825
WEIGHT INDICATOR
INSTALLATION and TECHNICAL MANUAL

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INTRODUCTION

Thank you for selecting and purchasing the Cardinal Model 825 Weight Indicator. The Model 825 indicator was built with quality and reliability at our factory in Webb City, MO USA and incorporates the latest in digital technology and innovative features for the weighing industry. Configuration and upgrades can easily be performed in the field, while still maintaining the rigid control the most demanding installations require. This flexibility insures the Model 825 will be able to meet your weight indicating needs for years to come.

The purpose of this manual is to provide you with a guide through installation, setup and calibration of your new Model 825 Weight Indicator. Please read it thoroughly before attempting to install your indicator and keep it handy for future reference.

SERIAL NUMBER _____

DATE OF PURCHASE _____

PURCHASED FROM _____

_____

_____

_____

RETAIN THIS INFORMATION FOR FUTURE USE

PRECAUTIONS

Before using this instrument, read this manual and pay special attention to all "WARNING" symbols:

IMPORTANT   ELECTRICAL WARNING   STATIC SENSITVE

FCC COMPLIANCE STATEMENT

WARNING! This equipment generates, uses and can radiate radio frequency and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area may cause interference in which case the user will be responsible to take whatever measures necessary to correct the interference.

You may find the booklet "How to Identify and Resolve Radio TV Interference Problems" prepared by the Federal Communications Commission helpful. It is available from the U.S. Government Printing Office, Washington, D.C. 20402. Order stock no. 001-000-00315-4.

PROPER DISPOSAL

When this device reaches the end of its useful life, it must be properly disposed of. It must not be disposed of as unsorted municipal waste. Within the European Union, this device should be returned to the distributor from where it was purchased for proper disposal. This is in accordance with EU Directive 2002/96/EC. Within North America, the device should be disposed of in accordance with the local laws regarding the disposal of waste electrical and electronic equipment.

It is everyone's responsibility to help maintain the environment and to reduce the effects of hazardous substances contained in electrical and electronic equipment on human health. Please do your part by making certain that this device is properly disposed of. The symbol shown below indicates that this device must not be disposed of in unsorted municipal waste programs.

SPECIFICATIONS

Power Requirements:	100 to 240 VAC (50/60 Hz) at 1A Max.
Enclosure Type:	NEMA 4X/IP66 Stainless Steel
Enclosure Size:	12"W x 9 3/4"H x 3 3/4"D (305mm W x 247mm H x 95mm D)
Weight:	16.2lbs (Includes Gimbal)
Operating Environment:	Temperature: 14 to 104 ºF (-10 to +40 ºC) Humidity: 90% non-condensing (maximum)
Display Size:	5.25" x 4.0" (133 mm x 102 mm)
Display Resolution:	640 x 480 pixel matrix Color Backlit LCD
Transducer Excitation:	10.85 VDC
Signal Input Range:	1.0 mV min. to 33 mV max. (with dead load boost)
Number of Load Cells:	14 each, 350 OHM minimum resistance
Load Cell Cable Length:	1260 feet maximum with sense lines Consult factory for 30 feet maximum without sense lines other requirements
Division Value:	1, 2, or 5 x 10, 1, 0.1, 0.01, 0.001 and 0.0001 commercial 0 to 99, non-commercial

Sensitivity:
   NON-COMMERCIAL
   NTEP
   CANADA
   OIML
	
	0.15 uV/e
	0.3uV/e (Class III/IIIL)
	0.3uV/e (Class III/IIIHD)
	0.5 uV/e (Class III)

Scale Divisions:
   NON-COMMERCIAL
   NTEP
   CANADA
   OIML
	
	100 to 240,000
	100 to 10,000 (Class III/IIIL)
	100 to 10,000 (Class III/IIIHD)
	100 to 10,000 (Class III), 1,000 (Class IIII)

Internal Resolution:	> 100,000 Counts
Tare Capacity:	Six Digits (999,999)
Sample Rate:	1 to 200 samples per second, selectable
Auto Zero Range:	0.5 or 1 through 9 divisions
Weighing Units:	Tons, Pounds, Tonnes "Metric Tons", Kilograms and Custom
Keypad:	Membrane type with 52 color-coded keys and using the display "touch screen", multiple programmable soft keys
Standard I/O:	1 ea bi-directional RS-232 port 1 ea bi-directional RS-232/20mA port 1 ea bi-directional RS-232/RS485 port 1 ea DeviceNet/ICAN port 4 ea Isolated Inputs and 4 ea Isolated Outputs port 1 ea 10/100 Base-T Ethernet port 2 ea USB A Host port 1 ea USB B Device port 1 ea Type 1 Compact Flash Slot

FEATURES

Standard

- ➤ Time and Date with selectable 12 or 24 hour operation
- ➤ Adjustable Filtering
- ➤ Multi-Point Calibration
- ➤ Gross, Tare and Net Conversion
- ➤ Multi-Interval Feature
- ➤ Push Button and Keypad Tare Function
- ➤ SMA Level 2 Compliant Serial Communications (See www.scalemanufacturers.org)
- ➤ Color-coded keypad with Alphanumeric and Navigation Keys
- ➤ Interactive Touch Screen
- ➤ Up to Eight Operators (one administrator and seven configurable users)

Optional

- ➤ 9 additional option slots
- ➤ 825-SIB Scale Input Board
- ➤ 825-DIO Digital Input/Output (provides 8 configurable digital input and output lines)

*These feature requires additional hardware and includes additional documentation.

