Service Manual

FB6000 Series Instrumentation

FB6001 In/Out/ GTN Analog Desktop Instrument

FB6002 In/Out/ GTN Analog NEMA 4X Wall Mount Instrument

FB6003 In/Out/GTN Analog Panel Mount Instrument

Generation 1 & 2

For complete wiring information, see

Load Cell-to-Instrument Interfaces Installation Manual, 51326

51292

Revision 13 10/2017

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AMENDMENT RECORD

FB6000 Series Instrumentation

FB6001 IN/OUT/ GTN Analog Desktop Instrument (31675)

FB6002 IN/OUT/ GTN Analog NEMA 4X Wall Mount Instrument (32575)

FB6003 IN/OUT/GTN Analog Panel Mount Instrument (32675)

Service Manual
Document 51292

Manufactured by

Fairbanks Scales
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Kansas City, MO 64106

Created	08/12	
Revision 1	12/12	New product documentation release
Revision 2	01/13	Corrected 20mA wiring. Added Factory Default Service Password. Added 32765 Labels to parts list
Revision 3	01/13	Corrected specification typographical error
Revision 4	08/14	Updated manual due to software updates and hardware changes
Revision 5	03/15	Corrected Remote switch wiring
Revision 6	07/15	Added part #34327 to parts lists and Web Interface section
Revision 7	09/15	Removed references to Intalogix. These were added incorrectly.
Revision 8	11/15	Updated Basic Troubleshooting in Service & Maintenance chapter
Revision 9	01/16	Appendix 1: Data String Output, Updated multiple broken cross-reference links
Revision 10	03/17	Added active 4-20 mA
Revision 11	06/17	Added TM-U220 printer and part # 34291C (LED Display assembly), analog scale card update
Revision 12	10/17	Updated Section 4: Web Interface
Revision 13	10/17	Updated Section 4: Web Interface > Configuration

TABLE OF CONTENTS

SECTION 1: GENERAL INFORMATION, GENERATION 2

This manual details the **FB6001/02/03 Instrument, GENERATION 2**.

- Identifying the difference between **GENERATION 1** and **GENERATION 2** is necessary for all maintenance upgrades, installations, and programming updates.

NOTE: *For complete details regarding* **GENERATION 1***, see* **Appendix IV.**

1.1. Generation 1 & 2 Differences

1.1.1 Component Differences

The following outlines the two (2) main physical, visual differences between the FB6001 Instrument **Generation ONE** *and* **TWO***.*

DIFFERENT BASE BOARD PROCESSORS

GENERATION 1 uses the **BASE BOARD PCB ASSY (31751)**.

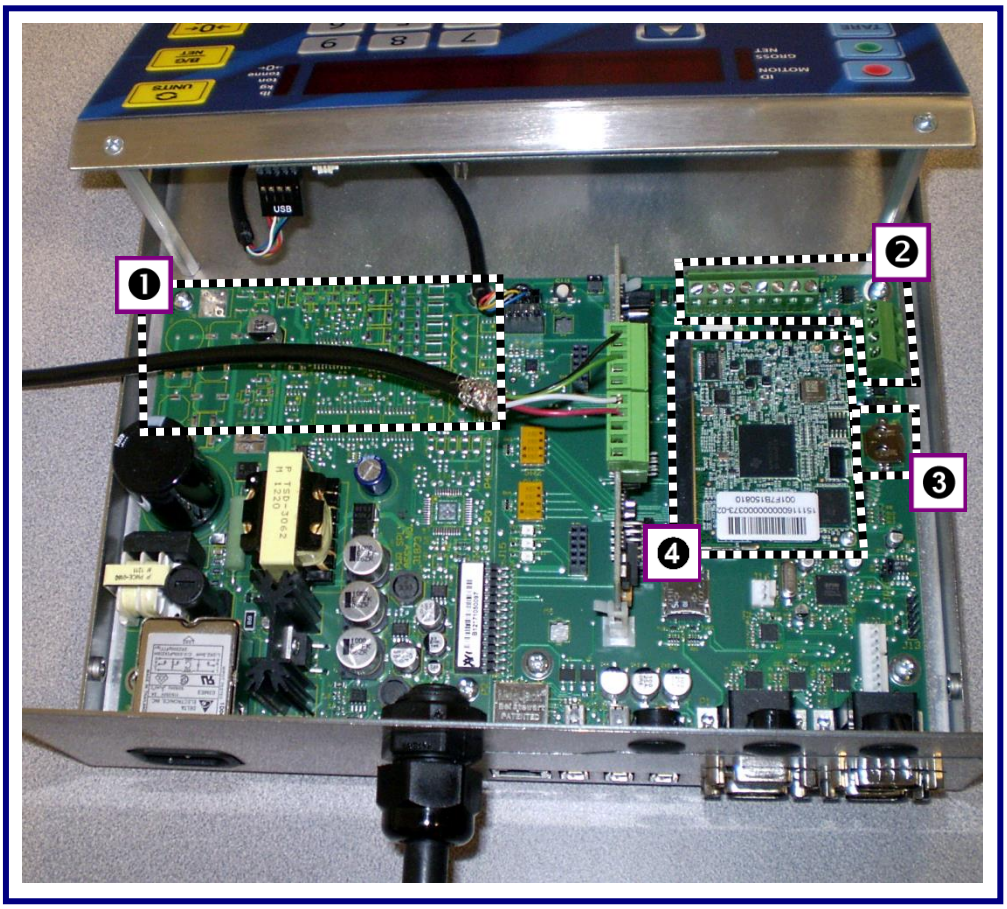
- **GENERATION 2** uses the **BASE BOARD PCB ASSY (33143).**
  - **GENERATION 2** is labeled on one side of the PCB with "**VARISCITE**".
  - The component configurations are different between the two board types.
  - This PCB is interchangeable with the **GEN 1,** but not visa-versa, as it is obsolete.

DIFFERENT POWER SUPPLY PCB

- **GENERATION 1** uses the **POWER SUPPLY PCB ASSY (31873).**

1.1.2 GENERATION 1 Instrument Components

The image below displays the **Generation 1 FB6001,** noting the differences in this Instrument from **Generation 2.**



1. ***Less populated*** Power Supply PCB Assy.
   – Very few capacitors and terminator blocks attached.
2. ***Relocated*** **J4** and **J17 Terminal Blocks** on the Base Board.
3. ***Relocated*** Battery Terminal 1 (**BT1**) on the Base Board.
4. ***Different*** Main Processor on Base Board.
   – **GENERATION 1** has no specific manufacture labeling on the Main Processor.

1.1.3 GENERATION 2 Instrument Components

The image above displays the **Generation 2 FB6001**, noting the differences in this Instrument from **Generation 1.**

1. **Relocated Jumpers 4, 17 (J4, J17) on the Base Board assembly.**
2. **Relocated Battery Terminal 1 (BT1) on the Base Board assembly.**
3. **Different Main Processor on Base Board assembly.**
4. **GENERATION 2 labels the main processor as "Variscite".**

1.1.4 GENERATION 1 & 2 Programming Differences

There are numerous programming differences between the FB6001 Instrument **GENERATION 1** and **2** versions.

Some of the primary programming differences are noted below.

OPERATOR MENU

- The **SET VOLUME** and **MUTE** functions were added to **GEN 2.**
  - For complete procedures, see **SECTION 11.3.10. UTILITY – KEY PAD BEEP, SET VOLUME, MUTE.**

- The **OPTIONS <OPERATOR>** menu was added to **GEN 2**.
  - For complete procedures, see **SECTION 11.3.11. OPTIONS (OPERATOR).**

CONFIGURATION MENU

- Many of the processing steps are different for creating each of the five (5) **TICKET FORMAT** types.
  - For complete procedures, see **SECTION 9.3. FORMATTING TICKETS.**

- The **NETWORK** and **TRANSACTION** functions were added to **GEN 2.**
  - For complete procedures, see **SECTION 6.11. NETWORK** and **6.12. TRANSACTION FILES.**

SERVICE MENU

- Some of the **CALIBRATION** functions are performed differently in **GEN 2**.
  - This is especially true with the **TRIM (Cell, Section, Scale).**
  - For complete procedures, see **SECTION 8: CALIBRATION.**

NOTE: *For complete details regarding* **GENERATION 1***, see* **Appendix IV.**

1.2. Instrument Description

The **FB6001/6002/6003 Instrument** is a Basic, Inbound, Outbound, and GTN instrument.

- The Instrument may be enhanced by adding either a 4-20mA or a 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 **FB6001/6002/6003 Instrument** is designed for a wide variety of truck, floor, hopper, and tank scale applications.

- The load cells interface with the Instrument through the **Analog Interface Card.**
- An RS-232 interface allows for the transfer of data from the Instrument to a computer and vice versa.
- The three FB6000 Series instrument models are the **Desktop (FB6001), NEMA 4X Wall Mount (FB6002)** and the **Panel Mount (FB6003).**

1.2.1 Standard Features

- **1.8" 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.**

1.2.2 Accessories

PART NO.	DESCRIPTION
30919	4-20mA Analog Kit * (passive)
33258	4-20mA Analog Kit * (active)
30920	Relay PCB Assy Kit *
25498	Mini USB Keyboard (87 key)
31036	Standard USB Keyboard (104 key)
15892	SVP/ Uninterruptable Power Supply

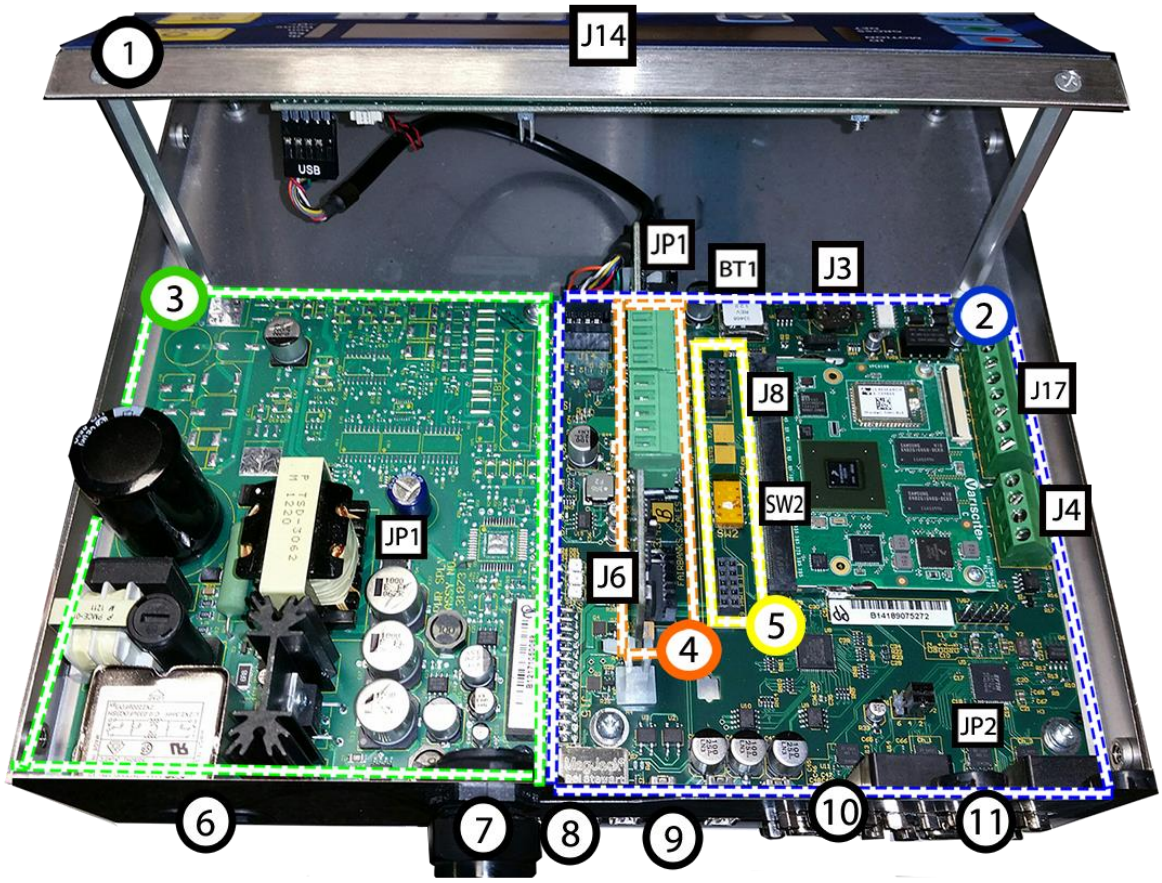
* *Only one or the other of these accessories may be used in the FB6001/02/03 series instrument.*

1.3. Instrument Components

Each FB6001/02/03 Instrument consists of the components listed below.

1	Front Panel Assembly (**31672**)	
2	Base Board BCB Assy (**33143**)	
3	Power Supply PCB Assembly (**31873**)	
4	Analog PCB Assembly – **J6** (**30997**)	
5	Open Expansion Card Slots – **J8**	
	— Relay Assy (**30757**)	— 4-20mA PCB (**30738**)

6	Power Cable Outlet
7	Load Cell Cable Gland
8	RJ45 Network Cable Port
9	Three (3) USB Jacks
10	RS232 Port (**Console**) for external programming and configuration
11	Three (3) RS232 9-pin Serial I/O COM



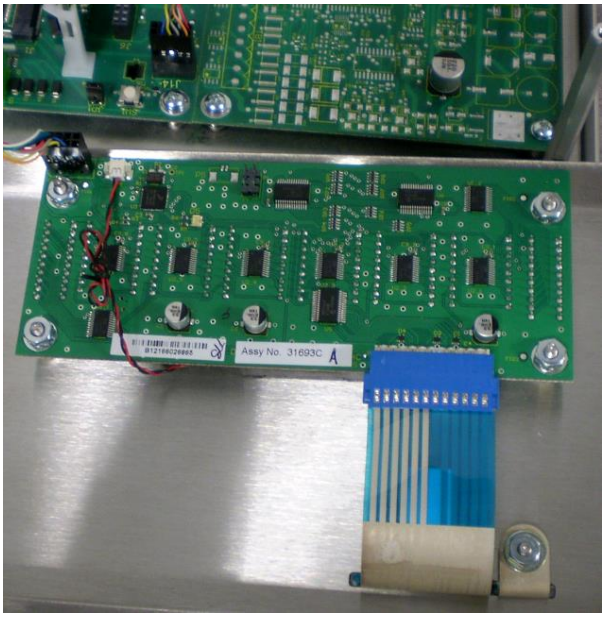
J3	SD Card Socket
J4	Remote Display Connection
J6	Analog Module Sockets (2)
J8	Expansion Module Sockets (2)
J14	Front Keypad & Display USB Port
J17	Remote Switch wiring

JP1 on Base Board PCB	Calibration (NJ Jumper)
BT1	Battery Terminal
JP2	Console Communications
SW2	Configuration Switch

1.3.1 Front Panel Assembly and LED Display Assembly (31672 & 34291C)

The **Front Panel Assembly** provides power to the Keypad.

– The USB Cable connects to **Terminal J14** on the **Base Board Assembly (33143)** from the **LED Display Assembly (31692C).**

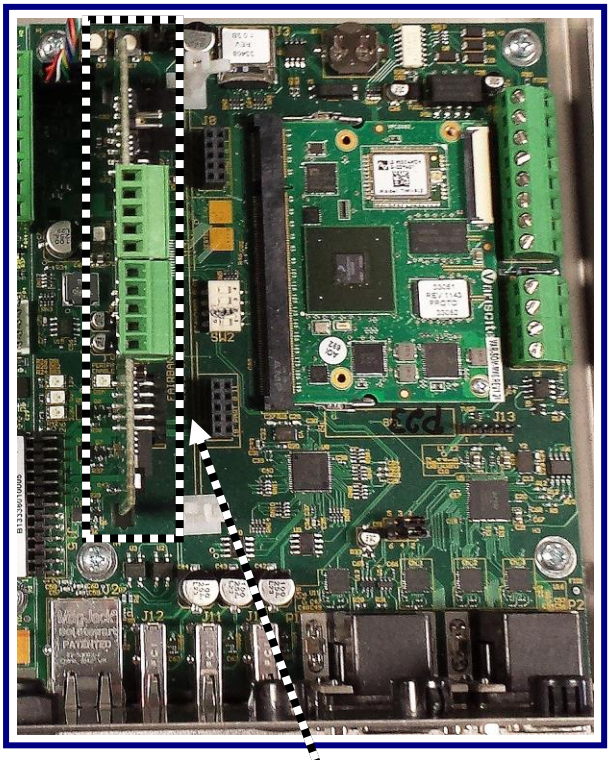


Back-side, component view of the **LED Display PCB Assy.**

1.3.2 Base Board PCB Assembly (33143)

The **Base Board PCB Assembly** is the main instrument interface controller. The weighing application resides on this assembly.

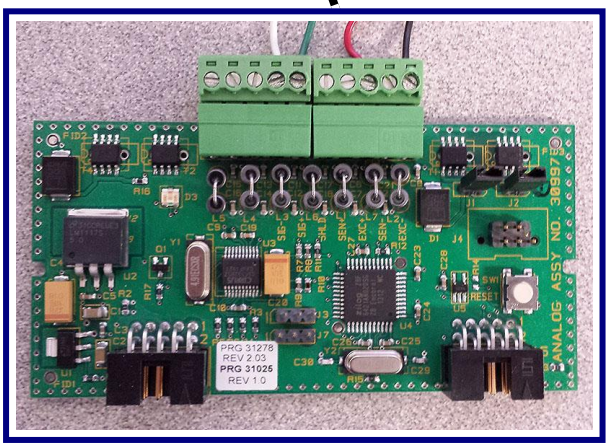
- Communication between the Base Board and the expansion modules are routed through the Expansion Module.
- Communications from the Base Board to the Expansion Module is RS232.

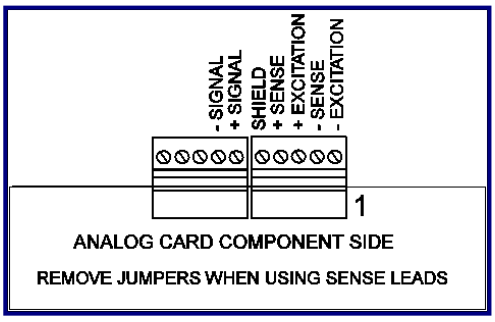


1.3.3 Analog Scale Card (30997)

The **Analog Scale Card** provides the communications interface to Fairbanks' Analog Technology.

- This card connects into **J6** of the Base Board PCB Assembly.
- Only one (1) card per scale can be configured per Instrument.





1.3.3. Analog Scale Card (30997), Continued

When configuring a **levertronic scale**, cell capacity must be set as “lever system multiple X actual load cell capacity.”

Example: 8 ea. 50,000 lb. load cells. 8 X 50,000 = 400,000. Cell capacity = 400,000 lb.

Example: Fairbanks Type “S” lever scale with short transverse and 3,000 lb. load cell: Scale multiple is 60:1. 60 X 3000 = 180,000 lb. Cell capacity = 180,000 lb.

Wiring:

TB1-1:- Excitation

TB1-2:- Sense

TB1-3:+ Excitation

TB1-4:+ Sense

TB1-6: Shield

TB1-7:+ Signal

TB1-8:- Signal

NOTE:

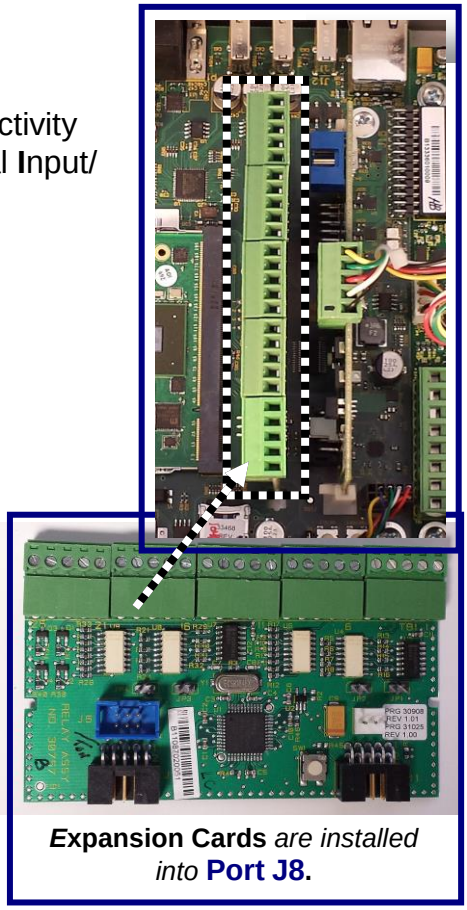
To enable the sense lead circuit, remove the 2 jumpers from the board.
Sense leads are required when cable length exceeds 25 feet.

1.3.4 Expansion Modules (30919, 30920)

Expansion Modules provide the physical connectivity between the FB6001/2/3 and all scale and peripheral **I**nput/ **O**utput (**I/O**) devices.

- Each Expansion Module is an intelligent device, consisting of the following components:
  - A Processor
  - Non-volatile Memory
  - An RS-232 Communication Node

- Insert one of the two (2) **Expansion Modules** into the two (2) dedicated **Base Board** sockets, **J8**.
  - **4-20mA Analog Kit (30919)**
  - **Relay PCB Assembly Kit (30920)**



***E*xpansion Cards** *are installed into* **Port J8.**

1.3.5 Power Supply PCB Assembly (31873)

The **Power Supply PCB Assembly** provides power to the **Instrument**.

- Power Supply PCB ***provides power to all the*** external scale components.
- Communications to this board use the **Analog Interface Card**, plugged into the load cell homerun cable.

1.4. Technical Specifications

PARAMETER	SPECIFICATION
Model	Desktop FB6001; NEMA 4X Wall Mount FB6012; Panel Mount FB6013
Load Cell Interface	Up to 16 ~ 1000Ω load cells max, Or up to 8 ~ 350Ω load cells max
Cell Capacity	1 thru 999,999
Load Cell Excitation	5 VDC
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

1.5. 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

FAIRBANKS SCALES REPRESENTATIVE

For any question, problems, or comments.

SECTION 2: STANDARD INSTALLATION

2.1. Introduction

Prior to installation, *always* verify that the equipment satisfies the customer's requirements as supplied, and as described in this manual.

If the equipment cannot satisfy the application and the application cannot be modified to meet the design parameters of the equipment, the installation should *NOT* be attempted.

The equipment consists of printed circuit assemblies which must be handled using *ESD handling procedures*, and must be replaced as units.

- ✓ **Replacement of individual components is not allowed.**
- ✓ **The assemblies must be properly packaged in ESD protective material and returned intact for replacement credit per normal procedures.**

It is the customer/operator's responsibility to ensure the equipment provided by Fairbanks Scales is operated within the parameters of the equipment's specifications, and is protected from accidental or malicious damage.

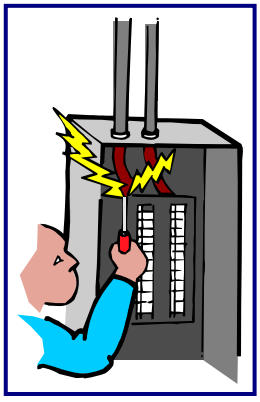
2.2. General Service Policy

Prior to installation, always verify that the equipment satisfies the customer's requirements as supplied, and as described in this manual.

- If the equipment cannot satisfy the application and the application cannot be modified to meet the design parameters of the equipment, **the installation should *NOT* be attempted.**
- Instructions within this manual apply to the instrument and its specific accessories. Installation procedures for printers and other peripherals are given in manuals specifically provided for those units. The instructions include a pre-installation checkout which must be performed either at the service center before the technician goes to the site, or at the site before he places the equipment in service.
- All electronic and mechanical calibrations and/or adjustments required to make this equipment perform to accuracy and operational specifications are considered to be part of the installation, and are included in the installation charge. **Only those charges which are incurred as a result of the equipment's inability to be adjusted or calibrated to performance specifications may be charged to warranty.**
- 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 no physical alterations (mounting holes, etc.) are allowed and will immediately void warranty

All load cells, load cell cables, and all interconnecting cables used for the scale components must be located a minimum of thirty-six inches (36") away from all single and multiple phase high energy circuits and electric current-carrying conductors.

- This includes, but is not limited to **digital weight instruments, junction boxes, sectional controllers**, and **power supplies**.
- This includes any peripheral devices, such as **printers, remote displays, relay boxes, remote terminals, card readers**, and **auxiliary data entry devices**.
- Scale components themselves must also be at least **thirty-six inches (36") away** from other high energy components, including the following devices.
- Any machinery with outputs of **120, 240**, or **480 VAC**.
- High voltage wiring runs and stations, AC power transformers, overhead or buried cables, electric distribution panels, electric motors, florescent and high intensity lighting which utilize ballast assemblies, electric heating equipment, traffic light wiring and power, and all relay boxes.
- Scale components are not designed to operate on internal combustion engine driven electric generators and other similar equipment.
  - *This includes all digital weight Instruments and peripheral devices.*



- Electric arc welding can severely damage scale components, such as digital weight Instruments, junction boxes, sectional controllers, power supplies, and load cells.
- The Service Technician's responsibility that all personnel are fully trained and familiar with the equipment's capabilities and limitations before the installation is considered complete.

2.3. Pre-Installation Guidelines

*The following points should be checked and discussed with the **Area Sales Manager and/or customer**, if necessary, before the technician goes to the site and installs the equipment.*

- If the installation process might disrupt normal business operations, tell the customer and ask that they make ample arrangements.
- Is properly-grounded power available at the installation location?
- Be sure that the equipment operator(s) are available for training.
- The service technician reviews the recommended setup with the Area Sales Manager or Area Service Manager, and together they identify all necessary variations to satisfy the customer's particular application.

Follow these guidelines when unpacking all equipment.

- Check in all components and accessories according to the customer's order.
- Remove all components from their packing material, checking against the invoice that they are accounted for and not damaged.
  - Advise the shipper immediately, if damage has occurred.
  - Order any parts necessary to replace those which have been damaged.
  - Keep the shipping container and packing material for future use.
  - Check the packing list.
- Collect all necessary installation manuals for the equipment and accessories.
- Open the equipment and perform an inspection, making certain that all hardware, electrical connections, and printed circuit assemblies are secure.
- Do not reinstall the cover if the final installation is to be performed after the pre-installation checkout.

Position the equipment with these points in mind.

- Intense direct sunlight can harm the display.
- Do not locate near magnetic material or equipment/instruments which use magnets in their design.
- Avoid areas which have extreme variations in room temperatures. Temperatures outside the instrument’s specifications will affect the weighing accuracy of this product.

2.4. Overview of Installation steps

A. **STANDARD INSTALLATION of all physical and software components.**

B. **WIRING electrical components, Setting up Switches, and Adjusting Jumpers.**

C. **Configure the POWER SUPPLY.**

D. **PROGRAMMING the Instrument.**

E. **CALIBRATING the Weighment System.**

F. **TESTING AND TROUBLESHOOTING the Weighment System, adjusting it as needed.**

G. **Inputting all Product and Customer Data (the Client's task).**

W A R N I N G !

Never perform any wiring with the instrument turned on!
Damage to the system components is very likely.

2.5. Base Board PCB Wiring, Switches & Jumpers

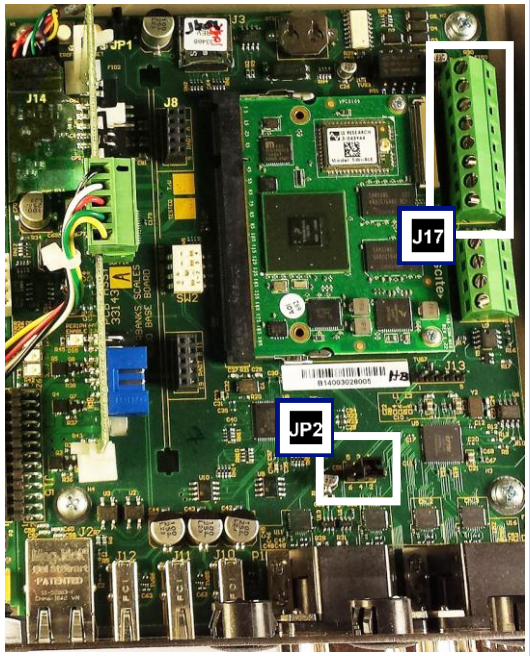
2.5.1 Base Board JP2 and JP3 Jumpers

The **JP2** jumpers of the **PCB Assembly Base Board (33143)** controls the **RS485 communications.**

- *For* **JP2 jumper** *connections, see the table below.*

Follow these steps to adjust the **JP2 Jumper***.*

1. **Remove all power from the Instrument.**
2. **Remove the four (4) screws in the top casing of the Instrument, then take off the cover.**
3. **Using needle-nose pliers, remove the jumper from JP2.**
   - **JP2** is located on the left-hand side of the **PCB Assembly Base Board**.
4. **Reinstall the cover and four (4) screws, then power-up the Instrument.**



The standard default **JP2** *position is placed over* ***Pins 1-3, 2-4, leaving 5&6 open****.* **Terminal Port J17** *is used for* **Remote Switch** *wiring.*

FUNCTION	JUMPER	FACTORY DEFAULT
RS232 receive as COM3 Input (RX)	**1 to 3**	YES
RS422/485 receive as COM3 Input (RX)	**3 to 5**	NO
RS485 TX ENABLE on COM3	**2 to 4**	YES
RS422 TX ENABLE on COM3	**4 to 6**	NO
Do not use COM3 Input (*strongly suggested*)	**3 to NC**	NO
RS422/485 TX Enable is **always off**	**4 to NC**	NO

2.5.2 Remote Switch Wiring

The **J17 Termination Block** sets up **Remote Switches** that can be located anywhere on the scale site.

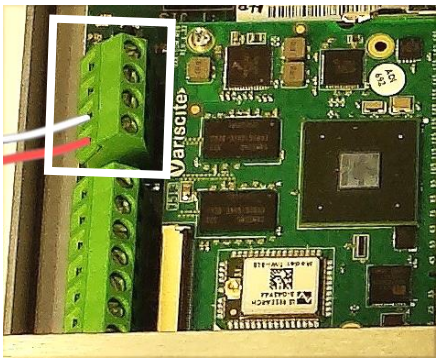
- There are four (4) different functions available for the button.

