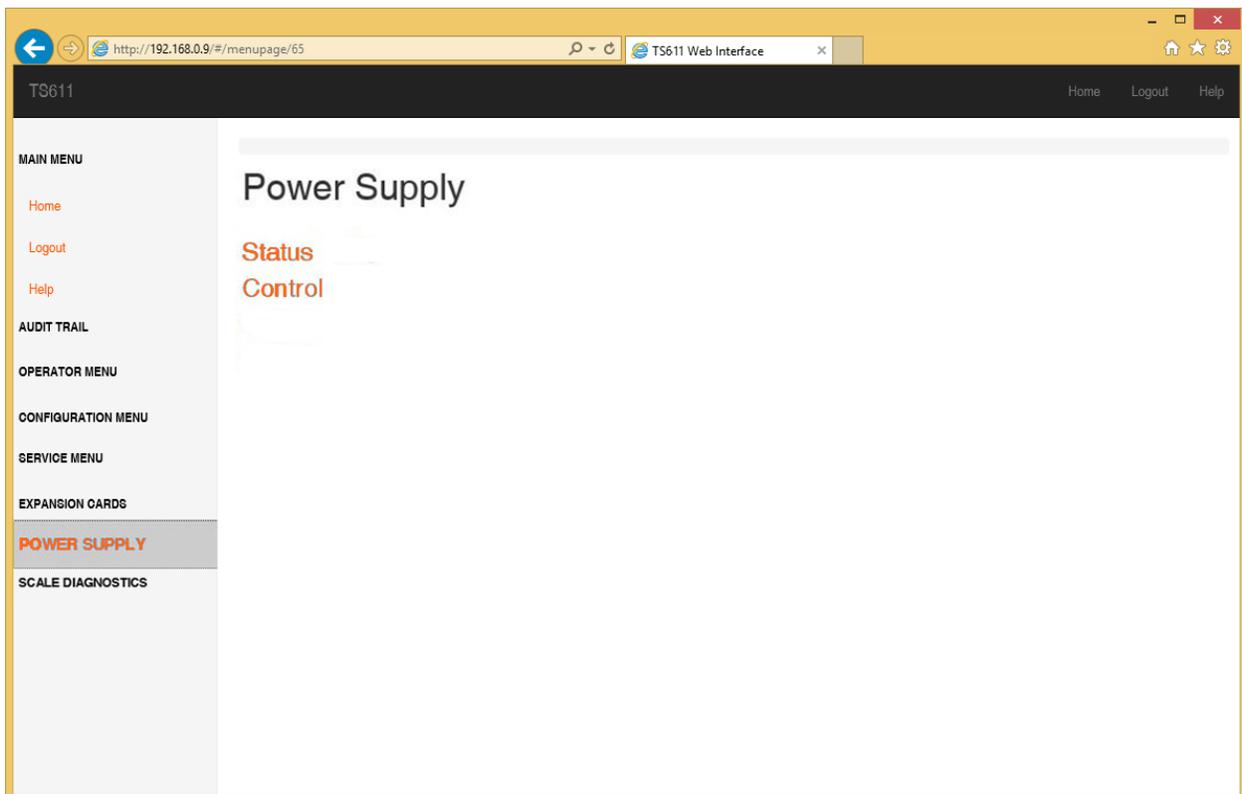
Remote Switches: **Initial Weight** option Used to configure/select the four (4) available remote Switch inputs.

Instrument ID: used to set the Instrument ID (1 – 255)

Serial Input Codes: **Initial Weight** option allows for entry of specific HEX codes to simulate a remote serial command.

3.3.4. Power Supply

The following options will appear in the Web Interface under **Power Supply**:



Status: Displays **Voltage, Current, Resistance** and **Status**.

Control: Provides options to Enable or Disable the **Pit Power**, perform a **Restart** by selecting Yes or No, displays the **Status** of control.



3.3.5. Scale Diagnostics

The screenshot shows a web browser window with the URL <http://192.168.0.9/#/menupage/65>. The page title is "TS611 Web Interface". The interface includes a navigation menu on the left with categories: MAIN MENU (Home, Logout, Help), AUDIT TRAIL, OPERATOR MENU, CONFIGURATION MENU, SERVICE MENU, EXPANSION CARDS, POWER SUPPLY, and SCALE DIAGNOSTICS. The main content area is titled "Scale Diagnostics" and has two tabs: "Weights" (selected) and "Cell Counts". Below the tabs is a table with the following data:

Current Counts	Zero Counts	Cell	Scale	Cell	Zero Counts	Current Counts
50417	30136	2	229497 lb	1	30167	50434
34683	14739	4		3	14729	34657
43739	23444	6		5	23427	43699
31428	11193	8		7	11193	31418

Below the table, the text "Gross Weight: 229497 lb" is displayed.

Scale Diagnostics displays real-time load cell data either by **Weights** or **Cell Counts**. Click either Weights or Cell Counts to switch between options. The **Gross Weight** appears as well.

Weights: Displays **Weights**, **Zero Counts**, and **Cell (#)** of each cell.

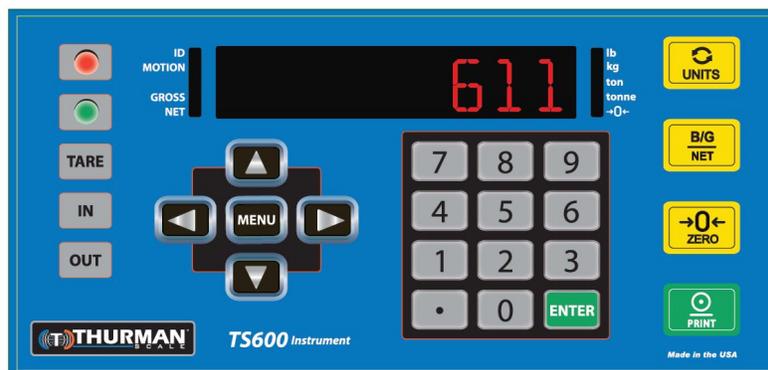
Cell Counts: Displays **Current Counts**, **Zero Counts** and **Cell (#)** of each cell.

SECTION 4: STANDARD PROGRAMMING

4.1. Programming the Instrument

KEYS	FUNCTION
RED & GREEN LIGHT	<ul style="list-style-type: none"> Activates the Traffic Light function, if one is installed. When in the Programming Mode, pressing the RED button returns to the Weight Display, <ul style="list-style-type: none"> Except when modifying an entry.
TARE	Performs an AutoTare function.
IN & OUT BUTTONS	Manually selects the INBOUND or OUTBOUND mode. <ul style="list-style-type: none"> When programming, the OUT key sends a script to the printer.
UP & Down Arrows	Navigates through the menu selections.
MENU	<ul style="list-style-type: none"> The basic HOME button. Initiates the programming process into the different menus. Backs up one level on the Menu Tree. If the actions are not saved, pressing the MENU button voids this input.
Numeric Keys	<ul style="list-style-type: none"> Enters values for passwords, weight amounts, and configuration inputs. These keys can shortcut to desired entries in a selection item (see 4.1.2.Short-cut Method for Menu Navigations).
ENTER	Activates and saves data input.
UNITS	<ul style="list-style-type: none"> Toggles and sets the unit types for the weight displayed. When programming, it inserts one line before the current one.
B/G/NET	<ul style="list-style-type: none"> Toggles active display between Gross and Tare, in the GTN mode. When programming, it inserts one line after the current one.
ZERO	<ul style="list-style-type: none"> ZEROs the scale. When editing numbers or text, this clears the data.
PRINT	<ul style="list-style-type: none"> Initiates a print cycle. Toggles between editing and showing the name of the current menu choice. Prints a sample ticket while in the Layout Menu.

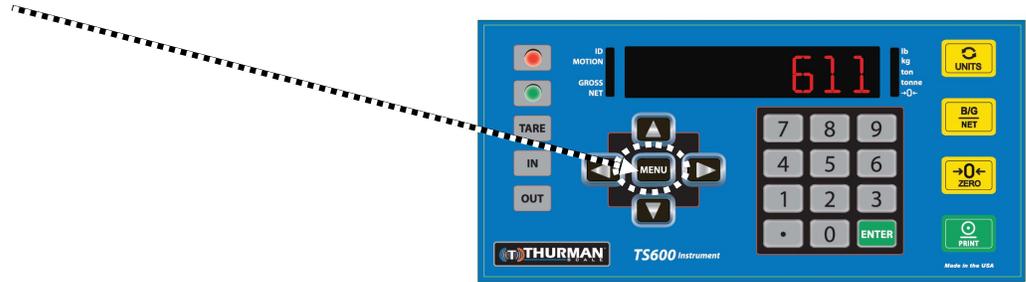
* When configured with the **BASIC Format**, the **IN** key becomes the **GROSS / PRINT** button, and the **OUT** key becomes the **TARE / PRINT** button. The **TARE** and **PRINT** keys become non-functional.





4.1.1. Login

1. Press the **MENU** button to toggle between **Weight Display** and **Menu System**.



2. To enter the **MENU System**, when **LOGIN** displays, press the **ENTER** button.
 - The display will be blank.
3. Input the **Service Password**, then press **ENTER**.
 - **OK** displays first, then **AUDIT TRAIL** follows.
4. Press the **DOWN ARROW** to navigate through the following main menus.
 - **AUDIT TRAIL**
 - **OPERATOR MENU**
 - **CONFIGURATION MENU**
 - **SERVICE MENU**
 - **EXPANSION CARDS**
5. Press **ENTER** to accept the option.



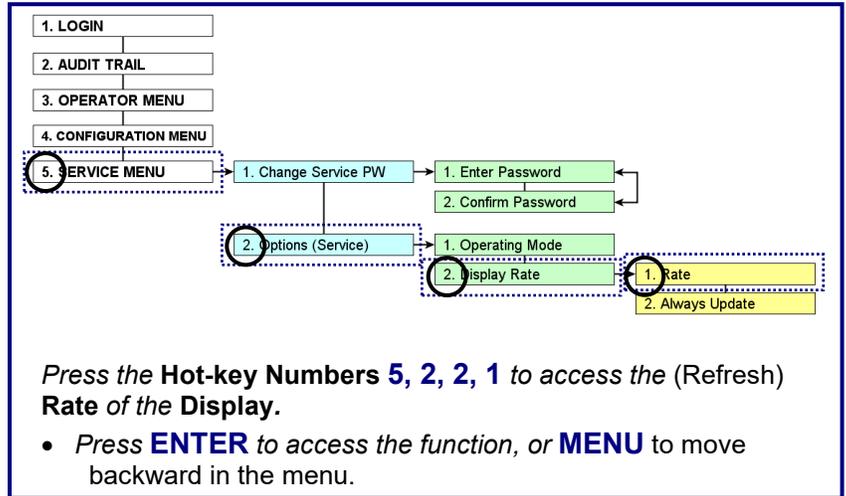
4.1.2. Short-cut Method for Menu Navigations

Navigate through the different menu levels by entering a **Hot-key Number** and immediately access functions of the next higher level.

- The **Hot-key Number** displays in the flow charts to the **left** of the function.

Follow these steps to navigate using the **HOT-KEY NUMBERS**.

1. Press a **HOT-KEY NUMBER** to advance to the functions of the next menu level.
2. Continue pressing the next **HOT-KEY NUMBER**, moving forward in the menu tree, until the needed function is accessed.
3. Press **ENTER** to access the function,



OR...

Press **MENU** to move backward to the previous level.

4.1.3. Defining the Programming Menus

The six (6) programming menus are briefly defined below.

AUDIT TRAIL	Identifies how many times and when changes have been made to the scale's Calibration or Configuration settings. NO Password required
OPERATOR MENU	Programs the Time/Date, Ticket Number, Load Cell Diagnostics, Tare Functions, Display Intensity and Keypad Sounds. NO Password required
CONFIGURATION MENU	Programs Customer Passwords, Communications Programming and Functions, Ticket Formats, Programmable Prompts and Legends, Device Input/Outputs, Weight Threshold, Report Configuration, Network Configuration, and Transaction Files Operations. Default Password = 1
POWER SUPPLY	Displays the power output to all the scale components. Viewing Access Only



4.2. Operator Menu Workflow

The **OPERATOR MENU** allows basic operations of the instrument.

- Allows access to change the time, date, ticket number, and the formatting of the time and date.
- Allows basic diagnostics of the load cells in the scale(s), with beneficial information for scale operations.

See **SECTION 2.3. Programming the Operator Menu** for complete descriptions.

4.3. Audit Trail

The **Audit Trail** report displays all the configuration and calibration activities that were changed within the Instrument.

- Provided for Weights and Measures Officials.

4.3.1. Display

Filters the **Audit Trail Events** displayed, based on the selected option, after the **ENTER** button is pressed.

- This option is limited to **view only access**.

*This example defines the **Audit Trail** report message.*



- The unit is in the **INBOUND/OUTBOUND MODE** (Inbound/Outbound, GTN or Basic Mode).
- The UNIT is currently in the **INSTRUMENT MODE** (Instrument, Scale or Complete).
- There have been **28** “log-able” events performed on this instrument.
- The **DATE** and **TIME** of the last recorded event (#28, in this case).



4.3.2. Print

Sets up the print output for the **Audit Report**, then prints all Configuration and Calibration activities that were changed within the Instrument.

- Offers a choice of the available printers configured to a COM Port.
- Prints some or all of the records.
- The **PRINT OUT** function activates the printer according to the settings.