EUROPEAN DECLARATION OF CONFORMITY

Manufacturer: Cardinal Scale Manufacturing Company
PO Box 151
203 East Daugherty
Webb City, Missouri 64870 USA
Telephone No. + 417 673 4631
Fax No. + 417 673 5001

Product: Non-automatic Weight Indicating Instrument
Model Number: 825
Serial Number EXXXYY-ZZZ
Where XXX = day of year
YY = last two digits of year
ZZZ = sequential number

The undersigned hereby declares, on behalf of Cardinal Scale Manufacturing Company of Webb City, Missouri, that the above-referenced product, to which this declaration relates, is in conformity with the provisions of:

European Standard EN 45501: 1992 and equivalent International
Recommendation OIML R76, edition 1992
EU Type Approval Certificate Number DK 0199.159
Report No. DANAK-1910305

Council Directive 2006/95/EC Low Voltage Directive
as amended by Council Directive 93/68/EEC (22 July, 1993)

Council Directive 90/384/EEC (20 June, 1990) on the Harmonization
Of the Laws of Member States relating to non-automatic weighing
Systems as amended by:
Council Directive 93/68/EEC (22 July, 1993)
EU Type Approval Certificate No. DK 0199.160

European Standard EN50082: 1995 for radiated emissions and
European Standard EN50082-2: 1995 Class B for EMC immunity.

The Technical Construction File required by this Directive is maintained at the corporate headquarters of Cardinal Scale Manufacturing Company, 203 East Daugherty, Webb City, Missouri.

Ginger Harper
Director, Quality Assurance

PRECAUTIONS

Static Electricity

CAUTION! This device contains static sensitive circuit cards and components. Improper handling of these devices or printed circuit cards can result in damage to or destruction of the component or card. Such actual and/or consequential damage IS NOT covered under warranty and is the responsibility of the device owner. Electronic components must be handled only by qualified electronic technicians who follow the guidelines listed below:

ALWAYS handle printed circuit card assemblies by the outermost edges. NEVER touch the components, component leads or connectors.

ALWAYS observe warning labels on static protective bags and packaging and NEVER remove the card or component from the packaging until ready for use.

ALWAYS store and transport electronic printed circuit cards and components in anti-static protective bags or packaging.

ATTENTION! ALWAYS use a properly grounded wrist strap when handling, removing or installing electronic circuit cards or components. Make certain that the wrist strap ground lead is securely attached to an adequate ground. If you are uncertain of the quality of the ground, you should consult a licensed electrician.

SITE PREPARATION

The Model 825 Weight Indicator is a precision weight-measuring instrument. As with any precision instrument, it requires an acceptable environment to operate at its peak performance and reliability. This section is provided to assist you in obtaining such an environment.

Environmental

The Model 825 Weight Indicator meets or exceeds all certification requirements within a temperature range of 14 to 104 °F (-10 to +40 °C).

In order to keep cooling requirements to a minimum, the indicator should be placed out of direct sunlight and to provide adequate air circulation, keep the area around the indicator clear.
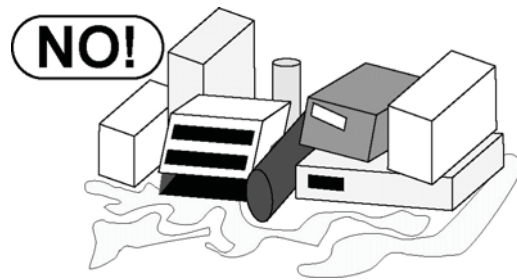
Make certain the indicator is not directly in front of a heating or cooling vent. Such a location will subject the indicator to sudden temperature changes, which may result in unstable weight readings.
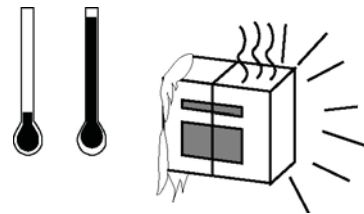
Insure that the indicator has good, clean AC power and is properly grounded. In areas subject to lightning strikes, additional protection to minimize lightning damage, such as surge suppressors, should be installed.
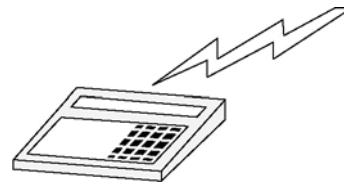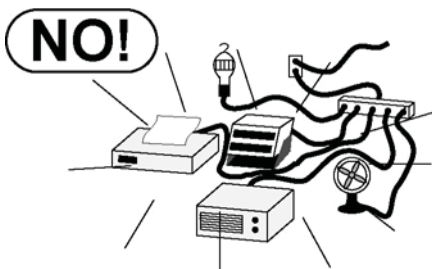
SITE PREPARATION, CONT.

Electrical Power

The 825 has been designed to operate from 100 to 240 VAC at 50/60 Hz. Note that a special order is <u>not</u> required for operation at 230/240 VAC.

CAUTION! - To avoid electrical hazard and possible damage to the indicator, DO NOT, under any circumstance, cut, remove, alter, or in any way bypass the power cord grounding prong.

- The socket-outlet supplying power to the indicator should be on a separate circuit from the distribution panel and dedicated to the exclusive use of the indicator.

- The socket-outlet shall be installed near the equipment and shall be easily accessible. Note that the power cord on the 825 serves as the power disconnect.

- The wiring should conform to national and local electrical codes and ordinances and should be approved by the local inspector to assure compliance.

- On installations requiring 230/240 VAC power, **it is the responsibility of the customer** to have a qualified electrician install the proper power cord plug that conforms to national electrical codes and local codes and ordinances.

Electrical Noise Interference

To prevent electrical noise interference, make certain all other wall outlets for use with air conditioning and heating equipment, lighting or other equipment with heavily inductive loads, such as welders, motors and solenoids are on circuits separate from the indicator. Many of these disturbances originate within the building itself and can seriously affect the operation of the instrument. These sources of disturbances must be identified and steps must be taken to prevent possible adverse effects on the instrument. Examples of available alternatives include isolation transformers, power regulators, uninterruptible power supplies, or simple line filters.

Transient Suppression

The following recommendations will help to reduce transients:

- Always use shielded cables to connect signal wires to the weight indicator.