FUNCTION	J17	J17
Remote Zero Switch	**1**	**2**
Remote Print Switch	**3**	**4**
Remote Tare Switch	**5**	**6**
Remote Switch Undefined	**7**	**8**

2.5.3 Remote Display 20mA Wiring (J4)

A.Typical Connections – Active Instrument, Passive Display

J4	DESCRIPTION	1600 TB1	DESCRIPTION
3	Loop Output	7	C-Loop +
4	Loop Return	8	C-Loop -

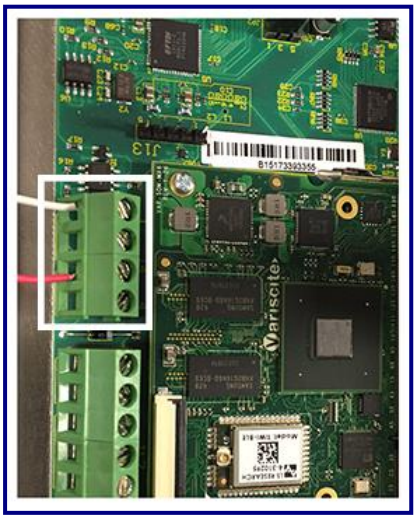


Attach **Remote Display** wires to **Port J4** of the Base Board.

NOTE: *The Fairbanks Factory recommendation for the* **20mA Output** *is* **ACTIVE.**

B. Typical Connections – Passive Instrument, Active Display.

J4	DESCRIPTION	1600 TB1	DESCRIPTION
1	Loop +	1	+ 15VDC
3	Loop Output	7	C-Loop +
		2	GND
		Jumper	
		8	C-Loop –



NOTE: *The* **Remote Switches** *and the* **20mA** *share a ground wire.*

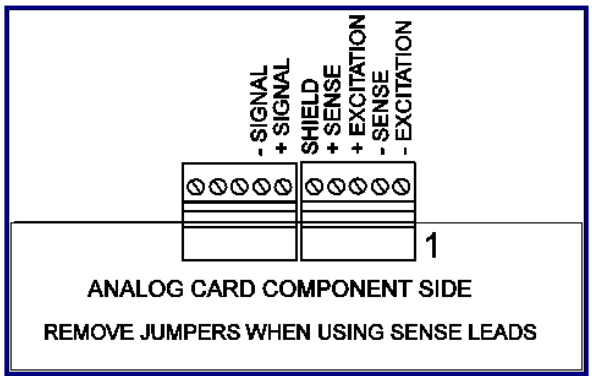
– *This means that remote switches, if used simultaneously with a remote display,* ***must NOT be grounded****. Otherwise they risk creating a ground loop through the instrument's main circuit board.*

– *Connect Switch Legs to non-grounded-bonded dry contact only. If the display is fully isolated (non-bonded), this is not an issue.*

2.5.4 Analog Interface Card (30997)

The **ANALOG INTERFACE CARD** provides the communications interface to Fairbanks Analog Technology.

- Wire the Terminal Block as shown to the right, then Insert the **Analog PCB** into the Base Board PCB Assembly (**J6**).
- Keypad Stickers for BASIC Operating Mode



When using the **BASIC Operating Mode**, the Front Panel button configuration is different.

Adhere the four (4) **Replacement Button Stickers (32765)** onto the standard keypad overlay in the following locations.

1. **Cover the blue IN button with the GROSS / PRINT sticker.**
2. **Cover the blue OUT button with the TARE / PRINT sticker.**
3. **Cover the blue TARE button with the BLANK sticker.**
4. **Cover the green PRINT button with the BLANK sticker.**

NOTE: *Replace the buttons with these stickers **only** when using the* **BasicIn** *or* **BasicOut Operating Modes.**

This FB6001/02/03 Front Panel image has the **BASIC Mode** *stickers applied.*

SECTION 3: SECURITY

3.1. Levels of Security

There are three security levels for accessing the FB6001/2/3 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

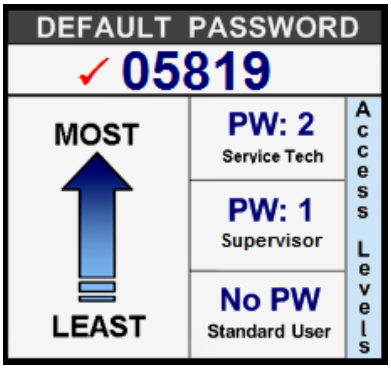
- Accesses the Operator Menu and the Audit Trail Menu.
- **No Password** is necessary for this level of instrument access.

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 **"1"**.
  - *It is strongly recommended to change this password.*
- Second Level Users can also access the **Configuration Menu**.

THIRD LEVEL: SERVICE TECHNICIAN ACCESS

- All of the previous level privileges.
- With the **Service Password**, the technician can also access ***all*** menus options, including the highest level programming **SERVICE MENU**.
- The *default first time use* password for **Technical Service** Access is **"2".**
  - *It is strongly recommended to change this password.*



3.2. Factory Default Service Password

If the service password is lost or forgotten, follow these steps to input the **Factory Default Service Password** *and access the* **SERVICE MENU**.

1. **Press MENU.**
2. **When LOGIN displays, press ENTER.**

   ✓ **Factory Default Service Password = 05819.**

3. **Press ENTER.**

3.3. Different Programming Options

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.
  - *See* **9.2.1. Programming COM Ports**.

SECTION 4: WEB INTERFACE

The configuration of all FB60XX series scales with **software version 2.0.1** or higher can now be performed through the instrument **OR** through the *Web Interface.*

NOTE: *Scale calibration can **ONLY** be performed through the **Web Interface** with versions 2.2.0 and higher.*

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 a 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.

4.1. How to Connect Remotely to the FB60XX Series:

There are two (2) connection types used with the FB60XX.

- **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 FB60XX"**)
- **STATIC –** Dedicated addresses assigned by the IT Department that are specific to each node, and do not change.

4.1.1 To obtain the current IP address of the FB60XX:

1. **Login to the FB60XX**
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 FB60XX 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***.*

NOTE: *See* **APPENDIX V** *for step-by-step details on connecting to the FB60XX via EtherNet.*

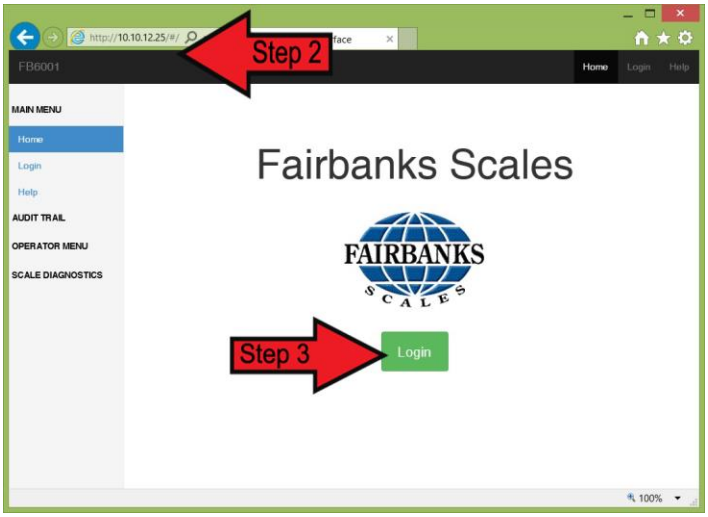
4.2. Logging In to the Web Interface

1. **Locate the IP Address of the FB60XX Series Instrument**

   (See also 4.1.1. To obtain the current IP address of the FB60XX)

NOTE: *In order to login to the Web Interface, you **MUST** logout of the FB60XX 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 FB60XX 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 LOG IN button.**

   Service Password = 2.

   The **Web Interface Home** screen appears.

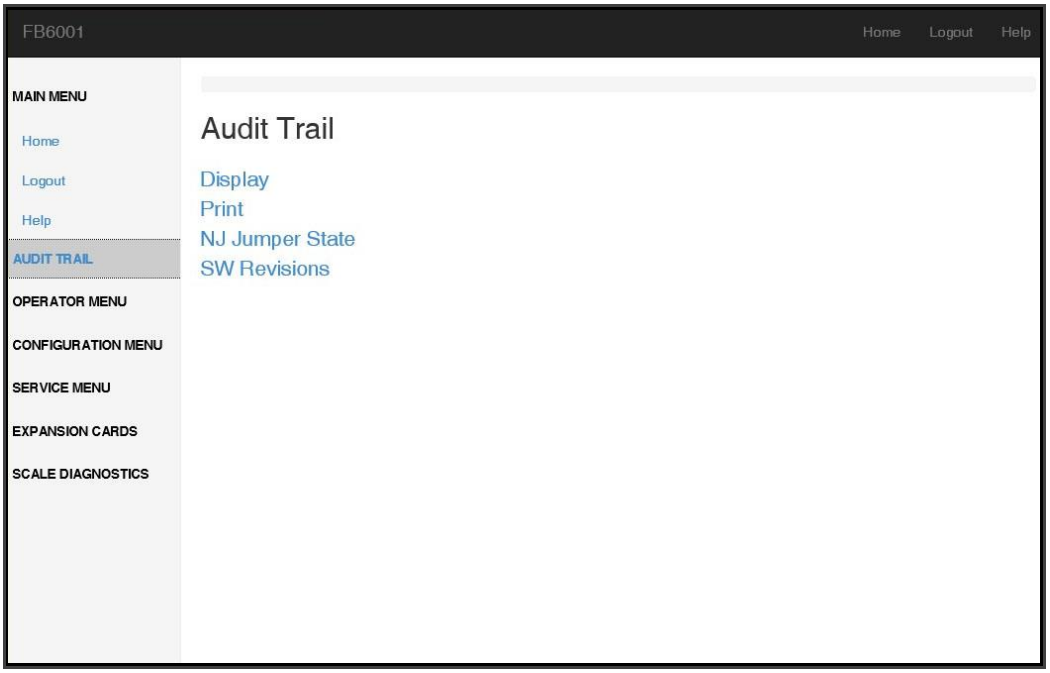
   After you are logged in successfully, the message "***Remote Config in Process***" will appear on the screen of the instrument.

4.3. Navigating the Web Interface

After successfully logging into the FB60XX 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**.

4.3.1 Audit Trail

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



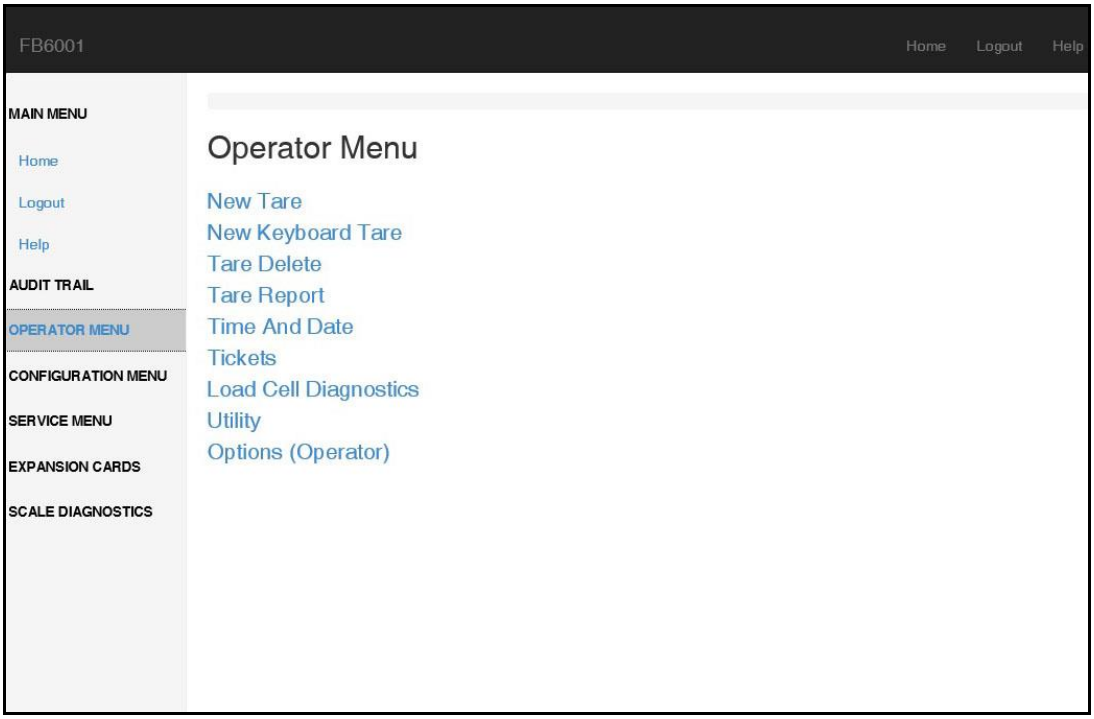
Display: Displays all configuration changes made to each scale with drop-down menus for **Audit Report**, **number of items per page** and an available **Search**.

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. See section **7.2.6. NJ Jumper Required** for more information about this option.

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

4.3.2 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**.

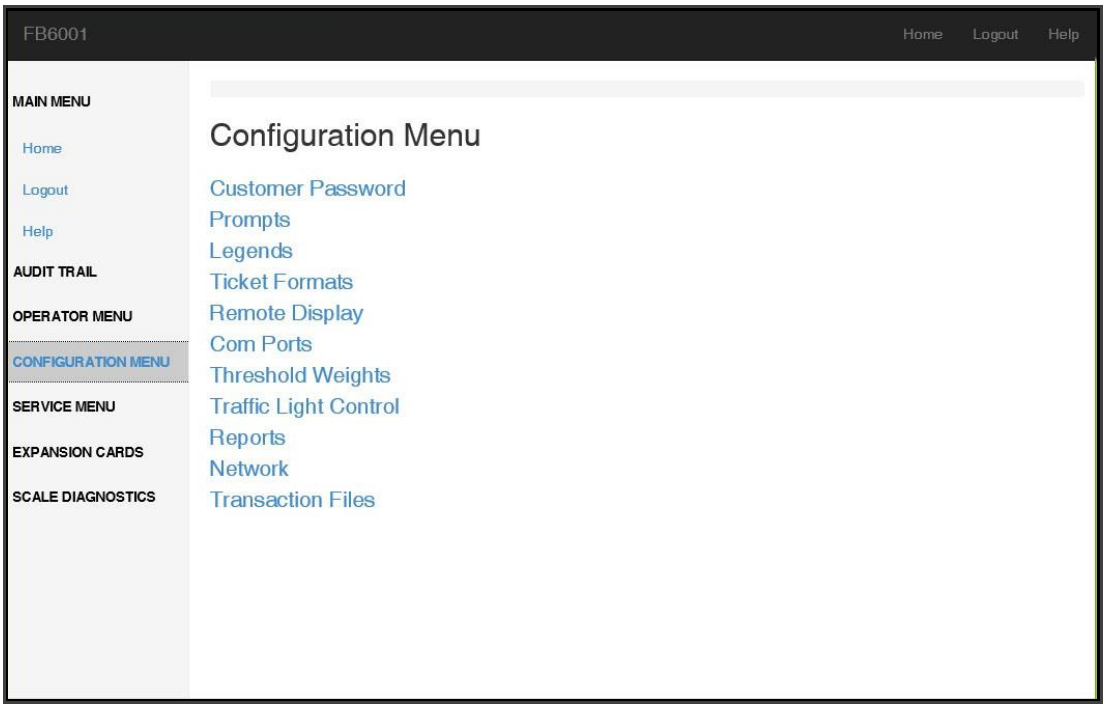
Load Cell Diagnostics: Provides a live count of the **Cell Outputs** and **Errors**.

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 Instrument 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.

4.3.3 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: Allows you to change the **Loop ID** field to a custom prompt.

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, 9.2. 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.

Com Ports: Provides options for configuring the three input com ports and the single outgoing port. See section **9.2. 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.

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.

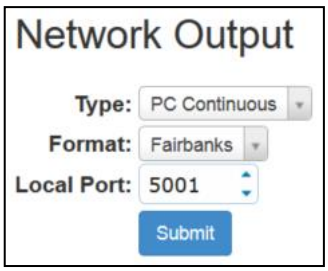
Reports: Provides options for displaying a report. **Type** provides an option for choosing Completed or Incomplete transactions. **Media** only shows “Jump Drive” in the drop-down menu. Reports must be generated to an inserted jump drive. **Sort By** provides the option of the report being sorted by Loop ID or Date/Time. **Delimeter** provides the option of generating a report in CSV or Tab format. See section **6.10. Reports**

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 (See **TIP2015-03,** for initial Network Setup)
- **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.



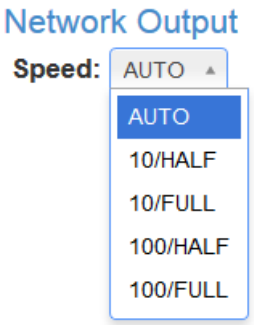
Type is either OFF or PC Continuous.

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

Fairbanks, Toledo, Cardinal, Weigh-Tronix, Condec.

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

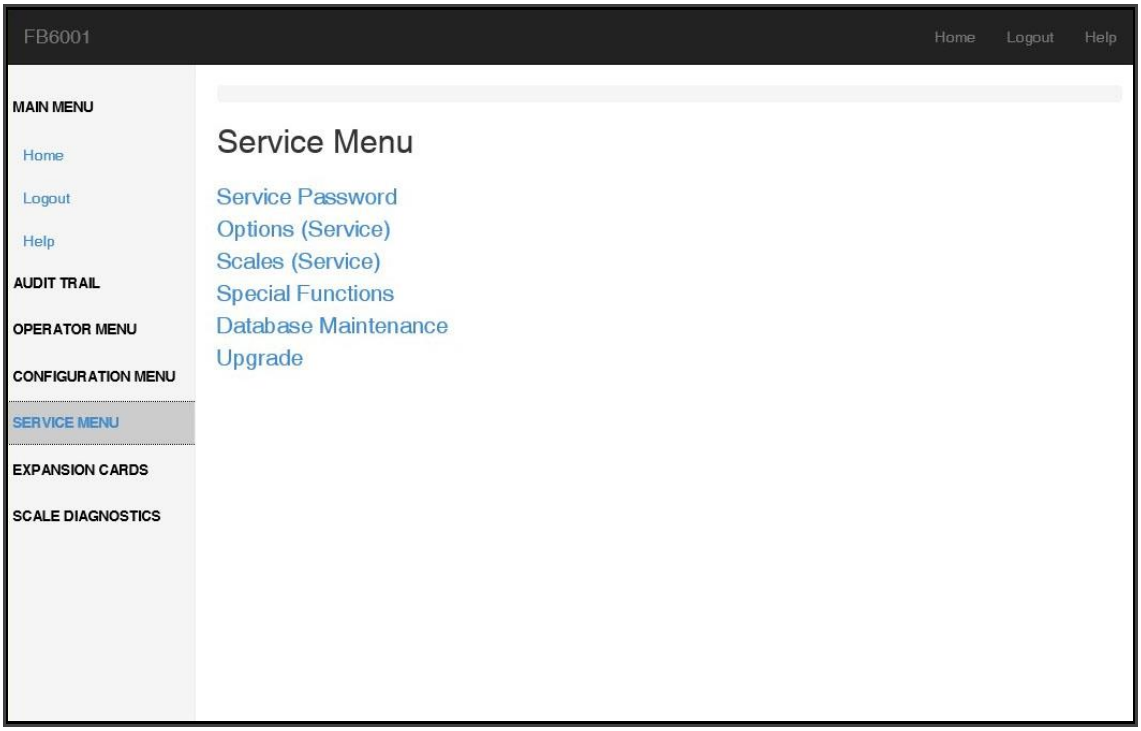
Speed: This controls the speed and if full or half duplex is used on the network device. Default is AUTO and in most cases, is sufficient.



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**.

4.3.4 Service Menu

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



Service Password: This screen allows the service technician to change the service password. Complete the **Enter Password** and **Confirm Password** boxes with same new password. Then, click **Submit.** See **Section 4: Security** for more detail.

Options (Service): Provides options for choosing a **Mode** (Inbound /Outbound, GTN, or Basic Modes) See Section **7.2.1. Operating Modes** for details. **Dual Units also** may be changed (Yes or No) in this area. See Section **7.2.2. Dual Units** for details.

Scales (Service): Provides a live count of the **Cell Outputs** and **Errors**. This information also is located in the *Operator Menu* under *Load Cell Diagnostics*. In **Options (Scale)**, the **On Scale Alarm** may be turned Off and On and in Reset Cell Errors, the errors may be reset back to zero, if the drop-down is changed to Yes. Then, click **Submit**.

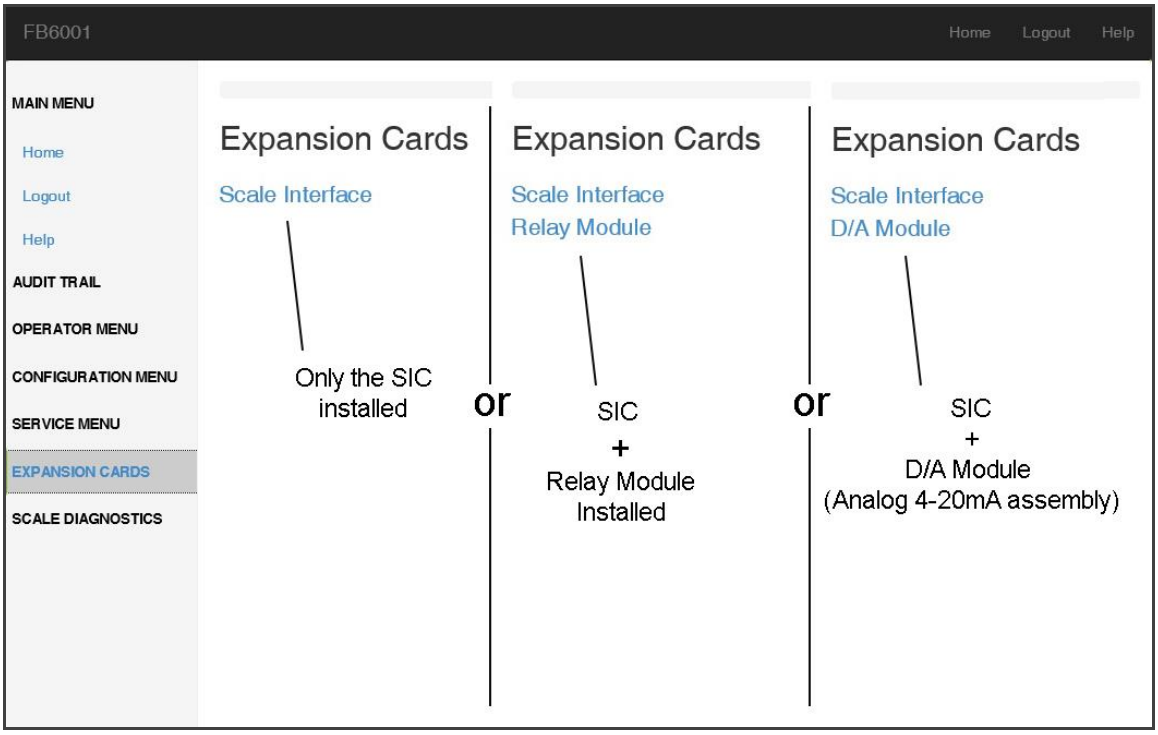
Special Functions: In **System Settings**, click Com Port Test to check the integrity of each port.

Database Maintenance: Provides the service tech to manually restore instrument defaults and perform backups. See Section **7.5. Database Maintenance** for details.

Upgrade: This function checks the **Micro SD Card** for any new program revisions.

4.3.5 Expansion Cards

The following options will appear in the Web Interface under **Expansion Cards**:



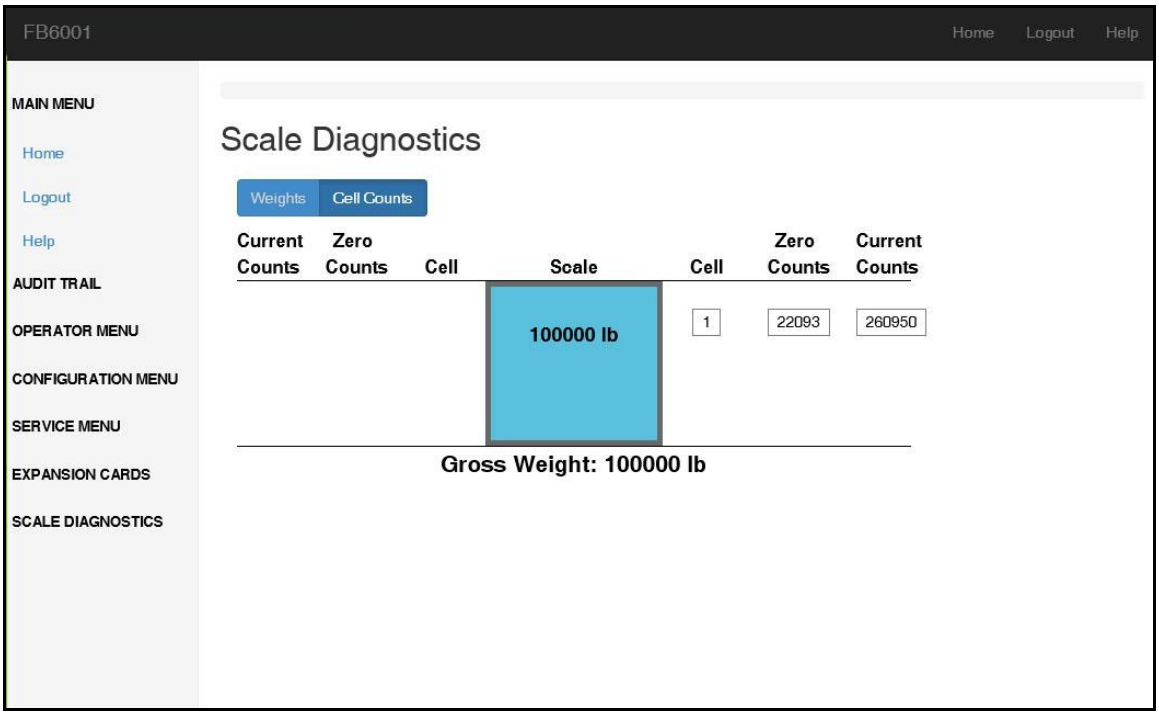
NOTE: *The menu display changes depending on the card installed.*

Scale Interface: Provides instrument data: **Revision Number**, **View Cells Found**, and number input boxes for **Update Rate (Ms)**, **Watchdogs**, **Bs_Reboots**. See section **10.2.1. Scale Interface Card (SIC) Programming** for more details.

4.3.6 Scale Diagnostics

Scale Diagnostics: Provides real-time data of the load cell counts and weight. The following screens are available:

Scale Diagnostics – Counts with Weight



Scale Diagnostics shown with a single Load Cell (analog) and the Cell Counts Selected.

Provides the following data:

- Cell number and zero Counts it was calibrated to
- Cell number and current counts with weight on it
- Live Gross Weight of the scale

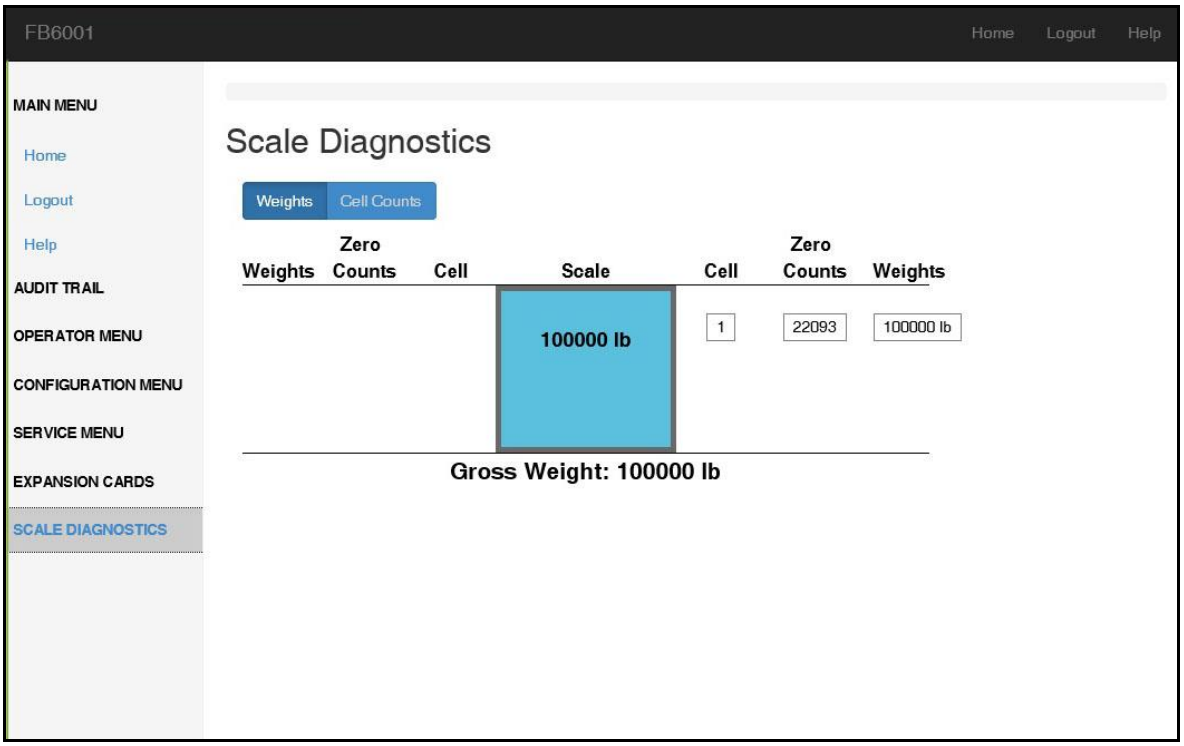
Scale Diagnostics – Counts with ZERO Weight

Scale Diagnostics shown with a single Load Cell (analog) and the Cell COUNTS Selected.