*Follow these steps to print an **AUDIT TRAIL** report.*

1. Prepare the printer.

2. In the **Audit Trail Menu**, select the correct printer.

- **TM-U295**
- **TM-U230**
- **SP-700**
- **SP-2000**
- **IDP-2550**
- **TM-U590**
- **SP-298**
- **SP-2200**
- **DemandPC**
- **TM-U220**

NOTE: *The printer must be correctly configured before completing this option.*

3. Select the **Number or Records** to include on the report.

- **Last (record)**
- **10**
- **50**
- **All (records)**

4. Select **PRINT OUT**, then press **ENTER**.

4.3.4. SW Revision

This option displays all the current revision information, used for troubleshooting.

IMAGE – Displays the Software Image revision number and software part number.

MODEL – Displays which model is selected during the last software installation.

- Either **TS601** or **TS611**.

MAIN – Displays the current revision level of the Main Software Program..

DRIVERS – Displays the current revision level of the software driver program.

INTERPRETER – Displays the current revision level of the software interpreter.

WEBCONFIG – Displays the current revision level of the **Web Configuration** software.



4.4. Power Supply

The **Power Supply PCB Assembly (32388)** controls and transfers power to all the Instrument components and to the Pit Power Supply (PPS). It is then regulated and transported to the Smart Sectional Controller (SSCs), which powers the Load Cells.

*Follow these steps to view the **POWER SUPPLY** settings.*

1. Press the **MENU** button to enter the **MENU System**.
2. Using the **DOWN** button, select **POWER SUPPLY**, then press **ENTER**.
3. When **STATUS** displays, press **ENTER**.
 - This allows *view-only access* to the **POWER SUPPLY** settings.

The **STATUS** function displays the power levels, as well as shows any applicable errors of the scale system.

VOLTAGE – Displays the applied **VOLTAGE** of the scale.

After calibration, these values should display at the following levels.

- 5V Rail = **5V**, reads **+/- 0.25**
- 12V Rail = **12V**, reads **+6V / -1V**
- 40V Rail = **40V**, reads **+12V / -2V**

CURRENT – Displays the applied **CURRENT** of the scale.

After calibration, these values should display at the following levels.

- 5V Rail = **0.5 – 1.5A**
- 12V Rail = **0.0 – 0.4A**
- 28VAC Current = **0.0 – 1.5A**

* *When the **Current value** is near zero, small negative readings are normal.*



4.4. Power Supply, Continued

RESISTANCE IN OHMS – Displays the applied **RESISTANCE** of the scale.

- The **Resistance value** varies according to the cable distance and type.
- **2.0 – 3.0 Ohms** is considered standard.
- Should be **+1.25 Ohms per 100 ft. of cable**.
 - This value can indicate a good or bad AC cable connection.
 - The **higher or inconsistent values denote** a bad cable, bad termination, or a bad Power Supply (at either end).
 - For a proper reading, turn off the Pit Power Supply, then retest the **Resistance**.

ERRORS – Displays any **ERRORS** associated with the scale that may need resolving.

Noted below are some of the messages displayed by the TS611 Instrument.

- **OK AND ENABLED** = The PPS is powered up.
- **OK AND READY** = The PPS is in Standby Mode.
- **OK AND OFF** = PPS is off.
- **ERROR:** _____
 - SLAVE NOT READY
 - FAILED TO VERIFY STATE
 - **AC OUTPUT OPEN** – Can indicate a broken connection.
 - **AC OUTPUT SHORTENED** – Can indicate repairable cabling issues.

NOTE: *When measuring errors, only the **AC wires** are tested, as they are the only ones capable of equipment damage.*

- *Disconnected lines are unimportant, such as **Ground, 20VDC, and TX/RX/TXEN** (Text Enabled), because they do not jeopardize safety and are not adjustable.*
-

SECTION 5: CONFIGURATION MENU

5.1. Change Customer PW

1. In the Configuration Menu, press **ENTER**.
2. When **CHANGE CUSTOMER PASSWORD** displays, press **ENTER**.
3. When **ENTER PASSWORD** displays, **ENTER**.
4. Present **Customer Password** displays.
5. Input the new **Customer Password**, then press **ENTER**.
6. When **CONFIRM PW** displays, press **ENTER** again.
 - If the password is entered incorrectly, **ERROR** displays, then the instrument returns to the previous step.

5.2. Prompts – Programmable

PROMPTS are messages to the Operator that ask a question, offer a choice, or relay an instruction.

1. In the Configuration Menu, press the DOWN arrow UNTIL **PROMPTS PROGRAMMABLE** displays.
2. Press **ENTER** when **PROMPT 1** displays.
3. When **NAME** displays, press **ENTER** to prompt the required text.
4. Enter the desired **Entry Prompt 1** text heading.
 - The operator can enter alphanumeric text by either using the **UP** and **DOWN** arrows of the **keypad**, or using the **external keyboard**.
 - When **ENABLED**, this feature displays a **Programmable Prompt** text box.
 - Some examples for this field include “**Truck type**”, “**Driver’s last name**”, “**Special Notes**”, etc.
5. Press **ENTER** to save the **Prompt 1** text, which then can be printed on the ticket.
 - This print command is activated with **<write (Prompt 1 Text)>**.



5.2. Prompts – Programmable, Continued

6. Press the DOWN arrow and choose **GTN, INBOUND, OUTBOUND, BASICIN** or **BASICOUT**, then press **ENTER**.
7. Press the **DOWN arrow** to select either **DISABLED** or **ENABLED**, then press **ENTER** to confirm this selection.
 - Selecting **ENABLED** initiates the prompt during the weighment transaction when that operating mode is used.

5.3. Legends – Programmable

*Activating this option displays a **LOOP ID** for the operator to enter.*

1. In the Configuration Menu, press the DOWN arrow until **LEGENDS - PROGRAMMABLE** displays.
2. Press **ENTER** when **LOOP ID** displays to edit this **LEGENDS** text.
3. Enter the desired **LOOP ID text**, then press **ENTER** to save it.
 - The Operator can enter alphanumeric text using the up/down arrows on the keypad, or using an external Keyboard..
 - This print command is activated with **<write (Loop ID Text)>**.

5.4. Ticket Formats

*For complete descriptions and procedures, see **SECTION 6.3. FORMATTING A TICKET**.*

IMPORTANT NOTE: *Always configure the **COM Ports** first before formatting tickets*

5.5. Remote Display

*For complete descriptions and procedures, see **SECTION 6.6. PROGRAMMING THE REMOTE DISPLAY**.*

5.6. COM Ports

*For complete descriptions and procedures, see **SECTION 6.2. COM PORTS**.*



5.7. Threshold Weights

THRESHOLD WEIGHT sets the minimum amount the truck must weigh to initiate a weighment.

– This feature is not used when the **Traffic Light Control** is set to **MANUAL**.

*Follow these steps to set the **THRESHOLD WEIGHT**.*

1. In the **CONFIGURATION MENU**, press the **DOWN** arrow until **THRESHOLD WEIGHTS** displays.
2. Press **ENTER**.
3. When **INITIAL WEIGHT** displays, press **ENTER**.
4. Enter the desired **Threshold Weights** value, then press **ENTER**.
5. When **MAXIMUM WEIGHT** displays, press **ENTER**.
6. When **THRESHOLD** displays, press **ENTER**.
7. Enter the desired **Maximum Threshold Weight** value, then press **ENTER**.
8. **ALLOW OVERWEIGHT TRANSACTION** displays, press **ENTER**.

NO = The **TS61X** will NOT allow the transaction to continue.

- The **TS61X** will display **WEIGHT EXCEEDS MAX THRESHOLD --- UNABLE TO CONTINUE**

NOTE – THERE IS NO MEANS TO OVERRIDE THIS SETTING AT THE WEIGH SCREEN. The load on the overweight vehicle must be adjusted before a weighment can be completed.

YES = The **TS61X** will prompt the Operator with options.

- The **TS61X** will display **WEIGHT EXCEEDS MAX THRESHOLD** – Press **MENU** to abort **OR ENTER** to continue
- The **TS61X** will continue to display this message until the Operator makes a choice.

5.8. Reports

*Follow these steps to setup and generate the **TRANSACTION REPORTS**.*

1. In the **CONFIGURATION MENU**, press the **DOWN** arrow until **REPORTS** displays, then press **ENTER**.
2. When **TYPE** displays, press **ENTER**.



3. Using the DOWN arrow, select either **COMPLETED TRANSACTIONS** or **INCOMPLETE TRANSACTIONS**, then press **ENTER**.
4. When **MEDIA TYPE** displays, press **ENTER**.
5. When **JUMP DRIVE** displays, press **ENTER**.
 - A **Jump Drive** must be inserted into a **USB port** for a report to be generated.
 - The **Jump Drive** must then be inserted into a printer or PC to print the document or process it further.
6. When **SORT BY** displays, use the **UP/DOWN** arrows to select the **LOOP ID**, **DATE/TIME** or the **TICKET#** for the desired method of sorting the data, then press **ENTER**.



5.8. Reports, Continued

7. When **DELIMITER** displays, using the **DOWN arrow**, select one of these options, then press **ENTER**.
 - **CSV** (**C**omma **S**eparated **V**alue) – Commas separate data items in the Transaction Report.
 - **TAB** – Tabs are used to separate data items in the Transaction Report.
8. When **GENERATE** displays, press **ENTER** to store the **Report** to the **Jump Drive**.
 - **SUCCESS TYPE_YYYY-M-DDTHM.XSV SAVED - MENU TO EXIT** displays with the data file name information when the report is stored.
 - Where **TYPE** is either Completed or Incomplete.
 - **YYYY** is the **year**; **M** is the **month**; **H** is the **hour**; **M** is the **minute**; and **X** is either **C** for **CSV** or **T** for **TAB**.
 - **NO USB DRIVE FOUND - MENU TO EXIT** will display if the USB drive is not installed.
9. Press **MENU** to exit.

5.9. Network IP Settings

The **NETWORK option** displays and provides access to configures the ethernet TCP/IP network connection addresses.

There are two (2) connection options available with the TS61X.

- **STATIC** – Dedicated, specific IP address. This IP address will be provided by the the IT Department. To use a Static IP address, the IT staff must provide you the following information:
 - IP address
 - Netmask
 - Gateway
 - Primary DNS
- **DHCP (Dynamic Host Configuration Protocol)** – Your DHCP network automatically assigns the IP address for the TX61X attached to the network. When using DHCP, the IP address of the TS61X **can change** each time the network reissues the leases for the IP addresses on the network. Therefore, this type of network is known as **Dynamic**.



To enter a **Static address**:

1. In the **CONFIGURATION MENU**, press the **DOWN arrow** until **NETWORK** displays, then press **ENTER**.
2. When **USE DHCP?** displays, either press **ENTER**.
3. When **DHCP** displays, press the **DOWN arrow** until **STATIC** displays, press **ENTER**.
4. When **USE DHCP?** will display again.
5. Press the **DOWN arrow** until **STATIC IP** displays. Press **ENTER**.
6. **IP ADDRESS** displays. Key in the IP Address and press **ENTER**.
7. **NETMASK** displays. Key in the Netmask and press **ENTER**.
8. **GATEWAY** displays. Key in the Gateway and press **ENTER**.
9. **PRIMARY DNS** displays. Key in the DNS and press **ENTER**.
10. Press the **DOWN arrow** until **APPLY CHANGES** displays. Press **ENTER**.
11. **NO** displays. Press the **DOWN arrow** until **YES** displays. Press **ENTER**.

NOTE – If you do not **APPLY** after entering the settings described above, the settings will **NOT** be saved.

NOTE - The instrument **MUST** be connected to a network or you will get an **INTERN** error when you apply changes.

12. Press the RED traffic light button to return to the weight screen.

**** Static IP settings are now complete. ****

To configure the TS61X for a **DHCP address**:

1. In the **CONFIGURATION MENU**, press the **DOWN arrow** until **NETWORK** displays, then press **ENTER**.
2. When **USE DHCP?** displays, press **ENTER**.
3. Either **DHCP** or **STATIC** will display, press the **DOWN arrow** until **DHCP** displays, press **ENTER**.
4. When **USE DHCP?** will display again.
5. Press the RED traffic light button to return to the weight screen.
6. Reboot the TS61X.

**** DHCP settings are now complete. ****



5.10. Transaction Files

Follow these steps to delete the **TRANSACTION FILES**.

1. In the CONFIGURATION MENU, press the DOWN arrow until **TRANSACTION FILES** displays, then press **ENTER**.
2. Press the **DOWN** arrow to select one of the following options, then press **ENTER**.
 - **DELETE ALL TRANSACTIONS** removes every transaction.
 - **DELETE BY TICKET** removes one specific transaction.
 - **DELETE BY DATE RANGE** removes all transactions within a date range
 - **DELETE BY TICKET RANGE** removes all transactions within a ticket range.
 - **DELETE INCOMPLETE** removes all the Inbound transactions.



5.11. Remote Switches

1. In the CONFIGURATION MENU, press the DOWN arrow until **REMOTE SWITCHES** displays, press **ENTER**.
2. Press the **DOWN** arrow to view switches 1-4 and press **ENTER** on any switch.
3. Press the **UP/DOWN** arrows to view the available options and press **ENTER** to assign one function.
4. **(Optional)** Repeat steps 2-3 to assign up to 3 other remote switches.
Use the RED LIGHT button to return to the weigh screen.

5.12. Instrument ID

Use this setting to assign a numeric ID to the instrument.

5.13. Serial Input Codes

1. In the configuration menu, scroll to **SERIAL INPUT CODES** and press **ENTER**.
RED will appear.



2. Use the arrow keys to scroll through the available inputs and press **ENTER** to select the desired input.
3. Assign the input code a hexadecimal value and press **ENTER**.
4. Repeat steps 3 and 4 for any remaining codes you wish to change.
5. Press the **RED LIGHT** button to return to the weigh screen.