- Connect the cable shield (indicator end only) to a ground point inside the indicator. Keep wires that extend beyond the shield as short as possible.

- Do not run load cell or signal cables from the weight indicator along side or parallel to wiring carrying AC power. If unavoidable, position the load cell and signal cables a minimum of 24" away from all AC wiring.

- Always use arc suppressors across all AC power relay contacts (see recommendations at http://www.paktron.com/pdf/Quencharch_QRL.pdf).

- Use zero voltage switching relays, optically isolated if possible.

INSTALLATION

Before beginning installation of your Model 825 Weight Indicator, make certain that it has been received in good condition. Carefully remove it from the shipping carton and inspect it for any evidence of damage (such as exterior dents or scratches) that may have taken place during shipment. Keep the carton and packing material for return shipment if it should become necessary. It is the responsibility of the purchaser to file all claims for any damages or loss incurred during transit.

Mounting the 825

> **NOTE!** If your 825 indicator is already installed on a scale, the following information describing its installation does not apply.

The Model 825 Indicator is housed in a NEMA 4X/IP66 stainless steel wall or desk-mount enclosure. The 825 gimbal may be mounted on a desk, table or other smooth, flat, horizontal surface or may be mounted on a wall. Refer to Figure No. 1 for a layout of wall-mounting.

7.50"

Clearance for #10 size screw

Figure No. 1
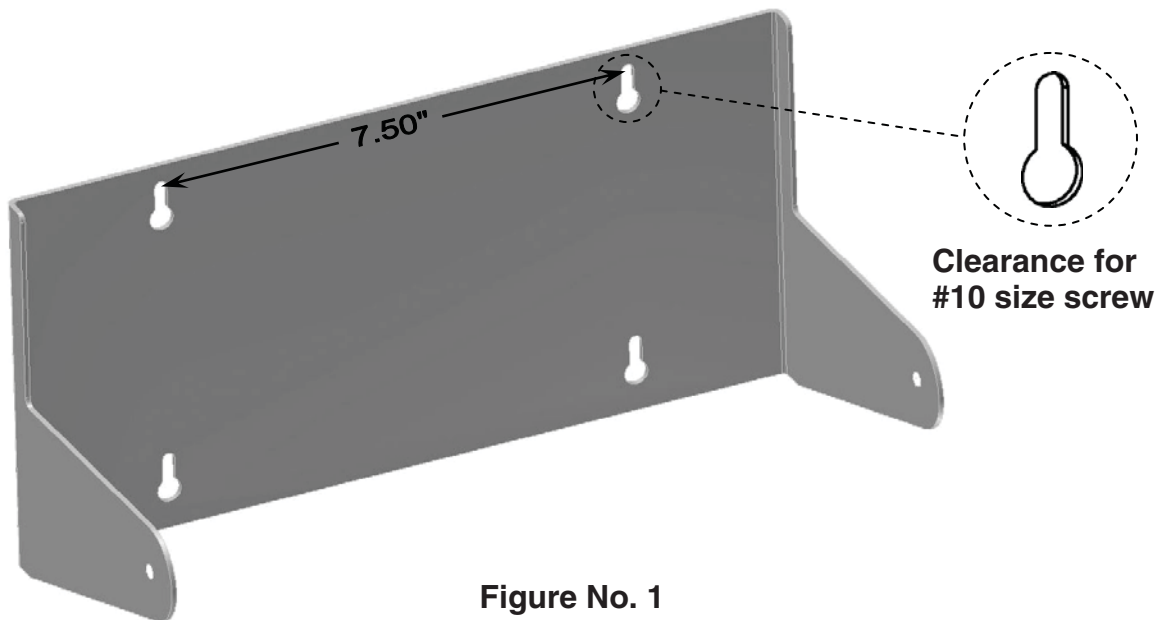
If wall mounted, make certain the mounting surface is strong enough to support the instrument. The mounting location should be where the display is easily viewed while being close enough to provide the operator easy access to the keypad. Carefully lay out the mounting hole locations, then drill and install the anchor bolts. Attach the gimbal to the wall and securely tighten the retaining bolts.

INSTALLATION, CONT.
Load Cell Cable Connection with RFI Suppression

CAUTION! Disconnect any external load cell power supply before connecting load cells to the indicator. Failure to do so will result in permanent damage to the indicator.
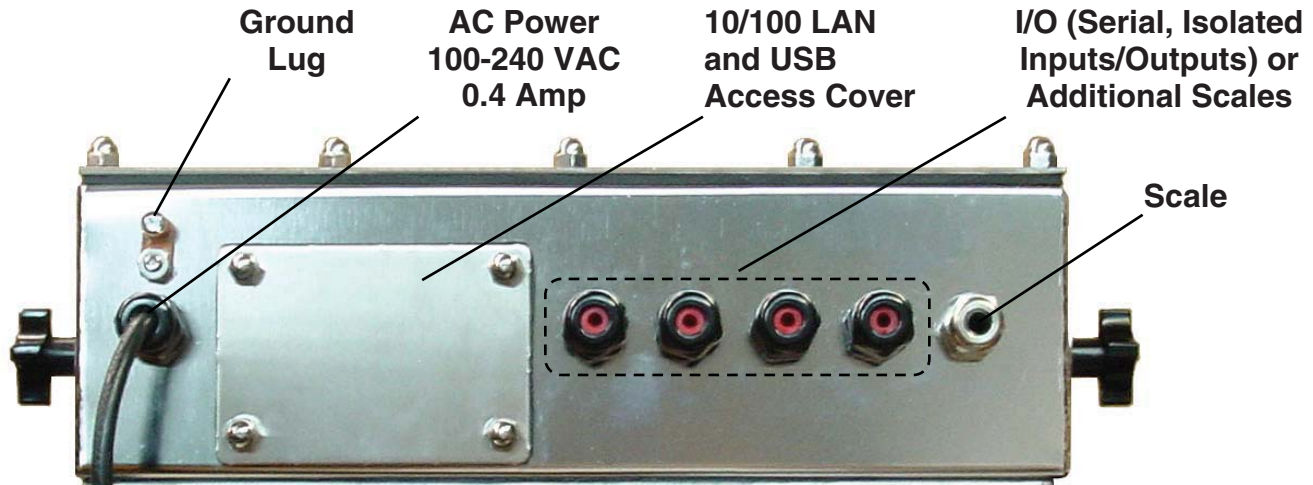
Figure No. 2

To eliminate RFI, the load cell cable should be routed through the special metallic gland connector and the shield wire from the load cell cable must be connected to this gland connector for grounding. Refer to Figure No. 2 for the gland connector layout.