Provides the following data:

- Cell number and zero Counts it was calibrated to
- Cell number and current counts with no weight on it, comparable to the calibrated zero counts
- Live Gross Weight of the scale shows 00

Scale Diagnostics – WITH Weight

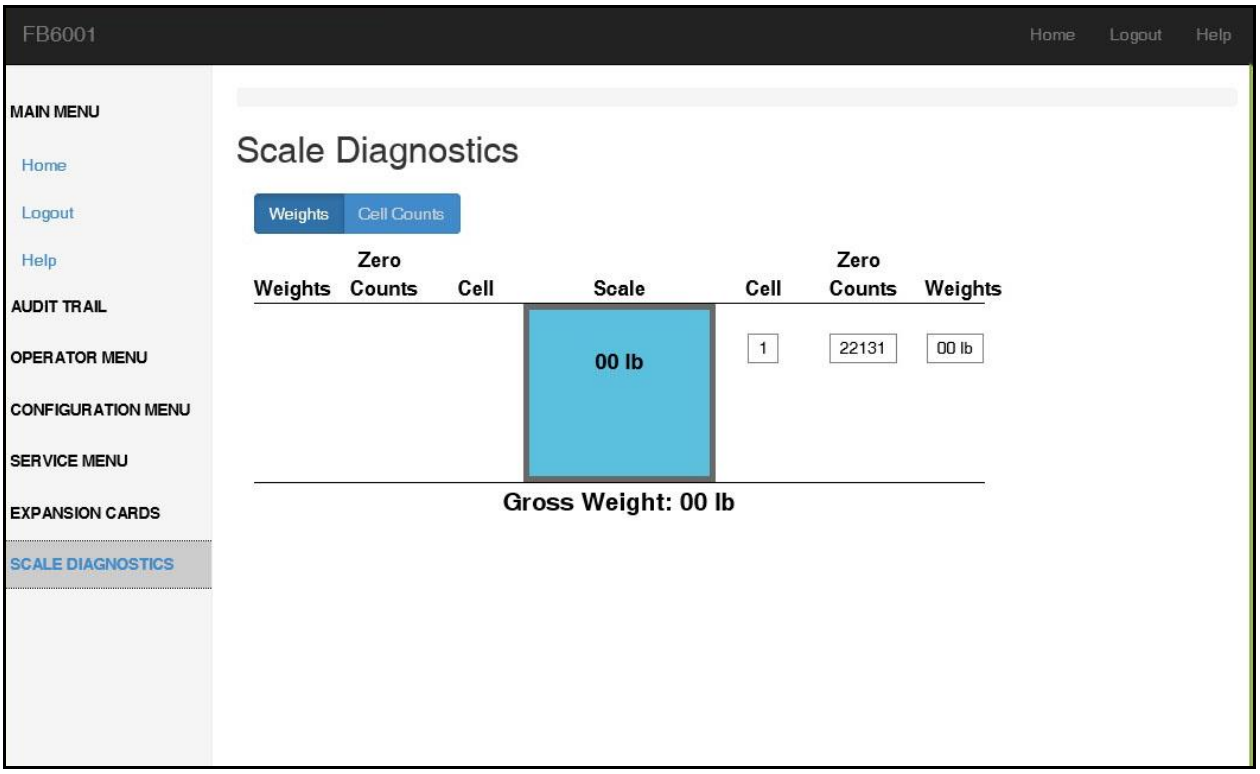


Scale Diagnostics shown with a single Load Cell (analog) and the WEIGHTS Selected.

Provides the following data:

- Cell number and zero Counts it was calibrated to
- Cell number and current WEIGHT on that load cell
- Live Gross Weight of the scale shows same as Weight on the Load Cell

Scale Diagnostics – With ZERO Weight



Scale Diagnostics shown with a single Load Cell (analog) and the WEIGHTS Selected.

Provides the following data:

- Cell number and zero Counts it was calibrated to
- Cell number and current WEIGHT of 00 on that load cell
- Live Gross Weight of the scale shows same as Weight on the Load Cell

SECTION 5: STANDARD PROGRAMMING

5.1. Programming the Instrument

KEYS	FUNCTION
RED & GREEN LIGHT	• 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.
TARE	Performs an **AutoTare** function.
IN & OUT BUTTONS	Manually selects the **INBOUND** or **OUTBOUND** mode. • When programming, the **OUT** key sends a script to the printer.
UP & Down Arrows	Navigates through the menu selections.
MENU	• 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	• Enters values for passwords, weight amounts, and configuration inputs. • These keys can shortcut to desired entries in a selection item (*see* **5.1.2 Short-cut Method for Menu Navigations**).
ENTER	Activates and saves data input.
UNITS	• Toggles and sets the unit types for the weight displayed. • When programming, it inserts one line ***before*** the current one.
B/G/NET	• Toggles active display between Gross and Tare, in the GTN mode. • When programming, it inserts one line ***after*** the current one.
ZERO	• **ZERO**s the scale. • When editing numbers or text, this clears the data.
PRINT	• 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.*

5.1.1 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.**

   ✓ **Supervisor Password = 1**

   ✓ **Service Technician Password = 2**

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.**

5.1.2 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**
SERVICE MENU	Programs the Service Password, **metrological parameters of the system**, such as Service and Scale Options (Scale Capacity, calibration, graduation size, etc.), Special System Functions Database Maintenance, and Upgrading Functions. **Default Password = 2**
EXPANSION CARDS	Programs the base configurations to the Expansion Modules in the system by establishing communications parameters for each board utilized. **Service Password required**

5.2. 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.

5.2.1 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).

5.2.2 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.**

- In the **Audit Trail Menu,** select the correct printer.
- TM-U295
- IDP-2550
- DemandPC
- TM-U230
- TM-U590
- TM-U220
- SP-700
- SP-298
- SP-2000
- SP-2200

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

2. **Select the Number or Records to include on the report.**
   - Last (record)
   - 10
   - 50
   - All (records)
3. **Select** PRINT OUT**, then press ENTER.**

5.2.3 NJ Jumper State

See **Section 7.2.6. NJ Jumper Required** *for complete details on how to enable and disable this feature.*

5.2.4 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 **FB6001** or **FB6001**.
- **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.

SECTION 6: CONFIGURATION MENU

6.1. 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 in entered incorrectly, ERROR displays, then the instrument returns to the previous step.

6.2. 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)>.**

6.3 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.

6.3. Legends – Programmable

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)>.**

6.4. Ticket Formats

For complete descriptions and procedures, see **9.3. FORMATTING TICKETS.**

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

6.5. Remote Display

For complete descriptions and procedures, see **10.4. PROGRAMMING THE REMOTE DISPLAY.**

6.6. COM Ports

For complete descriptions and procedures, see **9.2. COM PORTS.**

6.7. 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**.

✓ **Valid values = 0 to 99,999**

✓ **Default setting = 1000**

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

1. **In the CONFIGURATION MENU, press the DOWN arrow until** THRESHHOLD WEIGHTS **displays.**
2. **Press ENTER.**
3. **When** INITIAL WEIGHT **displays, press ENTER.**
4. **Enter the desired Threshold Weights value, then press ENTER.**

6.8. Traffic Light Control

NOTE: *See,* **10.3. PROGRAMMING THE TRAFFIC LIGHT CONTROL** *for complete instructions on this topic.*

6.9. 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.**
7. **When** DELIMTER **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.**

6.10. Network

The **NETWORK option** displays and/or configures the connection addresses.

– These addresses are used for remotely creating ticket formats.

There are two (2) connection types used with the FB6001.

- **DHCP (D**ynamic **H**ost **C**onfiguration **P**rotocol**)** – Automatically addresses each node the first time it connects to the company's Intranet.
- **STATIC –** Dedicated addresses assigned by the IT Department that are specific to each node, and do not change.

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

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

2a. When USE DHCP? displays, either press **ENTER**.

b. When DHCP displays, press **ENTER**.

c. When DHCP OPTIONS displays, press **ENTER.**

d. Open and record the MY IP, MY NETMASK, MY GATEWAY, and MY DSN addresses.

OR…

2a. When USE DHCP? displays, either press **ENTER**.

b. When DHCP displays, press the **DOWN arrow** and select STATIC, then. press **ENTER.**

c. Input the **STATIC Address** given from the company's **IT Department**, then press **ENTER**.

6.11. Transaction Files

Follow these steps to delete unneeded **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 transactions.
- **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.

C A U T I O N

Performing any of these TRANSACTION FILES functions will erase some or all the current transaction data records.

SECTION 7: SERVICE MENU

The **SERVICE MENU** programs the technical parameters of the system, such as **Scale Capacity, Span,** and **Load Cell Data**.

7.1. Change Service PW

1. **In the SERVICE MENU, when the** CHANGE SERVICE PASSWORD **displays, press ENTER.**
2. **When** ENTER PASSWORD **displays, press ENTER.**
   – The current password displays.
3. **Input the *new* Service Password, then press ENTER.**
4. **When** CONFIRM PW **displays, press ENTER.**
   – The old password displays.
5. **Input the *new* Service Password again, then press ENTER.**

– If the confirmation password does not match the new password, ERROR displays and cycles back to **Step 4**.

- CHANGE SERVICE PASSWORD displays.

7.2. Options (Service)

The **OPTIONS MENU** sets the **Operating Mode, Display Rate, Zero Mode**, and the **Tare Options**.

7.2.1 Operating Modes

INBOUND / OUTBOUND MODE weighing consists of weighing a vehicle, inbound, either full or empty, then weighing the same vehicle outbound, full or empty, and printing a ticket with the two weights shown.

✓ **STANDARD DEFAULT = INBOUND/OUTBOUND MODE**

– The **Loop ID Number** entered for an INBOUND transaction can be a stored Tare ID number, which generates an OUTBOUND formatted Ticket; or a new Loop ID Number, which generates an INBOUND ticket, and store the Loop ID for future transactions.

NOTE: **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 Number entered for an OUTBOUND Transaction is either a stored Tare ID or a previous Loop ID, generated during an INBOUND Transaction. In both cases, the ticket printed is in the OUTBOUND format.

– If a stored Tare ID is used, in either an Inbound or Outbound transaction, when a Loop ID is requested, the GROSS Weight on the scale is expected to be greater than the stored tare weight value.

▪ ERROR-. TARE IS HIGHER THAN GROSS WEIGHT *displays if this is* ***not true****.*

– If a stored Tare ID is used with a creation date that is older than the **Expiration Days** as established in **Tare Options**, the following error message displays:

▪ TARE HAS EXPIRED-. TO MENU TO UPDATE DATABASE *displays as needed.*

7.2.1 Operating Modes, Continued

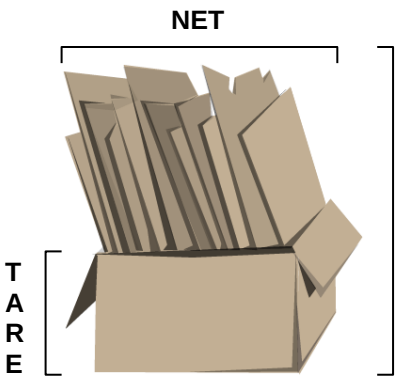
The Instrument can be set for one of these Operating modes.

- ✓ **GTN Mode**
- ✓ **Inbound/Outbound Mode**
- ✓ **Basic Mode (BasicIn** *or* **BasicOut)**

GTN MODE weighs a vehicle as **Gross Weight** only or utilizing the Gross Weight with a Key Tare or Tare and a derived Net weight.

The **Net Weight** (product only) is the **Gross Weight** (all) minus the **Tare Weight** (container only).

Gross Weight
– Tare Weight
NET WEIGHT



The **Net Weight** (*product only*) is the **Gross Weight** (*all*) minus the **TARE WEIGHT** (*container only*).

BASIC (BasicIn/BasicOut) Mode weighs the vehicle, then prints a ticket according to the defined ticket format for **BasicIn/BasicOut**.

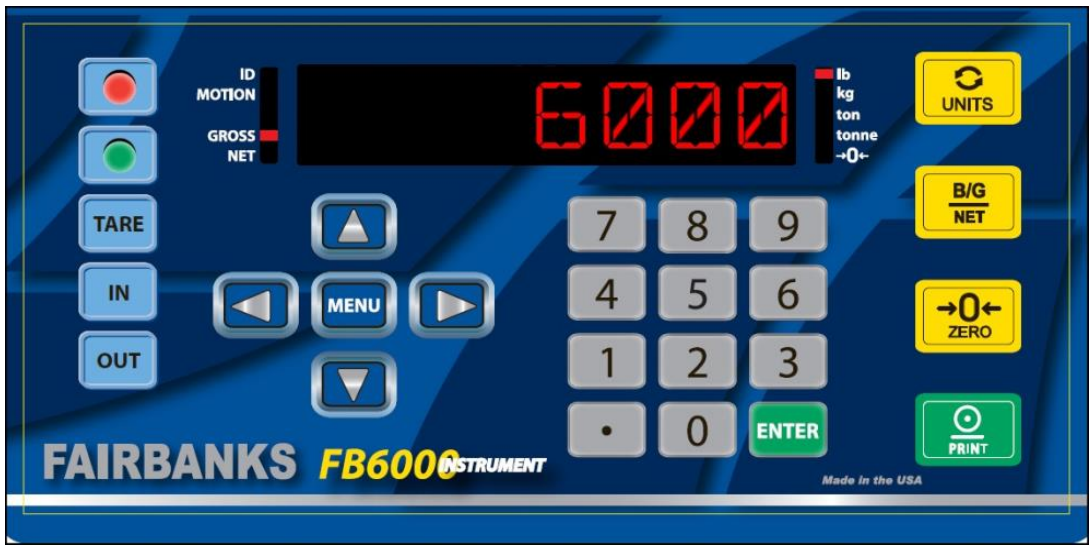
- It weighs either the **Gross** or the **Tare** amount.
- This mode ***does not*** utilize **Stored Tares**.

- With a **loaded vehicle** on the scale, press the **GROSS / PRINT** key.
- With an **empty vehicle** on the scale, press the **TARE / PRINT** key.

7.2.1 Operating Modes, Continued

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

1. **In the SERVICE MENU, press the DOWN arrow until the** OPTIONS (SERVICE) **displays, then press ENTER.**
2. **When** OPERATING MODE **displays, press ENTER.**
3. **When** MODE **displays, press ENTER.**
4. **Using the UP/DOWN Arrows, select** INBOUND / OUTBOUND MODE GTN MODE **or the** BASIC MODE**, then press ENTER.**
   - DUAL UNITS displays



See also section ***2.5.4. Analog Interface Card (30997)*** **and Keypad Stickers** *for* **BASIC Operating Mode***.*

7.2.2 Dual Units

Follow these steps to setup the **DUAL UNITS** *option.*

1. **In the SERVICE MENU, press the DOWN arrow until the** OPTIONS (SERVICE) **displays, then press ENTER.**
2. **When** OPERATING MODE **displays, press ENTER.**
3. **Press the DOWN arrow until** DUAL UNITS **displays, then press ENTER.**
4. **Using the UP/DOWN arrows, select either** NO **or** YES**, then press ENTER.**

When **YES** is selected, this feature prints two separate **UNIT types** on the ticket, when the ticket is formatted to accommodate this, converting each to the correct weights for easy comparisons.

– Very convenient for comparing pounds to kilograms, ounces to grams, etc.

When **DUAL UNITS** *is set to* **YES**, the following **"Write (_____)"** commands apply.

- **DUALGROSS** prints the **GROSS WEIGHT VALUE** for alternate units.
- **DUALTARE** prints the **GROSS TARE WEIGHT** value in alternate units.
- **DUALNET** prints the **NET WEIGHT** value in alternate units.
- **DUALINBOUND** prints the **INBOUND WEIGHT** value in alternate units.
- **DUALUNITSGROSS** prints the alternate **GROSS units** (i.e. lb, kg, etc.)
- **DUTANTUNITS** prints the alternate **TARE/NET units** (i.e. lb, kg, etc.)

7.2.3 Display Rate

Follow these steps to program the **DISPLAY [UPDATE] RATE**.

1. **In the Service Menu, press ENTER.**
2. **Press the DOWN arrow once and the OPTIONS (SERVICE) will display.**
3. **Press ENTER.**
4. **When DISPLAY RATE displays, press ENTER.**
5. **Press ENTER when RATE displays.**

6a. Either press **ENTER**, then input a value.

- This value will be between **0.1** to **0.5** seconds in **0.1** intervals in the **DISPLAY RATE** option.

✓ **Default = 0.333**

OR…

6b. Press the **DOWN ARROW** once to access the **ALWAYS UPDATE** option.

7. **When NO displays, either press ENTER, or press the DOWN ARROW once to change to YES to activate this option.**
8. **Press ENTER.**

7.2.4 Zero Mode

The **ZERO MODE MENU** programs the functionality of the zero operation.

- The ability to disable the **Zero Switch** and set the range or limit of the amount which may be zeroed from the scale.
- Refer to your local Weights & Measurement regulations for the proper setting for Legal-for-Trade applications.

Follow these steps to program the **ZERO MODE**.

1. **In the Service Menu, press ENTER.**
2. **Press the DOWN arrow once and the** OPTIONS (SERVICE) **will display.**
3. **Press ENTER.**
4. **When** ZERO MODE **displays, press ENTER.**
5. **Press ENTER when** SWITCH (ZERO) **displays.**
   - This option enables and disables the keypad **ZERO button**.
6. **Select** ENABLED **or** DISABLED**, then press ENTER. .**
7. **Press the DOWN arrow.**
8. **Press ENTER when** RANGE (ZERO) **displays.**
   - This option sets a **Percentage Range** for which the scale can **ZERO**.
   - This prevents **ZERO-ing** the scale by pushing the keypad button, while a full load is on the scale platform.

7.2.4 Zero Mode, Continued

9. **Setting the** LIMIT (ZERO) **allows either** USA (100%)**,** CANADA (2%) **or** OFF **(use ZERO Range) .**

NOTE: *If this option is selected, go to* **RANGE ENTRY (ZERO)** *to set the desired percentage amount using the numeric keypad.*

---

10. **Using the keypad, set the numeric amount.**
11. **Press ENTER.**
12. **Press ENTER when** PRINT INHIBIT **displays.**
    – This option allows **ZERO-ing** the scale with a programmed amount for every load, and then allows only one weighment.

13a. Select Enabled or Disabled.

OR…

13b. Press **ENTER** when ENABLE WEIGHT displays.

14. **Press ENTER to set the ZERO.**

✓ *This option sets the* **ZERO Threshold Value** *from* **one(1)** *to the* **scale's capacity.**

15. **Input the Threshold Value with the keypad, then press ENTER.**

7.2.5 Tare Options

Follow these steps to program the **TARE OPTIONS**.

1. **In the SERVICE MENU, press the DOWN arrow until the** OPTIONS (SERVICE) **displays, then press ENTER.**
2. **Press the DOWN arrow until the** TARE OPTIONS **displays, then press ENTER.**
3. **When** TARE ENABLED **displays, press ENTER.**
4. **Using the UP and DOWN Arrows, select either** YES **or** NO**, then press ENTER.**
   - YES *enables the* GTN TARE Function.
   - NO *prevents the* **PRINT button** *from prompting a* **TARE** when pressed, and also prevents the **TARE Key** from initiating an **Auto Tare** *when pressed*.
5. **When** MANUAL ID **displays, press ENTER.**
6. **Using the UP/DOWN Arrows, select either** YES **or** NO**, then press ENTER.**
   - YES *allows* the **GTN Ticket Format** to print an **asterisk (*)** next to the Tare when the **TARE Value** was generated by a manual keyboard entry.
     - *This can be either a saved* **New Keyboard Tare,** *used with an* **Outbound transaction***, or a one-time manual keyboard tare entry used in a* **GTN transaction***.*
7. **When** EXPIRATION DAYS **displays, press ENTER.**
8. **Enter the number of days for when a Tare entry will expire, using the numeric keypad, then press ENTER.**
9. **When** AUTO CLEAR **displays, press ENTER.**
10. **Using the UP/DOWN arrows, select either** YES **or** NO**, then press ENTER.**
    - YES deletes the established **Tare** automatically after the GTN transaction is completed.
    - NO keeps the last **Tare** value established using the **TARE** key for use by subsequent GTN transactions.

- TARE OPTIONS displays.

7.2.6 NJ Jumper Required

The FB6001/2/3 Instrument provides a mechanical means of locking out the front panel from accessing the **Calibration Menu**.

- The **JP1 Jumper** on the **Base Board Assembly** creates a physical security to the system unmatched in any other form.
- Some Regional and State regulatory agencies, like those in New Jersey for example, require that each Instrument be sealed not only with password protection, but also a physically secure method. Moving the jumper remedies this need.

Follow these steps to install the **JP1 Jumper***.*

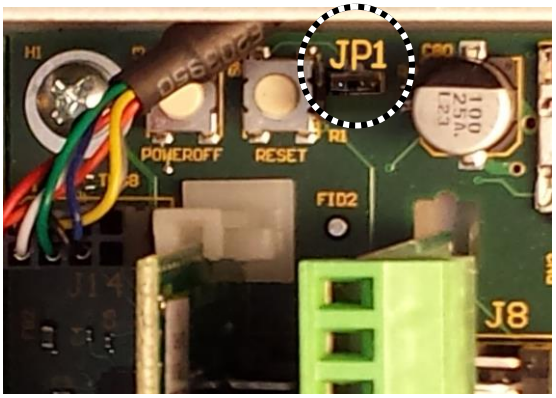
1. **Unplug the Instrument.**
2. **Remove the Instrument cover.**
3. **Using needle-nose pliers, from the Base Board PCB Assembly, remove the jumper.**

4a. Either place the **JP1 Jumper** over BOTH PINS to *activate* the **NJ Jumper Security State,**

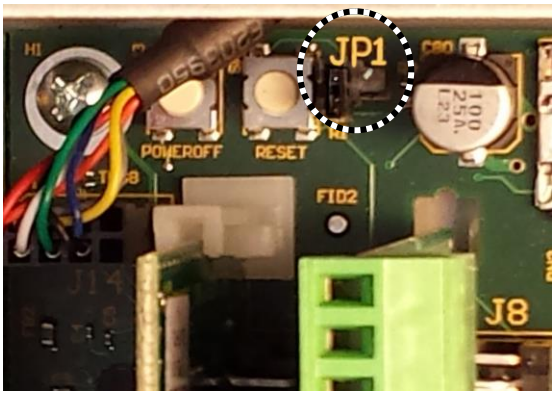
OR…

4b. Place the **JP1 Jumper** over **ONLY ONE PIN** to *disable* the **NJ Jumper Security State**.

5. **Reinstall the cover.**
6. **Power-up the Instrument.**



Installing the **JP1 Jumper** *connection over both pins* ***prevents*** *accessing the* **Configuration and Service Menus** *from the front panel keypad*



Disconnecting the **JP1 Jumper** *and turning it side-ways* ***allows*** *access to the* **Configuration and Service Menu** *from the*

7.2.6 NJ Jumper Required, Continued

Follow these steps to configure the **NJ Jumper Security State**.

1. **In the SERVICE MENU, press the DOWN arrow once, and when the** OPTIONS (SERVICE) **displays, press ENTER.**
2. **Press the DOWN arrow until** NJ JUMPER REQUIRED? **displays, then press ENTER.**
3. **Press the DOWN arrow and select one of the following.**
   - YES enables the **NJ Jumper Security State,** preventing configuration functions on the front panel,

OR…

   - NO disables the **NJ Jumper Security State**, allowing configuration functions on the front panel.
4. **Press ENTER.**

7.3. Scales (Service)

7.3.1 Cell Outputs

1. **In the SERVICE MENU, press the DOWN arrow until the** SCALES (SERVICE) **displays, then press ENTER.**
2. **When** ID 1 **displays, Press ENTER.**
3. **When** CELL OUTPUTS **displays, press ENTER.**

4a. When COUNTS displays, either press **ENTER**,

OR…

b. Press the ▼ **to** select ERRORS, then press **ENTER**.

c. When CELL 1 displays, press the **UP/DOWN arrows**, select the desired cell number (**Cell 1** thru **Cell 16**), then press **ENTER**.

5. **Either the current load cell counts or the error data for the selected load cell will display.**

NOTE: *If no errors have logged, then* **NONE** *will display.*

The error message displays in the following format.

ERROR -.XXX ERROR DATE -. MM/DD/YYYY GHOST -. YES/NO

6. **When finished viewing data, press MENU until** CELL OUTPUTS **displays.**

7.3.2 Calibration

See **Section 8: Calibration** *for complete instructions.*

7.3.3 Options (Scale), On Scale Alarm

This function initiates an audible alarm and display a message when a weight exceeds the **Initial Threshold Weight setting.**

1. **In the Service Menu, press the DOWN arrow until** SCALES (SERVICE) **displays, then press ENTER.**
2. **When** ID 1 **displays, Press ENTER.**
3. **When** CELL OUTPUTS **displays, press the DOWN arrow until** OPTIONS (Scale) **displays, then press ENTER.**
4. **When** On Scale Alarm **displays, then press ENTER.**
5. **Using the ▼, select either ON or OFF, then press ENTER.**
   – Turning this feature **ON** programs a "**VEHICLE ON SCALE**" display message and sounds an alarm when the **Threshold Weight** is exceeded.
6. **Press MENU to exit.**

7.3.4 Options (Scale), Reset Cell Errors

This function deletes all the **Cell Errors,** *refreshing the memory being used.*

1. **In the Service Menu, press the ▼ until** SCALES (SERVICE) **displays, then press ENTER.**
2. **When** ID 1 **displays, Press ENTER.**
3. **When** CELL OUTPUTS **displays, press the ▼ until** OPTIONS (Scale) **displays, then press ENTER.**
4. **press the ▼ until** RESET CELL ERRORS **displays, then press ENTER.**
5. **Using the ▼, select either ON or OFF, then press ENTER.**

7.4. Special Functions

7.4.1 System Settings

The **SYSTEM SETTINGS option** *stores all the company information where the scale is located.*

1. **In the Service Menu, press the ▼ until** SPECIAL FUNCTIONS **displays, then press ENTER.**
2. **When** SYSTEM SETTINGS **displays, then press ENTER.**
3. **When** LOCATION INFORMATION **displays, press ENTER.**
4. **Input all the company information with the external keyboard by pressing the ▼, then press ENTER.**

7.4.2 COM Port Test

The **COM PORT TEST option** *checks the integrity of each port.*

1. **In the Service Menu, press the ▼ until** SYSTEM SETTINGS **displays, then press ENTER.**
2. **When** LOCATION INFORMATION **displays, press ENTER.**
3. **Input all the company information with the external keyboard by pressing the ▼, then press ENTER.**
4. **While** TEST/ **is present, it will broadcast continuously to all three RS232 ports with the configured baud rate and device attached.**

7.5. Database Maintenance

7.5.1 Defaults Set

This option returns the Instrument to its original factory default settings.

1. **In the SERVICE menu, select DATABASE MAINTENANCE.**
2. **Press the ▼ until DEFAULTS SET displays, then press ENTER.**
3. **Press the ▼ to select either NO or YES, then press ENTER.**

- **ON BOARD** feature is a small amount of flash memory located on the CPU module.
  - This memory can be used as a temporary data backup, and is always present, even with no SD or USB drive.
  - Any data within this programmed space is erased when the SD Card is flashed.

- **SD CARD** is a small removable memory card for storing settings, weighment and other programming data. This card is located in the **Flash Card Holder J3** of the **Base Board Assembly.**

- **USB DRIVE** is available when a USB Jump Drive is installed in one of the ports in the back of the Instrument.
  - If none is installed, NO displays for this option.

7.5.2 Backup

This option backs up the current settings and transaction data, so these can be restored later if there is a problem.

1. **In the SERVICE MENU, select DATABASE MAINTENANCE.**
2. **Press the▼ and select ENTER when BACKUP displays.**
3. **Using the ▼, select ON BOARD, SD CARD, or USBDRIVE, then press ENTER.**
4. **When the operation is complete, DONE - PRESS ANY KEY TO EXIT displays.**

C A U T I O N

Performing any of the DATABASE MAINTENANCE functions will erase some or all of the current transaction data records and/or Instrument settings.

7.5.3 Restore

This option restores the previous settings and data, if there is a problem.

1. **Restore data from the ONBOARD MEMORY by following these steps.**
   a. **In the SERVICE MENU, select DATABASE MAINTENANCE.**
   b. **Press the ▼ and select ENTER when BACKUP displays.**
   c. **Press ENTER when ONBOARD displays to restore all data previously backed up in the ONBOARD MEMORY.**
   d. **When the operation is complete, DONE - PRESS ANY KEY TO EXIT displays.**

OR…

2. **Restore data from the INTERNAL SD CARD by following these steps.**
   a. **In the SERVICE MENU, select DATABASE MAINTENANCE.**
   b. **Press the ▼ and select ENTER when BACKUP displays.**
   c. **Press the ▼ and press ENTER when SD CARD displays to restore all the data previously backed up to the internal Mini SD Card.**
   d. **When the operation is complete, DONE - PRESS ANY KEY TO EXIT displays.**

OR…

3. **Restore data from an External USB Flash Drive by the following steps.**
   a. **Insert the Flash Drive with the previous Backup into the USB port of the Instrument.**
   b. **In the SERVICE MENU, select DATABASE MAINTENANCE.**
   c. **Press the ▼ and select ENTER when BACKUP displays.**
   d. **Press the ▼, then select ENTER when USB DRIVE displays.**
   e. **When the operation is complete, DONE - PRESS ANY KEY TO EXIT displays.**
      - *This restores all the data previously backed up on the* **USB flash drive***.*

C A U T I O N

Performing any of the DATABASE MAINTENANCE functions will erase some or all of the current transaction data records and/or Instrument settings.

7.5.4 Ticket Format Restore

This option restores only **Ticket Format Data** *that was backed up previously, using the* **BACKUP option**.

1. **In the SERVICE MENU, press the ▼ until** DATABASE MAINTENANCE **displays, then press ENTER.**
2. **Press the ▼ and when** TICKET FORMAT RESTORE **displays, press ENTER.**
3. **Using the ▼, select** ON BOARD, SD CARD, **or** USBDRIVE, **then press ENTER.**
   - DONE - PRESS ANY KEY TO EXIT displays when the Ticket Restore process is successful.
4. **Press ENTER, and** Database Maintenance **displays.**

C A U T I O N

Performing any of the **DATABASE MAINTENANCE** functions **will erase some or all of the current transaction data records and/or Instrument settings.**

7.6. Upgrade

This function checks the **Micro SD Card** *for any new program revisions.*

1. **In the SERVICE MENU, press the ▼ until** UPGRADE **displays, then press ENTER.**
2. **When** CHECK **displays, press ENTER.**
3. **Press ENTER when prompted to upgrade the program.**

SECTION 8: CALIBRATION

8.1. Calibration

1. **In the SERVICE MENU, press ▼ to SCALES (SERVICE, then press ENTER.**
2. **ID 1 displays, press ENTER.**
3. **Press ▼ to CALIBRATION, then press ENTER.**

8.1.1 Data (Calibration)

1. **In Calibration, press ▼, to DATA (CALIBRATION, press ENTER.**
2. **Press the▲/▼ keys, followed by ENTER, to configure the following DATA (Calibration) options.**
   a. **DIVISION SIZE – Using the ▲/▼ keys, input the appropriate amount according to the site's standard weighments.**
   b. **PRIMARY UNITS – Using the ▲/▼ keys, select one of the following.**
      - lb
      - kg
      - ton
      - tonne
   c. **SECONDARY UNITS – Using the ▲/▼ keys, select one of the following.**
      - lb
      - kg
      - ton
      - tonne
   d. **MOTION BAND – Using the numeric keypad, select one of the following.**
      - 0.5d
      - 1.0d
      - 3.0d
      - OFF

8.1.1 Data (Calibration), Continued

e. **AUTO ZERO TRACKING – Using the ▲/▼ keys, select the appropriate Division.**

- 0.5d
- 1.0d
- 3.0d
- OFF

- *Refer to the local Weights & Measures regulations for the proper setting for Legal-for-Trade applications.*

f. **DUAL RANGE – Using the ▲/▼ keys, select ON or OFF.**

- *When* **ON** *is selected, the displayed* **Division Size** *increases to the next largest size available when a weight exceeds the* **DUAL THRESHOLD (DUAL RANGE).**

g. **DUAL THRESHOLD – Using the numeric keypad, input the desired amount according to the capacity of the lower range.**

h. **SCALE CAPACITY – Using the numeric keypad, input the maximum limit of the scale.**

i. **FILTER FACTOR – – Using the ▲/▼ keys, select the best option, considering the usage of the scale.**

- MEDIUM, HEAVY, OFF, MED/LIGHT, HVY/MED, ANIMAL *or* LIGHT.

j. **CELL CAPACITY – Enter the maximum limit for each cell of the scale.**

k. **CELL UNITS – – Using the ▲/▼ keys, select from one of the following.**

- Lb
- Ton
- kg
- tonne

- DATA (CALIBRATION) displays.