SECTION 6: SERIAL INPUT / OUTPUT

6.1. Printers

6.1.1. Printer Switch Settings

ROLL TAPE PRINTER	SW 1 ON	SW 2 ON	SW 3 ON	SWITCH SETTINGS
iDP3550 (28810)	2, 3, 4, 8	1, 2, 3, 5, 6	—	9600 Baud, No Parity, 8 Data and 1 Stop Bit.

TICKET PRINTER	SW 1 ON	SW 2 ON	SW 3 ON	SWITCH SETTINGS
TM-U590 (24740)	1, 3, 7	All OFF	—	9600 Baud, No Parity, 8 Data and 1 Stop Bit.
TM-U295 (24741)	1, 3	All OFF	—	9600 Baud, No Parity, 8 Data and 1 Stop Bit.
SP298	All OFF	3	1, 5	9600 Baud, No Parity, 8 Data and 1 Stop Bit.
SP700	1 thru 7	1 thru 6	1, 5	9600 Baud, No Parity, 8 Data and 1 Stop Bit.
SP2000	All OFF	3	1, 5	2400 Baud, Even Parity, 7 Data and 2 Stop Bit.
SP2200	2, 3, 8	All OFF	All OFF	2400 Baud, No Parity, 7 Data and 2 Stop Bit.
TM-U230 (30954)	All OFF	2, 5, 8	—	9600 Baud, No Parity, 8 Data and 1 Stop Bit.

— No switch bank present inside the printer.

NOTE: The Thurman Scale standard default COM Port settings for all the printers is **9600 Baud, No Parity, 8 Bits, and 1 Stop Bit.**

6.1.2. Printer Cabling

The chart below shows the connections for the two cable types used with the printers.

14807 CABLE KIT

WIRE	DB-9 INSTRUMENT	COLOR	DB-25 PRINTER	DESC.
1	P1-2	R	P2-2	RX
2	P1-3	W	P2-3	TX
3	P1-5	G	P2-7	GROUND
4	P1-7	O	P2-8	JUMPERED

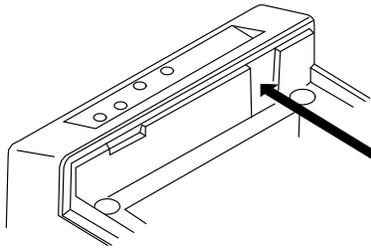
14809 CABLE KIT

✓ Used only with the **3550 Printer.**

WIRE	DB-9 INSTRUMENT	COLOR	DB-25 PRINTER	DESC.
1	P1-3	R	P2-3	TX to PRINTER
2	P1-8	W	P2-20	BUSY
3	P1-5	G	P2-7	GROUND



6.1.3. iDP3550 Tape Printer Settings



DS2	ON	OFF	DS1	ON	OFF
1	X		1		X
2	X		2	X	
3	X		3	X	
4		X	4	X	
5	X		5		X
6	X		6		X
7		X	7		X
8		X	8	X	
			9		X
			10		X

BAUD	9600
PARITY	No
DATA BITS	8
STOP BIT	1

6.1.4. TM-U590 Ticket Printer Settings

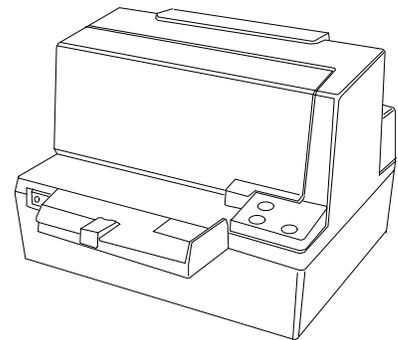
- For TS611/2/3 Instrument **Desktop** and **NEMA 4X SERIAL** communications, use cable **14807**.

BAUD	9600
PARITY	No
DATA BITS	8
STOP BIT	1

Set the printer **dip switches** as listed below.

DSW 1: 1, 3, and 7 = **ON** only.

DSW 2: All Switches = **OFF**



NOTE: For wiring table, see [Section 6.1.2. Printer Cabling](#).



6.1.5. TM-U295 Ticket Printer Settings

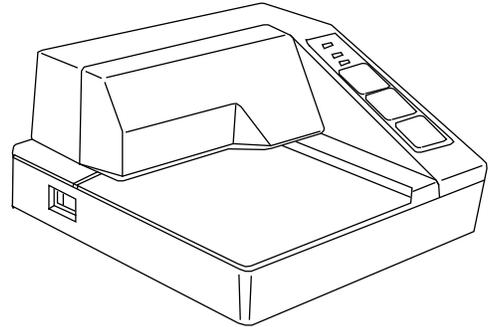
- For TS611/2/3 Instrument Desktop and NEMA 4X SERIAL communications, use cable **14807**.

BAUD	9600
PARITY	No
DATA BITS	8
STOP BIT	1

Set the printer **dip switches** as listed below.

SW1: 1 and 3 = **ON**

Remainder = **OFF**



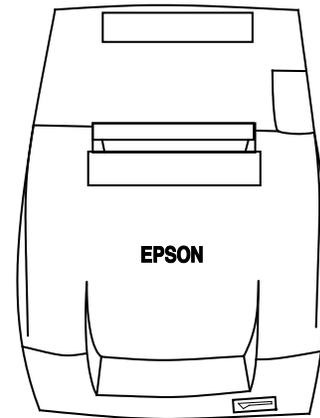
NOTE: For wiring table, see [Section 6.1.2. Printer Cabling](#).



6.1.6. TM-U220 Tape Printer

- Uses **SERIAL** communication.
- Use cable **25932**.

BAUD	9600
PARITY	No
DATA BITS	8
STOP BIT	1



WIRING

Cable **25932** Wiring for COM 1-3

DB-9 INSTRUMENT	DESCRIPTION	WIRE COLOR	DB-25 PRINTER	DESCRIPTION
2	RxD	BR	2	TxD
3	TxD	R	3	RxD
4	DRT	O	6	DSR
5	SG	Y	7	SG
6	DSR	G	20	DTR
7	RTS	BL	5	CTS
8	CTS	BK	4	RTS

Cable **25932** Wiring for Serial Expansion Module*

RS232 PORT 1: COM7 XX	DESCRIPTION	WIRE COLOR	DB-25 PRINTER	DESCRIPTION
TB1a-2	RxD	BR	2	TxD
TB1a-3	TxD	R	3	RxD
TB1a-4	DRT	O	6	DSR
TB1a-5	SG	Y	7	SG
TB1b-6	DSR	G	20	DTR
TB1b-7	RTS	BL	5	CTS
TB1b-8	CTS	BK	4	RTS

* Must remove the 9-pin connector.



6.1.6. TM-U220 Tape Printer, Continued

DIP SWITCH 1 (Serial Interface)

SWITCH	FUNCTION	ON	OFF
1	Data receive error	Ignored	Prints “?”
2	Receive buffer capacity	40 bytes	4KB
3	Handshaking	XON/XOFF	DTR/DSR
4	Work length	7 bits	8 bits
5	Parity check	Yes	No
6	Parity selection	Even	Odd
7	Transmission speed	4800 bps	9600 bps
8	BUSY condition	Receive buffer full	Receive buffer full or Offline

Default settings are in bold.

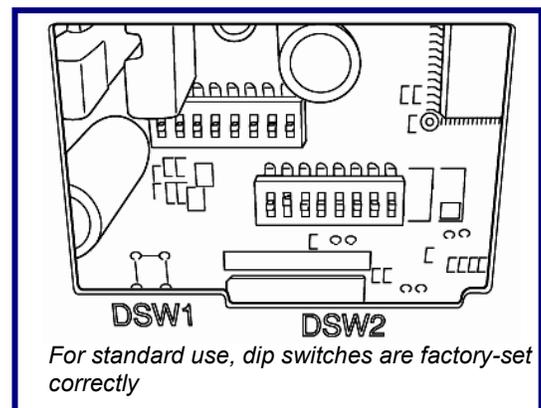
DIP SWITCH 2 (Serial Interface)

SWITCH	FUNCTION	ON	OFF
1	Print Column	42/35	40/33
* 2	For internal use only (auto-cutter) (do not change)	Enabled	Disabled
3	Pin 6 reset signal	Used	Not used
4	Pin 25 reset signal	Used	Not used
5	Undefined	--	--
6	Internal use only (flash memory rewriting) (Do not change)	Enabled	Disabled
7	Undefined	--	--
8	Serial Interface section	Memory Switch	Dip Switch

Default settings are in bold.

** The TM-U220 Tape Printer DAT (dk gray case, w/cutter) will have DSW2 switch #2 set to ON. TM-U220 Tape Printer (white case, no cutter) will have DSW2 switch #2 set to OFF. All other switch settings are identical between printers.*

Access the **Dip Switches** by unfastening the screw and removing the cover plate, found on the bottom of the printer.





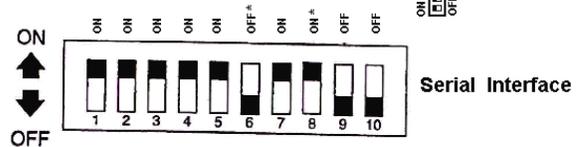
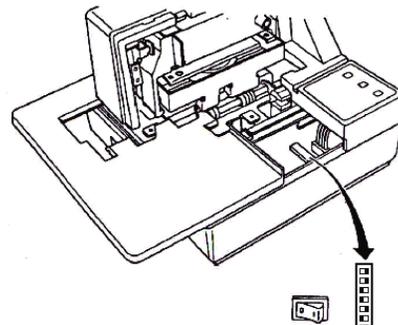
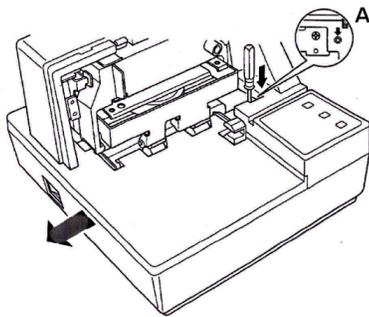
6.1.7. SP298 Printer Settings

- For TS611/2/3 Instrument Desktop and NEMA 4X SERIAL communications, use cable 14807.

BAUD	9600
PARITY	No
DATA BITS	8
STOP BIT	1

ACCESSING THE DIP SWITCHES

1. Remove all power from the printer, as well as all Network cables from between the printer and the Instrument.
2. Remove the Printer Cover.
3. Press down with a screwdriver at **Location "A"** marked in the illustration below, and carefully slide the **Document Table** in the direction indicated by the arrow until it is out of the way.
 - It is not necessary to remove the document table completely. Just move it enough to access the DIP Switches inside.
4. Set the **DIP Switches** into their correct positions.
5. Slide the Document Table back into place while pressing down at **Location "A"**.
6. Replace the **Print Cover**.



NOTE: For wiring table, see [Section 6.1.2. Printer Cabling.](#)



6.1.7. SP298 Printer Settings, Continued

DIP Switch Settings (SERIAL INTERFACE)

SWITCH	FUNCTION	ON	OFF
1	Baud Rate	<i>See table below.</i>	
2			
3	Data Length	8 bits	7 bits
4	Parity Check	Disabled	Enabled
5	Parity	Odd	Even
6	Handshake	DTR/DSR	XON/XOFF
7	Command Emulation	<i>See table below</i>	
8			
9	Pin #6 (DSR) reset signal	Enabled	Disabled
10	Pin #25 (INIT) reset signal	Enabled	Disabled

Baud Rate Settings Table

BAUD RATE	SWITCH 1	SWITCH 2-2
4800 bps	OFF	ON
9600 bps	ON	ON
1920 bps	ON	OFF
3840 bps	OFF	OFF

Command Emulation Table

COMMAND EMULATION	SWITCH 7	SWITCH 8
Star Mode	ON	ON
ESC/POS (TM-295)	ON	OFF
ESC/POS (TM-290)	OFF	OFF
Not used (*)	OFF	ON

* Never set **Switch 7** to **OFF** at the same time that **Switch 8** is set to **ON**.

NOTE: For wiring table, see [Section 6.1.2. Printer Cabling](#).



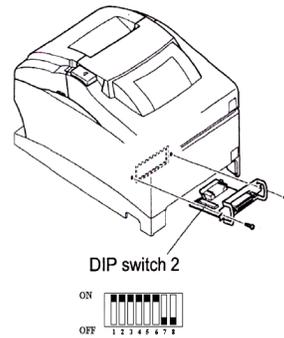
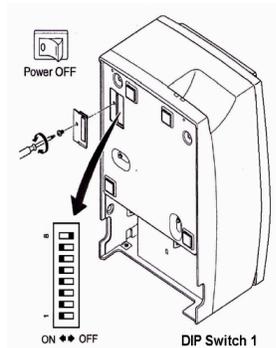
6.1.8. SP700 Printer Settings

- For TS611/2/3 Instrument Desktop and NEMA 4X SERIAL communications, use cable **14807**.

BAUD	9600
PARITY	No
DATA BITS	8
STOP BIT	1

There are **two (2) dip switch** locations on the Star SP700 Printer.

- Underneath the printer, behind a protective cover is **DIP Switch 1**.
- **DIP Switch 2** is on the Serial Interface Board.



SWITCH	FUNCTION	ON	OFF
1-1	Always ON	Should be set ON	
1-2	Auto Cutter *	Invalid	Valid
1-3	Always ON	Should be set ON	
1-4	Command Emulation	Star	ESC/POS
1-5	USB mode **	Printer Class	Vendor Class
1-6	2 Colors Printing	Valid	Invalid
1-7	Reserved		
1-8	Print head model ***	18-pin wire	9-pin wire

* The factory settings for enabling/disabling the Auto Cutter are as listed below.

- Models without Auto Cutter: Invalid (**Switch 1-2 = ON**).
- Models with Auto Cutter: Valid (**Switch 1-2 = OFF**).