1. Remove the 14 acorn nuts securing the rear panel to the main housing.

2. Loosen and remove the metal gland connector nut and remove the plastic insert.

3. Referring to Figure No. 3, route the single cable from the load cell or load cell junction box through the nut and plastic insert and into the enclosure.

4. With the load cell cable routed into the enclosure, refer to Figure No. 4 and then remove approximately 6 inches of the cable outer insulating jacket exposing the internal wires.

5. Next, cut the shield wire so that it extends past the outer jacket approximately 3/4 inch.
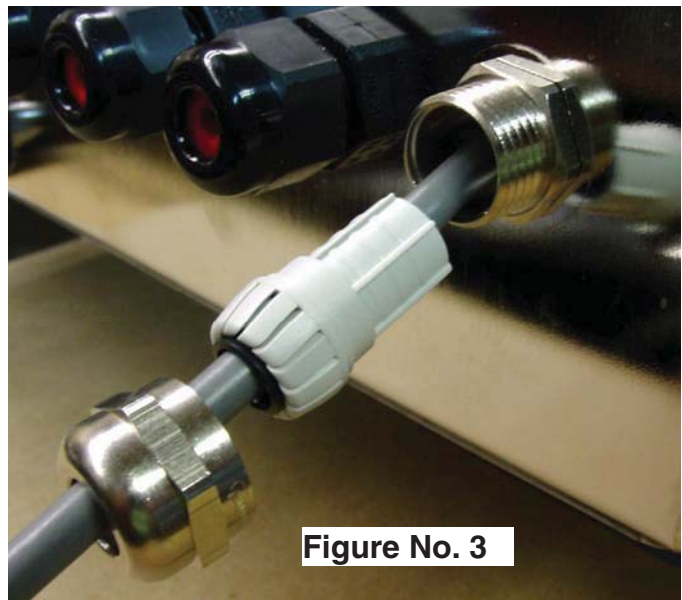
Figure No. 3

INSTALLATION, CONT.

6 inches

3/4 inch

Figure No. 4
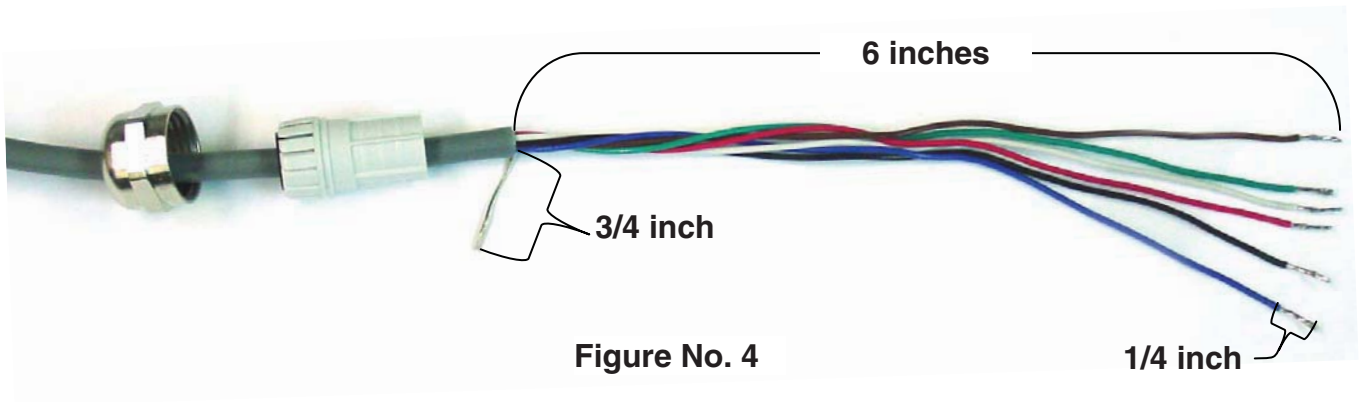
1/4 inch

6. Now, remove 1/4 inch of insulation from the end of each of the six wires (with sense leads) or four wires (without sense leads).

7. Remove the screw securing the 825 Scale Input Board (825-SIB) to the main PC board and then lift the 825-SIB straight up to remove it from the enclosure. See Figure No. 5.

CAUTION!
Be careful not to strike board against side of 825 enclosure when removing.