8.2. Cell Sensitivity

To pre-calibrate using a mV/V method:

8.2.1 Pre-calibrate All Cells Together

1. **In the Calibration menu, ▼ down to CELL SENSITIVITY, press ENTER.**
2. **When CELL 1 displays, press ENTER**
3. **When SENSITIVITY displays, press ENTER, then using the numeric keys, input the cells' rated mV/V value.**
4. **▼ down to RESISTANCE press ENTER.**
5. **Using the numeric keys, input the cell's rated Ohm value, then press ENTER.**

6. **Press MENU**
7. **Press ▼until** CALIBRATE (MV/V/OHM) **displays, press ENTER.**
8. **Press ▼and either select** NO **to abort the calibration, or** YES **to calibrate the scale, then press ENTER.**
9. **When** UNLOAD SCALE PRESS ENTER **displays, do this.**

SUCCESS! CELLS CALIBRATED! displays once the process is complete.

Display with switch between this message weight on scale platform.

Press red traffic light button to return to weigh screen.

8.3. Trim (Cell/Section/Scale)

1. **Go to the Calibration Menu, press▼ to** TRIM (CELL/SECTION/ SCALE **> press ENTER.**
2. **When** SELECT REFERENCE TYPE **displays, press ENTER.**
3. **Using the ▲/▼ keys, select the desired Reference Type then press ENTER.**
   a. SET ZERO REFERENCE **– Reestablishes a ZERO reference before trimming.**
      - *The scale must be unloaded top establish a* **ZERO reference***, then a known weight is applied and trimmed.*
   b. SET RECAL REFERENCE **– Calibrates the from an unknown zero.**
      - *i.e. A huge, half full hopper cannot be unloaded for calibrating.*
      - *This uses the current weight on the scale as a 'resting' reference point.*
      - *A known weight is added and trimmed.*
      - *A* ***ZERO*** *point and the calibration are calculated, based on the trimming of this known weight.*
4. **When** ENTER TEST WEIGHT **displays, press ENTER.**
5. **Using the numeric keypad, Input Test Weight , then press ENTER.**
6. **When** SPAN UNITS? **displays, press ENTER.**
7. **Using the UP/DOWN ARROWs, select one of the following UNITS, then press ENTER.**
   - lb
   - kg
   - ton
   - tonne

8.3 Trim (Cell/Section/Scale), Continued

8. ***Implement these steps only if* SET ZERO REFERENCE *was selected in Step 3***

   a. When UNLOAD SCALE PRESS ENTER CCCCCC displays , remove all weight from Scale, then press **ENTER.**

   – Where CCCCCC = Counts.

   b. When APPLY LOAD PRESS ENTER WWWWWW displays, add test load to scale, then press **ENTER.**

   – Where WWWWWW = **Pre-trim weight reading.**

   c. Display shows TRIM COMPLETE !

   d. Press **ENTER** & MULTI-POINT CALIBRATION? Displays

   e. Select YES or NO.

   f. If NO is selected, display returns to TRIM : CELL, SECTION, SCALE ;

   g. If YES is selected, display shows ENTER TEST WEIGHT.

   h. Press **ENTER** and key in test weight value.

   i. APPLY LOAD TO SCALE displays. Apply the weight and press **ENTER**.

   j. SCALE TRIM COMPLETE displays. Press **ENTER**.

   k. MULTI-POINT CALIBRATION? displays. Press **ENTER** to return to ***Step e.*** or press the red traffic light button to exit and save calibration and return to the weigh screen. Process can be repeated up to 5 multi-points.

   l. If NO is selected on ***Step 8.e.***, display will return to TRIM :CELL, SECTION, SCALE;

OR…

9. ***Implement these steps only if* SET RECALL REFERENCE was selected in Step 3.**

   a. When PRESS ENTER TO SET REFERENCE CCCCCC displays, with reference weight applied to selected section, press **ENTER.**

   – Where CCCCCC = **Counts**.

   b. When APPLY LOAD TO SCALE X, PRESS ENTER WWWWWW displays, add test load to selected section, press **ENTER.**

   – Where WWWWWW = **Pre-trim weight**.

   c. When SECTION RECALIBRATION COMPLETE ! displays, press **ENTER.**

If an error occurs or a step is missed, the display will show: TRIM FAILED! TRY AGAIN ...

NOTE: *When active units are LBs and SPAN units are KG, the entered Trim Weight value is converted from KGs to LBs, and the displayed weight values during the trim process will be in LBs.*

For example, if 10,000 KGs is used for the trim weight, the FB60XX will display 22,046 (LBs.)

SECTION 9: SERIAL INPUT / OUTPUT

9.1. Printers

9.1.1 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 Fairbanks Scales standard default COM Port settings for all the printers is* **9600 Baud, No Parity, 8 Bits**, *and* **1 Stop Bit.**

9.1.2 Printer Cabling

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

14807 CABLE KIT

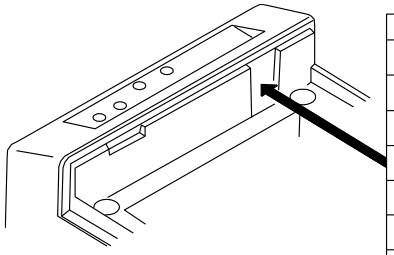
WIRE	DB-9 INSTRUMENT	COLOR	DB-25 PRINTER	DESC.
1	**P1-2**	R	**P2-2**	RX
2	**P1-3**	W	**P2-3**	TX
3	**P1-5**	G	**P2-7**	GROUND
4	**P1-7**	O	**P2-8**	JUMPERED

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

9.1.3 iDP3550 Tape Printer Settings



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

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

BAUD	**9600**
PARITY	**No**
DATA BITS	**8**
STOP BIT	**1**

9.1.4 TM-U590 Ticket Printer Settings

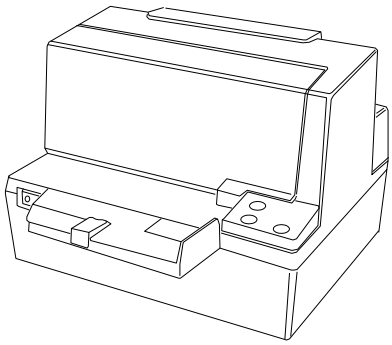
- For FB6001/2/3 Instrument **Desktop** and **NEMA 4X SERIAL** communications, use cable **14807.**

BAUD	**9600**
PARITY	**No**
DATA BITS	**8**
STOP BIT	**1**

Set the printer **dip switche**s as listed below.

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

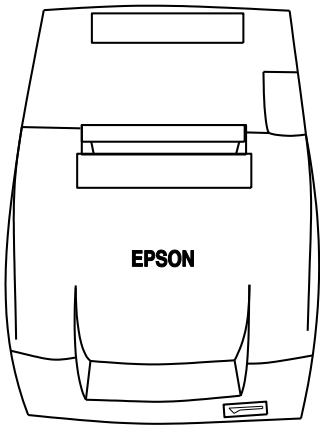
DSW 2: All Switches = **OFF**



9.1.5 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
TB1**a**-2	RxD	BR	2	TxD
TB1**a**-3	TxD	R	3	RxD
TB1**a**-4	DRT	O	6	DSR
TB1**a**-5	SG	Y	7	SG
TB1**b**-6	DSR	G	20	DTR
TB1**b**-7	RTS	BL	5	CTS
TB1**b**-8	CTS	BK	4	RTS

* *Must remove the* **9-pin connector**.

9.1.5 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 byes	**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.

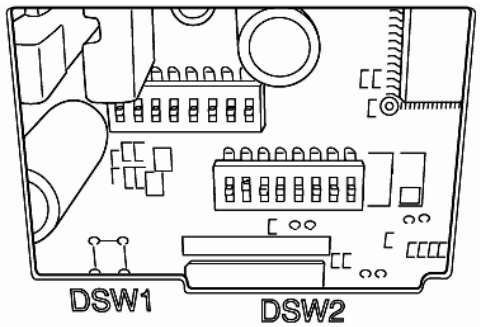
DIP SWITCH 2 (Serial Interface)

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.



For standard use, dip switches are factory-set correctly

9.1.6 TM-U295 Ticket Printer Settings

- For FB6001/2/3 Instrument **Desktop** and **NEMA 4X SERIAL** communications, use cable **14807**.

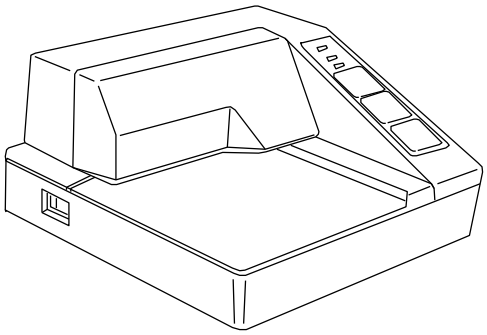
BAUD	**9600**
PARITY	**No**
DATA BITS	**8**
STOP BIT	**1**

.

Set the printer **dip switche**s as listed below.

SW1: 1 and 3 = **ON**

Remainder = **OFF**



9.1.7 SP298 Printer Settings

- For FB6001/2/3 Instrument **Desktop** and **NEMA 4X SERIAL** communications, use cable **14807**.

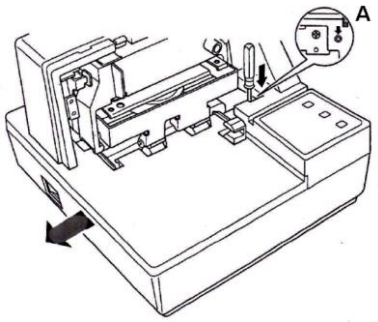
BAUD	**9600**
PARITY	**No**
DATA BITS	**8**
STOP BIT	**1**

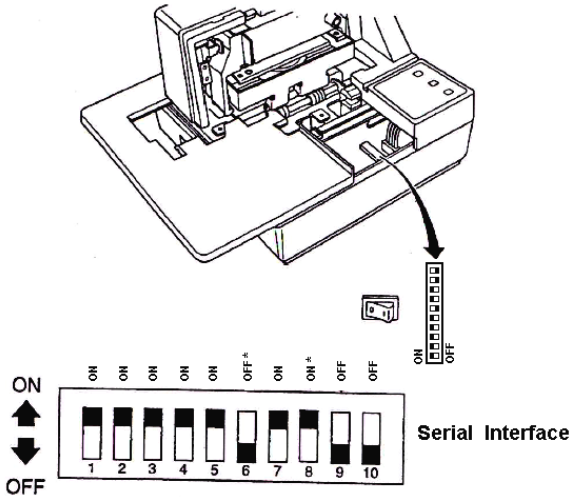
ACCESSING THE DIP SWITCHES

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".**

9.1.7 SP298 Printer Settings, Continued

6. **Replace the Print Cover.**





DIP Switch Settings (SERIAL INTERFACE)

SWITCH	FUNCTION	ON	OFF
1	Baud Rate	***See table below*.**	
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	***See table below***	
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**.

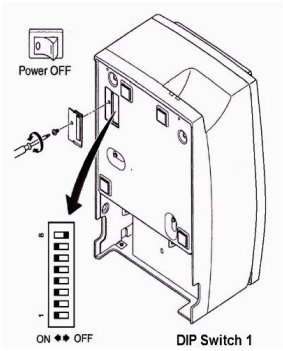
9.1.8 SP700 Printer Settings

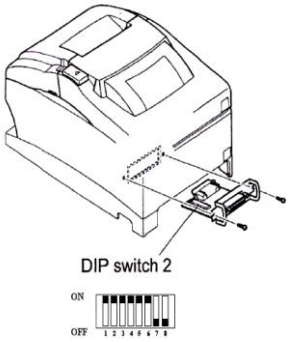
BAUD	**9600**
PARITY	**No**
DATA BITS	**8**
STOP BIT	1

- For FB6001/2/3 Instrument **Desktop** and **NEMA 4X SERIAL** communications, use cable **14807**.

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.

9.1.8 SP700 Printer Settings, Continued

– 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**).

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

9.1.9 SP2000 Printer Settings

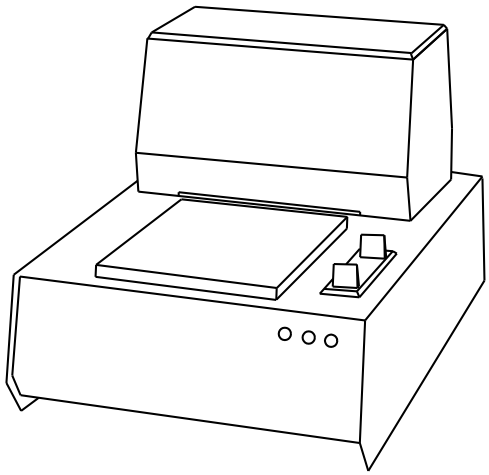
The SP2000 is a Dot Matrix ticket printer. The following switch settings and cable requirements will work with the default format.

- For FB6001/2/3 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 switche**s according to the following:

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



9.1.10 SP2200 Printer Settings

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

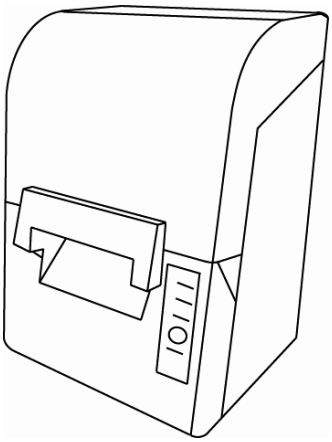
- **FB6001/2/3 Desktop** and **NEMA 4X** use cable **14807**.

BAUD	**2400**
PARITY	**NO**
DATA BITS	**7**
STOP BIT	**2**

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

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

9.1.11 TM-U230 Printer Settings



- For FB6001/2/3 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)

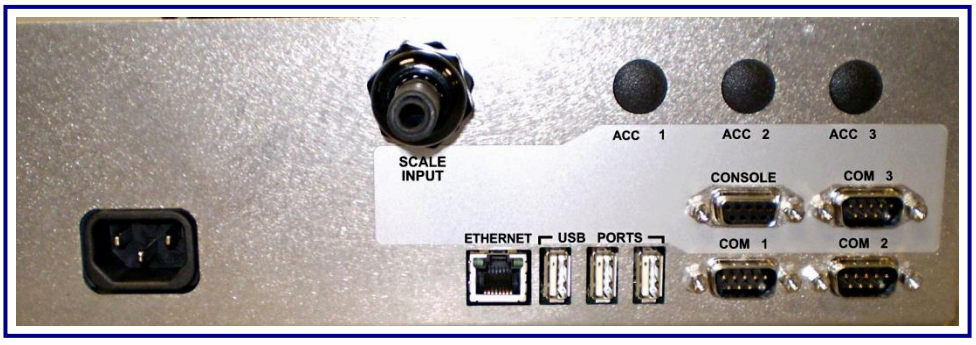
SWITCH	FUNCTION	ON	OFF
1	Sections number of characters per line (cpl) 7 x 9 font/ 9 x 9 font	42/35	**40/33**
2	For internal use only (Auto-cutter) (do not change)	**Enabled**	Disabled
3	Pin 6 reset signal	Used	Not used
4	Pin 25 reset signal	Used	Not used
5	PAPER OUT LED flashing pattern	**Flashes**	Lights 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 9.1.2. Printer Cabling.**

9.2. COM Ports

The FB6001/2/3 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 FB6001/2/3 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 9**.
- 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.
- The Ethernet Port is used for the **WEB FORMATTING.**
  - *For completed details, see* **Section 4: Web Interface**



9.2.1 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.

NOTE: *For complete wiring information, see* **2.5.3. Remote Display 20mA Wiring (J4)***.*

9.2.2 Configuring the Remote Display Output

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

4. **In the** CONFIGURATION MENU**, press the** DOWN **arrow until** COM PORTS **displays.**
5. **Press** ENTER**.**
6. **Using the** DOWN arrow, **select the desired** 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 Fairbanks 160x remote displays.
   - SETTINGS is displayed. If using a non-Fairbanks remote display or if the settings otherwise require changes, press **ENTER** to enter the setting menu.
   - The available settings include: BAUD RATE, PARITY, STOP BITS DATA BITS, and CHECKSUM.

9.2.2. Configuring the Remote Display Output, Continued

7. **Using the** DOWN/UP **arrows, select the proper communication settings for your remote display, then press** ENTER
8. **Select the correct setting for your remote display, then press** ENTER**.**
9. **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.*

9.2.3 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-U295
- IDP-3550
- TM-U220
- TM-U230
- TM-U590
- SP-700
- SP-2000
- SP-22000
- SP-298

* *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 Fairbanks Scales 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.*

9.2.4 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. To test the output with a terminal program, press: “W” and [ENTER], and the instrument responds with return data.
3. **Press ENTER when** FORMAT **displays.**
4. **Press the DOWN-arrow to select the correct standardized data string format.**
   - FAIRBANKS .
   - TOLEDO
   - CARDINAL
   - WEIGHTRONIX
   - CONDEC
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.

10a. When the current setting is displayed, either press **ENTER,**

OR

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

9.2.5 DemandPC

This option transmits the weight data in the **Outbound format** whenever the **PRINT button** is pressed. It occurs in one of three situations, as listed below.

- When a **Gross/Tare/Net** print is made.
- An **Inbound Weighment** is completed.
- An **Outbound Weighment** is completed.
  - The instrument outputs information based on the configured ticket format. **GROSS/TARE/NET, INBOUND**, and/or **OUTBOUND format** respectively.
  - 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.

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…

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

9.3. Formatting Tickets

9.3.1 Standard Ticket Formatting Steps

Listed below are the standard steps for formatting a ticket.

1. **Configure the Service Menu to the correct OPERATING MODE.**
   - *See* **SECTION 7.2.1.**

- The **OPERATING MODE** 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.*

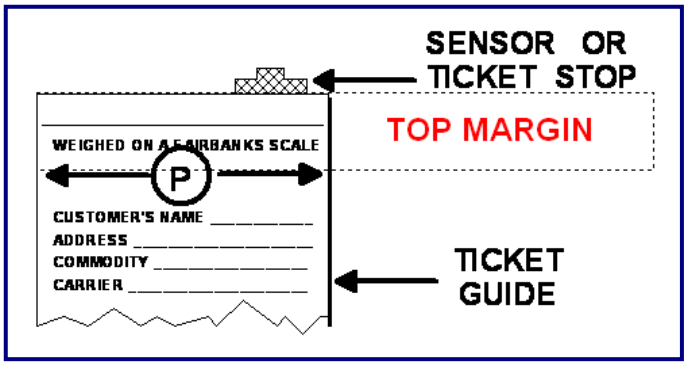
2. **Set up the COM Ports in the Configuration Menu to a specific attached device.**
   - *For complete details, see* **Section 9.2. COM PORTS**.
3. **Install, wire and configure the printer.**
   - *See* **Section 9.1.1. Printer Switch Settings**.
4. **Access the TICKET FORMAT menu.**
5. **Insert a blank ticket, then press the PRINT key for a ticket self-test.**
   - This identifies its current margin setup.
6. **Press the OUT button to print out the complete Operating Mode format structure.**
7. **Using this self-test ticket, plan where to format the ticket margins and available print spaces.**
   a. **Determine how the current ticket format might differ from the customer's needs.**
   b. **Plan the needed changes according to their SPACE (*horizontal*) and FEED (*vertical*) coordinates of the ticket.**
   c. **Mark up this ticket with a ruler and pencil as needed, using it as a guide.**

9.3.1 Standard Ticket Formatting Steps, Continued

Consider these factors for placement of data when formatting a ticket.

A. TOP MARGIN

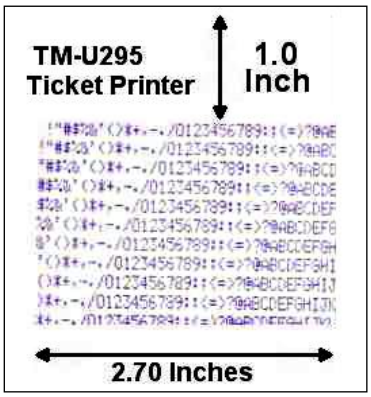
The area between the ticket sensor, stop, tear-off and the first line of print is called the **Top Margin**. Printing is not possible in this part of the ticket.



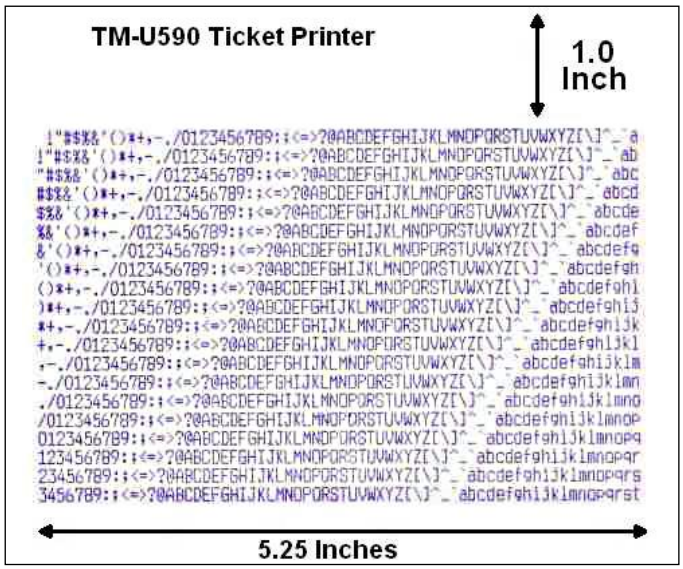
B. PRINTING AREA

There is a wide variation of printing area used between the different types of printers. This is determined by the physical characteristics of each particular one.

- To find the available space on a ticket, run a printer self-test.



The print head size is different between these two models, so their print area is different also.



C. ENHANCED PRINT SIZE

Another factor that regulates how many lines can be placed on a ticket is the font size of the characters. This varies depending on the printer.

- Typically, the **Enhanced Print** feature doubles the standard default font size, making it bolded and emphasized on the page.
- It is recommended using Enhanced Print for only the most important characters on the ticket, such as **Truck ID, Net Weight**, etc.
- It also enhances the character size of **FEEDS** and **SPACES**.

9.3.2 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 wil l 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.

9.3.3 Programming Tips

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

- GROSS
- TARE
- NET
- DATEIN
- DATEOUT
- TIMEIN
- TIMEoUT
- UNITSgROSS UNITSTARENET
- TICKET nUMBER
- LOOP1TEXT
- LOOP1PROMPT1TEXT
- PROMPT1
- INBOUND
- MANUAL TARE
- DUPLICATE
- DUALGROSS
- DUALTARE
- Dual Net
- Dualinbound
- DualUNITSGross
- DuTaNEUnits
- 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**	• Saves ticket format (**YES/NO**). • Backs up one menu level.	**MENU**
RED LIGHT	**F1**	Exits without saving.	**Red Light ON**
GREEN LIGHT	**F2**	Deletes the entire Ticket Format Script.	**Green Light ON**
IN	**F4**	N/A	**INBOUND**
OUT	**F5**	Prints the entire Ticket Format Script.	**OUTBOUND**
TARE	**"."**	N/A	**Auto Tare**

9.3.4 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.
CLAMP ( )	Clamps the printer paper.
CUTPAPER ( )	Cuts the printer paper.

9.3.5 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.**
   a. **If the printer is already selected, then press ENTER,**

OR…

   b. **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.**

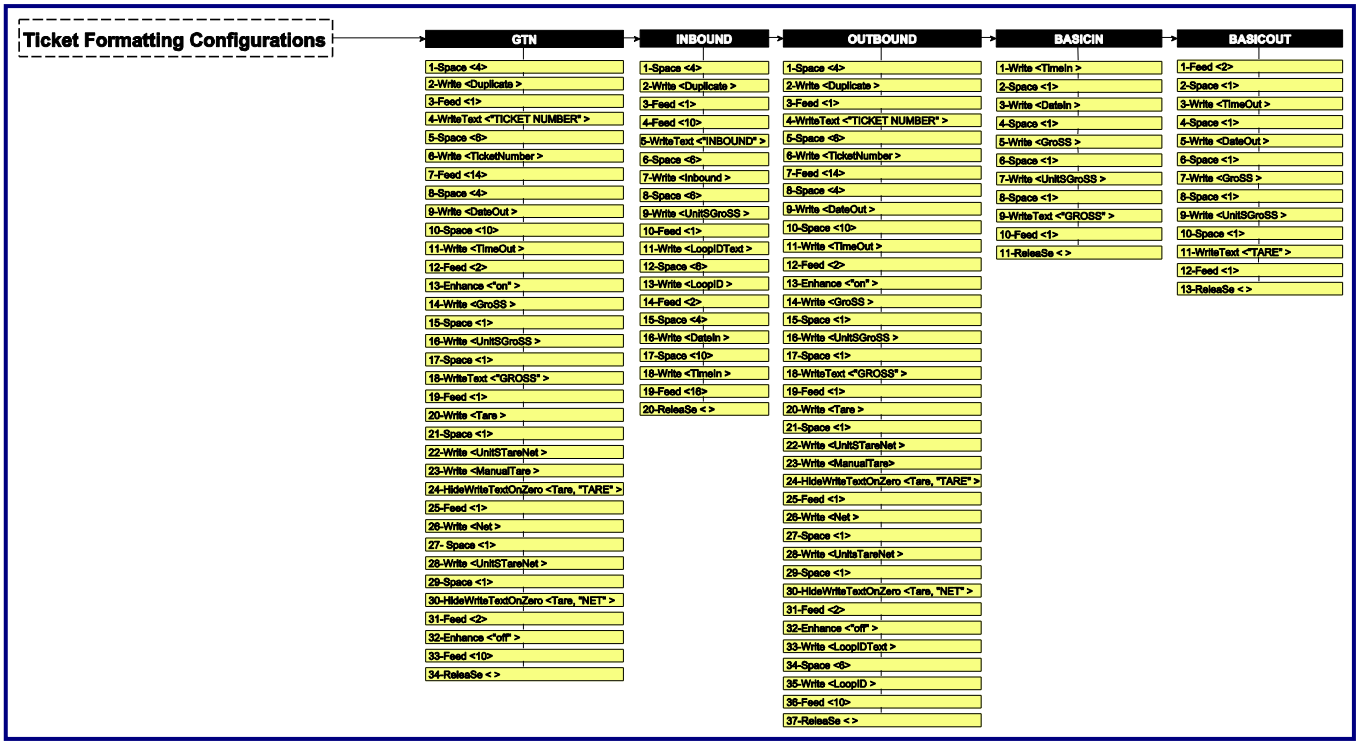
5. **When FORMAT displays, press ENTER.**
6. **Press the UP/DOWN arrows to navigate and format these ticket commands.**
   - Press the **PRINT key** while in the **TICKET FORMAT mode** to print a test ticket.
   - Adjust the parameters for **FEED** and **SPACE** to align the information as required to 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.

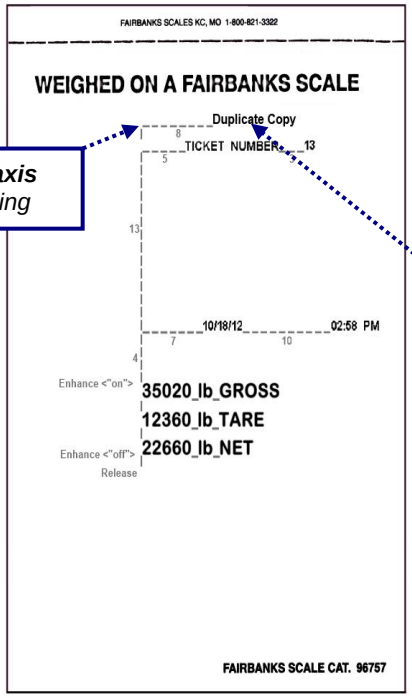
ENTER: Saves all data input..
PRINT: Prints a sample ticket.
RED Button: Exits to **Weigh Screen**.
GREEN Button: Deletes Format Script.

The flow chart below displays samples of available options for **TICKET FORMATTING CONFIGURATION**.