NOTE: Only program the **Auto Cutter** function with models that have the **Auto Cutter Accessory** installed.

- This is models with a tear bar.
- A mechanical error will occur.

** **USB Interface** model only.

*** Do not change the default setting (**Switch 1-8 = OFF**).



6.1.8. SP700 Printer Settings, Continued

DIP Switch 2

SWITCH	FUNCTION	ON	OFF
2-1	Baud Rate	See table below.	
2-2			
2-3	Data Length	8 bits	7 bits
2-4	Parity Check	Disabled	Enabled
2-5	Parity	Odd	Even
2-6	Handshake	DTR/DSR	XON/XOFF
2-7	Pin #6 (DSR) reset signal	Valid	Invalid
2-8	Pin #25 (INIT) reset signal	Valid	Invalid

Baud Rate Settings Table

BAUD RATE	SWITCH 2-1	SWITCH 2-2
4800 bps	OFF	ON
9600 bps	ON	ON
1920 bps	ON	OFF
3840 bps	OFF	OFF

NOTE: For wiring table, see [Section 6.1.2. Printer Cabling.](#)



6.1.9. SP2000 Printer Settings

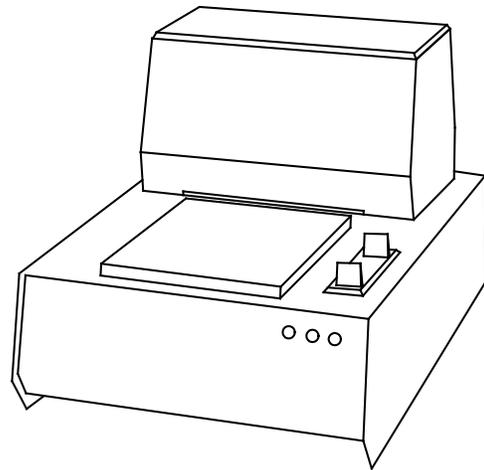
The SP2000 is a Dot Matrix ticket printer. The following switch settings and cable requirements will work with the default format.

- For TS611/2/3 Instrument **Desktop** and **NEMA 4X SERIAL** communications, use cable **14807**.

BAUD	2400
PARITY	EVEN
DATA BITS	7
STOP BIT	1

Set the printer's **dip switches** according to the following:

- **DSW 1:** All **OFF**.
- **DSW 2:** **Three (3) ON** only.
- **DSW 3:** One (1) and five (5) **ON** only.



6.1.10. SP2200 Printer Settings

The SP2200 is a Dot Matrix ticket printer. The following switch settings and cable requirements will work with the default format.

- **TS611/2/3 Desktop** and **NEMA 4X** use cable **14807**.

BAUD	2400
PARITY	NO
DATA BITS	7
STOP BIT	2

Set the printer's **dip switches** according to the following:

- **DSW 1:** **Two (2), three (3), and eight (8) ON** only.
- **DSW 2** and **3:** All **OFF**.

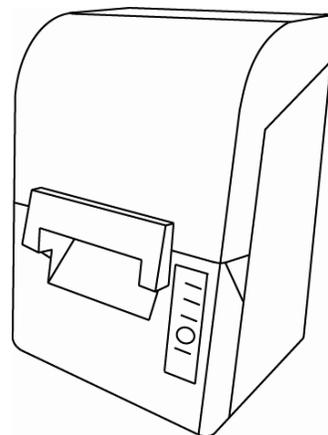
NOTE: For wiring table, see [Section 6.1.2. Printer Cabling](#).



6.1.11. TM-U230 Printer Settings

- For TS611/2/3 Instrument **Desktop** and **NEMA 4X SERIAL** communications, use cable **14807**.

BAUD	9600
PARITY	No
DATA BITS	8
STOP BIT	1



DIP Switch 1 Settings (SERIAL INTERFACE)

SWITCH	FUNCTION	ON	OFF
1	Data receive error	Ignored	Prints “?”
2	Receive buffer capacity	1KB	16KB
3	Handshaking	XON/XOFF	DTR/DSR
4	Work length	7 bits	8 bits
5	Parity check	Yes	No
6	Parity selection	Even	Odd
7	Transmission speed	4800 bps	9600 bps
8	BUSY condition	Receive buffer full	Receive buffer full or Offline

DIP Switch 2 Settings (SERIAL INTERFACE)

SWITCH	FUNCTION	ON	OFF
1	Sections number of characters per line (cpl) 7 x 9 font/ 9 x 9 font	42/35	40/33
2	For internal use only (Auto-cutter) (do not change)	Enabled	Disabled
3	Pin 6 reset signal	Used	Not used
4	Pin 25 reset signal	Used	Not used
5	PAPER OUT LED flashing pattern	Flashes	Lights on
6	For internal use only (flash memory rewriting) (Do not change)	Enabled	Disabled
7	For internal use only (Internal synchronization) (Do not change)	Asynchronous	Synchronous with clock
8	Internal buzzer	Disabled	Enabled

NOTE: For wiring table, see [Section 6.1.2. Printer Cabling](#).



6.2. COM Ports

The TS611/2/3 Instrument has numerous ports and outlets allowing different Input/Output devices to be utilized.

- The back of the Instrument has a 120V outlet, but the unit also supports 220V Scale Input.
- The TS611/2/3 instrument has three (3) standard **Serial Output COM Ports**.
 - These are configured for **RS-232** communications.
 - Serial Outputs can be customized to provide specific configured data string protocols, configuration parameters, using output modes such as **PC Polled, PC Continuous, Demand PC, Off, Remote Display**, and then **all printers** listed in **Section 10.1.1**.
- The **Console Port** is a RS232 Connection.
 - Currently unused.
- There are three (3) **USB Ports** used for different external components, such as a keyboard, USB Flash Drive, etc.
- The three (3) **ACC holes** are used when wiring external component accessories, such as a remote display, traffic lights, etc.





6.2.1. Programming COM Ports

NOTE: Always configure the Printer before formatting the tickets.

Follow these steps to program the **FOUR (4) COM PORTS**.

1. In the **CONFIGURATION MENU**, press the **DOWN** arrow until **COM PORTS** displays.
2. Press **ENTER**.
3. Using the **DOWN** arrow, select the desired **COM PORT** to configure, then press **ENTER**.
 - COM Ports one thru three (1-3) are standard **Serial ports**.
 - COM Port four (4) is dedicated to **20 mA Output**, currently used only for the Remote Display.
 - The wires for this device feed through the **Gland Nut** located on the Instrument's back wall, then attach to **TERMINAL J4**.

Follow these steps to program the **FOUR (4) COM PORTS**.

1. In the **CONFIGURATION MENU**, press the **DOWN** arrow until **COM PORTS** displays.
2. Press **ENTER**.
3. Using the **DOWN** arrow, select the desired **COM PORT** to configure, then press **ENTER**.
 - COM Ports one thru three (1-3) are standard **Serial ports**.
 - COM Port four (4) is dedicated to **20 Ma Output**, currently used only for the Remote Display

6.2.2. Configuring the Remote Display Output

Follow these steps to program the **REMOTE DISPLAY**

1. In the **CONFIGURATION MENU**, press the **DOWN** arrow until **COM PORTS** displays.
2. Press **ENTER**.
3. Using the **UP/DOWN** arrows, select **COM 4 (20 MA)**, then press **ENTER**.
 - **DEVICE ATTACHED** is displayed. Press **ENTER**.
 - Use the **UP/DOWN** arrows to display **REMOTE DISPLAY**, then press **ENTER**.
 - **LOAD DEFAULT SETTINGS?** Is displayed, press **ENTER**.



- Use the UP/DOWN arrow to display **YES**, then press ENTER.
 - This will load the default settings for Thurman 218 remote displays.
 - **SETTINGS** is displayed. If using a non-Thurman remote display or if the settings otherwise require changes, press ENTER to enter the settings menu.
 - The available settings include BAUD RATE, PARITY, STOP BITS, DATA BITS, and CHECKSUM.
4. Using the DOWN/UP arrow, select the proper communication settings for your remote display, then press ENTER.
 5. Select the correct setting for your remote display, then press ENTER.
 6. After **CHECKSUM** is displayed, **SETTINGS** is displayed again. Press the RED traffic light button once to return to the weigh screen.

NOTE: Reference section 10.4 PROGRAMMING THE REMOTE DISPLAY for additional information.

6.2.2. Selecting the Printer

1. When **DEVICE ATTACHED** displays, press **ENTER**.
 2. Using the **DOWN/UP arrows**, select the desired printer, then press **ENTER**.
 - **OFF ***
 - **TM-U230**
 - **SP-2000**
 - **TM-U295**
 - **TM-U590**
 - **SP-22000**
 - **IDP-3550**
 - **SP-700**
 - **SP-298**
 - **TM-U220**
- * Does not transmit weight amount.
3. When **LOAD DEFAULTS** display, press **ENTER**.
 4. Using the **UP/DOWN arrows**, select **YES** or **NO**, then press **ENTER**.
 5. When **SETTINGS** displays, press **ENTER**.
 6. Using the **DOWN/UP arrow**, select the proper RS-232 Communication settings, then press **ENTER**.
 - The settings include Baud Rate, PArity, Stop Bits, Data Bits, and CheckSum.
 7. Input the correct setting, then press **ENTER**.

NOTE: The Thurman Scale standard default COM Port settings for all the printers is **9600 Baud, No Parity, 8 Bits, and 1 Stop Bit**.

- The **FORMAT option** does not appear when programming the printers.
-



6.2.3. Selecting the PC Data String Output

1. When **DEVICE ATTACHED** displays, press **ENTER**.
2. Pressing the **DOWN arrow**, select **PC CONTINUOUS** or **PC POLLED**, then press **ENTER**.
 - **PC CONTINUOUS** – Sends displayed weight continuously.
 - **PC POLLED** – The external device sends out a polling request (i.e. CR, “W”, etc.), and the instrument responds with return data.
 - *Data sent is configured in the **GTN** format as the **DEMAND OUTPUT**..*
3. Press **ENTER** when **FORMAT** displays.
4. Press the **DOWN-arrow** to select the correct standardized data string format.
 - **THURMAN .**
 - **WEIGHTRONIX**
 - **TOLEDO**
 - **CONDEC**
 - **CARDINAL**
5. Press **ENTER** to confirm this selection.
6. When **LOAD DEFAULTS** displays, press **ENTER**.
7. Using the **DOWN/UP arrow**, select **YES** or **NO**, then press **ENTER**.
8. When **SETTINGS** displays, press **ENTER**.
9. Using the **DOWN/UP** arrow, select the proper RS-232 communication settings, then press **ENTER**.
 - The settings include BAUD, RATE, PARITY, STOP, BITS, DATA BITS, and CHECKSUM.
10. When the current setting is displayed, either press **ENTER**

OR

Using the **Numeric Keypad** or **DOWN arrow** input the desired setting, then press **ENTER**.

6.2.3. Configuring Network Output

1. Press **MENU** and **LOGIN** will show on screen. Press **ENTER** , (Login in with appropriate login) **OK** appears. Press **ENTER** and **AUDIT TRAIL** appears.
2. Press **DOWN/UP** arrows until **CONFIGURATION** appears. Press **ENTER** and **CHANGE CUSTOMER PASSWORD** appears.
3. Press **DOWN/UP** arrows until **COM PORTS** appears. Press **ENTER**. **UCOM= 1** appears.
4. Press **DOWN/UP** arrows to select the appropriate COM= 1,2,3 or 4. Press **ENTER**. The selected comport, 1,2,3 or 4, is dedicated to the ethernet output only. COM with the comport number you are using. (RS232) will show on the screen. Press **ENTER**.



5. Press **DOWN/UP** arrows until **DEVICE ATTACHED** appears. Press **ENTER**. **OFF** appears.
6. Press **DOWN/UP** arrows until **NETWORK** appears. Press **ENTER**, **LOCAL PORT** appears. Add the correct port number as determined by the customer. 5001 is the default. Press **ENTER**, **OK** appears and then **CONFIGURE**.
7. Press **ENTER**, **LOAD** appears. Press **ENTER**, **FAIRBANKS** appears. Press **UP/DOWN** arrows on keypad to view a list of formats. Choose the one the customer's IT department wants the FB6005 to stream to the PC. Press **ENTER**, **OK** appears and then **LOAD**.

6.2.4. DemandPC

This option transmits the weight data in the **GTN format** whenever a carriage return is received.

- All data strings which have a **NON-ZERO VALUE** in the coordinates will be transmitted.
- The order the data strings appear in the data transmission follows the order in which the data is listed in the ticket format.

NOTE: DemandPC has a separate ticket format that must be enabled in the [Ticket Formats](#) menu.

*Follow these steps to format the **DemandPC** option.*

1. When **DEVICE ATTACHED** displays, press **ENTER**.
2. Pressing the **DOWN** arrow, select the **DEMANDPC OUTPUT** then press **ENTER**.
3. When **LOAD DEFAULTS** displays, press **ENTER**.
4. Using the **DOWN/UP** arrow, select **YES** or **NO**, then press **ENTER**.
5. When **SETTINGS** displays, press **ENTER**.
6. Using the **DOWN/UP** arrow, select the proper RS-232 communication settings, then press **ENTER**.
 - These settings include BAUD, RATE, PARITY, STOP, BITS, DATA BITS, and CHECKSUM.
7. When the current setting is displayed, either press **ENTER**.

OR...

Using the **numeric keypad** or **DOWN** arrow input the desired setting, then press **ENTER**.



6.3. Formatting Tickets

6.3.1. Standard Ticket Formatting Procedures

Listed below are the standard steps for formatting a ticket.