Figure No. 5

Remove this screw
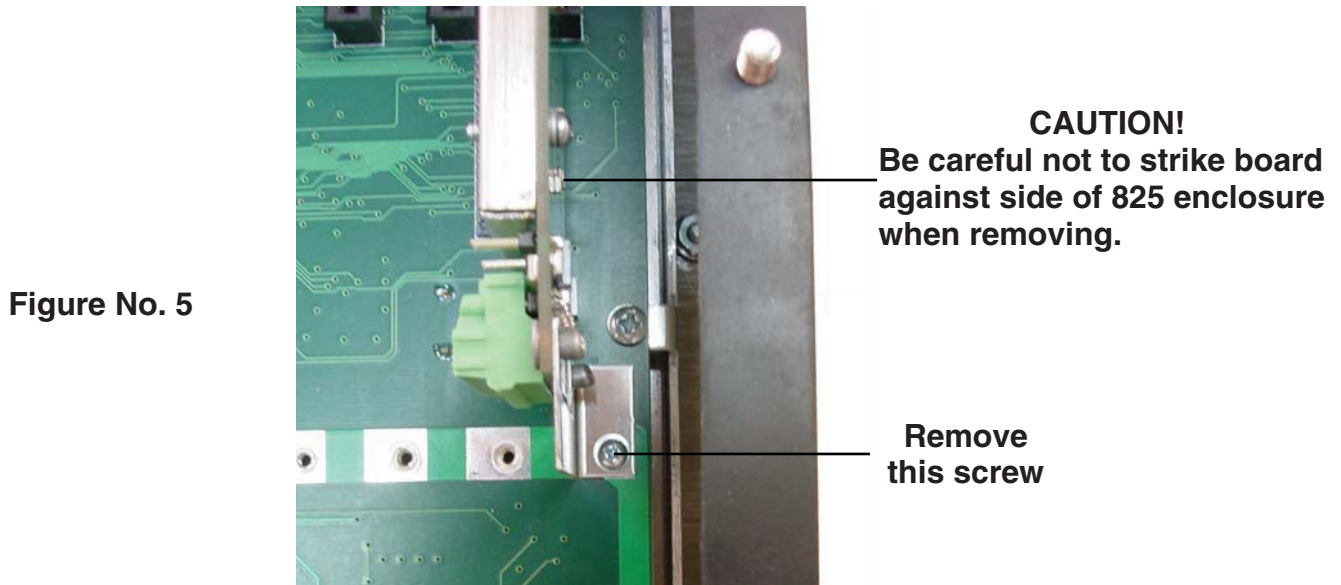
8. Remove the 7-connector terminal from the 825-SIB (hold the board in place and grasp the terminal block connector and lift straight up away from the board. See Figure No. 6.

Hold board. Grasp here and lift up.

Figure No. 6
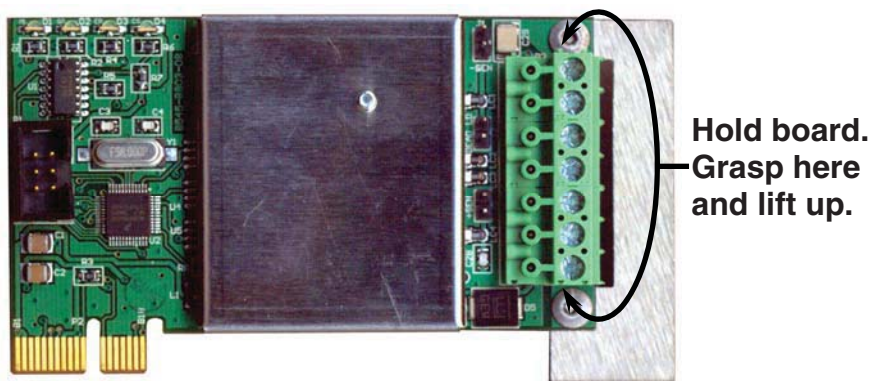
INSTALLATION, CONT.

9. Referring to the table below and the labels on the circuit board for terminal connections, connect each wire to the terminal block.

Load Cell Wiring Table

Board Label	Function	Board Label	Function
+EXC	+ EXCITATION	**-SIG**	- SIGNAL
+SEN	+ SENSE	**-SEN**	- SENSE
+SIG	+ SIGNAL	**-EXC**	- EXCITATION
SHLD	SHIELD (Not used, the shield wire is connected to metal gland).		

Figure No. 7

Insert wire and tighten screw.
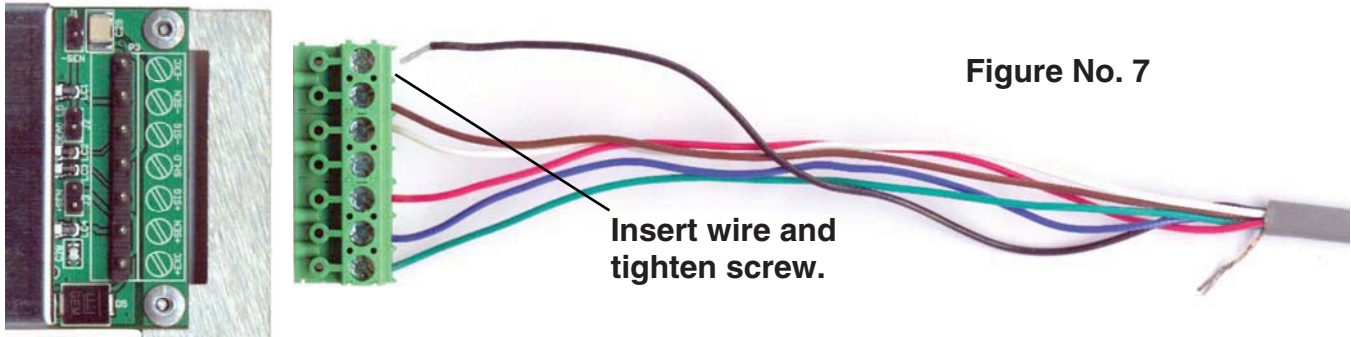
10. To terminate a wire, loosen the screws in the terminal block and then insert the wire into the terminal opening. Tighten the screw to secure the wire in place. See Figure No. 7.

11. Repeat the procedure until all wires are in place.

12. After all terminations have been made, remove the excess cable from the enclosure.

13. Referring to Figure No. 8, fold the shield wire back over the plastic insert and then insert the plastic insert (with the shield wire) into the gland connector.