9.3.6 G/T/N Ticket Formatting

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



X/Y axis *starting*

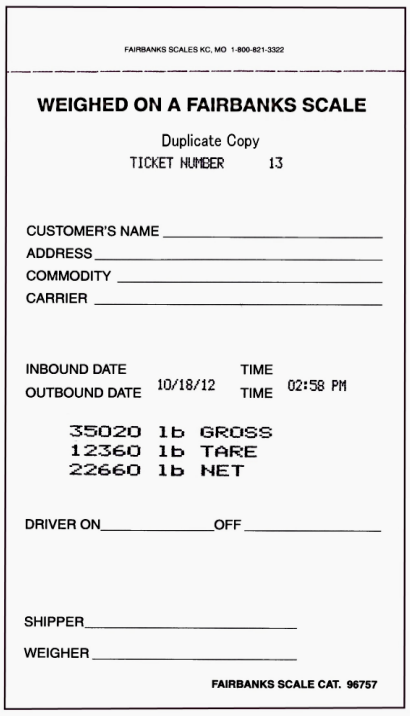
1-Space <8> *moves the ticket text* ***horizontally.***

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

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

This image shows the printed areas and other defined elements of a **G/T/N Ticket.**

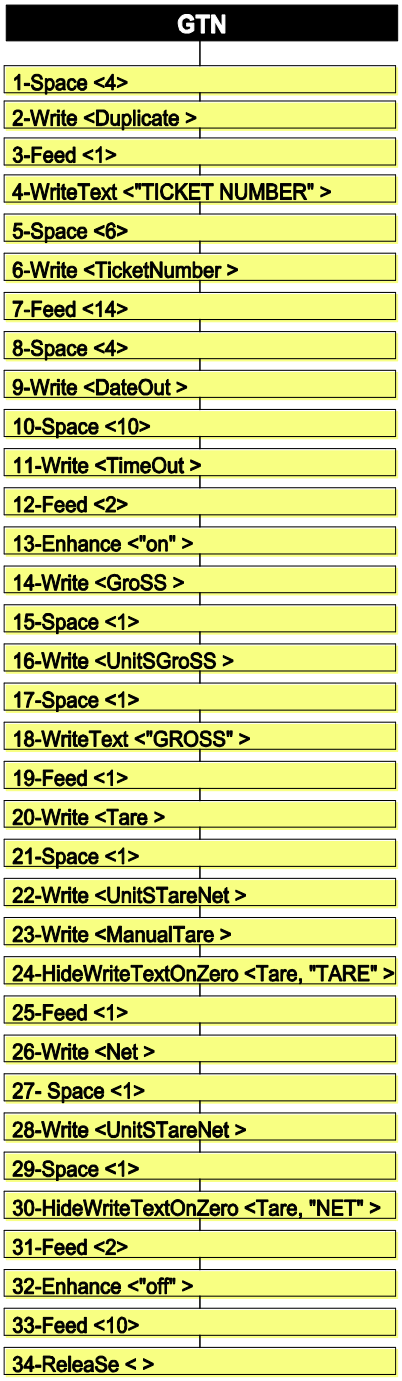
– *All grey markings are for illustration purposes only*



Example of an actual ***G/T/N***

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

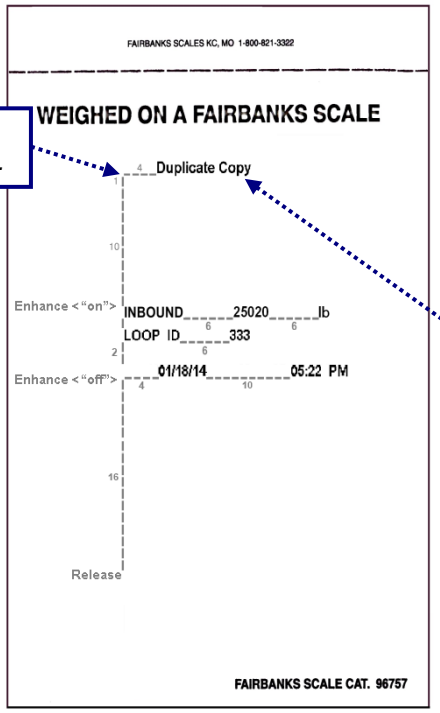
32-Enhance <"off" > *restores print style to standard.*



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

9.3.7 Inbound Ticket Formatting

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

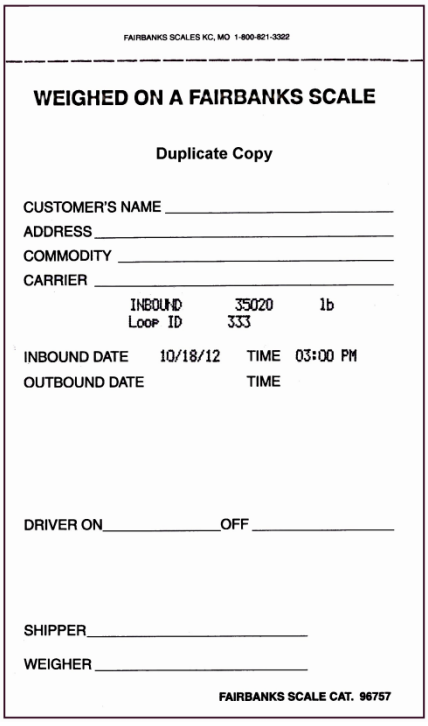


X/Y *axis* *starting point.*

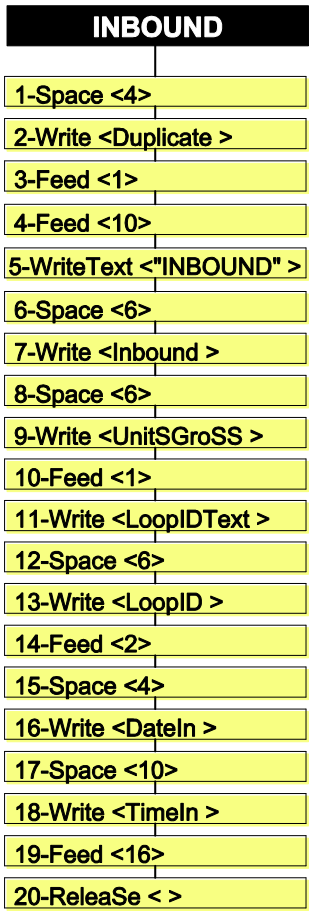
"Duplicate Copy" *appears **only** when a* **TICKET REPRINT** *is performed.*

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.*



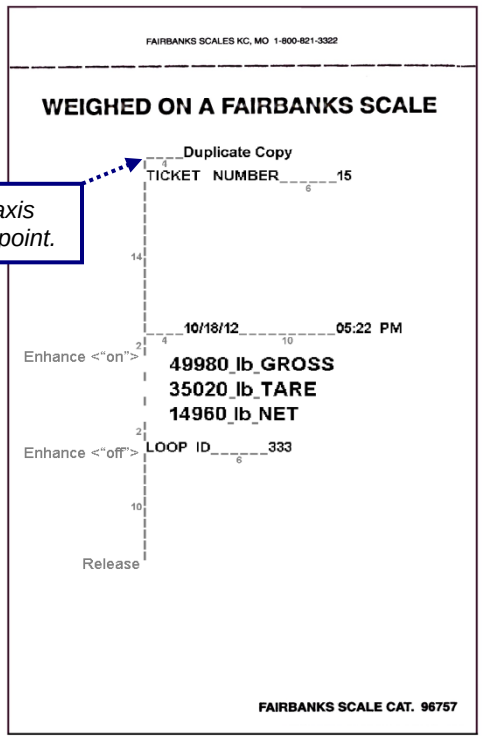
*Example of an **Inbound Ticket**.*



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

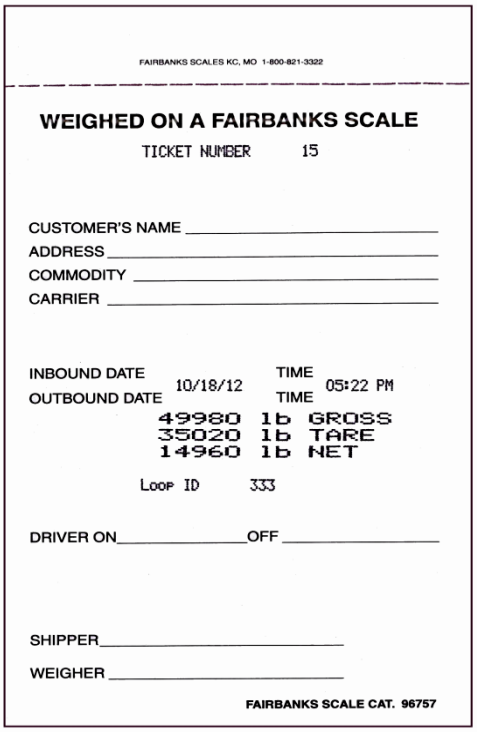
9.3.8 Outbound Ticket Formatting

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



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).*

OUTBOUND

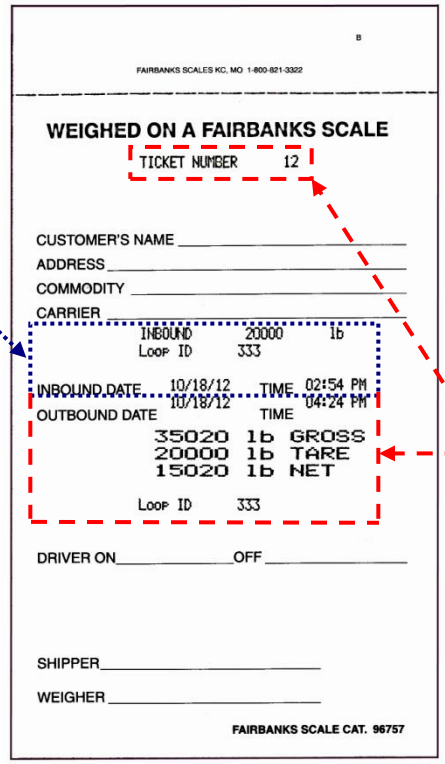
1-Space <4>
2-Write <Duplicate >
3-Feed <1>
4-WriteText <"TICKET NUMBER" >
5-Space <6>
6-Write <TicketNumber >
7-Feed <14>
8-Space <4>
9-Write <DateOut >
10-Space <10>
11-Write <TimeOut >
12-Feed <2>
13-Enhance <"on" >
14-Write <GroSS >
15-Space <1>
16-Write <UnitSGroSS >
17-Space <1>
18-WriteText <"GROSS" >
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 flow chart outlines coordinates for each element of the ***Outbound Ticket****.*

9.3.9 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**.



FAIRBANKS SCALES KC, MO 1-800-821-3322

WEIGHED ON A FAIRBANKS SCALE

TICKET NUMBER 12

CUSTOMER'S NAME _____

ADDRESS _____

COMMODITY _____

CARRIER _____

INBOUND 20000 lb
LOOP ID 333

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

35020 lb GROSS
20000 lb TARE
15020 lb NET

LOOP ID 333

DRIVER ON _____ OFF _____

SHIPPER _____

WEIGHER _____

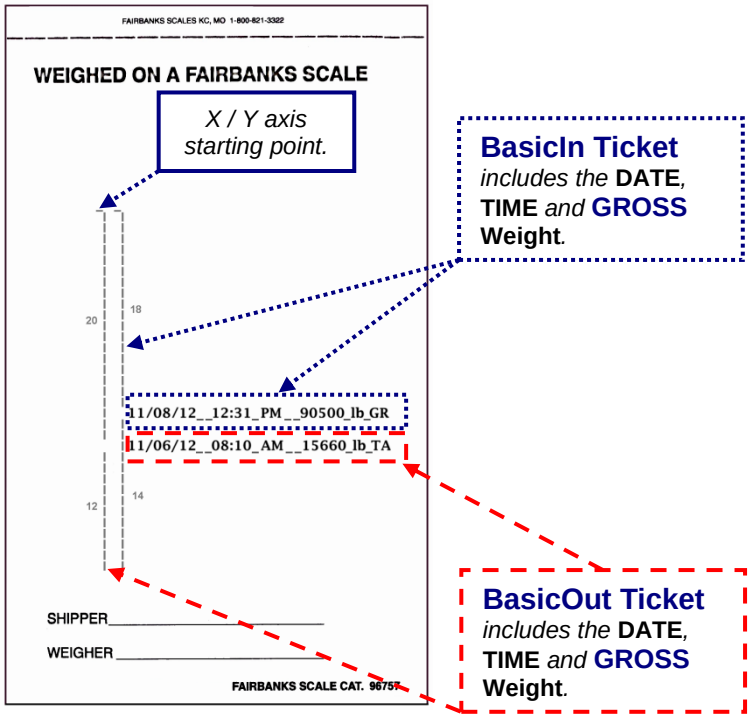
FAIRBANKS SCALE CAT. 96757

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.

9.3.10 BasicIn and BasicOut Ticket Formatting



*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**.*

9.3.11 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.**

9.4. Formatting Web Interface Tickets

9.4.1 Logging In to the Web Interface

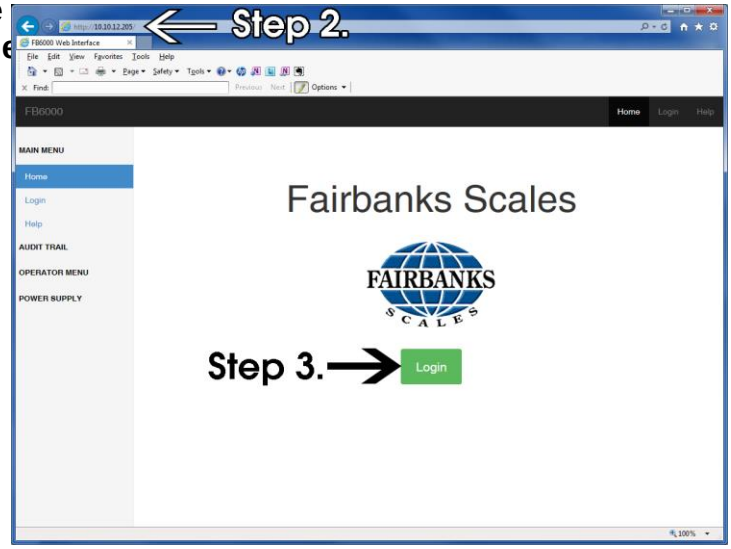
1. **Locate the IP Address of the FB60XX Series Instrument**

   (See also 4.1.1. To obtain the current IP address of the FB60XX)

NOTE: *In order to login to the Web Interface, you* ***MUST*** *logout of the FB60XX 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 FB60XX into the Address Bar of the web browser, then press ENTER on the remote computer.**

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

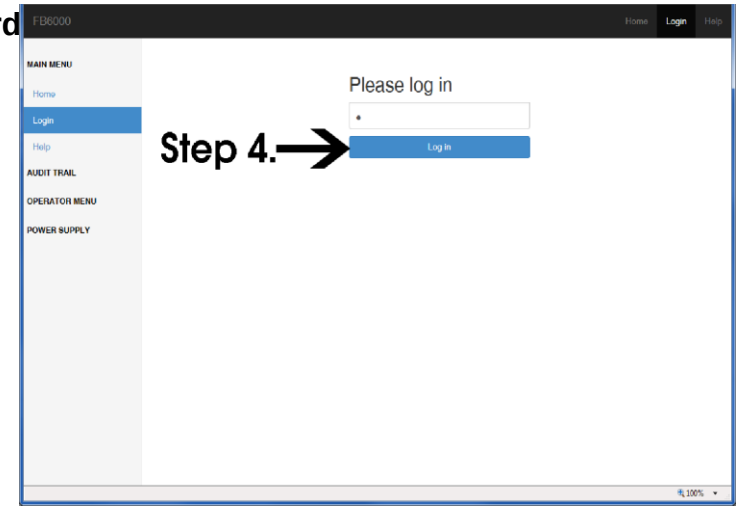


4. **Input the Default Service Password then press the LOG IN button.**

   Service Password = 2.

   The **Web Interface Home** screen appears.

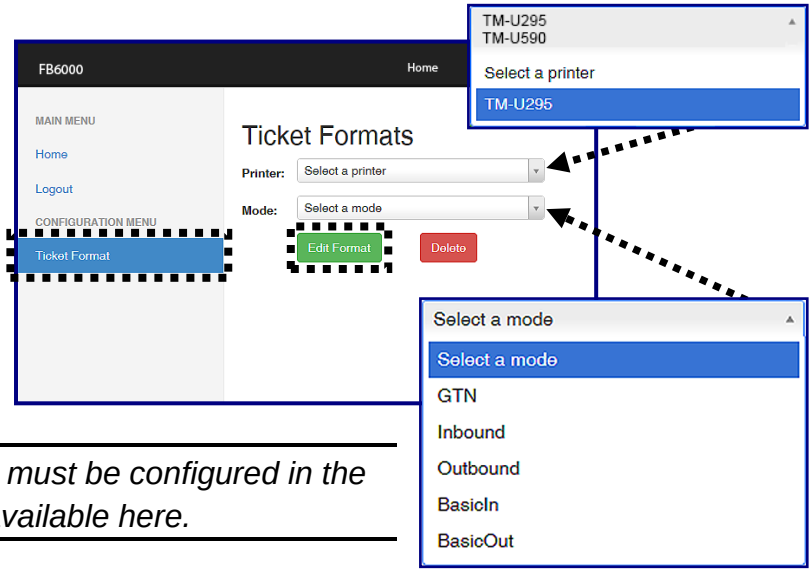
   After you are logged in successfully, the message "***Remote Config in Process***" will appear on the screen of the instrument.



For more complete detail regarding the Web Interface, see Section 4: Web Interface.

9.4.2 Ticket Format

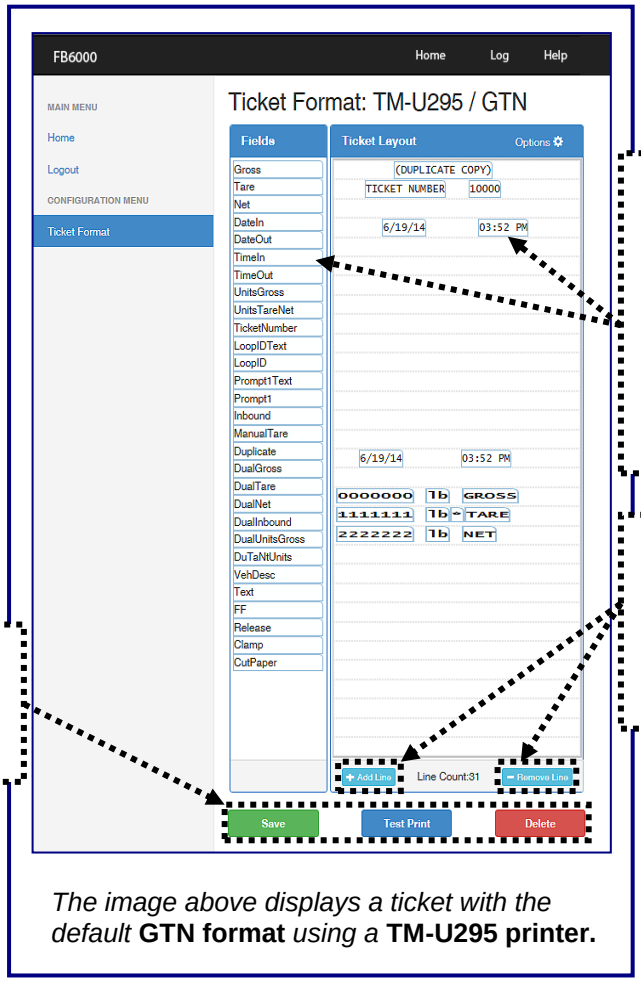
1. **Click the drop-down arrow and Select a printer.**
2. **Click the drop-down arrow and Select a mode.**



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.**



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.

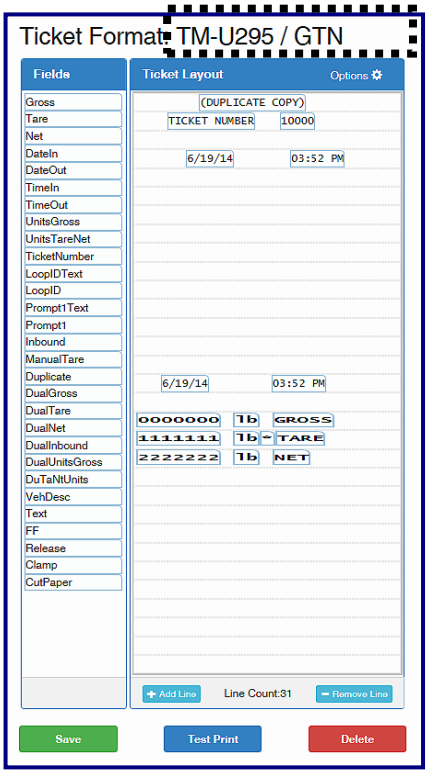
To add or delete lines within the ticket format, click **+Add Line** *or* **– Remove Line**.

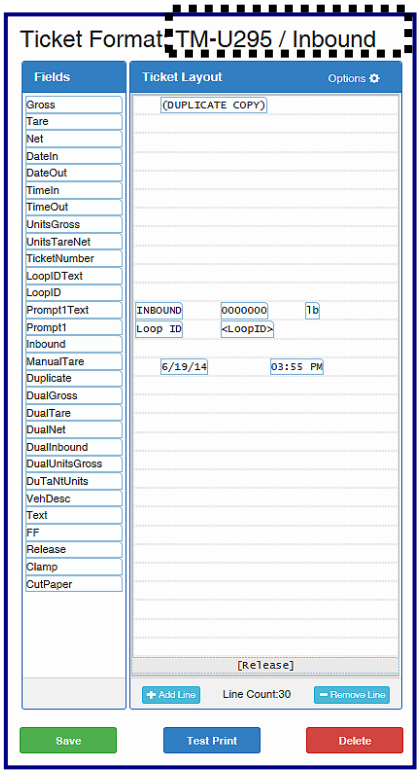
Once completed, click **TEST PRINT.** *Click either* **SAVE** *or* **DELETE**.

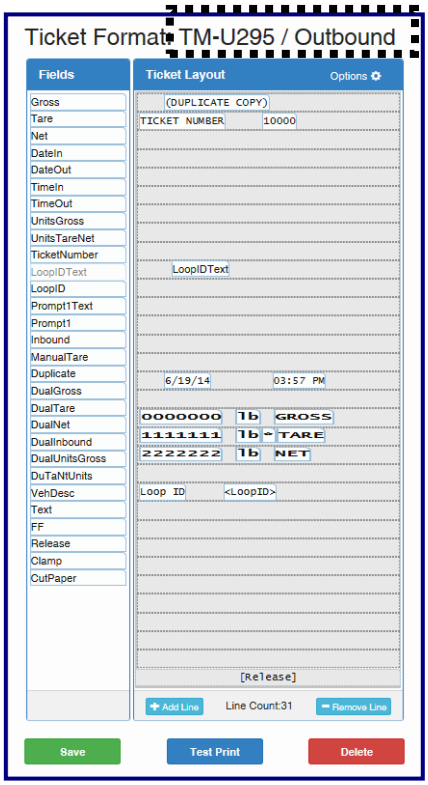
The image above displays a ticket with the default **GTN format** *using a* **TM-U295 printer.**

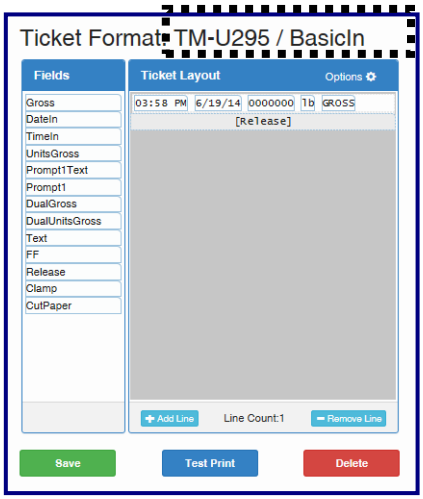
9.4.3 Standard Default Formats

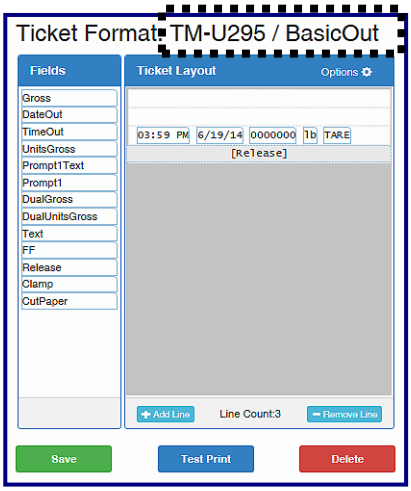
*Shown below are images of the **standard default formats** for each of the Ticket Modes when using theTM-U295.*







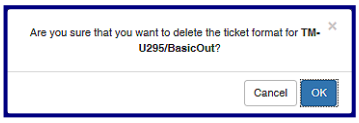




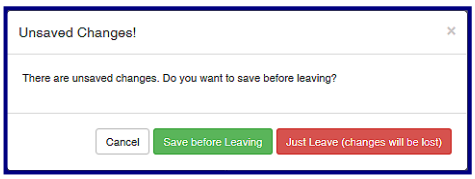
9.4.4 Exiting Without Saving

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.

9.5. 4-20mA Analog Card

The **4-20mA Expansion Card Accessory** is a 16 bit, high resolution, analog output, offering these two transmission options.

ACTIVE provides its own **18VDC** power source for the analog output circuit.

–The dedicated output interfaces the Instrument with PLC's, chart recorders, or other control systems requiring a 4-20mA signal.

ACTIVE, SUPPLIED POWER SOURCE	
4-20mA Specifications	16 bit resolution +/- .01 integral linearity
Current Loop Voltage Compliance	Fairbanks Instrumentation provides the scale's 18VDC power source.
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

PASSIVE requires the customer supply the external power source of **7VDC** to **40VDC**.

PASSIVE, CUSTOMER-SUPPLIED POWER SOURCE	
4-20mA Specifications	16 bit resolution +/- .01 integral linearity

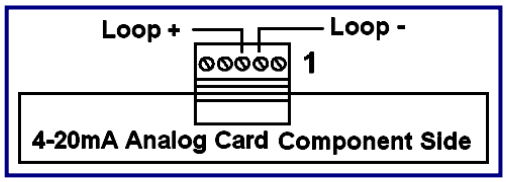
Current Loop Voltage Compliance	The negative (-) power of the supply *MUST* be isolated from chassis ground. A separate power supply must be furnished for each installed passive 4-20.
Full Scale Setting Time	8mSecs
Output Impedance	25 Meg Ohms.
Alarm Current	3.5 to 24mA (underload/overload conditions), 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

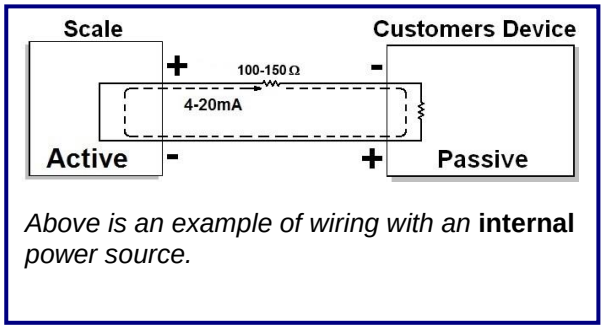
Requires minimum 100 Ohm resistance

9.5.1 Active 4-20mA Kit Installation (33258)

The **4-20 mA ANALOG CARD (33252)** is an **ACTIVE** current loop device with 16-Bit High Resolution Output.

1. Shut down the Instrument properly, and then unplug it.
2. **Remove the cover.**
3. **Install the** Card Guides (29966) **onto the** Expansion PCB Assembly.
   –Note their orientation and location on the PCB Assembly, as they may be installed in any open slot.
   –The **4-20mA PCB Assembly** can be installed in any open location on the **Expansion PCB Assembly.**
4. **Remove one of the** hole plugs **on the back of the FB6000, then replace this with a** Strain Relief Bushing (11020), **used for the** 4-20mA Interface Cable**..**
5. **Connect the** Active 4-20mA Interface Cable **according to this chart.**
   –Using a **100-150Ω Resister** is recommended to complete this circuit.





Above is an example of wiring with an **internal** *power source.*

4-20MA INTERFACE	OUTPUT CONNECTION
Output (–)	TB2-2
Output (+)	TB2-3

6. **Access the FB6000 Instrument's internal configuration to setup the Active 4-20mA PCB Assembly, in order to test and calibrate the output.**
7. **Reassemble the instrument, then place it into operation.**

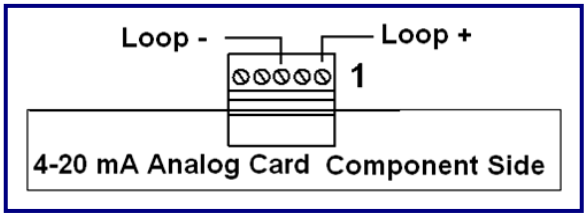
C A U T I O N

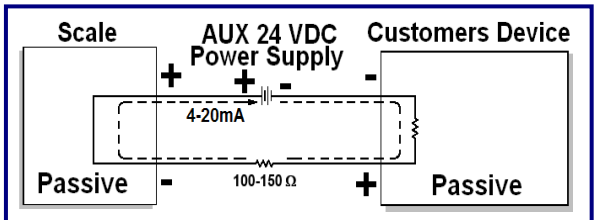
DO NOT CONNECT an EXTERNAL POWER SUPPLY!
Doing so will damage the 4-20mA Expansion Card.

9.5.2 Passive 4-20mA Kit Installation (30919)

The **4-20 mA ANALOG CARD (30738)** is a **PASSIVE** current loop device with 16-Bit High Resolution Output.

8. Shut down the Instrument properly, and then unplug it.
9. **Remove the cover.**
10. **Install the Card Guides (29966) onto the** Expansion PCB Assembly.
    –Note their orientation and location on the PCB Assembly, as they may be installed in any open slot.
    –The **4-20mA PCB Assembly** can be installed in any open location on the **Expansion PCB Assembly.**
11. **Remove one of the** hole plugs **on the back of the FB2550, then replace this with a** Strain Relief Bushing (11020), **used for the** 4-20mA Interface Cable**..**
12. **Connect the** Passive 4-20mA Interface Cable **according to this chart.**
    –Using a **100-150Ω Resister** is recommended to complete this circuit.





Above is an example of wiring with a **customer-supplied**, ***isolated*** *and* ***dedicated*** *power source.*

- *Recommend use with a* **100-150 Ω resistor.**

4-20MA INTERFACE	OUTPUT CONNECTION
Output (+)	**TB2-1**
Output (–)	**TB2-3**

13. Access the **FB6000 Instrument's internal configuration** to setup the Passive 4-20mA PCB Assembly, in order to test and calibrate the output.
14. Reassemble the instrument, then place it into operation.

C A U T I O N

***Failure to use a* DEDICATED *and* ISOLATED POWER SUPPLY *will damage the* 4-20mA Expansion Card.**

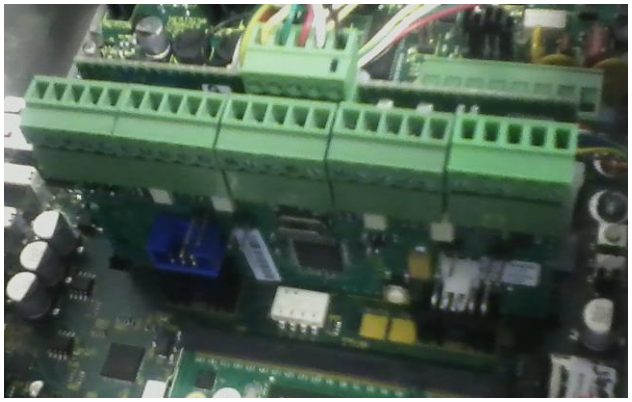
SECTION 10: ACCESSORIES

10.1. Installing Accessories

There are two optional **EXPANSION MODULES** for the FB6001/2/3 Instrument.

✓ **Only one of the two kits can be installed on the instrument, and not both.**

- **4-20mA Analog Kit** (**30919**) produces an analog output between 4 and 20mA, dependent on configuration and weight applied to scale.
- Relay **PCB Assembly Kit (30920)** controls the **ON/OFF state** of the **Traffic Signal Lights** or **Relay Box**.