- The **MODE OF OPERATION** setup determines how the ticket prints.
 - The **GTN format** configures only the **GTN tickets**.
 - The **In/Out format** configures In/Out tickets.
 - The **Basic format** configures BasicIn and BasicOut tickets.
- Each **Mode of Operation** formats the weighment data in different positions on the ticket, printing only the needed data for that ticket.
- The ticket format can also vary due to the printer type that is used.
- Each ticket format can be adjusted to best suit the customer's needs.

IMPORTANT NOTE: *Always configure the COM Ports before formatting tickets.*

1. Set up the **COM Ports** in the **Configuration Menu** to a specific attached device.
 - For complete details, see **Section 6.2. COM PORTS**.
2. Install, wire and configure the printer.
 - See Section 6.1.1. Printer Switch Settings.
3. Access the **TICKET FORMAT** menu.
4. Insert a blank ticket, then press the **PRINT key** for a ticket self-test.
 - This identifies its current margin setup.
5. Press the **OUT button** to print out the complete Mode of Operation Format Structure.
6. Using this self-test ticket, plan where to format the ticket margins and available print spaces.
 - Determine how the current ticket format might differ from the customer's needs.
 - Plan the needed changes according to their **SPACE** (*horizontal*) and **FEED** (*vertical*) coordinates of the ticket.
 - Mark up this ticket with a ruler and pencil as needed, using it as a guide.



6.3.2. Programming Tips

Follow these guidelines when programming a **TICKET FORMAT**.

- All commands are written in the specific order to the ticket. They flow downward, starting from the top-left of the printer-assigned margin.
- Each command first describes the action, then in brackets, it defines how many, the type of action, or exactly what text to print.
- To remove a printed item on the ticket, display the command, then press the **ZERO** key.

WRITE (_____) commands offer a standard list of **System Data Fields** to use when programming.

Follow these steps to alter how a **WRITE** field appears.

1. Use the **UP/DOWN** arrows to navigate thru the **WRITE** commands, then press **ENTER** to open one.
2. Using the **UP/DOWN** arrows, select the option that best suits the programming need, then press **ENTER**.
 - The **WRITE (_____)** option selected will display next on the ticket.
 - Certain commands offer two choices, followed by a printed response for one.

Example:

HIDEWRITEONZERO (TARE/TARE)

This example means the following:

- Hide (**do not print**) the Tare amount if it equals ZERO (0).
- Write (**print**) the Tare amount if it is greater than ZERO (0).

Keypad Formatting Buttons

UNITS: Inserts new format line *before*.

B/G/NET: Inserts new format line *after*.

ZERO: Deletes the current format line.

OUT: Prints entire Format Script.

MENU: Saves ticket format.

- Steps back one level.

ENTER: Saves all data input..

PRINT: Prints a sample ticket.

RED Button: Exits to **Weigh Screen**.

GREEN Button: Deletes Format Script.



6.3.2. Programming Tips, Continued

Listed below are the **WRITE (_____)** commands.

- **GROSS**
- **TARE**
- **NET**
- **DATEIN**
- **DATEOUT**
- **TIMEIN**
- **TIMEOUT**
- **UNITSGROSS UNITSTARENET**
- **TICKET NUMBER**
- **LOOPIDTEXT**
- **LOOPIDPROMPT 1TEXT**
- **PROMPT 1**
- **INBOUND**
- **MANUAL TARE**
- **DUPLICATE**
- **DUALGROSS**
- **DUALTARE**
- **DUAL NET**
- **DUALINBOUND**
- **DUALUNITSGROSS**
- **DUTANTUNITS**
- **VEHDESC**

WRITE (TEXT) commands are programmable text fields, allowing legends or prompts to be altered to suit the application needs.

- These text fields can be any character(s) required to suit the customer’s need.
- All data items are **left justified**, with a maximum of **fifteen (15) characters**.

NOTE: When inverting tickets, the **Invert “On”** command should be the first one in the format.

Turn the option **“Off”** as the last command before the ticket release, or the reports will invert when they print.

QUICK FORMATTING BUTTONS

KEYPAD	EXT. KEYBOARD	PROGRAMMING FUNCTION	NORMAL FUNCTION
ZERO	DEL	Deletes current formatting line.	ZERO
UNITS	PgUp	Inserts a new line before the current line.	UNITS
PRINT	INSERT	Prints a sample ticket	PRINTS
B/G NET	END	Inserts a new line after the current line.	B/G NET Select
MENU	HOME	<ul style="list-style-type: none"> • Saves ticket format (YES/NO). • Backs up one menu level. 	MENU
RED LIGHT	F1	Exits without saving.	Red Light On
GREEN LIGHT		Deletes the entire Format Script.	
IN	F4	N/A	INBOUND
OUT	F5	Prints the entire Format Script.	OUTBOUND
TARE	“.”	N/A	Auto Tare



6.3.3. Ticket Format Commands

The **TICKET FORMAT** commands are defined below.

SPACE ()	One (1) movement across (horizontal).
FEED ()	One (1) movement downward (vertical).
INVERT ON/OFF	Prints the ticket from the bottom-to-the-top, placing data where it belongs according to the programmed coordinates.
WRITE TEXT ("___")	Programmable fields that allow Legends or Prompts to be altered to suit the application needs. Appears exactly as written within the quotation marks. When programming (WRITE) fields, a System Data list displays.
HIDEWRITEONZERO (TARE, NET)	If the Tare is ZERO , this prevents the Net Weight figure from being printed.
HIDEWRITETEXTONZERO (___/"___")	HIDE the message if the amount is ZERO (0) . WRITE the quoted word if there is a different amount. Quotation marks within the command display the exact words)
WRITE (_____)	Without quotation marks, the printer writes out requested data of the command. A command is sometimes blended with others together to print all the correct elements. WRITE (UNITSTARENET) is an example.
WRITE (DUPLICATE)	"Duplicate Copy" appears on the ticket for a TICKET REPRINT . This specialized command has one purpose, and cannot be altered.
ENHANCE ("on")	Enlarges the font characters, and prints them in bold text.
ENHANCE ("off")	Reduces the font size, and prints them in standard text.
WRITE (GROSS)	Prints the Gross Weight .
WRITE (TARE)	Prints the Tare Weight .
WRITE (NET)	Prints the Net Weight .
WRITE (DATE IN)	Prints the date of the first weighment .
WRITE (DATE OUT)	Prints the date of the final weighment .
WRITE (TIME IN)	Prints the time of the first weighment .
WRITE (TIME OUT)	Prints the time of the final weighment .
WRITE (UNITS)	Prints the Unit choice.
WRITE (TICKET NUMBER)	Prints the current ticket number .
WRITE (LOOP ID TEXT)	Prints the legend in the Loop ID field, determined by the technician. Truck Number, Rail Car Number, etc.
WRITE (LOOP ID)	Prints the Loop ID .
WRITE (PROMPT 1 TEXT)	Prints the Legend that prompts the user to enter an answer or to add data. BOL Number, License, etc.
WRITE (PROMPT 1)	Prints the data from the Prompt 1 Text field.
INBOUND	Prints the Inbound weight .
WRITE (MANUAL TARE)	Prints an asterisk (*) next to the TARE value when it is a MANUAL TARE ..
RELEASE ()	End of the ticket, this command releases the ticket from the printer.
ELAMP ()	Clamps the printer paper.



CUTPAPER ()

Cuts the printer paper.

6.3.4. Ticket Formats

Follow these steps to set up and configure the **TICKET FORMATS**.

1. In the **CONFIGURATION MENU**, press the **DOWN** arrow until **TICKET FORMATS** displays, then press **ENTER**.

2. When **PRINTER** displays, select the desired available printer.

– If the printer is already selected, then press **ENTER**,

OR...

Press **ENTER**, press the **DOWN** arrow to select the correct printer, then press **ENTER** again.

3. When **SELECT FORMAT** displays, press the **DOWN** arrow to select one of the five (5) default **Ticket Formats**, then press **ENTER**.

- **GTN**
- **INBOUND**
- **OUTBOUND**
- **BASICIN**
- **BASICOUT**

4. Press the **DOWN** arrow to enter either **DISABLED** or **ENABLED**, then press **ENTER** to confirm this selection.

5. When **FORMAT** displays, press **ENTER**.

6. Press the **UP/DOWN** arrows to navigate and format these ticket commands.

– Press the **PRINT** key while in the **TICKET FORMAT mode** to print a test ticket.

– Adjust the parameters for **FEED** and **SPACE** to align the information as required to fit the ticket.

– Align and fit all the needed information on it. Repeat this process as needed, until all the data prints correctly on the ticket.

– Remove a printed item from the ticket by pressing the **ZERO** key.

Keypad Formatting Buttons

UNITS: Inserts new format line *before*.

B/G/NET: Inserts new format line *after*.

ZERO: Deletes the current format line.

OUT: Prints entire Format Script.

MENU: Saves ticket format.

– Steps back one level.

ENTER: Saves all data input..

PRINT: Prints a sample ticket.

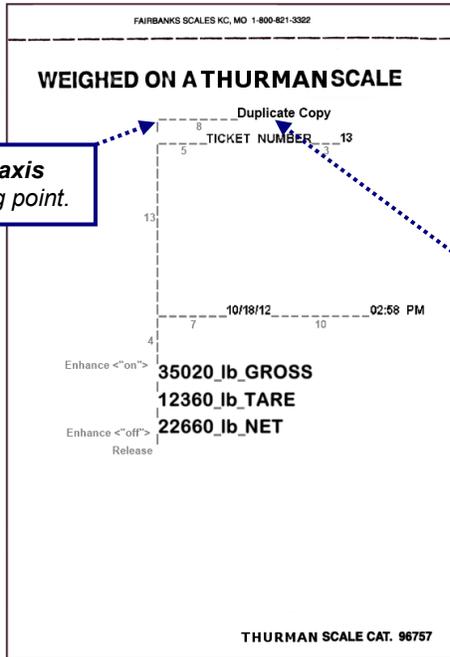
RED Button: Exits to **Weigh Screen**.

GREEN Button: Deletes Format Script.



6.3.5. G/T/N Ticket Formatting

Defined below is the structure and appearance of a **GROSS/TARE/NET** ticket.



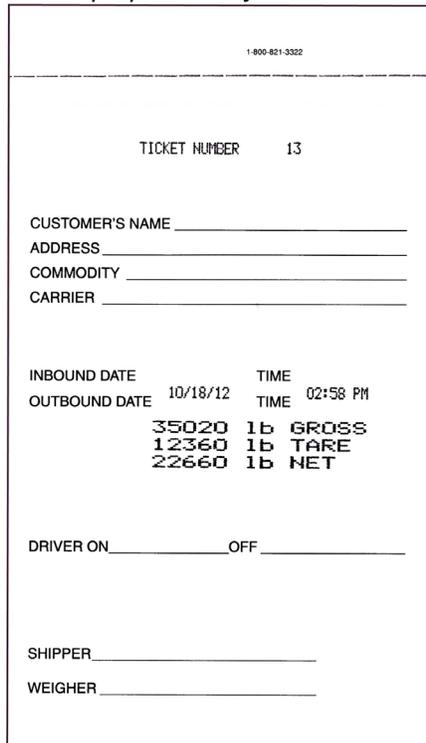
1-Space <8> moves the ticket text horizontally.

3-Feed <1> moves the ticket text vertically.

"Duplicate Copy" appears only when a **TICKET REPRINT** is performed.

X/Y axis starting point.

This image shows the printed areas and other defined elements of a G/T/N Ticket.
 – All grey markings are for illustration purposes only.



14-Enhance <"on"> is the command for enlarged and bolded print.

32-Enhance <"off"> restores print style to standard.

Example of an actual G/T/N Ticket.

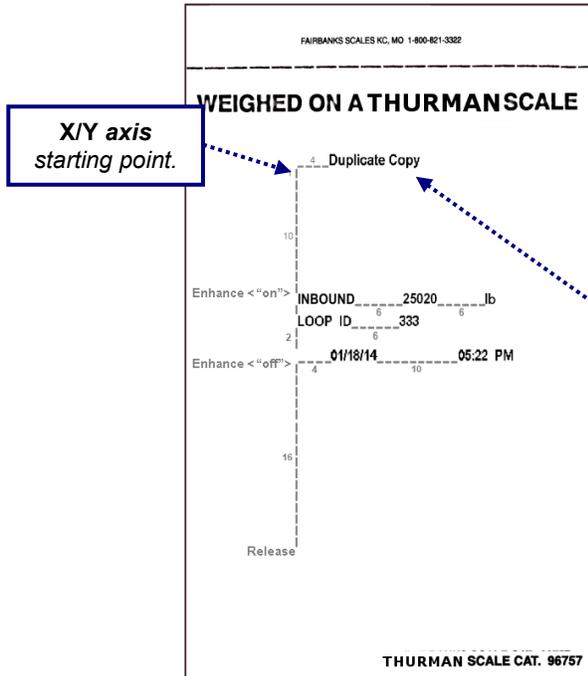
GTN	
1-Space <4>	
2-Write <Duplicate >	
3-Feed <1>	
4-WriteText <"TICKET NUMBER" >	
5-Space <6>	
6-Write <TicketNumber >	
7-Feed <14>	
8-Space <4>	
9-Write <DateOut >	
10-Space <10>	
11-Write <TimeOut >	
12-Feed <2>	
13-Enhance <"on" >	
14-Write <GroSS >	
15-Space <1>	
16-Write <UnitSGroSS >	
17-Space <1>	
18-WriteText <"GROSS" >	
19-Feed <1>	
20-Write <Tare >	
21-Space <1>	
22-Write <UnitSTareNet >	
23-Write <ManualTare >	
24-HideWriteTextOnZero <Tare, "TARE" >	
25-Feed <1>	
26-Write <Net >	
27- Space <1>	
28-Write <UnitSTareNet >	
29-Space <1>	
30-HideWriteTextOnZero <Tare, "NET" >	
31-Feed <2>	
32-Enhance <"off" >	
33-Feed <10>	
34-ReleaSe < >	

The flow chart above outlines the coordinates for each element of the G/T/N Ticket.