Figure No. 8
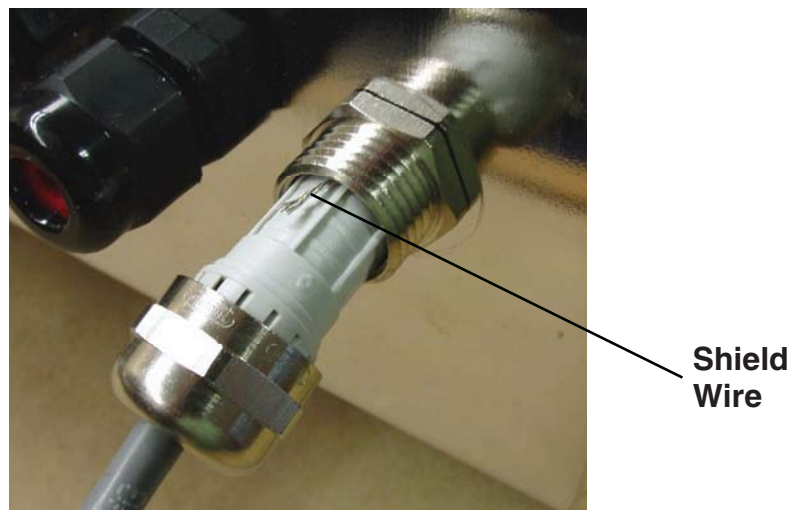
Shield Wire

INSTALLATION, CONT.

14. The shield wire is secured when tightening the gland connector nut. See Figure No. 9.

Shield Wire
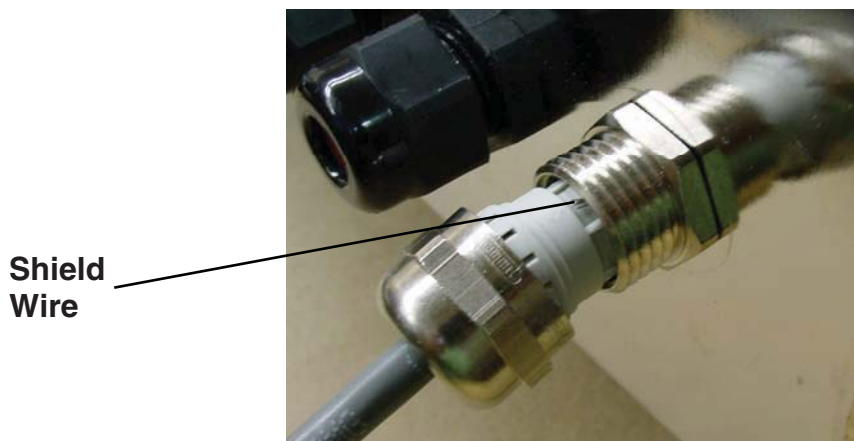
15. Do not over-tighten the connector but make certain it is snug.

Load Cell Cable Connection <u>without</u> RFI Suppression

The following instructions describe the load cell connection without RFI Suppression should it not be required.

1. Remove the 14 acorn nuts securing the rear panel to the main housing.

2. Referring to Figure No. 2, choose a gland connector for the load cell cable and loosen it.

3. Slip the single cable from the load cell or load cell junction box through the gland connector and into the enclosure.

4. Referring to Figure No. 4, remove 3 inches (not 6 inches) of the outer insulation jacket

5. Next, remove 1/4 inch of insulation from each of the six wires and shield (with sense leads) or four wires and shield (with sense leads).

6. Referring to the table below and the labels on the circuit board for terminal connections, connect each wire to the terminal block.

Load Cell Wiring Table

Board Label	Function	Board Label	Function
+EXC	+ EXCITATION	-SIG	- SIGNAL
+SEN	+ SENSE	-SEN	- SENSE
+SIG	+ SIGNAL	-EXC	- EXCITATION
SHLD	SHIELD (Connect the load cell cable shield wire here).		

7. To terminate a wire, loosen the screws in the terminal block and then insert the wire into the terminal opening. Tighten the screw to secure the wire in place. See Figure No. 7.

8. Repeat the procedure until all wires are in place.

INSTALLATION, CONT.

Load Cell Connections with Over 30 Feet of Cable

For installations with over 30 feet of cable between the 825 and the load cells, sense wires should be used. The sense wires must be connected between the +SENS, -SENS terminals on the 825-SIB (Scale Input Board) and the +EXCITATION, -EXCITATION wires of the load cells or the +SENS, -SENS terminals of the load cell trim board (or the section seal trim board). For the 825-SIB to use the sense wires, the -SENS and +SENS jumpers J1 and J3 must be open (on one pin only) or removed. Refer to Figure No. 10 for the location of these jumpers.

825-SIB (Scale Input Board)
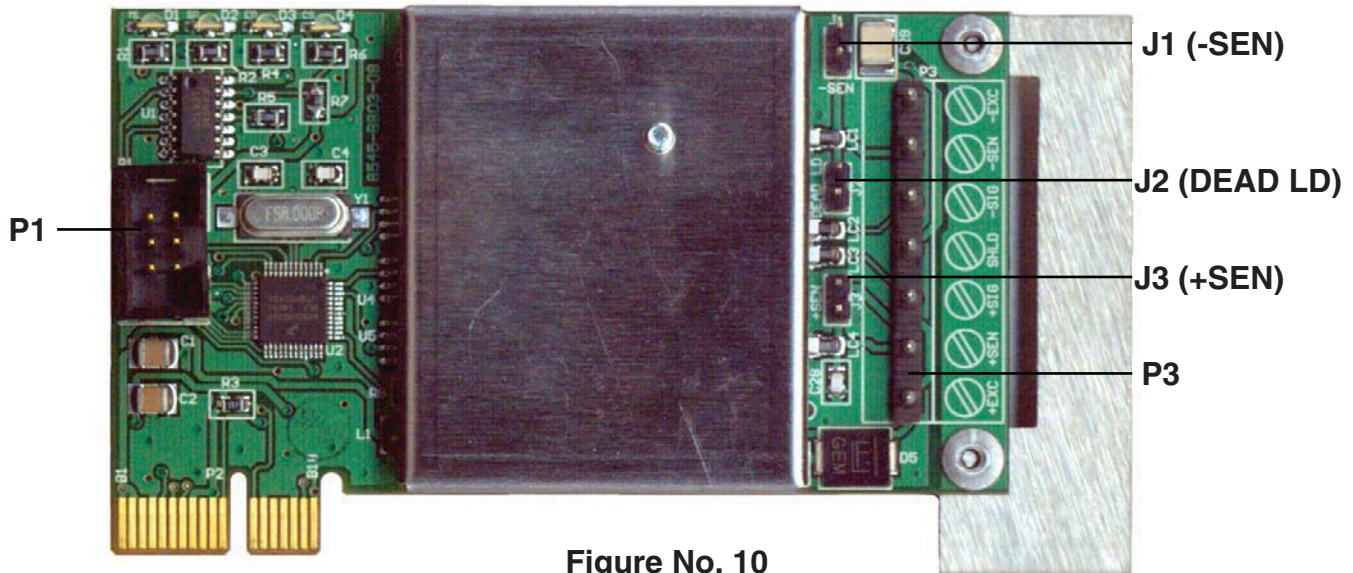
Figure No. 10