The **Relay PCB Assembly** *is used to control the* **traffic lights**, *also optional.*

1. **Remove all external power from the Instrument.**
2. **Remove the fastening screws on each side of the case.**
3. **Using the needle-nose pliers at the base of the Expansion Module Mounting Pegs, insert each one onto the Base Board Assembly.**
   - Install each Mounting Peg ***facing inward*** in slots **M5** and **M6**.
   - Press each one firmly against the board until it snaps into place.
   - Removing one of these broken Mounting Pegs requires a razor knife.
4. **Remove the hole cover in ACC 1 in the back wall of the Instrument.**
5. **Thread the Expansion Module Communications Cable through the Cable Insert in ACC 1, then assemble it into the back wall of the Instrument, leaving the mounting bolt still loose.**
6. **Wire the Communications Cable to the Expansion Module according to the charts on the following pages.**
7. **Insert and slide the Expansion Module down the two (2) Mounting Pegs, then plug it into dedicated Base Board Assembly sockets, J8.**
8. **Pull any excess cable through the back of the ACC 1 Access Hole and push in the Cable Insert tightly.**
9. **Turn on and test the system.**

NOTE: *For complete wiring information, see* **Load Cell-to-Instrument Interfaces Installation Manual, 51326**

10.2. Expansion Modules (30919, 30920)

EXPANSION MODULES provide the physical connectivity between the FB6000 family of instruments and all scale and peripheral **I**nput/ **O**utput (**I/O**) devices.

Insert the **Analog Interface Card PCB assembly (30997)** into the dedicated **BASE BOARD SOCKET J6.**

Insert one of the two **Accessory Modules** into the other dedicated **BASE BOARD SOCKET J8.**

- **4-20mA Analog Kit (30919)**

OR…

- **Relay PCB Assembly Kit (30920)**

10.2.1 Analog Scale Card Programming

Follow these steps to view the installed software revision, and program the **Data UPDATE RATE** *for the* **ASC PCB**.

1. **In the Expansion Cards menu, press the DOWN arrow until** SCALE INTERFACE **displays, then press ENTER.**
2. **When** REVISION NUMBER **displays, press ENTER, record the appropriate information, then press ENTER.**
3. **When** VIEW CELLS FOUND **displays, press ENTER.**
4. **Observe the number of cells found to verify correct scale interface, then press ENTER.**
5. **When** UPDATE RATE **displays, then press ENTER.**
6. **The current Update Rate displays, adjust the Update Rate as needed (0.1 to 0.5ms), then press ENTER.**

   ✓ **Default = 0.333ms**

The following are steps used ONLY when needing to update the revision of firmware on the ASC card.

7. **With the USB jump drive inserted into the FB600X USB port, when** CHECK FOR UPDATES **displays, press ENTER**
8. **The system will scan for valid hex files that have been downloaded on the USB jump drive, and scroll to** FILE SELECT**, press ENTER**

   a) NOTE: The hex file must be placed on the root of the USB jump drive.

9. **Press up or down to scroll through the list and press ENTER to select from the list. Display will scroll the revision of the selected file, press ENTER**

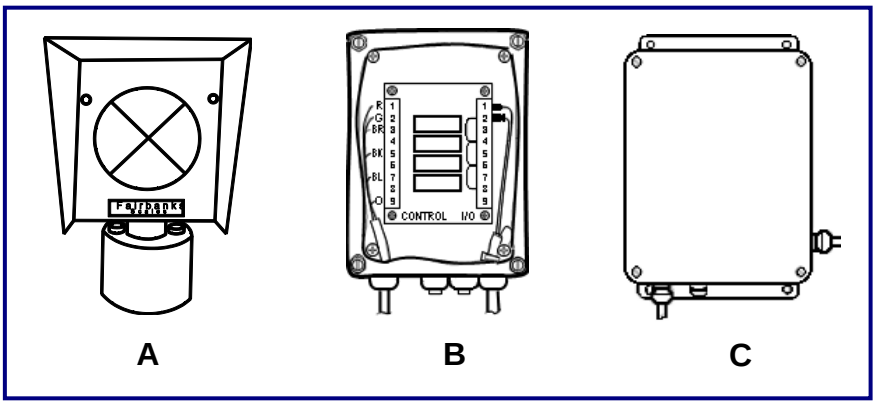
10. **The display will now indicate "APPLY UPDATE". Press the ENTER key to show the options.**

11. **The display will indicate "NO" as a selection. Use the UP/DOWN arrows to display "YES" and press ENTER**

12. **The display will scroll SENDING UPDATE PLEASE WAIT and on completion will show UPDATE SUCCESSFUL**

10.2.2 Relay PCB Assembly (30920)

The **RELAY CARD** is intended to ***ONLY*** be used with the **Fairbanks Relay Boxes** and the **ACC 777 Traffic Light**.



COMPONENTS USING THE RELAY CARD

A. ACC 777 LED Traffic Light

– Connects directly to the relay card.

B. ACC 2018 Traffic Light Relay Box

– Solid state relays.

C. ACC 703 Relay Box

– Dry Contact Relays.

RELAY CARD (30920) JUMPER SETTINGS

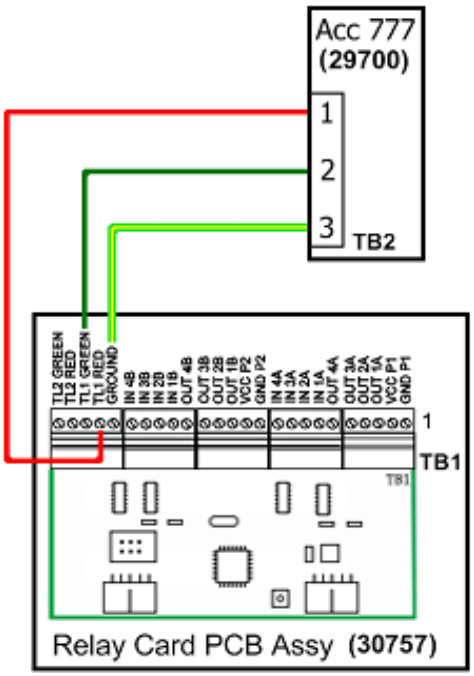
RELAY ACC	J1	J2	J3	J4
ACC 2018 (16163)	ON	ON	ON	ON
ACC 703 (13170)	OFF	OFF	OFF	OFF
ACC 2019 (13171)	OFF	OFF	OFF	OFF

IMPORTANT NOTE: ***DO NOT*** *cross communication lines on the* **RELAY CARD.**

10.2.3 ACC 777 LED Traffic Light (29001)

Wire the **Relay PCB Assembly Kit** (**30920**) to the **ACC 777 LED Traffic Light** according to the chart shown to the right.

- **ACC 777 (29700)** is a sub-assembly component within the **Traffic Light (29001).**

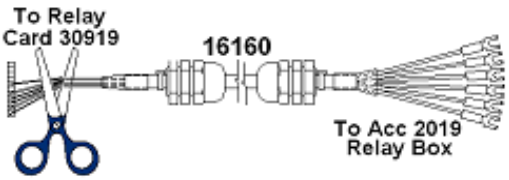


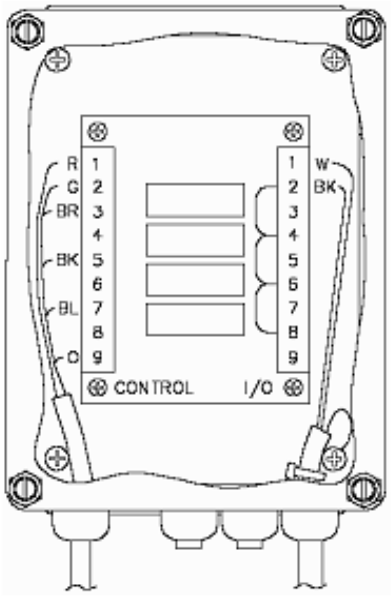
Install a temporary jumper from **TB1** *to* **TB3** *test the* **RED** *light. Jump* **TB2** *to* **TB3** *for testing the* **GREEN** *light.*

10.2.4 ACC 2018 Traffic Light Relay Box (16163)

The FB6001 controls one (1) set of traffic lights per scale when a **Relay Card** (**30919**) is interfaced **to ACC 703 Relay Box** (**13170**).

- A ten foot (10') control cable is included with the **ACC 2018 relay box** (**16163**).
- The customer supplies AC power source to the **ACC 2018 Relay Box**.





WIRING

Follow these steps to install the **Traffic Light Relay Box**.

1. **Remove all external power from the Instrument.**

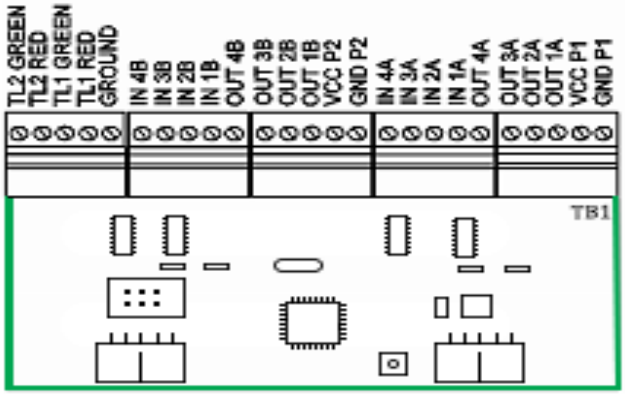
The **Control Cable** (**16160**) *needs field modification to connect to the* **Relay Card**.

2. **Cut off factory wired plug.**
3. **Strip and wire to the relay card according to the chart on the following page.**

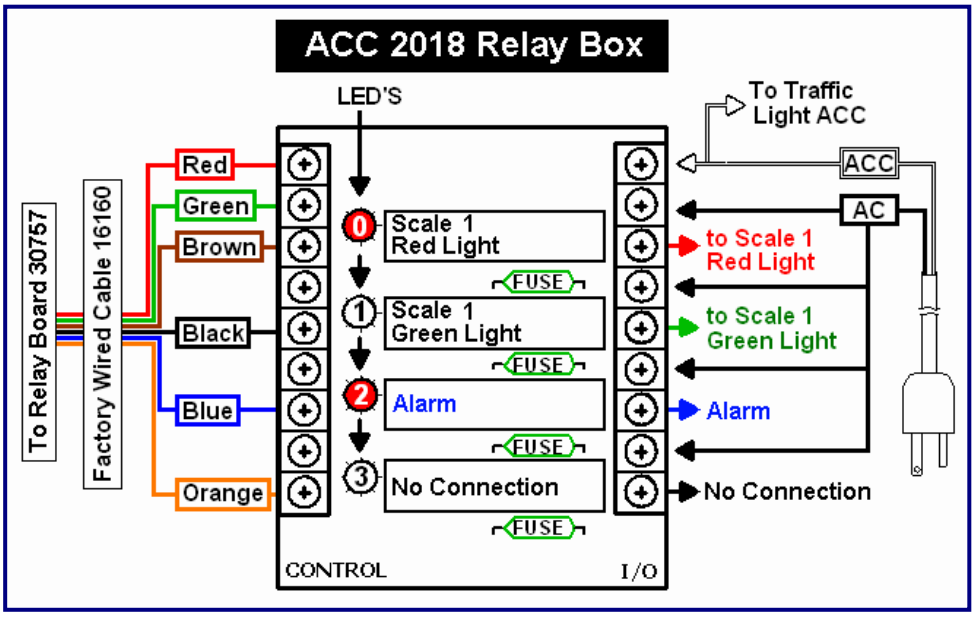
10.2.4 ACC 2018 Traffic Light Relay Box (16163), Continued

RELAY CARD CONNECTIONS

TB1		
Color	**From Relay Card to ACC 2018 #1**	**From Relay Card to ACC 2018 #2**
Green	Pin 1 (GND)	Pin 11 (GND)
Red	Pin 2 (+5VDC)	Pin 12 (+5 VDC)
Black	Pin 3 (Out 1A)	Pin 13 (Out 1B)
Brown	Pin 4 (Out 2A)	Pin 14 (Out 2B)
Orange	Pin 5 (Out 3A)	Pin 15 (Out 3B)
Blue	Pin 6 (Out 4A)	Pin 16 (Out 4B)



AC TO LIGHTS WIRING



10.2.5 ACC 703 Relay Box (13170)

- ***The ACC 2019 Cutoff Relay Box and ACC 703 Relay Box are wired identically.***
- The FB6001/2/3 can control up to **four (1) traffic lights** [two pair (2) per scale] when a **Relay Card** (**30920**) is interfaced **to ACC 703 Relay Box** (**13170**).
  - **ACC 703 Relay Box** requires an AC power outlet, and is supplied with a ten foot (10') **Control Cable.**
  - The **ACC 703 Relay Box *does not*** supply AC power to the traffic lights, but switches externally supplied AC power, furnished by other components.

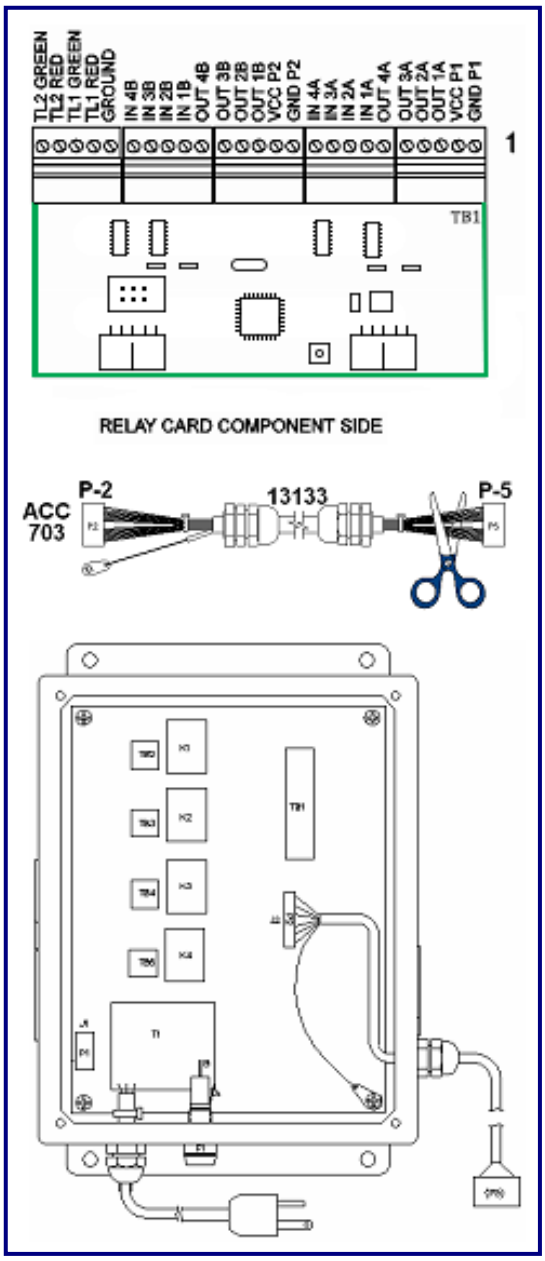
WIRING

Follow these steps to install the **Traffic Light Relay Box**.

1. **Properly shut down the FB6001/2/3 Instrument, and then remove all AC power *BEFORE* installing the Relay Card to the Expansion Module.**

The **Control Cable** (**13133**) *requires field modification to connect to the* **Relay Card**.

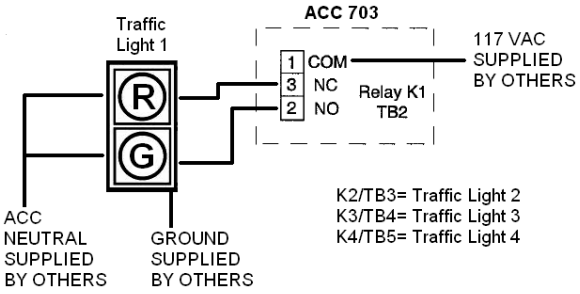
2. **Cut off factory wired plug.**
3. **Strip and wire to the relay card according to the chart on the following page.**



10.2.5 ACC 703 Relay Box (13170), Continued

WIRE COLOR	1 ST ACC 703/ 2019– LIGHTS 1-2-3-4	2 ND ACC 703/ 2019 – LIGHTS 5-6-7-8
Black	Pin 1 (GND)	Pin 11 (GND)
Brown	Pin 2 (+5VDC)	Pin 12 (+5 VDC)
Red	Pin 3 (Out1A)	Pin 13 (Out1B)
Orange	Pin 4 (Out2A)	Pin 14 (Out2B)
Yellow	Pin 5 (Out3A)	Pin 15 (Out3B)
Green	Pin 6 (Out4A)	Pin 16 (Out4B)
Blue	Pin 7 (In1A)	Pin 17 (In1B)
Violet	Pin 8 (In2A)	Pin 18 (In2B)
Grey	Pin 9 (In3A)	Pin 19 (In3B)
White	Pin 10 (In4A)	Pin 20 (In4B)

AC to LIGHTS WIRING



10.2.6 Relay Module [Expansion Card]

Follow these steps to program the **Relay Module Expansion Card.**

– Visible only if **Relay Card** is installed.

1. **In the EXPANSION CARDS menu, press ENTER.**
2. **Press the DOWN arrow to select** RELAY MODULE**.**
3. **When** DEVICE ATTACHED **displays, press ENTER.**
4. **Using the DOWN arrow, select either** 2018 ACC **for activating the Traffic Light Relay Box (16163), if it is attached; or select** OTHER **for the other items listed in Section 10.2.4, then press ENTER.**
5. **Press the DOWN ARROW to display the** REVISION NUMBER**, then press ENTER.**
6. **Record the information as needed for future references, then press ENTER.**

10.2.7 D/A Module [Expansion Card]

Follow these steps to program the **D/A Module Expansion Card.**

– Visible only if **Relay Card** is installed. .

1. **In the EXPANSION CARDS menu, press ENTER.**
2. **Press the DOWN arrow to select** D/A Module**, then press ENTER.**
3. **Using the DOWN arrow, select one of the following options, then press ENTER.**

- Revision Number
- Idle
- Low Limit
- High Limit
- Units
- Scale
- Test

4. **Press ENTER to adjust the current parameters for each of these options.**
5. **Press ENTER to save and close the new settings.**

10.3. Traffic Light Control

The **Traffic Light Control** sets the operational modes of the traffic light. It is typically controlled automatically by the instrument weighment cycle.

- Each **I/O RELAY CARD** supports **two (2)** sets of lights operated in parallel.

10.3.1 Control (Traffic Light)

Follow these steps to setup the **TRAFFIC LIGHT CONTROL***.*

1. **In the CONFIGURATION MENU, press the DOWN arrow until** TRAFFIC LIGHT CONTROL **displays.**
2. **Press ENTER.**
3. **When** SCALE ID 1 **displays, press ENTER.**
4. **When** CONTROL TRAFFIC LIGHT **displays, press ENTER.**
5. **When** AUTOMATIC **displays, either press ENTER to select it,**

Or…

6. **Press the DOWN arrow to enter the** MANUAL **option, then press ENTER.**

10.3.2 Event to Signal

Follow these steps to setup the **EVENT TO SIGNAL OPTION***.*

1. **In the Configuration Menu, press the DOWN arrow until** Traffic Light Control **displays.**
2. **Press ENTER**
3. **When** SCALE ID 1 **displays, press ENTER.**
4. **Press the DOWN arrow until** CONTROL TRAFFIC LIGHT **displays, then press ENTER.**
5. **Press the DOWN arrow until** EVENT TO SIGNAL **displays, then press ENTER.**
6. **When** X SECOND TIME DELAY **displays, where "X" is the delay setting, input a value from 2 to 10 (seconds), then press ENTER.**

   ✓ **Default = 6 Seconds**

10.4. Programming the Remote Display

10.4.1 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.**

NOTE: *For installation details, see* **2.5.3. Remote Display 20mA Wiring (J4).**

10.4.2 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.**

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.

IMPORTANT PROGRAMMING CONSIDERATIONS, CONTINUED

- 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 1601/5/5T 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!**

NOTE: *For further information, see* **SECTION 4.3.4.** *of the* **1600 Series Remote Display Manual (51157).**

10.4.3 Enable 1605T

Follow these steps to enable the **1605T Display Instrument***.*

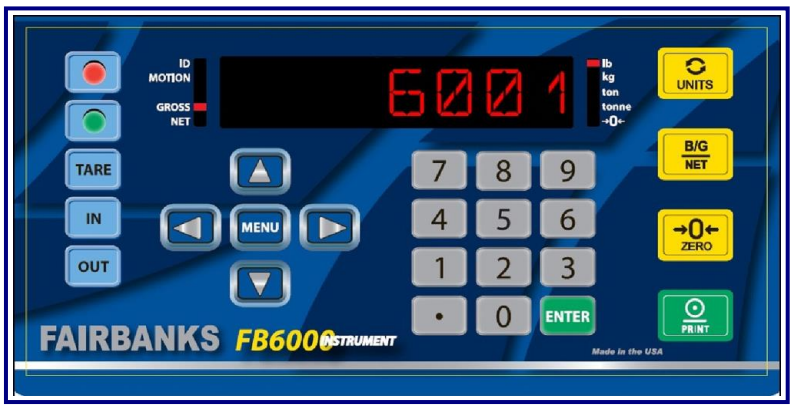
1. **In the CONFIGURATION MENU, press the DOWN arrow until** REMOTE DISPLAY **appears, then press ENTER.**
2. **Press the DOWN arrow until** ENABLE 1605T **displays, then press ENTER.**
3. **Select** YES **or** NO**, then press ENTER.**

NOTE: *For the* **Traffic Light** *function on the 1605T to work, the* **Display Mode** *must be set to* **CONTINUOUS.**

SECTION 11: USER OPERATIONS

11.1. Front Panel Key Functions

KEYS	FUNCTION
RED & GREEN LIGHT BUTTONS	• 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	• 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	• 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	• 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	• 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	• Toggles active display between **GROSS** and **TARE**, in the **GTN** mode. • Deletes one character in text/number.
ZERO	• **ZERO**s the scale. • When editing numbers or text, this clears the data.
PRINT	• 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**.



11.2. Operational Procedures

11.2.1 Gross Weighing

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.**
   – A **GTN** ticket prints with the **Gross Weight**.

11.2.2 Basic 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*.

- See **Section 7.2.1.** to configure the Instrument for the **BASIC Operating Mode**.
  – 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.

This FB6000 Front Panel has the **BASIC Mode** *stickers applied.*

NOTE: *See* **2.5.4. Analog Scale Card for *BASIC* Operating Mode** *for complete details.*

11.2.3 Gross-Tare-Net Weighing

- See **Section 7.2.1.** to configure the Instrument for the **GTN Operating Mode**.

1a. Press the **ZERO** key.

b. Drive the empty vehicle to be weighed on the platform.

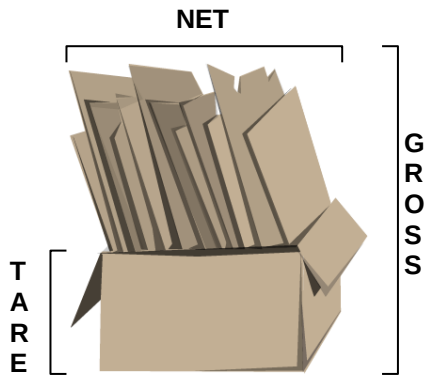
c. Press the **TARE** button.

– Displayed weight is the captured **Tare Weight**.

d. Exit the scale and load the vehicle with product.

e. Drive back onto the scale.

f. Once the display stabilizes, press the **PRINT** key and a Gross-Tare-Net Ticket will be printed.



The **Net Weight** (*product only*) is the **Gross Weight** (*all*) minus the **TARE WEIGHT** (*container only*).

OR…

2a. With the scale unloaded, press the **ZERO** key.

b. Drive the loaded vehicle to be weighed on the platform.

c. When the display stabilizes, press the **PRINT** key.

d. 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.

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

11.2.4 Inbound/Outbound Weighing

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

- With software revision **2.2.0 and lower**, **Loop ID** input can only be a **NUMERIC value** with a maximum of **three** characters.

  Revision **2.4.2 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.

See **Section 7.2.1.** to configure the Instrument for the **INBOUND/OUTBOUND Operating Mode**.

1a. Press the **ZERO** key.

b. Drive the vehicle onto the platform, whether it is either full or empty.

c. Once the display stabilizes, press the **IN** (I**nbound**) key.

d. When the **Loop ID** legend text displays, enter the **Loop ID number** using the numeric keypad, then press **ENTER.**

– *For complete information, see* **Section 6.4. Legends – Programmable**.

OR…

2a. Press **ENTER** to have the FB6001 auto-assign a **Loop ID number**.

b. Drive off the scale and process the trailer, by either filling or emptying it.

c. The same vehicle returns to the scale, either full or empty.

d. Once the display stabilizes, press the **OUT** (**Outbound**) key.

e. When the **Loop ID legend text** displays, enter the **LOOP ID Number** from an Inbound Transaction or saved TARE ID number, then press **ENTER**.

OR…

11.2.4 Inbound/Outbound Weighing, Continued

3a. With the scale unloaded, press the **ZERO** key.

b. Drive the loaded vehicle to be weighed on the platform.

c. When the display stabilizes, press the **PRINT** key.

d. When KEY IN TARE AND PRESS ENTER display, using the enter a known **TARE amount** from an earlier 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.*

OR…

4a. With the scale unloaded, press the **ZERO** key.

b. Drive the loaded vehicle to be weighed on the platform.

c. When the display stabilizes, press the **IN** or **OUT** key.

d. 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.**

– *For complete information, see* **Section 6.4. Legends – Programmable**.

The transaction is processed and an* Outbound *ticket prints

11.3. Programming the Operator Menu

Shown below is the complete flow chart of the **Operator Menu***.*

11.3.1 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
   - HH:MM
   - H:M:S
   - 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 formate 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.**

11.3.2 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. **Input the** YEAR**, then press ENTER.**
3. **Input the** MONTH**, then press ENTER.**
4. **Input the** DAY**, then press ENTER.**
5. **Input the** HOUR**, then press ENTER.**
6. **Input the** MINUTE**, 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***.*

11.3.3 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.**

2a. When NUMBER displays press **ENTER**.

b. 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.

c. Press the **DOWN arrow** until the LAST TICKET - PRINT option displays, then press **ENTER**.

- This prints a duplicate of the last ticket transaction.

OR…

2a. Press the **DOWN arrow** until the DUPLICATE - PRINT option displays, then press **ENTER**.

b. 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.)

11.3.4 Load Cell Diagnostics

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

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.**

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

b. When COUNTS displays, press **ENTER**.

c. 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.

d. Press **ENTER** to return to **Cell Selection**.

e. Press **MENU** to return to DISPLAY MENU.

f. Press **DOWN** arrow until ERRORS displays, then press **ENTER**.

– If NONE appears, then there are no errors to display.

e. 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…

4a. Press the **DOWN arrow** until PRINT displays, then press **ENTER**.

b. When PRINTER displays, press **ENTER**.

c. Press the **DOWN arrow** to select a printer if multiple printers are configured, then press **ENTER**.

d. When COUNTS displays, press **ENTER** to print the **Cell Counts**.

11.3.4 Load Cell Diagnostics, Continued

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.

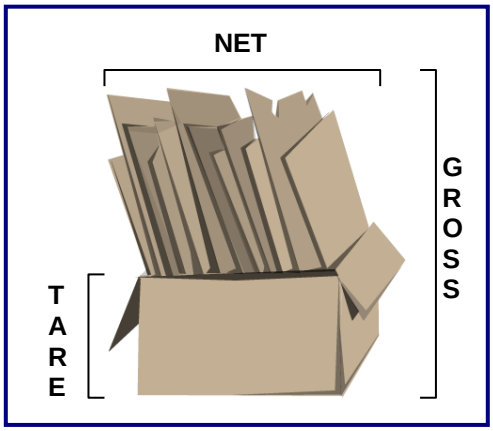
CURRENT – the current load cell counts.

WEIGHT – the current weight value.

11.3.5 New Tare

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

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.



GROSS WEIGHT – TARE WEIGHT = NET WEIGHT

11.3.5 New Tare, Continued

8. **When** SAVE **displays, press ENTER.**
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* OVERWRITE? - 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.

11.3.6 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.**

13. **To overwrite the existing tare, press the DOWN ARROW until OVERWRITE? displays, then press ENTER when YES displays.**

11.3.7 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.**

11.3.8 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.**

2a. When DISPLAY appears, press **ENTER**.

– This shows the **Stored Tares**, listing the **Tare ID Number, Weight, Date**, and the **Tare Description**.

b. Use the **UP/DOWN arrows** to scroll through the list.

c. Press M**ENU** to return to the **Tare Menu**.

OR…

11.3.8 Tare Report, Continued

2a. Use the **DOWN arrows** to select **PRINT**, then press **ENTER**.

b. Press **ENTER** when PRINTER displays.

c. Select an available **PRINTER**.

d. Press **ENTER** when PRINT OUT displays for the **Tare Report**.

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

11.3.9 Utility – 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.**

11.3.10 Utility – Key Pad Beep, Set Volume, Mute

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.

11.3.11 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 INSTRUMENT INBOUND ID –** When processing Inbound Loops, this options automatically uses the next available one (without displaying it).
- **SHOW LOOPING ID TEXT –** This selection displays *all* the stated information about the Loop, including the ID number, truck description, or any related text.