6.3.6. Inbound Ticket Formatting

Defined below is the structure and appearance of an **INBOUND** ticket example.



INBOUND	
1-Space <4>	
2-Write <Duplicate >	
3-Feed <1>	
4-Feed <10>	
5-WriteText <"INBOUND" >	
6-Space <6>	
7-Write <Inbound >	
8-Space <6>	
9-Write <UnitSGroSS >	
10-Feed <1>	
11-Write <LoopIDText >	
12-Space <6>	
13-Write <LoopID >	
14-Feed <2>	
15-Space <4>	
16-Write <DateIn >	
17-Space <10>	
18-Write <TimeIn >	
19-Feed <16>	
20-Release < >	

The image above shows the printed areas and other defined elements of the ticket.

- All grey markings are for illustration purposes only, and not printed.

1-800-821-3322

Duplicate Copy

CUSTOMER'S NAME _____
 ADDRESS _____
 COMMODITY _____
 CARRIER _____

INBOUND 35020 1b
 Loop ID 333

INBOUND DATE 10/18/12 TIME 03:00 PM
 OUTBOUND DATE TIME

DRIVER ON _____ OFF _____

SHIPPER _____
 WEIGHER _____

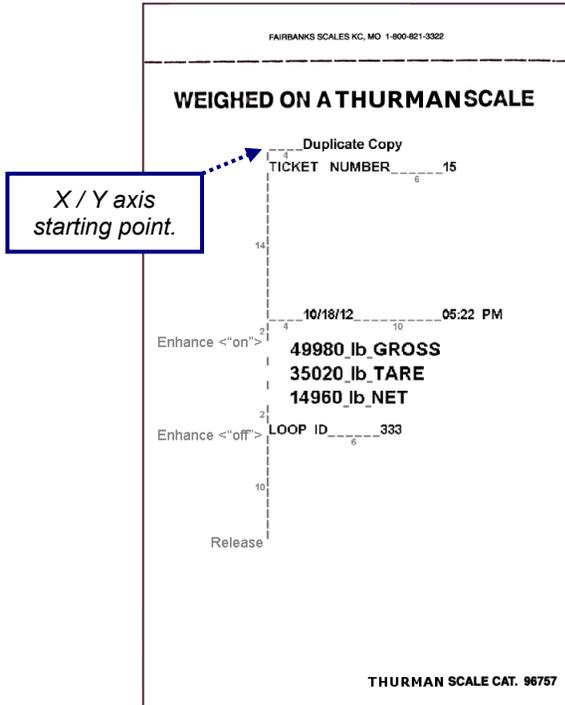
The flow chart above outlines each element of the Inbound Ticket.

Example of an **Inbound Ticket**.



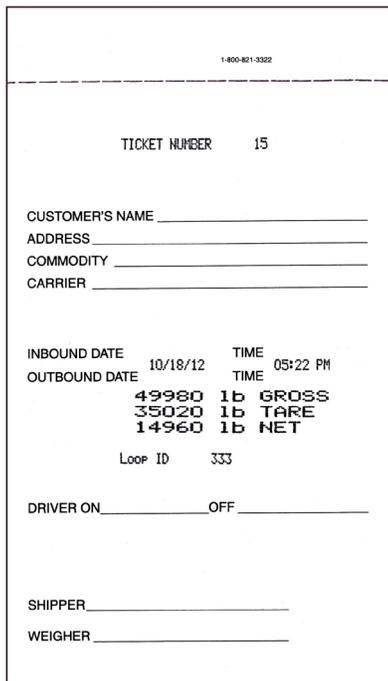
6.3.7. Outbound Ticket Formatting

Defined below is the structure and appearance of an **OUTBOUND** ticket example.



OUTBOUND	
1-Space <4>	
2-Write <Duplicate >	
3-Feed <1>	
4-WriteText <"TICKET NUMBER" >	
5-Space <6>	
6-Write <TicketNumber >	
7-Feed <14>	
8-Space <4>	
9-Write <DateOut >	
10-Space <10>	
11-Write <TimeOut >	
12-Feed <2>	
13-Enhance <"on" >	
14-Write <Gross >	
15-Space <1>	
16-Write <UnitSGross >	
17-Space <1>	
18-WriteText <"GROSS" >	
19-Feed <1>	
20-Write <Tare >	
21-Space <1>	
22-Write <UnitSTareNet >	
23-Write <ManualTare>	
24-HideWriteTextOnZero <Tare, "TARE" >	
25-Feed <1>	
26-Write <Net >	
27-Space <1>	
28-Write <UnitsTareNet >	
29-Space <1>	
30-HideWriteTextOnZero <Tare, "NET" >	
31-Feed <2>	
32-Enhance <"off" >	
33-Write <LoopIDText >	
34-Space <6>	
35-Write <LoopID >	
36-Feed <10>	
37-Release <>	

This image shows the printed areas and other defined elements of the **Outbound Ticket**.
- All grey markings are for illustration purposes only.



Actual image of an **Outbound Ticket** (without any Inbound Ticket information).

This flow chart outlines coordinates for each element of the **Outbound Ticket**.



6.3.8. Completed Transaction Ticket Example

Shown below is a ticket example of a completed **INBOUND / OUTBOUND** transaction.

INBOUND TICKET
includes the **LOOP ID, DATE, TIME,** and Initial Weight.

1-800-821-3322

TICKET NUMBER 12

CUSTOMER'S NAME _____
 ADDRESS _____
 COMMODITY _____
 CARRIER _____

INBOUND	20000	1b
Loop ID	333	

INBOUND DATE	10/18/12	TIME	02:54 PM
OUTBOUND DATE	10/18/12	TIME	04:24 PM

35020	1b	GROSS
20000	1b	TARE
15020	1b	NET

Loop ID 333

DRIVER ON _____ OFF _____

SHIPPER _____

WEIGHER _____

OUTBOUND TICKET includes the **DATE, TIME, GROSS, TARE and NET Weights.** Also includes the **TICKET NUMBER and LOOP ID NUMBER.**

Keypad Formatting Buttons

UNITS: Inserts new format line *before*.

B/G/NET: Inserts new format line *after*.

ZERO: Deletes the current format line.

OUT: Prints entire Format Script.

MENU: Saves ticket format.
 – Steps back one level.

ENTER: Saves all data input..

PRINT: Prints a sample ticket.

RED Button: Exits to **Weigh Screen**.

GREEN Button: Deletes Format Script.



6.3.9. BasicIn and BasicOut Ticket Formatting

1-800-821-3322

X / Y axis starting point.

CUSTOMER'S NAME _____
 ADDRESS _____
 COMMODITY _____
 CARRIER _____

INBOUND DATE _____ TIME _____
 OUTBOUND DATE _____ TIME _____

11/08/12	12:31 PM	90500	1b	GR
11/08/12	12:29 PM	51660	1b	TA

DRIVER ON _____ OFF _____

SHIPPER _____
 WEIGHER _____

BasicIn Ticket
 includes the DATE,
 TIME and GROSS
 Weight.

BasicOut Ticket
 includes the DATE,
 TIME and GROSS
 Weight.

This image shows the printed areas and other defined elements of the BasicIn and BasicOut Tickets.

BASICIN	
1-Write <TimeIn >	
2-Space <1>	
3-Write <DateIn >	
4-Space <1>	
5-Write <GroSS >	
6-Space <1>	
7-Write <UnitSGroSS >	
8-Space <1>	
9-WriteText <"GROSS" >	
10-Feed <1>	
11-ReleaSe < >	

BASICOUT	
1-Feed <2>	
2-Space <1>	
3-Write <TimeOut >	
4-Space <1>	
5-Write <DateOut >	
6-Space <1>	
7-Write <GroSS >	
8-Space <1>	
9-Write <UnitSGroSS >	
10-Space <1>	
11-WriteText <"TARE" >	
12-Feed <1>	
13-ReleaSe < >	

NOTE: Tickets programmed in the **BasicIn** and **BasicOut** formats can be set up as the customer requests, within the boundaries of the ticket size.

– The one displayed above is shown as an **example only**.



6.3.10. Deleting a Ticket Format

Follow these steps to **DELETE** a ticket format, and then reset to the factory default.

1. In the **CONFIGURATION MENU**, press the **DOWN arrow** until **TICKET FORMATS** displays, then press **ENTER**.
2. When **PRINTER** displays, press **ENTER**.
3. Press the **DOWN arrow** until the desired printer displays, then press **ENTER**.
4. Press the **DOWN arrow** until **SELECT FORMAT** displays, then press **ENTER**.
5. Press the **DOWN arrow** the **Ticket Format** to be deleted displays, then press **ENTER**.
6. When **ENABLED** or **DISABLED** displays, press **ENTER**.
7. Press the **DOWN arrow** until **DELETE** displays, then press **ENTER**.
8. Press the **DOWN arrow** until **YES** displays, then press **ENTER** to delete the current ticket format and replace with the default format.



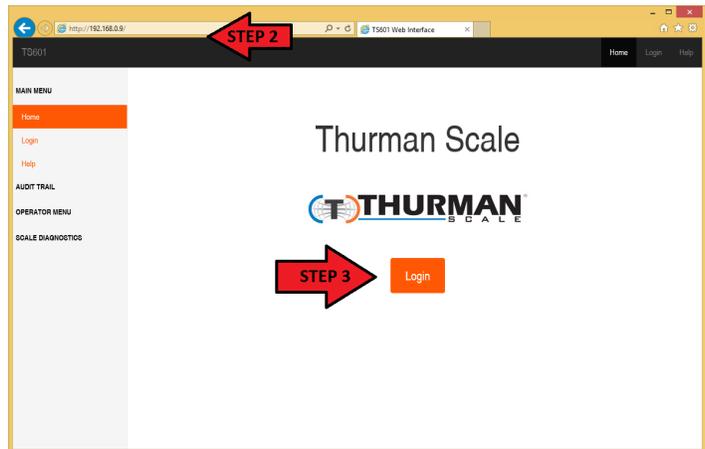
6.4. Formatting Web Interface Tickets

6.4.1. Logging In to the Web Interface

1. Locate the **IP Address** of the TS6XX Series Instrument
(See also To obtain the current IP address of the TS6XX)

NOTE: In order to login to the Web Interface, you **MUST** logout of the TS6XX instrument. If you are **NOT** logged out, you will receive the message “**Front Panel in Use**” until you log out.

2. Input the correct **IP Address** of the TS6XX into the Address Bar of the web browser, then press **ENTER** on the remote computer.
3. Click on the **LOGIN** link.

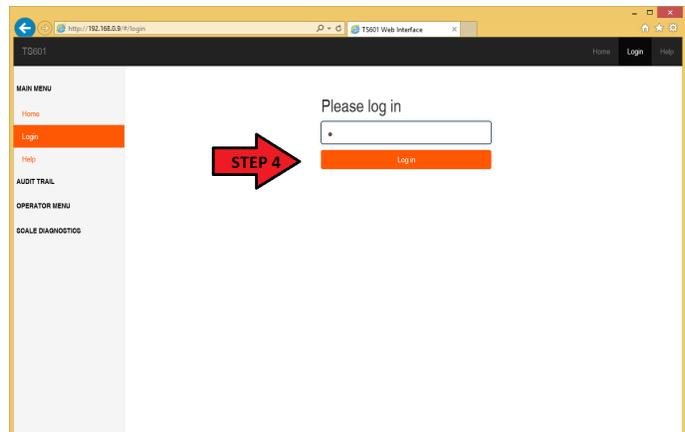


4. Input the Default **Service Password**, then press the **LOGIN** button.

Operator Password = 1

The **Web Interface Home** screen appears.

After you are logged in successfully, the message “**Remote Config in Process**” will appear on the screen of the instrument.

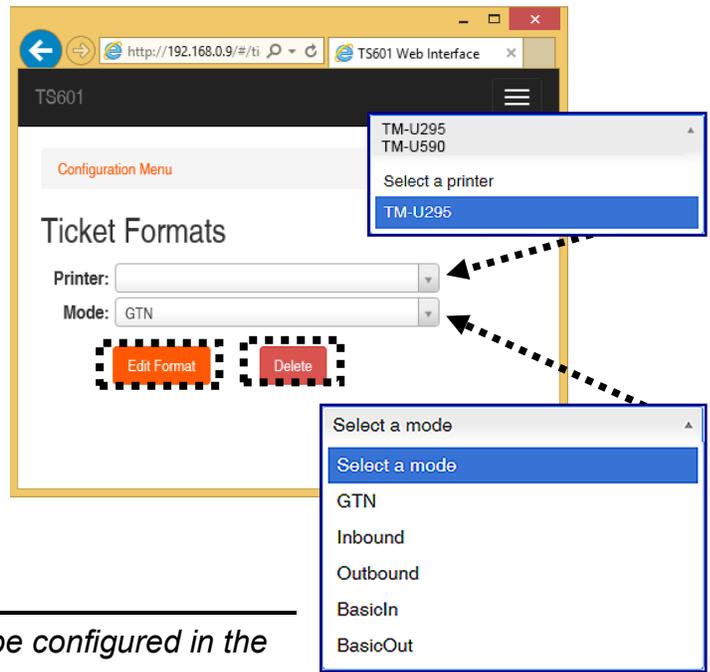


For more complete detail regarding the Web Interface, see [Section 3: Web Interface](#).