P1 – FACTORY USE ONLY

P3 – LOAD CELL TERMINAL

Board Label	Function	Board Label	Function
+EXC	+ EXCITATION	**-SIG**	- SIGNAL
+SEN	+ SENSE	**-SEN**	- SENSE
+SIG	+ SIGNAL	**-EXC**	- EXCITATION
SHLD	SHIELD		

J1 (-SEN) and J3 (+SEN) – SENSE JUMPERS

If the sense leads are NOT used, you must install the -SEN and +SEN jumpers at J1 and J3 (near the P3 terminal block). These jumpers connect the sense leads to the excitation leads. If sense leads ARE used (as in motor truck scales or installations with over 30 feet between the indicator and load cells), these jumpers should be open (on one pin only) or removed.

J2 (DEAD LD) – DEAD LOAD BOOST JUMPER

For scales with very low dead loads (less than 10% of the combined load cell capacity), connect the DEAD LD (dead load boost) jumper J2 (near the P3 terminal block).

INSTALLATION, CONT.

I/O Cable Preparation and Installation

The 825 indicator may be connected to a printer to record weight and associated data or it may be connected to a remote display or even to a computer for transmission of weight data. The weight data may be transmitted on demand (pressing the **PRINT** key or on receipt of a command from the computer).

1. If the rear panel of the indicator has been removed, proceed to step 2. Otherwise, remove the 14 acorn nuts securing the rear panel to the main housing.
2. Referring to Figure No. 2, choose a gland connector for the I/O cable and loosen it.
3. Slip the cable through the gland connector and into the enclosure.
4. Referring to Figure No. 4, remove 3 inches (not 6 inches) of the outer insulation jacket
5. Next, remove 1/4 inch of insulation from each of the wires.
6. Referring to the corresponding I/O tables and figures in the next sections, connect each wire to the terminal block.
7. To terminate a wire, loosen the screws in the terminal block and then insert the wire into the terminal opening. Tighten the screw to secure the wire in place.
8. Repeat the procedure until all wires are in place.

RS232 Terminal Connections

Refer to the table and Figure No. 11 below to connect each wire to the terminal block.

RS232 COM1, COM2, and COM3
TERMINALS P22, P21 and P20

Terminal	Function
1	**TXD** (Transmit)
2	**RXD** (Receive)
3	**RTS** (Ready To Send)
4	**CTS** (Clear To Send)
5	**GND** (Ground)

IMPORTANT!

- **COM1** is RS232 only (no jumper or shunt).
- **COM2** requires **J7** shunt installed on RS232.
- **COM3** requires **J8** shunt installed on RS232.

Figure No. 11
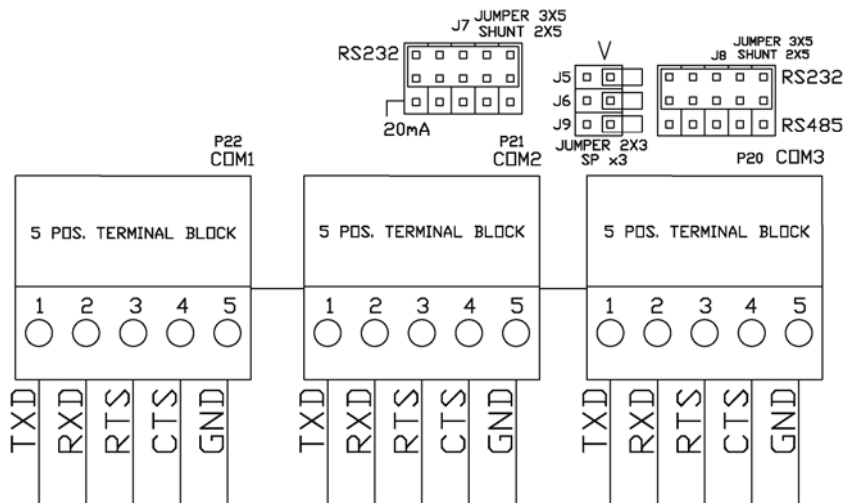
INSTALLATION, CONT.

20mA Terminal Connections

Refer to the table and Figures No. 12 and 13 below to connect each wire to the terminal block.

20mA COM2 – TERMINAL P21

Terminal	Function
1	**TXA** (Transmit A)
2	**TXB** (Transmit B)
3	**RXA** (Receive A)
4	**RXB** (Receive B)
5	**GND** (Ground)

IMPORTANT!