SECTION 12: SERVICE & MAINTENANCE

12.1. Basic Troubleshooting

ERROR CONDITION(S)	SOLUTION(S)
CHECK THAT SCALE IS EMPTY . **If Scale is empty, Call for Service. Load Cell(s) bad.**	**A large amount of weight has been zeroed.** –Press **OK** and continue weighing. –Possible load cell damage, check load cells
LOAD CELL FAILURE(S) **Flashing and displays** "- - - -"	**Check cells** –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.
SC CELLS FOUND NONE	**Possible damaged load cell cable.** –Defective Analog Interface Module.
INTERR	**System Error.** –Restore Backup, if possible to recover. –Otherwise, replace the PCB Assembly Base Board (33143).
POWER SUPPLY ERROR: AC OUTPUT OPEN	**Check home run cable for cuts**
COMMUNICATION ERROR	**Can be caused by numerous transmission problems, including bad Load Cell, faulty cable, conflicting programming, etc.**
CELL 1 OUT OF RANGE	**Possible bad load cell** **Possible load cell cable issue** **Normal condition after board replacement** – **Reconfigure and recalibrate**
ASC CARD DOES NOT MATCH UNIT, RECONFIGURE	**Normal condition after board replacement.** –**Reconfigure and recalibrate**

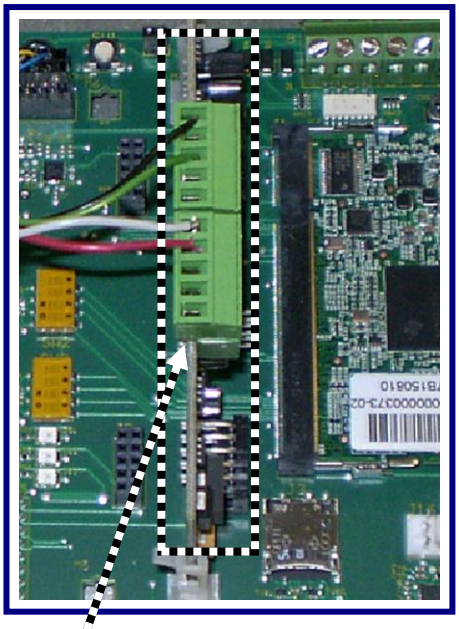
12.2. Replacing the Analog Interface PCB Assembly (30997)

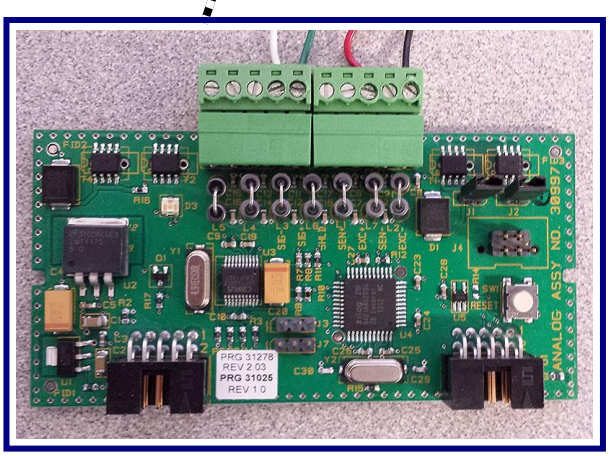
NECESSARY ASSEMBLY TOOLS

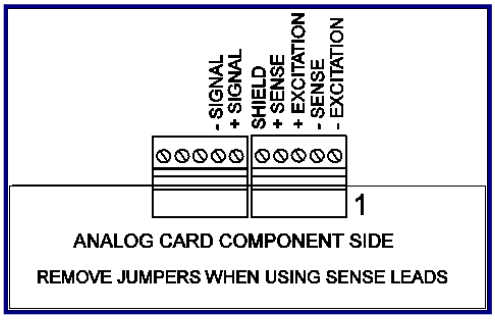
- ✓ **Phillips screwdriver**
- ✓ **Needle nose pliers**
- ✓ **Anti-Static Wrist Band**

Follow these steps to replace an **Analog Interface PCB Assembly (ASC)**.

1. **Unplug the Instrument from all external power.**
2. **Remove the screws of the outer instrument case and pull it off, setting it aside.**
3. **Unplug the Terminal Connector Plug from the non-functioning Analog Interface Assembly.**
4. **Pull away the security tabs on each side mounting peg and remove the defective Analog Interface Assembly.**
5. **Slide the new Analog Interface Assembly down onto the mounting pegs, inserting it in the two (2) J6 sockets of the Base Board. Snap the mounting peg tabs into place on the new Analog Interface Assembly.**
   - This will be installed in the same location as where the defective Analog Interface Assembly was removed.
6. **Be certain the load cell wiring is according to the lower-right image.**
7. **Reassemble the Instrument case, fastening it together with the screws.**
8. **Apply power to the instrument.**
9. **Recalibrate the instrument.**





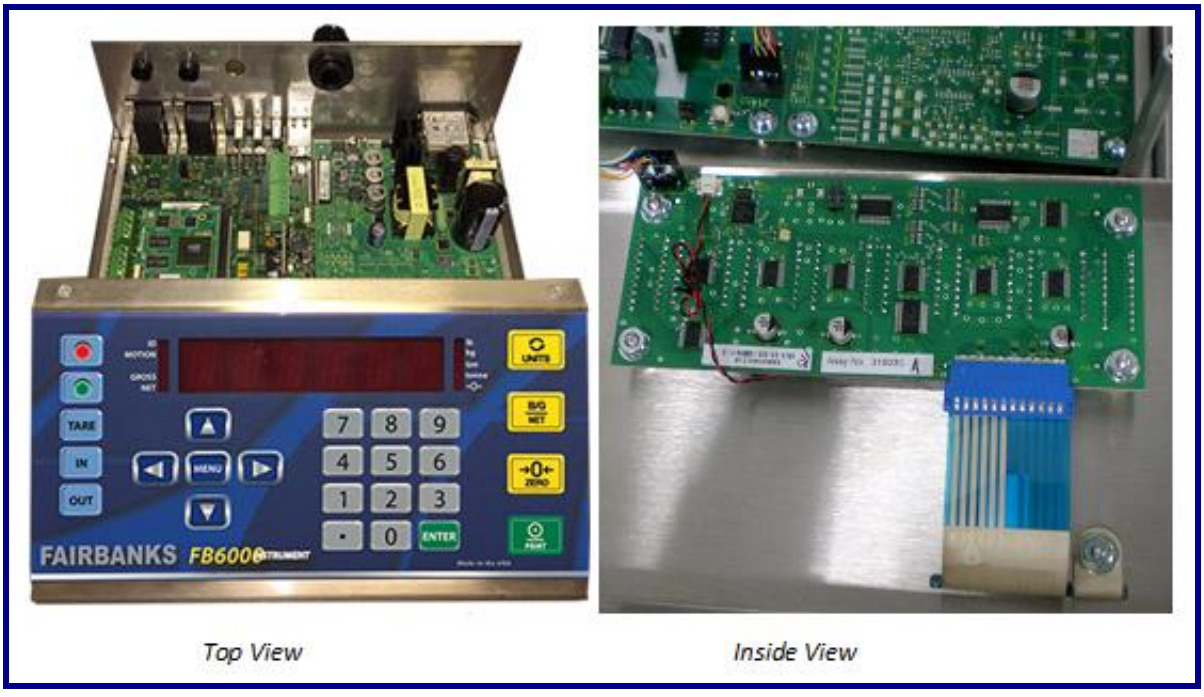


NOTE: ***Instrument may indicate*** CELL 1 OUT OF RANGE ***or*** ASC CARD DOES NOT MATCH, RECONFIGURE ***This is normal when replacing the ASC.***

12.3. Replacing the Keypad (32060) and Display Assembly (34291C)

Follow these steps to replace the **Front Panel Keypad Assembly**.

1. **Remove all external power from the Instrument.**
2. **Remove the fastening screws on the case.**
3. **Unplug the Keypad Assembly from Terminal J14 of the Base Board Assembly.**
4. **Remove the screws that fasten the Instrument Keypad (Assembly) to the Instrument frame.**
5. **Turn the Assembly over, then unplug the Power, Communications and Grounding Cables from the LED Display Assembly.**
6. **Remove the nuts and washers that fasten the LED Display to the Keyboard Assembly.**
7. **Replace the defective component(s).**
8. **Reassemble the new Keypad Assembly exactly as the defective one was taken apart.**
9. **Replace the Instrument case, fastening it together with the screws.**
10. **Turn on and test the instrument.**



12.4. Base Board PCB Assembly (33143) Replacement

1. **Remove all external power from the Instrument.**
2. **Unscrew the fasteners on each side of the case.**
3. **Unscrew the fastening screws from the defective Base Board Assembly, lifting it out carefully.**
4. **Install the new Base Board PCB Assembly, securing it with the screws.**
5. **Turn ON the SW2-2 switch.**
6. **Replace the Instrument case, fastening it together with the screws.**
7. **Power-up the instrument.**
8. **When the Instrument displays FLASH?, and then scrolls the part number, press the DOWN arrow once to select YES, then press ENTER.**

- Numerous messages display during the boot-up. **LEAVE ALL THE KEYS ALONE!**

Turn **Switch 2** *of* **SW2** *to the* **ON** *position.*

9. **When Instrument TYPe displays, press the UP/DOWN arrows to select FB6001, then press ENTER.**
10. **When FORMAT SD? displays, press the DOWN arrow and select NO, then press ENTER.**
11. **When RUN THE PEP? displays, press the DOWN arrow and select NO, then press ENTER.**
12. **When SET SW2-2 TO OFF AND REBOOT displays, power-down the Instrument.**
13. **Restart, then configure and calibrate the Instrument, as required.**

12.5. Replacing the Power Supply PCB Assembly (31873)

1. **Remove all external power from the Instrument.**
2. **Unscrew the fasteners on each side of the case.**
3. **Unscrew the mounting fasteners from the Power Supply PCB Assembly, lifting it out carefully.**
4. **Unplug the communication cable from the Analog Interface Assembly and the home run cable.**
5. **Install the new Power Supply PCB Assembly, securing it with the screws.**
6. **Plug the previously removed cables back in their original locations.**
7. **Replace the Instrument case, fastening it together with the screws.**
8. **Turn on and test the instrument.**

FINAL NOTES

With an external keyboard, while in the **Weigh Screen**,
press **CTRL + ALT +SHIFT + D** to perform a **Display Sequence Test**.

- Once the test is underway, pressing **any key stops** the process.

With an external keyboard, while in the **Weigh Screen**, press
CTRL + ALT +SHIFT + R to perform a **Relay Card Test.**

Press this again to stop it.

NOTE: *Instrument may indicate* CELL 1 OUT OF RANGE *or* ASC CARD DOES NOT MATCH, RECONFIGURE *This is normal when replacing the baseboard.*

SECTION 13: GENERATION 2 PARTS

13.1. FB6001 Desktop Model (31675)

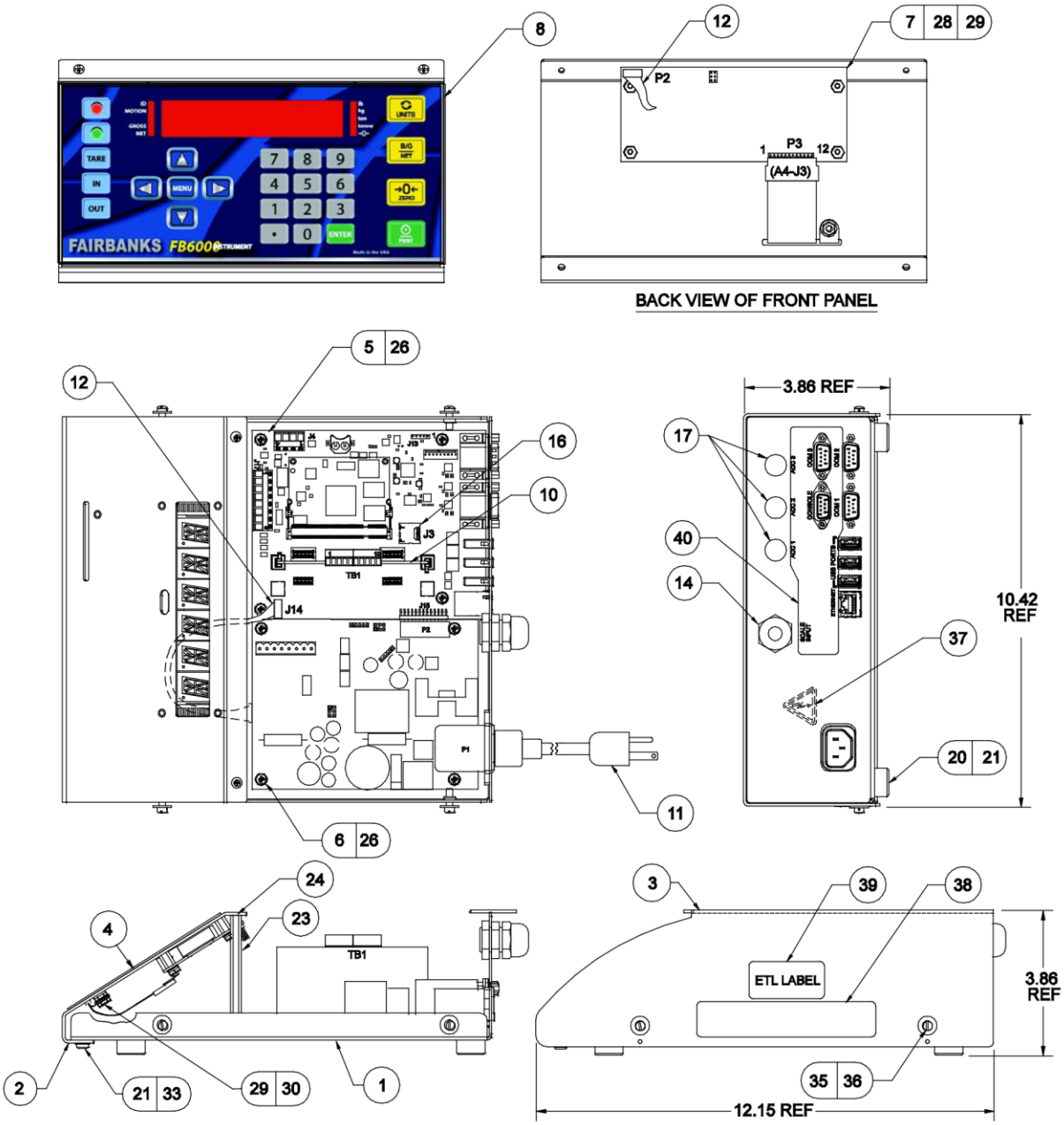
13.1.1 Parts List

ITEM	PART NO.	QTY	DESCRIPTION
1	31671	1	BASE ASSY
2	31672	1	FRONT PANEL ASSY
3	31673	1	COVER
4	34327	1	FRONT PANEL ASSY WITH KEYBOARD OVERLAY
5	33143	1	PCB ASSY, BASE BOARD ASSY
6	31873	1	PCB ASSY, POWER SUPPLY
7	34291C	1	PCB ASSY, LED DISPLAY
8	32060	1	KEYBOARD, INSTRUMENT
10	30997	1	PCB ASSY, A/D CONVERTER (ASC)
11	30467	1	POWER CORD ASSY, 6 FOOT
12	32316	1	CABLE ASSY, DISPLAY
14	17534	1	CONNECTOR, LIQUID TIGHT
16	30915	1	MEMORY CARD, 2 GB MICRO SD
	33468	1	MEMORY CARD, 2 GB MICRO SD, FACTORY LOADED WITH FB6000 APPLICATION
17	14225	3	PLUG, HOLE .50 DIA
20	12103	4	FOOT
21	10902	6	MACHINE PHILIIPS SCREW 8-32 X 0.38
23	31674	2	HEX SPACER, 6-32 X 3.25 long
24	10306	2	MACHINE PHILIPS SCREW 6-32 X 0.38
26	31093	8	MACHINE PHILLIPS SCREW WITH INT LOCK WASHER
28	10201	4	LOCK EXT. TOOTH WASHWER NO. 6
29	10103	5	HEX NUT 6-32
30	10310	1	PLAIN WASHER NO. 6
33	10202	2	LOCK EXT. TOOTH WASHWER NO. 8
35	13468	4	SEALING SCREW 8-32 X 0.50
36	11495	4	PLAIN NYLON WASHER
37	29574	1	LABEL
38	32814	1	NAMEPLATE SPECIFICATION
39	29081	1	ETL MARK LABEL
40	32444	1	BACK PANEL LABEL
42	11175	1	AMPHENOL RUBBER BUSHING
43	11176	1	BUSHING
45	12083	1	LABEL, NORMAL CAPACITY
46	11193	1	LABEL, CLC / SECTIONAL CAPACITY
47	12189	2	WIRE SEAL
N/S*	15820	1	LITHIUM BATTERY
N/S*	32765	1	LABELS, KEYCAPS

*** N/S** *means* **N***ot* **S***hown in the* **Parts Diagram**, *on the following page.*

The two (2) components that are different between **GENERATION 1** *and* **2** *are highlighted in yellow.*

13.1.2 Parts Diagram



13.2. FB6002 NEMA 4X Hostile Model (32575)

13.2.1 Parts List

ITEM	PART NO.	QTY	DESCRIPTION
1	**52555**	1	BOX ASSEMBLY
2	**32552**	1	STAND, INSTRUMENT
3	**32546**	1	BRACKET, SUPPORT
4	**32547**	1	BRACKET, PCB MOUNTING
5	**32556**	1	COVER, USB
6	**32557**	1	GASKET, USB
7	**32548**	1	BRACKET, CABLE
8	**32549**	2	BRACKET, HINGE
9	**32550**	1	BRACKET, ANGLED
10	**32551**	1	BRACKET, LINK
11	**-**	-	-
12	**33143**	1	PCB ASSY, BASE BOARD *** ***
13	**31873**	1	PCB ASSY, POWER SUPPLY
14	**34291C**	1	PCB ASSY, LED DISPLAY
15	**32567**	1	KEYBOARD, INSTRUMENT
16	**32650**	1	PCB ASSY, CONNECTOR (MAKE CABLE)
17	**30997**	1	PCB ASSY, A/D CONVERTER (ASC)
18	**-**	-	-
19	**30467**	1	POWER CORD ASSY, 6 FOOT
20	**32620**	1	CABLE ASSY, DISPLAY
21	**31273**	1	CABLE ASSY, USB
22	**17534**	2	CONNECTOR, LIQUID TIGHT
23	**12342**	2	O-RING
24	**30915**	1	MEMORY CARD, 2GB MICRO SD
	33468	1	MEMORY CARD, 2 GB MICRO SD, FACTORY LOADED WITH FB6000 APPLICATION
25	**14827**	1	COVER, HOLE
26	**-**	-	-
27	**11146**	3	SCREW, MACH, PH, PHIL 6-32 X .38
28	**31093**	13	SCREW MACH, PH, PHIL, W/ INT. LOCK WASHER 6-32 X .31
29	**11075**	2	SCREW, CAP, HEX HD 10-32 X .50
30	**11495**	2	WASHER, PLAIN NYLON NO. 10
31	**11120**	2	WASHER, PLAIN ¼"
32	**15745**	2	KNOB
33	**12621**	2	WASHER, RETAINER (RUBBER)
34	**11998**	4	SPACER, HEX 6-32 THREADS X .50 LONG
35	**32651**	2	SPACER, HEX 6-32 THREADS X 2.13 LONG
36	**12103**	4	FOOT
37	**11138**	4	SCREW, MACH, PH, PHIL 8-32 X .38
38	**11191**	12	WASHER, LOCK, EXT. TOOTH #6
39	**11102**	9	NUT, HEX
40	**11124**	1	WASHER, PLAIN #6

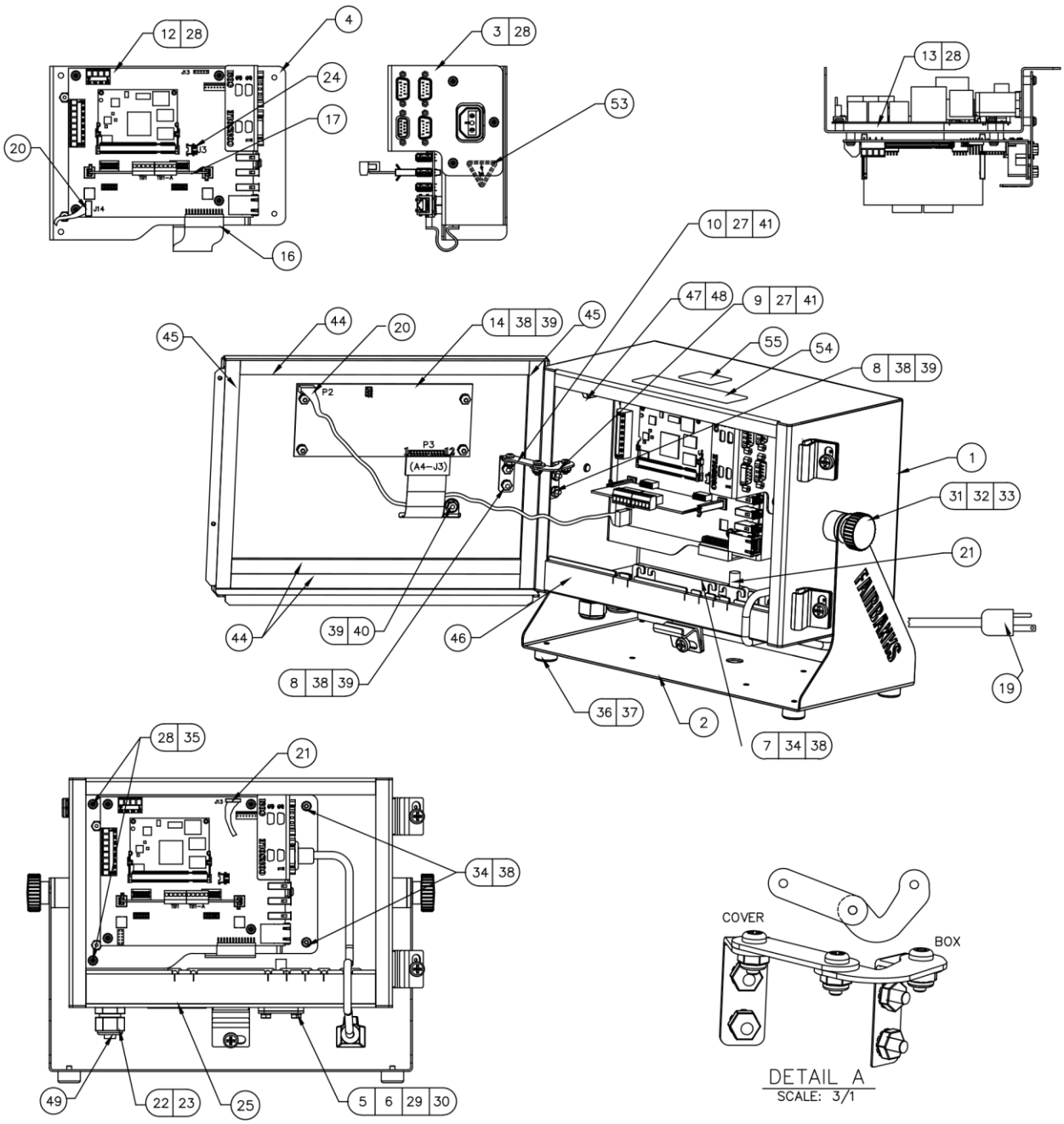
13.2.1 Parts List, Continued

ITEM	PART NO.	QTY	DESCRIPTION
41	**11182**	3	NUT, STOP 6-32
42	**-**	-	-
43	**-**	-	-
44	**32562**	3	GASKET, TOP
45	**32563**	2	GASKET, SIDE
46	**32564**	1	GASKET, CABLE
47	**25355**	1	VENT, MEMBRANE
48	**25356**	1	VENT, NUT
49	**12011**	1	ROD, NYLON .38 O.D. X 1.00 LONG
50	**-**	-	-
51	**-**	-	-
52	**-**	-	-
53	**29574**	1	LABEL, ELECTRIC SHOCK HAZARD
54	**32558**	1	NAMEPLATE
55	**29081**	1	ETL MARK LABEL
56	**-**	-	-
57	**11175**	1	BUSHING, AMPHENOL RUBBER
58	**11176**	1	BUSHING, AMPHENOL RUBBER
59	**12356**	1	LABEL, NORMAL CAPACITY
60	**12083**	1	LABEL, NORMAL CAPACITY
61	**11193**	1	LABEL, CLC / SECTIONAL CAPACITY
62	**12189**	2	SEAL, WIRE
N/S	**32765**	1	LABELS, BLANK, GROSS PRINT, TARE PRINT
N/S	**15820**	1	LITHIUM BATTERY

***** **N/S** *means* **N***ot* **S***hown in the* Parts Diagram *on the following page.*

*** *** *When replacing* ***33143 Rev. A*** *or* ***B*** *with* ***33143 Rev. C or higher****, in a NEMA 4X or Panel Mount FB6000, you must also order cable* ***34332*** *(not shown)*

13.2.2 Parts Diagram



13.3. FB6003 Panel Mount (32675)

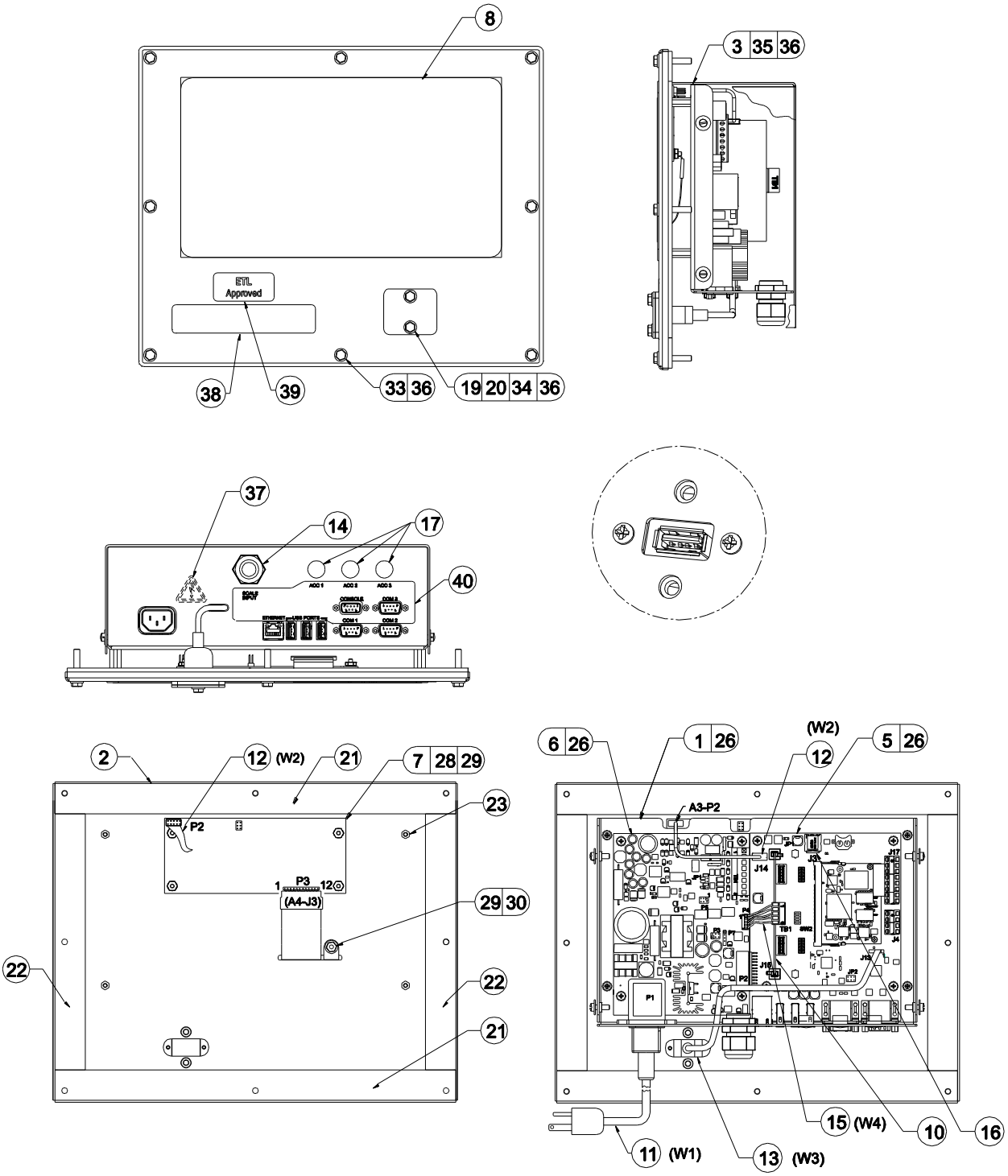
13.3.1 Parts List

ITEM	PART NO.	QTY	DESCRIPTION
1	**32659**	1	BASE ASSY
2	**32660**	1	FRONT PANEL ASSY
3	**32658**	1	COVER
5	**33143**	1	PCB ASSY, BASE BOARD *** ***
6	**31873**	1	PCB ASSY, POWER SUPPLY
7	**34291C**	1	PCB ASSY, LED DISPLAY
8	**32567**	1	KEYBOARD, INSTRUMENT
10	**30997**	1	PCB ASSY, A/D CONVERTER (ASC)
11	**30467**	1	POWER CORD ASSY – 6 FOOT
12	**32316**	1	CABLE ASSY, DISPLAY
13	**31273**	1	CABLE ASSY, USB
14	**17534**	1	CONNECTOR, LIQUID TIGHT
16	**30915**	1	MEMORY CARD, 2 GB MICRO SD
	33468	1	MEMORY CARD, 2 GB MICRO SD, FACTORY LOADED WITH FB6000 APPLICATION
17	**14225**	3	PLUG, HOLE .50 DIA
19	**32556**	1	COVER, USB
20	**32557**	1	GASKET, USB
21	**32677**	4	GASKET, TOP
22	**32678**	4	GASKET, SIDE
23	**11661**	4	SPACER, HEX 6-32 THREADS X 1.00 LONG
26	**31093**	12	SCREW, MACH, PH, PHIL W/INT LOCK WASHER 6-32 X .31
28	**10201**	4	WASHER, LOCK, EXT. TOOTH NO. 6
29	**11102**	5	NUT, HEX 6-32
30	**11124**	1	WASHER, PLAIN #6
33	**11086**	8	SCREW, CAP, HEX HD 10-32 X 1.13
34	**11075**	2	SCREW, CAP HEX HD 10-32 X .50
35	**13468**	4	SCREW, SEALING 8-32 X .50
36	**11495**	14	WASHER, PLAIN, NYLON
37	**29574**	1	LABEL, ELECTRIC SHOCK HAZARD
38	**32679**	1	NAMEPLATE
39	**29081**	1	ETL MARK LABEL
40	**32444**	1	LABEL, BACKPANEL
42	**11175**	1	BUSHING, AMPHENOL RUBBER
43	**11176**	1	BUSHING, AMPHENOL RUBBER
45	**12083**	1	LABEL, NORMAL CAPACITY
46	**11193**	1	CLC/SECTIONAL CAPACITY LABEL
47	**12189**	2	SEAL, WIRE
N/S	**32765**	1	LABEL KEYCAPS
N/S	**15820**	1	LITHIUM BATTERY

***** **N/S** *means* **N***ot* **S***hown in the* Parts Diagram *on the following page.*

*** *** *When replacing* ***33143 Rev. A*** *or* ***B*** *with* ***33143 Rev. C or higher****, in a NEMA 4X or Panel Mount FB6000, you must also order cable* ***34332*** *(not shown)*

13.3.2 Parts Diagram



INSTRUMENT ASSY
FB6013-INTALOGIX
32813

13.4. Optional 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 (USB)

** Only one or the other of these accessories may be used in the FB6001/2/3 Series Instrument.*

APPENDIX I: DATA STRING OUTPUTS

A. Remote Display Output

DATA FORMAT

<STX><A><0><SP/–><XXXXXX><ETX>

NOTES:

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.

FAIRBANKS/TOLEDO DATA FORMAT

<STX><A><B><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

FAIRBANKS/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><WWWWWW>Period (.)<m><SP><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><WWWWWW><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><WWWWWW><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

COMMAND	DESCRIPTION
A	Sets the Auto Tare Weight on scale.
G	Turns the traffic light Green. — Used in Manual Mode only.
LA	Changes Traffic Light to **Automatic Mode**.
LM	Changes Traffic Light to **Manual Mode**.
R	Turns Traffic Light Red. — Used in the **Manual Mode** only.
Txxxxx	Sets Tare on scale — Where **xxxxx** equals the tare weight value required.
U	Toggles Units on scale.
Z	Zeroes the scale.
P	Prints a ticket for the active scale.
W	**Demand Request** for a Weight output using **PC Polled**.