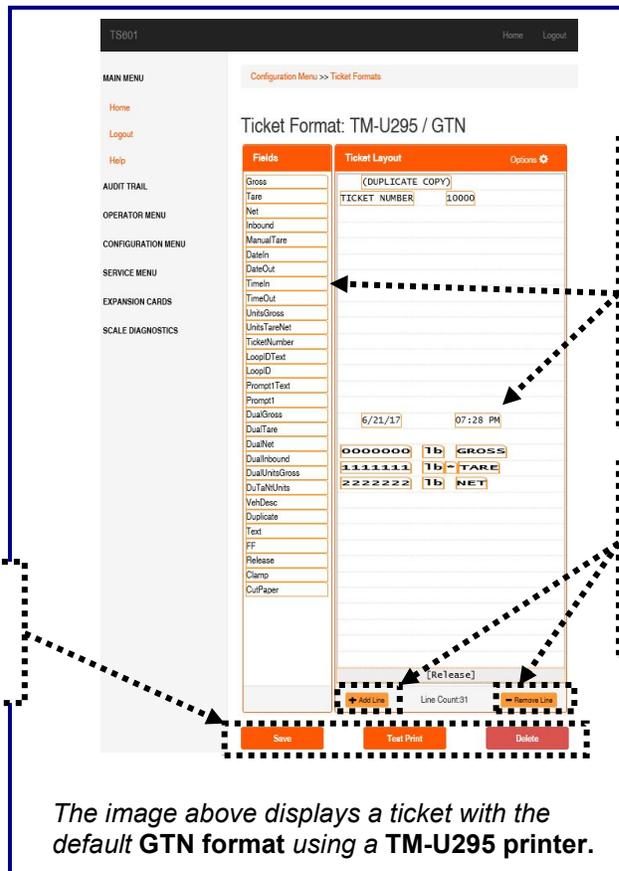
6.4.2. Ticket Format

1. Click the drop-down arrow and **Select a printer.**
2. Click the drop-down arrow and **Select a mode.**



IMPORTANT NOTE: The printer must be configured in the **COM Port** menu before it is available here.

3. Click the **EDIT FORMAT** button.
4. Drag-and-Drop the **FIELDS** options into their place on the **TICKET LAYOUT** area.
5. To add or delete lines within the ticket format, click the **+ ADD LINE** or **- REMOVE LINE**.
6. Once formatting is complete, click **TEST PRINT** to print a sample.
7. Either **SAVE** or **DELETE** the format.



Once completed, click **TEST PRINT**. Click either **SAVE** or **DELETE**.

Drag-and-drop the **FIELDS** options into their place on the **TICKET LAYOUT** area. The printed ticket will appear similar to how it is formatted.

To add or delete lines within the ticket format, click **+Add Line** or **- Remove Line**.

The image above displays a ticket with the default GTN format using a TM-U295 printer.



6.4.3. Standard Default Formats

Shown below are images of the standard default formats for each of the Ticket Modes when using the TM-U295.

Ticket Format: TM-U295 / GTN

Fields	Ticket Layout	Options
Gross	(DUPLICATE COPY)	
Tare	TICKET NUMBER 10000	
Net		
DateIn	6/19/14	03:52 PM
DateOut		
TimeIn		
TimeOut		
UnitsGross		
UnitsTareNet		
TicketNumber		
LoopIDText		
LoopID		
Prompt1Text		
Prompt1		
Inbound		
ManualTare		
Duplicate	6/19/14	03:52 PM
DualGross		
DualTare	000000 1b GROSS	
DualNet	111111 1b TARE	
DualInbound		
DualUnitsGross	222222 1b NET	
DuTaNUUnits		
VehDesc		
Text		
FF		
Release		
Clamp		
CutPaper		

Line Count:31

Save Test Print Delete

Ticket Format: TM-U295 / Inbound

Fields	Ticket Layout	Options
Gross	(DUPLICATE COPY)	
Tare		
Net		
DateIn		
DateOut		
TimeIn		
TimeOut		
UnitsGross		
UnitsTareNet		
TicketNumber		
LoopIDText		
LoopID		
Prompt1Text	INBOUND 000000 1b	
Prompt1	Loop ID <LoopID>	
Inbound		
ManualTare	6/19/14	03:55 PM
Duplicate		
DualGross		
DualTare		
DualNet		
DualInbound		
DualUnitsGross		
DuTaNUUnits		
VehDesc		
Text		
FF		
Release		
Clamp		
CutPaper		

[Re]lease

Line Count:30

Save Test Print Delete

Ticket Format: TM-U295 / Outbound

Fields	Ticket Layout	Options
Gross	(DUPLICATE COPY)	
Tare	TICKET NUMBER 10000	
Net		
DateIn		
DateOut		
TimeIn		
TimeOut		
UnitsGross		
UnitsTareNet		
TicketNumber		
LoopIDText	LoopIDText	
LoopID		
Prompt1Text		
Prompt1		
Inbound		
ManualTare		
Duplicate	6/19/14	03:57 PM
DualGross		
DualTare	000000 1b GROSS	
DualNet	111111 1b TARE	
DualInbound		
DualUnitsGross	222222 1b NET	
DuTaNUUnits		
VehDesc	Loop ID <LoopID>	
Text		
FF		
Release		
Clamp		
CutPaper		

[Re]lease

Line Count:31

Save Test Print Delete

Ticket Format: TM-U295 / BasicIn

Fields	Ticket Layout	Options
Gross	03:58 PM 6/19/14 000000 1b GROSS	
DateIn	[Re]lease	
TimeIn		
UnitsGross		
Prompt1Text		
Prompt1		
DualGross		
DualUnitsGross		
Text		
FF		
Release		
Clamp		
CutPaper		

Line Count:1

Save Test Print Delete

Ticket Format: TM-U295 / BasicOut

Fields	Ticket Layout	Options
Gross		
DateOut		
TimeOut	03:59 PM 6/19/14 000000 1b TARE	
UnitsGross		
Prompt1Text	[Re]lease	
Prompt1		
DualGross		
DualUnitsGross		
Text		
FF		
Release		
Clamp		
CutPaper		

Line Count:3

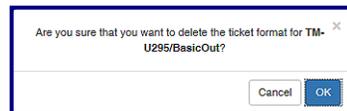
Save Test Print Delete



6.4.4. Exiting Without Saving

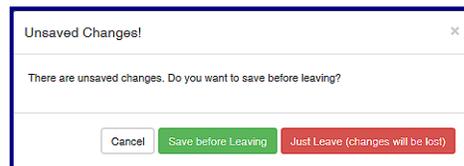
There are two warnings that display when the ticket format is closed without being saved.

DELETE BUTTON pressed without saving the format identifies the action.



CLOSING THE PROGRAM WITHOUT SAVING offers three buttons.

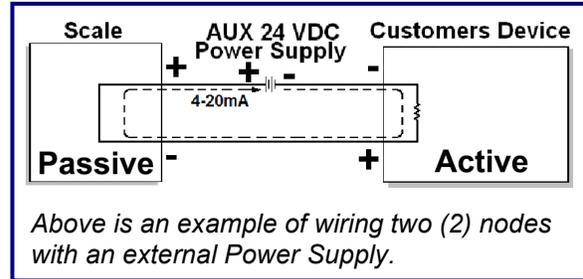
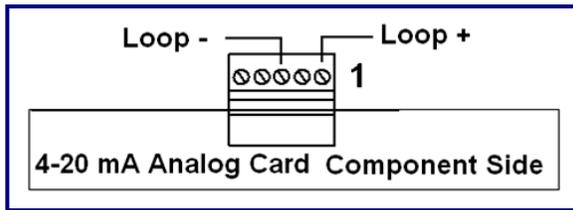
- **CANCEL** returns to the Ticket Interface.
- **SAVE BEFORE LEAVING** saves the format before exiting the interface.
- **JUST LEAVE (CHANGES WILL BE LOST)** closes the Ticket Interface without saving the current format.



6.5. 4-20mA Analog Card (30919)

The **4-20 mA ANALOG CARD (30920)** is a **Passive Current Loop Device** with **16 Bit High Resolution Output**.

4-20mA Specifications	– 16 bit resolution +/- .01 integral linearity
Current Loop Voltage Compliance	<ul style="list-style-type: none"> • The 4-20 Analog Card is a PASSIVE DEVICE, and <i>does</i> supply any current loop voltage. • Customer's external source must furnish 7 to 40 VDC power (typical voltage 24 VDC). • The negative (-) power of the supply MUST be isolated from chassis ground • See important CAUTION box below. • A separate Power Supply must be furnished for each output.
Full Scale Setting Time	– 8msecs.
Output Impedance	– 25 Meg Ohms.
Alarm Current	– 3.5 to 24mA (underload/overload conditions), Offset at 25°C; +/- .1% of full scale. Offset drift; +/- 25 ppm of full scale per degree Celsius.
Total Output Error	– (20mA) at 25°C: +/- .2% of full scale max.
Total Output Drift	– +/- 50 ppm of full scale per degree Celsius max.



CAUTION

Failure to have an **ISOLATED POWER SUPPLY**
WILL CAUSE
CATASTROPHIC DAMAGE!

6.6. Programming the Remote Display

6.6.1. Display Mode

Follow these steps to setup the **DISPLAY MODE**.

1. In the **CONFIGURATION MENU**, press the DOWN arrow until **REMOTE DISPLAY** appears.
2. Press **ENTER**.
3. When **DISPLAY MODE** appears, press **ENTER**.
4. When **CONTINUOUS** displays, either press **ENTER** to select it, or press the **DOWN** arrow to enter **ON PRINT**.
5. Press **ENTER**.

6.6.2. Type (Output)

This option formats what will appear on the **REMOTE DISPLAY**.

1. In the **REMOTE DISPLAY** menu, press the **DOWN** arrow until **TYPE OUTPUT** displays, then press **ENTER**
2. Press the **DOWN** arrow to select Gross Wt, Net Wt, Ticket Number, Active Gross or Net Wt.
3. Press **ENTER**.



6.6.2. Type (Output), Continued

IMPORTANT PROGRAMMING CONSIDERATIONS

- When **Display mode** is set to **CONTINUOUS**, and the **Active Gross or NetWt** is also set, the remote display follows what appears on the instrument display.
 - The operator can toggle between **Gross Wt** and **Net Wt** by pressing the **B/G NET** button.
 - If the output type is set to **Gross Wt**, the instrument will only display the Gross Weight, regardless of what appears on the instrument.
 - This is the same for **Net Wt**. The remote display indicates the Net Weight.
 - When display **Type (Output)** is set to **TICKET NUMBER**, the next **Ticket Number** displays until a print occurs and the printed vehicle leaves the scale.
 - The weight drops below a threshold, either the **Initial Weight** threshold entry or **25 divisions of zero**, whichever is higher.
 - At that point, the next new ticket number displays.
 - If display **Type (Output)** is set to **TICKET NUMBER**; the 218/218T Remote Display must be configured first.
 - Set the Annunciator (**ANNUN**) to **SCALE 1**.
 - Set the Annunciator to **NO**.
- ✓ **Failure to do this will constitute an NTEP violation!**
- For further information, see [Section 4.3.4](#) of the **218 Series Remote Display Manual (51157)**.

6.6.3. Enable 218T

1. In the **CONFIGURATION MENU**, press the **DOWN arrow** until **REMOTE DISPLAY** appears, then press **ENTER**.
2. Press the **DOWN arrow** until **ENABLE 218T** displays, then press **ENTER**.
3. Select **YES** or **NO**, then press **ENTER**.

NOTE: For the Traffic Light function on the 218T to work, the **Display Mode** must be set to **CONTINUOUS**.



6.7. Basic Troubleshooting

ERROR CONDITION(S)	SOLUTION(S)
<p>Check that scale is empty. If Scale is empty, Call for Service. Load Cell(s) bad.</p>	<p>A large amount of weight is zeroed.</p> <ul style="list-style-type: none"> – This is normal. – Press OK and continue weighing. – Possible load cell damage. – Call for Service.
<p>LOAD CELL FAILURE (S) Flashing and displays "-- -- -- --"</p>	<p>Possible load cell damage.</p> <ul style="list-style-type: none"> – Access the Load Cell Diagnostics Menu to verify the load cell status. – Count stability or change of counts. – Contact the local service for further trouble-shooting. – Call for Service.
<p>SC CELLS FOUND NONE</p>	<p>Possible damaged load cell cable.</p> <ul style="list-style-type: none"> – Load cell shortened. – Defective Pit Power Supply. – Defective Smart Sectional Controller(s). – Defective SIC Module.
<p>Displays "-- -- -- --" M LB GROSS</p>	<p>Communication error to load Cells.</p> <ul style="list-style-type: none"> – Check settings by pressing F10. – Settings should be COM2, Even.
<p>INTERR</p>	<p>System Error.</p> <ul style="list-style-type: none"> – Restore Backup, if possible to recover. – Otherwise, replace the PCB Assembly Base Board (33143).
<p>POWER SUPPLY ERROR FAILED TO VERIFY STATE</p>	<p>General error when voltages are outside of acceptable thresholds.</p> <ul style="list-style-type: none"> – Check main interface cable to be cut.
<p>AC OUTPUT SHORTENED</p>	<p>Cable problems, usually repairable.</p>
<p>COMMUNICATION ERROR</p>	<p>Can be caused by numerous transmission problems, including bad Load Cell, faulty cable, conflicting programming, etc.</p>
<p>POWER SUPPLY NEEDS TO BE CONFIGURED: GO TO MENU</p>	<p>First-time opening message to configure the Instrument to the Power Supply.</p>

APPENDIX I: DATA STRING OUTPUTS

A. Remote Display Output

DATA FORMAT

<STX><A><0><SP/-><XXXXXX><ETX>

Character String Description:

1. Characters denoted by X are characters 0-9.
 2. Leading zeroes are suppressed.
 3. Polarity indication for a positive value is a space (SP).
 - Negative values are not transmitted.
 4. Identifier code <4><0> = Gross weight.
 - Transmission is Gross Only.
 5. Transmission for the DEMAND Mode occurs when a carriage return (CR) HEX 0D is received.
 6. See [APPENDIX V](#) for more ID Codes.
-

B. Configure Output

The Continuous Computer Output is an uninitiated, unrequested output that gets transmitted at a fixed time interval.

THURMAN/TOLEDO DATA FORMAT

<STX><A><C><GGGGGG><TTTTTT><CR>

Character String Description:

STX - Start of Text character (02 Hex)

A - Status Word A

B - Status Word B

C - Status Word C

G (gross weight data) - xxxxxx Displayed Weight : x = Weight

- 6 characters if the graduation size does not have a decimal point.

- 5 characters if the graduation size does have a decimal point.

The decimal point is not sent as part of the character string.

T (tare weight data) - xxxxxx Tare Value : x = Tare

- (6 characters if the graduation size does not have a decimal point.)

- (5 characters if the graduation size does have a decimal point.

The decimal point is not sent as part of the character string.

CR - Carriage Return Character: (0D hex)

CS - CheckSum Character: If enabled, this character consists of the last eight bits of the binary sum of all characters transmitted up to this checksum character.



B. Configure Output, Continued

STATUS CODE (WORD) A

Bit #	X00	X0	X	X.X	X.XX	X.XXX	X.XXXX	X.XXXXX
0	0	1	0	1	0	1	0	1
1	0	0	1	1	0	0	1	1
2	0	0	0	0	1	1	1	1

THURMAN/TOLEDO DATA FORMAT

INCREMENT SIZE

Bit #	Count By 1	Count by 2	Count by 5
3	1	0	1
4	0	1	1
5		Always Logic 1	
6		Always Logic 0	
7		Parity Bit	

STATUS CODE (WORD) B

Bit #	Description
0	Gross = 0 Net = 1
1	Positive = 0 Negative = 1
2	In Range = 0 Overcapacity = 1
3	No Motion = 0 Motion = 1
4	Lb = 0 Kg = 1
5	Always Logic 1
6	Normal = 0 Power Up = 1
7	Parity Bit



B. Configure Output, Continued

STATUS CODE (WORD) C

Bit #	Description		
0		Always Logic = 0	
1		Always Logic = 0	
2		Always Logic = 0	
3		Normal = 0	Print Switch Pushed = 1
4		Always Logic = 0	
5		Always Logic = 0	
6		Normal = 0	Keyboard Tare = 1
7		Parity Bit	

CARDINAL 738 CONTINUOUS SCOREBOARD DATA FORMAT

<CR><P><WWWWW>Period (<u><SP><g><SP><SP><ETX>

Character String Description:

CR – Carriage return

P – Polarity (+ = Positive weight, - = Negative weight)

W – Displayed weight

- 6 characters if the graduation size does not have a decimal point.

- 5 characters if the graduation size does have a decimal point.

m – Motion or o = Overload

SP – Space

U - Units (lb = pounds, kg = kilograms)

g – Gross or **n** = Net

ETX - End of text

- Leading zeros are not suppressed
- If division size has no decimal point, set the decimal to "trailing".
- If division size has a decimal point, set the decimal to "floating".



B. Configure Output, Continued

WEIGHTRONIX DATA FORMAT

<SP><G><WWWWW><SP><U><U><CR><LF>

Character String Description:

SP – Space

g – Gross or **n** = Net

W – Displayed weight

- 6 characters if the graduation size does not have a decimal point.
- 5 characters if the graduation size does have a decimal point.

SP – Space

U – Units (lb = pounds, kg = kilograms)

M – Motion

CR – Carriage return

LF – Line feed

- Leading zeros are not suppressed.
 - There is no motion character.
-

CONDEC CONTINUOUS DATA FORMAT

<STX><SP><SP><WWWWW><U><G><M><CR>

Character String Description:

STX – Start of Text character (02 Hex)

SP – Space

SP – Space

W – Displayed weight

- 6 characters if the graduation size does not have a decimal point.
- 5 characters if the graduation size does have a decimal point.

U – Units (L = pounds, K = kilograms)

G – Gross; **N** = Net

M – Motion

CR – Carriage return.

- Leading zeros are suppressed.
-

APPENDIX II: REMOTE DISPLAY CODES FOR 20mA OUTPUT

CODE	UNITS	WEIGHT	SCALE #
00 – Displays all data			
40	Lbs	Gross	1
41	Lbs	Net	1
42	Lbs	Tare	1
43	Kg	Gross	1
44	Kg	Net	1
45	Kg	Tare	1

APPENDIX III: REMOTE SERIAL COMMANDS

NOTE: Commands CAN NOT be combined. A carriage return must be performed after each command, as indicated by the <CR> below.

COMMAND	DESCRIPTION
A <CR>	Sets the <u>A</u> uto Tare Weight on scale.
G <CR>	Turns the traffic light <u>G</u> reen. — Used in Manual Mode only.
LA <CR>	Changes Traffic <u>L</u> ight to Automatic Mode .
LM <CR>	Changes Traffic <u>L</u> ight to Manual Mode .
R <CR>	Turns Traffic Light <u>R</u> ed. — Used in the Manual Mode only.
Txxxxx <CR>	Sets <u>T</u> are on scale — Where xxxxx equals the tare weight value required.
U <CR>	Toggles <u>U</u> nits on scale.
Z <CR>	<u>Z</u> eroes the scale.
P <CR>	<u>P</u> rints a ticket for the active scale.
W <CR>	Demand Request for a <u>W</u> eight output using PC Polled .

APPENDIX VI: CONNECTING TO THE TS61X VIA ETHERNET

Connecting via the Web Utility using an Ethernet crossover cable

NOTE: If you are *not* using a keyboard and mouse on your PC or if you are using a Tablet, touch and hold will act as a 'Right Click'.

To access the current IP address of the TS61X:

1. Login to the TS61X
2. Scroll *down* to **CONFIGURATION**.
Press ENTER
3. Scroll *up* to **NETWORK**
Press ENTER
4. Use **DHCP?** is displayed.
Press ENTER
Depending on how the TS61X has been configured **DHCP** or **STATIC** will display. Follow the instructions below for **DHCP** or **STATIC**:

If DHCP is displayed...

5. Scroll down to **STATIC** and press **ENTER**:
6. Use **DHCP?** is displayed.
Scroll down to **STATIC IP** and press **ENTER**
7. **IP ADDRESS** is displayed
Enter the IP ADDRESS as:
192.168.100.XXX and press **ENTER**
XXX must be **greater** than 001
8. **IP ADDRESS** is displayed and press **ENTER**
9. Scroll *down* to **NETMASK** and press **ENTER**
Enter the **NETMASK** as:
255.255.255.000 and press **ENTER**
10. Scroll *down* to **GATEWAY** and press **ENTER**
Enter the **GATEWAY** as:
192.168.100.001 and press **ENTER**
11. Scroll down to **PRIMARY DNS** and press **ENTER**



Enter the **PRIMARY DNS** as:

008.008.008.008 and press **ENTER**

12. Scroll *down* to **APPLY CHANGES**

Scroll *down* to **YES** and press **ENTER**

13. Press the **RED** Traffic light button twice to return to the weigh screen

If STATIC is displayed...

5. Press **ENTER**

6. **IP ADDRESS** is displayed and press **ENTER**

7. The TS61X IP address is displayed

XXX.XXX.XXX.XXX

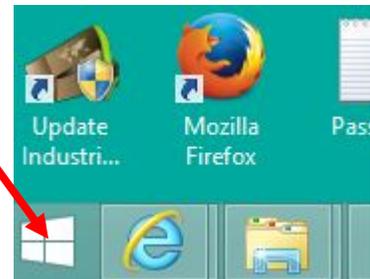
8. Use the right arrow to scroll to see the whole IP address

9. Write down the IP address

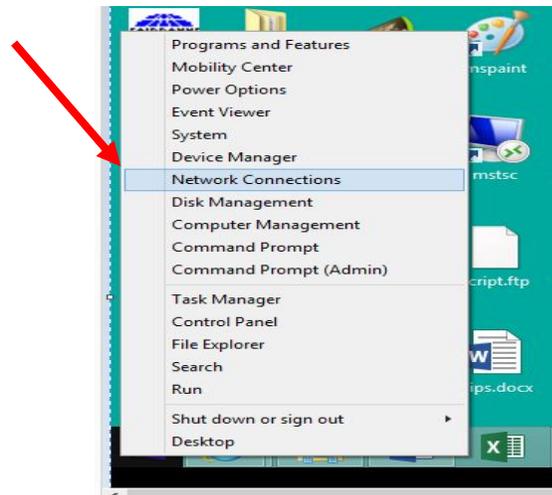
Procedure:

1. **FOR TABLET USERS ONLY** - Plug in your USB to Ethernet adaptor
a. If you are using a PC with **Windows 8**, proceed directly to step 2

2. Right click on the **Start menu** (Windows Logo)

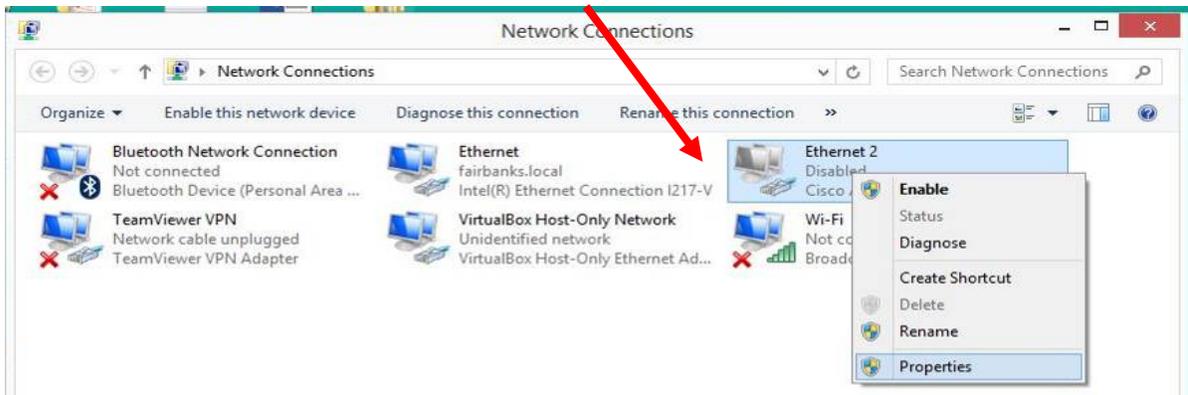


3. Click on **Network Connections**





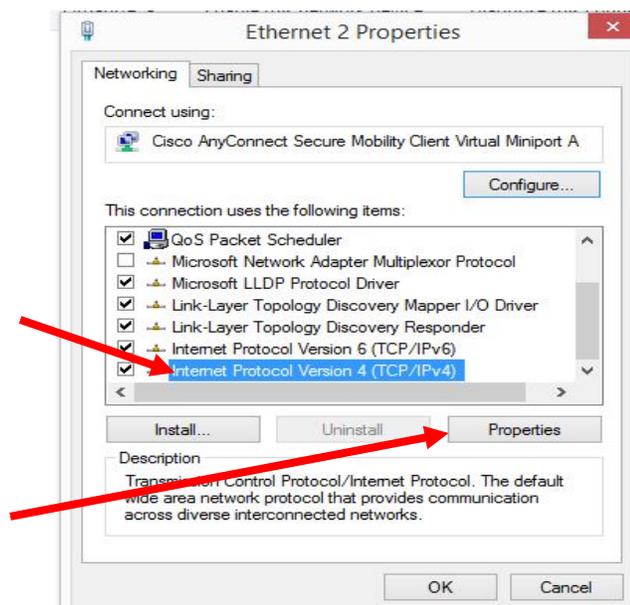
4. Right click on **Ethernet Connection** for the adapter (it may state **ETHERNET 2**)



5. Click on **Properties**

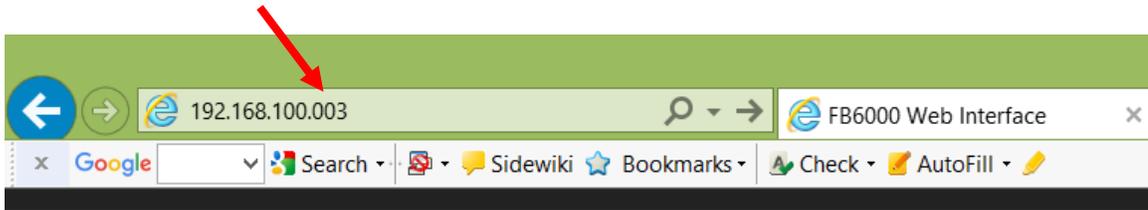


6. Click on internet protocol **Ver. 4 TCP/IP 4**





16. Enter the IP address of the instrument in the browser address bar



WHEN USING CERTAIN BROWSERS, YOU MAY NEED TO INCLUDE LEADING ZEROS WHEN ENTERING THE IP ADDRESS.



Thurman Scale
4025 Lakeview Crossing
Groveport, Ohio 43215
www.thurmanscale.com

TS600 Series Instrumentation

TS611 IN/OUT/GTN Intalogix® Desktop Instrument

TS612 IN/OUT/GTN Intalogix® NEMA 4X Wall Mount Instrument

TS613 IN/OUT/GTN Intalogix® Panel Mount Instrument

TS613 Intalogix Driver Assist Terminal

Operator Manual 51423