APPENDIX IV: FB6001/02/03, GENERATION 1 PARTS

A. Desktop Model (31675)

Parts List

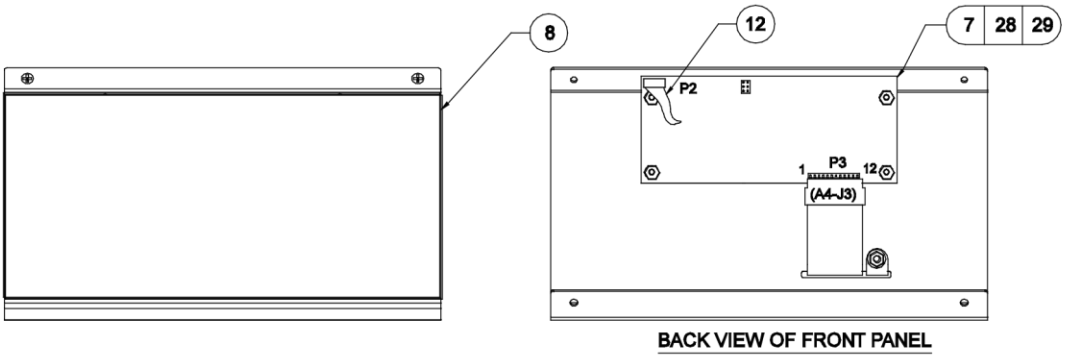
ITEM		QTY	PART NO.	DESCRIPTION
1		**1**	**31671**	BASE ASSY
2		**1**	**31672**	FRONT PANEL ASSY
3		**1**	**34673**	COVER
4		**1**	**34327**	FRONT PANEL ASSY WITH KEYBOARD OVERLAY
5		**1**	**31751**	PCB ASSY, BASE BOARD ASSY, INCLUDES PROCESSOR MODULE CARD (MATCHED PAIR)
6		**1**	**31873**	PCB ASSY, POWER SUPPLY
7		**1**	**34291C**	PCB ASSY, LED DISPLAY
8		**1**	**32060**	KEYBOARD, INSTRUMENT
10		**1**	**30997**	ANALOG LOADCELL INTERFACE CARD (ASC)
11		**1**	**30467**	POWER CORD ASSY, 6 FOOT
12		**1**	**32316**	CABLE ASSY, DISPLAY
14		**1**	**17534**	CONNECTOR, LIQUID TIGHT
16		**1**	**30915**	MEMORY CARD, 2 GB MICRO SD
17		**3**	**14225**	PLUG, HOLE .50 DIA
20		**4**	**12103**	FOOT
21		**6**	**10902**	MACHINE PHILIIPS SCREW 8-32 X 0.38
23		**2**	**31674**	HEX SPACER, 6-32 X 3.25 long
24		**2**	**10306**	MACHINE PHILIPS SCREW 6-32 X 0.38
26		**8**	**31093**	MACHINE PHILLIPS SCREW WITH INT LOCK WASHER
28		**4**	**10201**	LOCK EXT. TOOTH WASHWER NO. 6
29		**5**	**10103**	HEX NUT 6-32
30		**1**	**10310**	PLAIN WASHER NO. 6
33		**2**	**10202**	LOCK EXT. TOOTH WASHWER NO. 8
35		**4**	**13468**	SEALING SCREW 8-32 X 0.50
36		**4**	**11495**	PLAIN NYLON WASHER
37		**1**	**29574**	LABEL
38		**1**	**32062**	NAMEPLATE SPECIFICATION
39		**1**	**29081**	ETL MARK LABEL
40		**1**	**32444**	BACK PANEL LABEL
42		**1**	**11175**	AMPHENOL RUBBER BUSHING
43		**1**	**11176**	AMPHENOL RUBBER BUSHING
44		**1**	**12356**	LABEL, NORMAL CAPACITY
45		**1**	**12083**	LABEL, NORMAL CAPACITY
46		**1**	**11193**	LABEL, CLC / SECTIONAL CAPACITY
47		**2**	**12189**	WIRE SEAL

N/S		**1**	**15820**	LITHIUM BATTERY
N/S		**1**	**32765**	LABELS – BLANK, GROSS PRINT, TARE PRINT

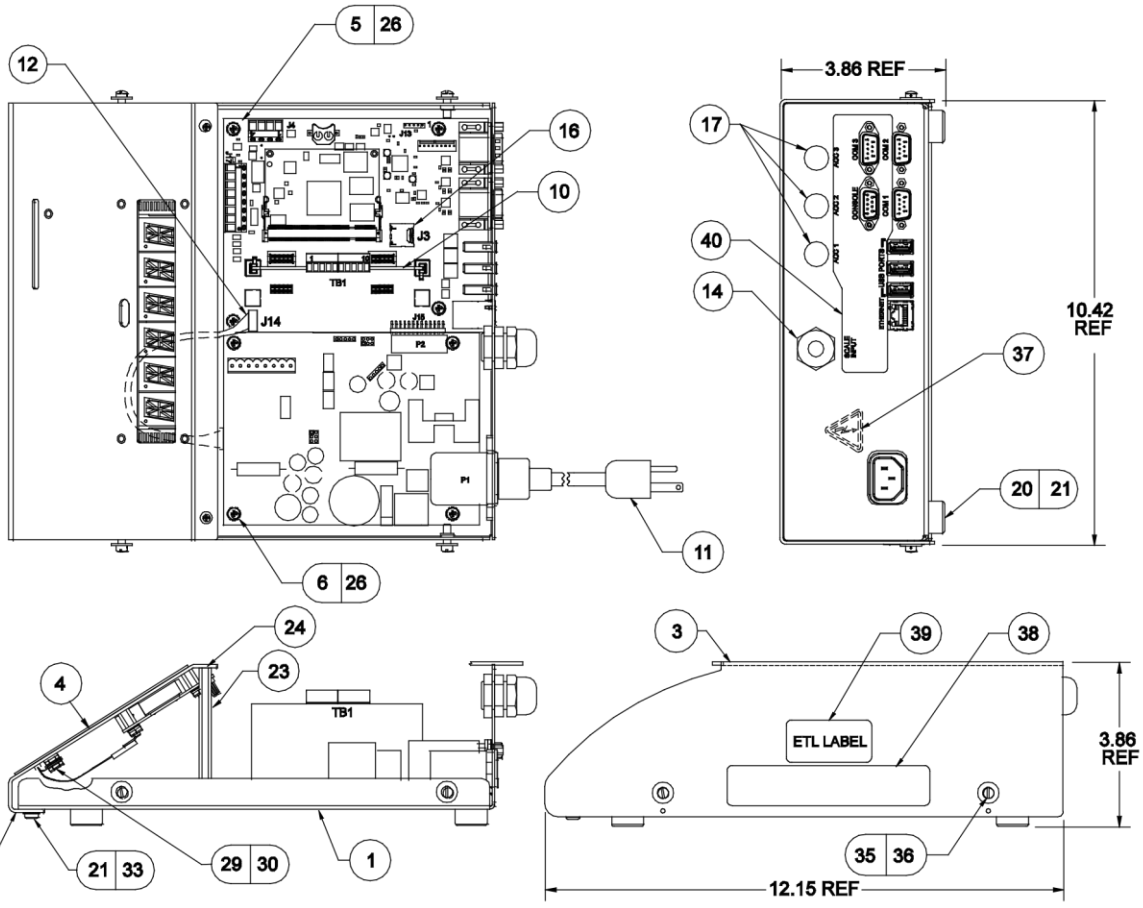
***** **N/S** *means the item is* **N***ot* **S***hown.*

NOTE: *The* **Base Board Assy** *is compatible with both generations of Instruments.*

- *It is preferable to use the newest PCB whenever possible.*



BACK VIEW OF FRONT PANEL



REFERENCE LOAD CELL CONNECTIONS	
TB1-1	(-) EXC
TB1-2	(-) SENSE
TB1-3	(+) EXC
TB1-4	(+) SENSE
TB1-5	SHIELD
TB1-6	(+) SIG
TB1-7	(-) SIG
TB1-8	GND
TB1-9	GND
TB1-10	GND

INSTRUMENT ASSY
FB6001-ANALOG
31675

B. FB6002 NEMA 4X Hostile Model (32575)

Parts List

ITEM	PART NO.	QTY	DESCRIPTION
1	**52555**	1	BOX ASSEMBLY
2	**32552**	1	STAND, INSTRUMENT
3	**32546**	1	BRACKET, SUPPORT
4	**32547**	1	BRACKET, PCB MOUNTING
5	**32556**	1	COVER, USB
6	**32557**	1	GASKET, USB
7	**32548**	1	BRACKET, CABLE
8	**32549**	2	BRACKET, HINGED
9	**32550**	1	BRACKET, ANGLED
10	**32551**	1	BRACKET, LINK
12	**31751**	1	PCB ASSY, BASE BOARD INCLUDES PROCESSOR MODULE CARD (MATCHED PAIR)
13	**31873**	1	PCB ASSY, POWER SUPPLY
14	**34291C**	1	PCB ASSY, LED DISPLAY
15	**32567**	1	KEYBOARD, INSTRUMENT
16	**32650**	1	PCB ASSY, CONNECTOR (MAKE CABLE)
17	**30997**	1	ANALOG LOAD CELL INTERFACE CARD (ASC)
19	**30467**	1	POWER CORD ASSY, 6 FOOT
20	**32620**	1	CABLE ASSY, DISPLAY 16”
21	**31273**	1	CABLE ASSY, USB
22	**17534**	2	CONNECTOR, LIQUID TIGHT
23	**12342**	2	O-RING
24	**30915**	1	MEMORY CARD, 2GB MICRO SD
25	**14827**	1	COVER, HOLE
27	**11146**	3	SCREW, MACH, PH, PHIL 6-32 X .38
28	**31093**	13	SCREW MACH, PH, PHIL, W/ INT. LOCK WASHER 6-32 X .31
29	**11075**	2	SCREW, CAP, HEX HD 10-32 X .50
30	**11495**	2	WASHER, PLAIN NYLON NO. 10
31	**11120**	2	WASHER, PLAIN ¼”
32	**15745**	2	KNOB
33	**12621**	2	WASHER, RETAINER (RUBBER)
34	**11998**	4	SPACER, HEX 6-32 THREADS X .50 LONG
35	**32651**	2	SPACER, HEX 6-32 THREADS X 2.13 LONG
36	**12103**	4	FOOT
37	**11138**	4	SCREW, MACH, PH, PHIL 8-32 X .38
38	**11191**	12	WASHER, LOCK, EXT. TOOTH #6
N/S	**15820**	1	LITHIUM BATTERY

***** **N/S** *means the item is* **N***ot* **S***hown.*

NOTE: *The* **Base Board Assy** *is compatible with generations of Instruments.*

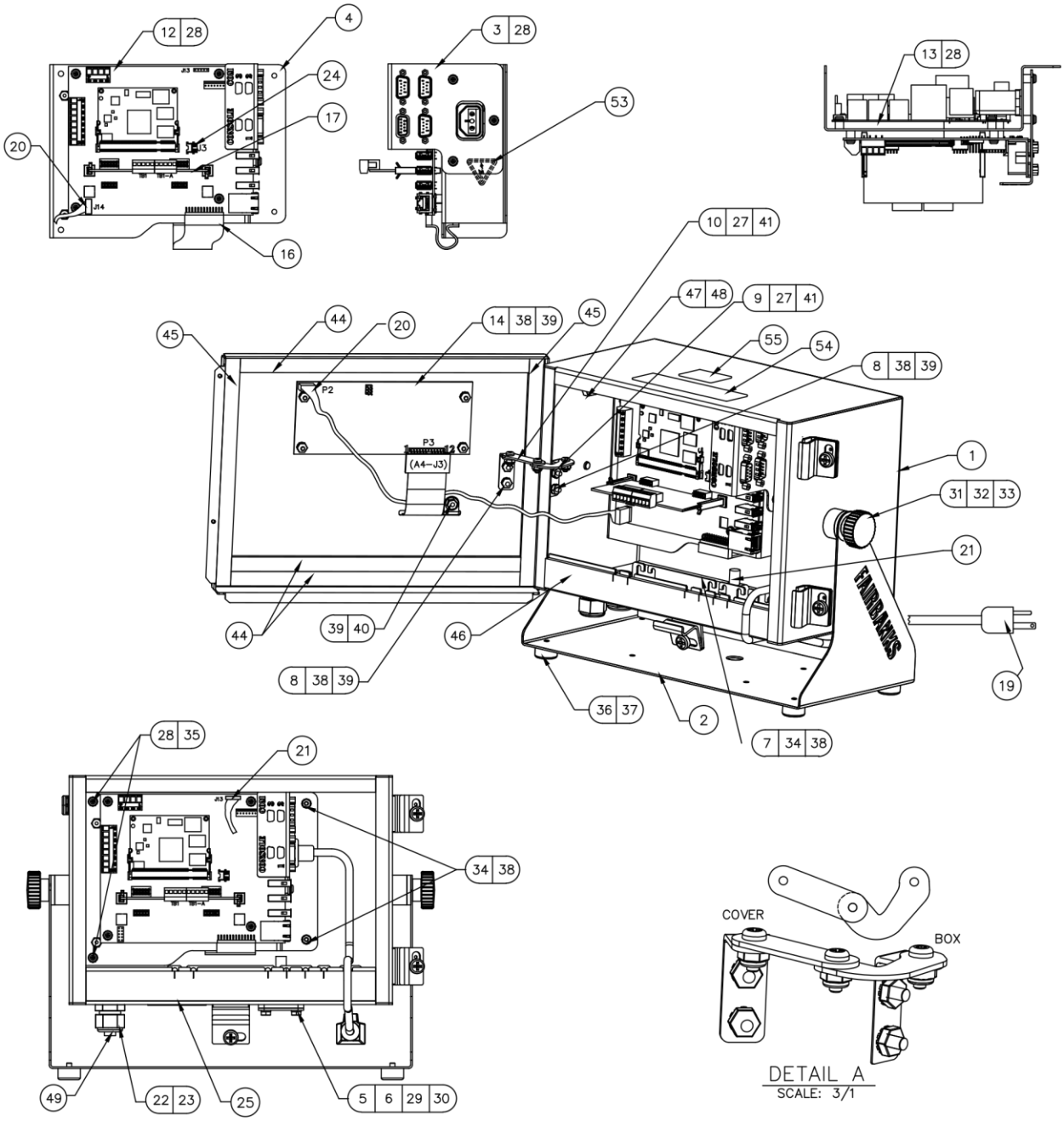
- *It is preferable to use the newest PCB whenever possible.*

Parts List, Continued

ITEM	PART NO.	QTY	DESCRIPTION
39	**11102**	9	NUT, HEX
40	**11124**	1	WASHER, PLAIN #6
41	**11182**	3	NUT, STOP 6-32
44	**32562**	3	GASKET, TOP
45	**32563**	2	GASKET, SIDE
46	**32564**	1	GASKET, CABLE
47	**25355**	1	VENT, MEMBRANE
48	**25356**	1	VENT, NUT
49	**12011**	1	ROD, NYLON .38 O.D. X 1.00 LONG
53	**29574**	1	LABEL
54	**32558**	1	NAMEPLATE SPECIFICATION
55	**29081**	1	ETL MARK LABEL
57	**11175**	1	BUSHING, AMPHENOL RUBBER
58	**11176**	1	BUSHING, AMPHENOL RUBBER
59	**12356**	1	LABEL, NORMAL CAPACITY
60	**12083**	1	LABEL, NORMAL CAPACITY
61	**11193**	1	LABEL, CLC / SECTIONAL CAPACITY
62	**12189**	2	SEAL, WIRE
N/S	**32765**	1	LABELS, BLANK, GROSS PRINT, TARE PRINT

***** **N/S** *means the item is* **N***ot* **S***hown.*

Parts Diagram



C. FB6003 Panel Mount (32675)

Parts List

ITEM	PART NO.	QTY	DESCRIPTION
1	**32659**	1	BASE ASSY
2	**32660**	1	FRONT PANEL ASSY
3	**32658**	1	COVER
4	**-**	-	-
5	**31751**	1	PCB ASSY, BASE BOARD
6	**31873**	1	PCB ASSY, POWER SUPPLY
7	**34291C**	1	PCB ASSY, LED DISPLAY
8	**32567**	1	KEYPAD OVERLAY
9	**34327**	1	FRONT PANEL ASSY WITH KEYPAD OVERLAY **–** (INCLUDES PART #**32660 & 32567)**
10	**30997**	1	ANALOG LOAD CELL INTERFACE CARD (ASC)
11	**30467**	1	POWER CORD ASSY – 6 FOOT
12	**32316**	1	CABLE ASSY, DISPLAY
13	**31273**	1	CABLE ASSY, USB
14	**17534**	1	CONNECTOR, LIQUID TIGHT
15	**-**	-	-
16	**30915**	1	MEMORY CARD, 2 GB MICRO SD
17	**14225**	3	PLUG, HOLE .50 DIA
18	**-**	-	-
19	**32556**	1	COVER, USB
20	**32557**	1	GASKET, USB
21	**32677**	4	GASKET, TOP
22	**32678**	4	GASKET, SIDE
23	**11661**	4	SPACER, HEX 6-32 THREADS X 1.00 LONG
24	**-**	-	-
25	**-**	-	-
26	**31093**	12	SCREW, MACH, PH, PHIL W/INT LOCK WASHER 6-32 X .31
28	**10201**	4	WASHER, LOCK, EXT. TOOTH NO. 6
29	**11102**	5	NUT, HEX 6-32
30	**11124**	1	WASHER, PLAIN #6
31	**-**	-	-
32	**-**	-	-
33	**11086**	8	SCREW, CAP, HEX HD 10-32 X 1.13
34	**11075**	2	SCREW, CAP HEX HD 10-32 X .50
35	**13468**	4	SCREW, SEALING 8-32 X .50
36	**11495**	14	WASHER, PLAIN, NYLON
37	**29574**	1	LABEL, ELECTRIC SHOCK HAZARD
38	**32679**	1	NAMEPLATE SPECIFICATION
39	**29081**	1	ETL MARK LABEL
40	**32444**	1	LABEL, BACKPANEL
42	**11175**	1	BUSHING, AMPHENOL RUBBER
43	**11176**	1	BUSHING, AMPHENOL RUBBER
44	**12356**	1	LABEL, NORMAL CAPACITY
45	**12083**	1	LABEL, NORMAL CAPACITY
46	**11193**	1	CLC/SECTIONAL CAPACITY LABEL

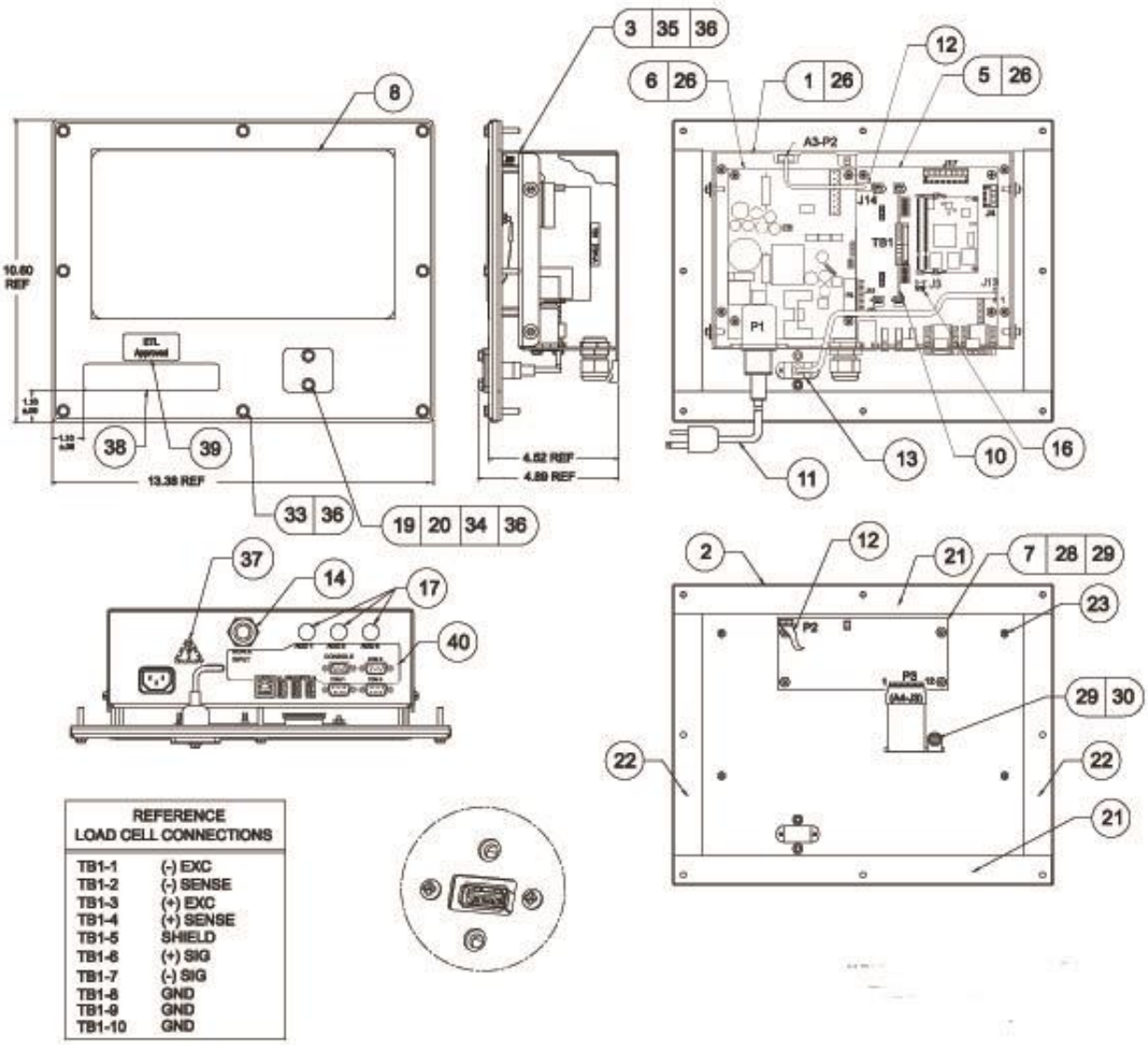
47	**12189**	2	SEAL, WIRE
N/S	**32765**	1	LABELS
N/S	**15820**	1	LITHIUM BATTERY

***** **N/S** *means the item is* **N***ot* **S***hown.*

NOTE: *The* **Base Board Assy** *is compatible with both generations of Instruments.*

- *It is preferable to use the newest PCB whenever possible.*

Parts Diagram



SECTION 14: APPENDIX V: CONNECTING TO THE FB60XX 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 FB60XX:

1. Login to the FB60XX
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 FB60XX 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 FB60XX IP address is displayed

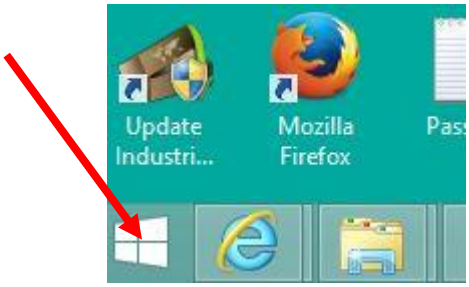
   XXX.XXX.XXX.XXX

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

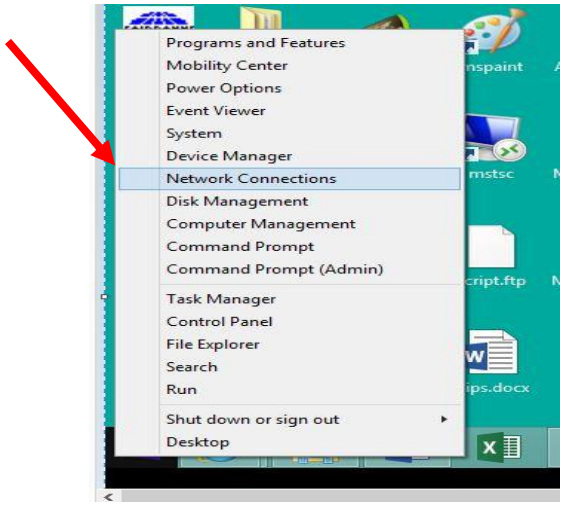
Procedure:

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

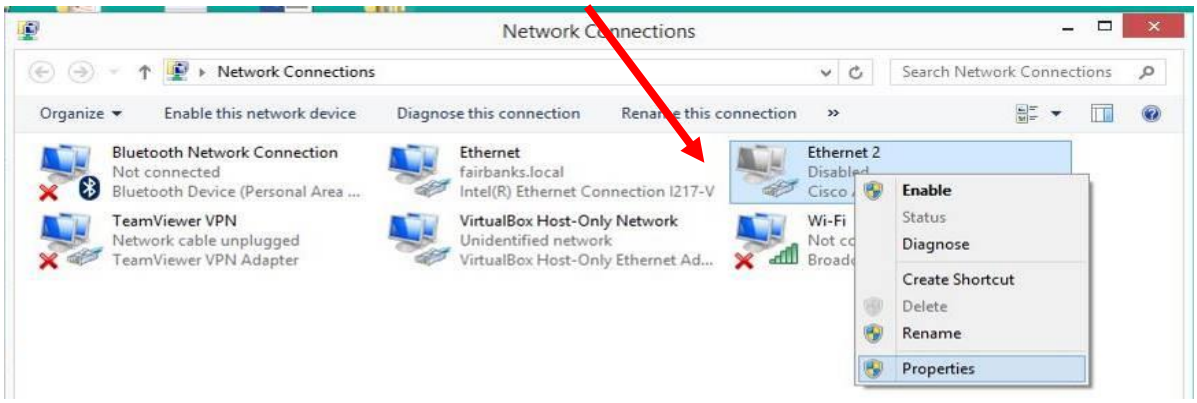
2. Right click on the **Start menu** (Windows Logo)



3. Click on **Network Connections**

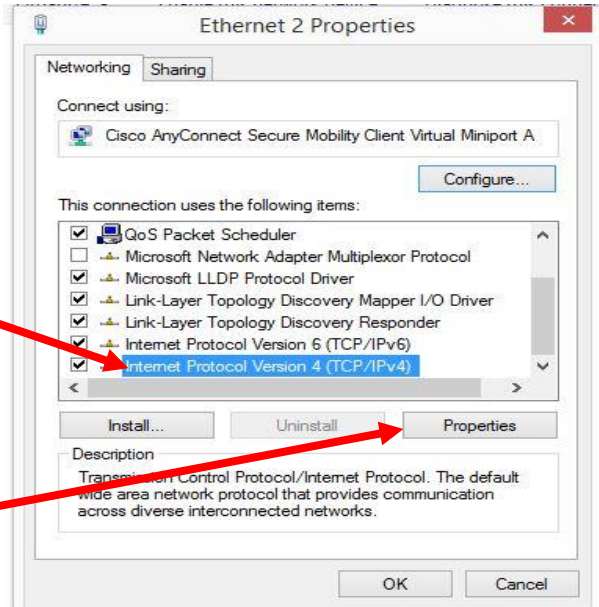


4. Right click on **Ethernet Connection** for the adapter (it may state **ETHERNET 2**)



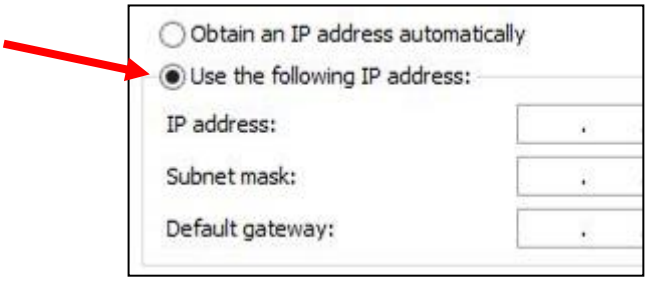
5. Click on **Properties**

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

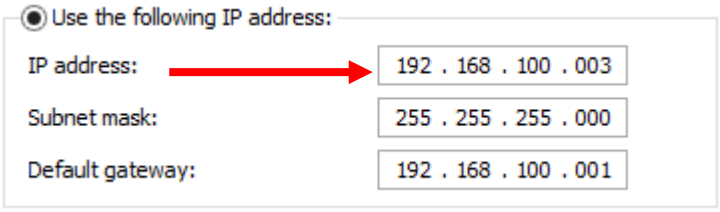


7. Then click on **Properties**

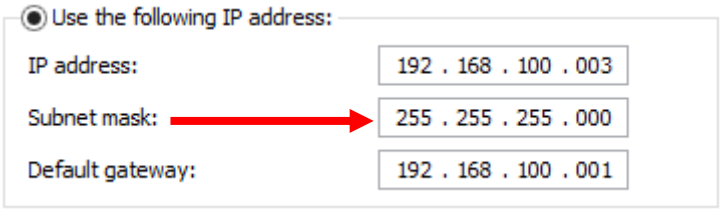
8. Click **Use the following IP address:**



9. Enter the IP address of the instrument here, but make the last number in the IP address **at least 1 number higher** than the instrument.

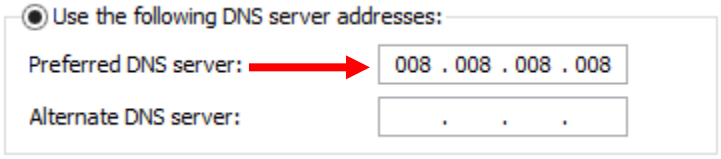


10. Click in the Subnet Mask box and enter 255.255.255.0 as shown.



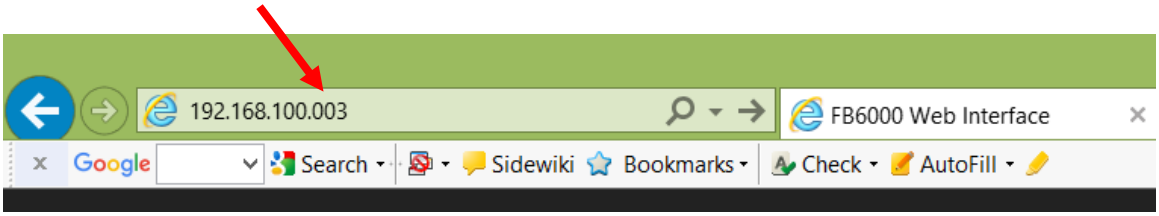
11. Click in the Default Gateway box and enter 192.168.100.001 as shown.

12. Click in the Preferred DNS server box and enter 008.008.008.008 as shown.



13. Click **OK** close this window.
14. Connect your PC or Tablet to the instrument using the ethernet cable.
15. Open your browser (Internet Explorer, Chrome or FireFox)

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



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

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