- **COM2** requires **J7** shunt installed on 20mA.
- **825 Active** requires **J3** installed.
- **825 Passive** requires **J3** removed.
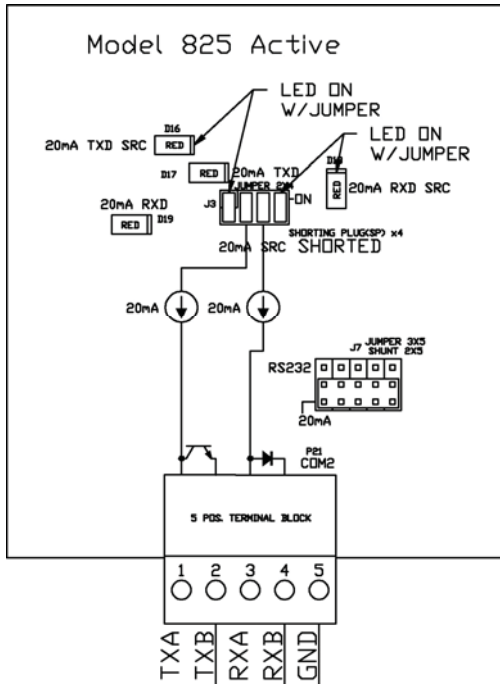
Figure No. 12
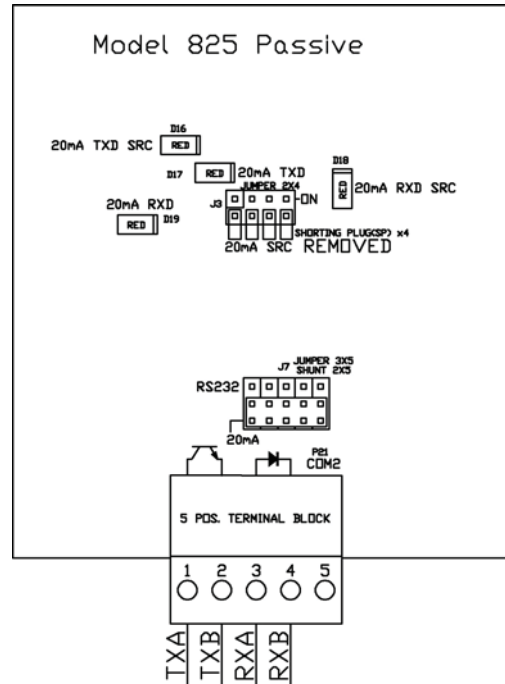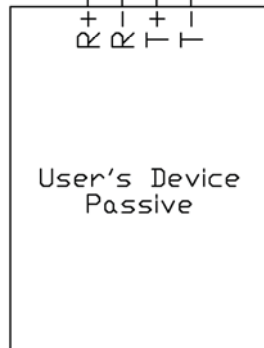
Figure No. 13
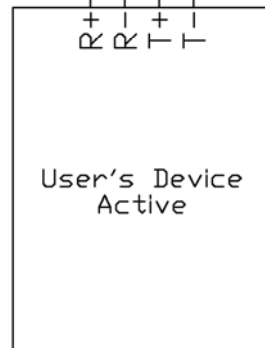
INSTALLATION, CONT.

RS485 Terminal Connections

Refer to the table and Figure No. 14 below to connect each wire to the terminal block.

RS485 COM3 – TERMINAL P20

Terminal	Function
1	**TXA** (Transmit A)
2	**TXB** (Transmit B)
3	**RXA** (Receive A)
4	**RXB** (Receive B)
5	**GND** (Ground)

IMPORTANT!

- **COM3** requires **J8** shunt installed on RS485.
- **2-Wire** requires **J5** and **J6** installed.
- **4-Wire** requires **J5** and **J6** removed.
- Install **J9** if 825 is last device on RS-485 bus.

Figure No. 14
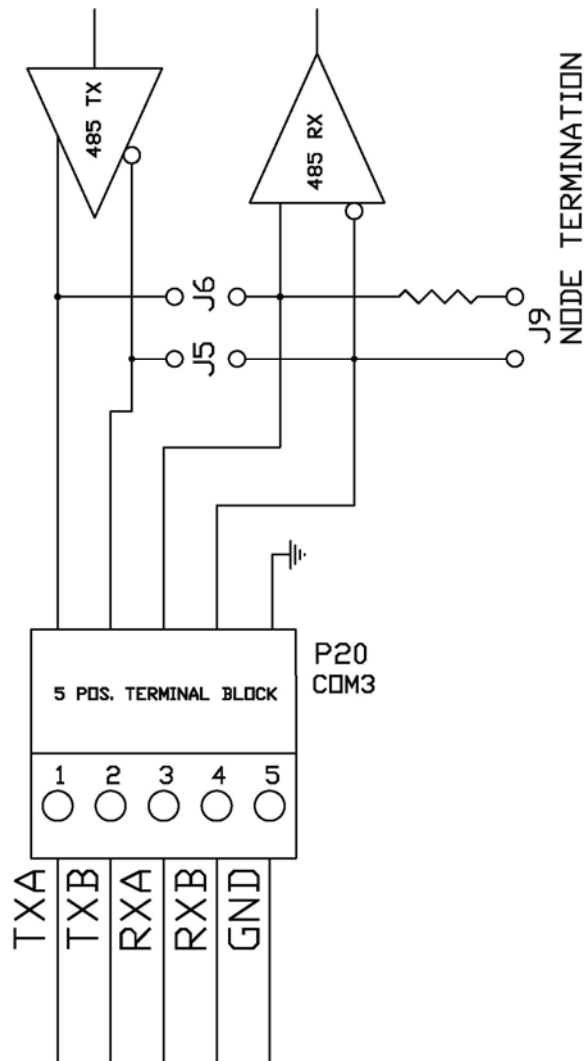
INSTALLATION, CONT.

DeviceNet Terminal Connections

Refer to the table and Figure No. 15 below to connect each wire to the terminal block.

DEVICENET – TERMINAL P19

Terminal	Function
1	V-
2	CAN L
3	SHIELD
4	CAN H
5	V+

IMPORTANT!

- **DeviceNet** requires **J4** and **J11** removed.
- Install **J10** if 825 is last device on CAN bus.

Turns on when external DeviceNet power is applied.

Turns on when link is established with scanner.
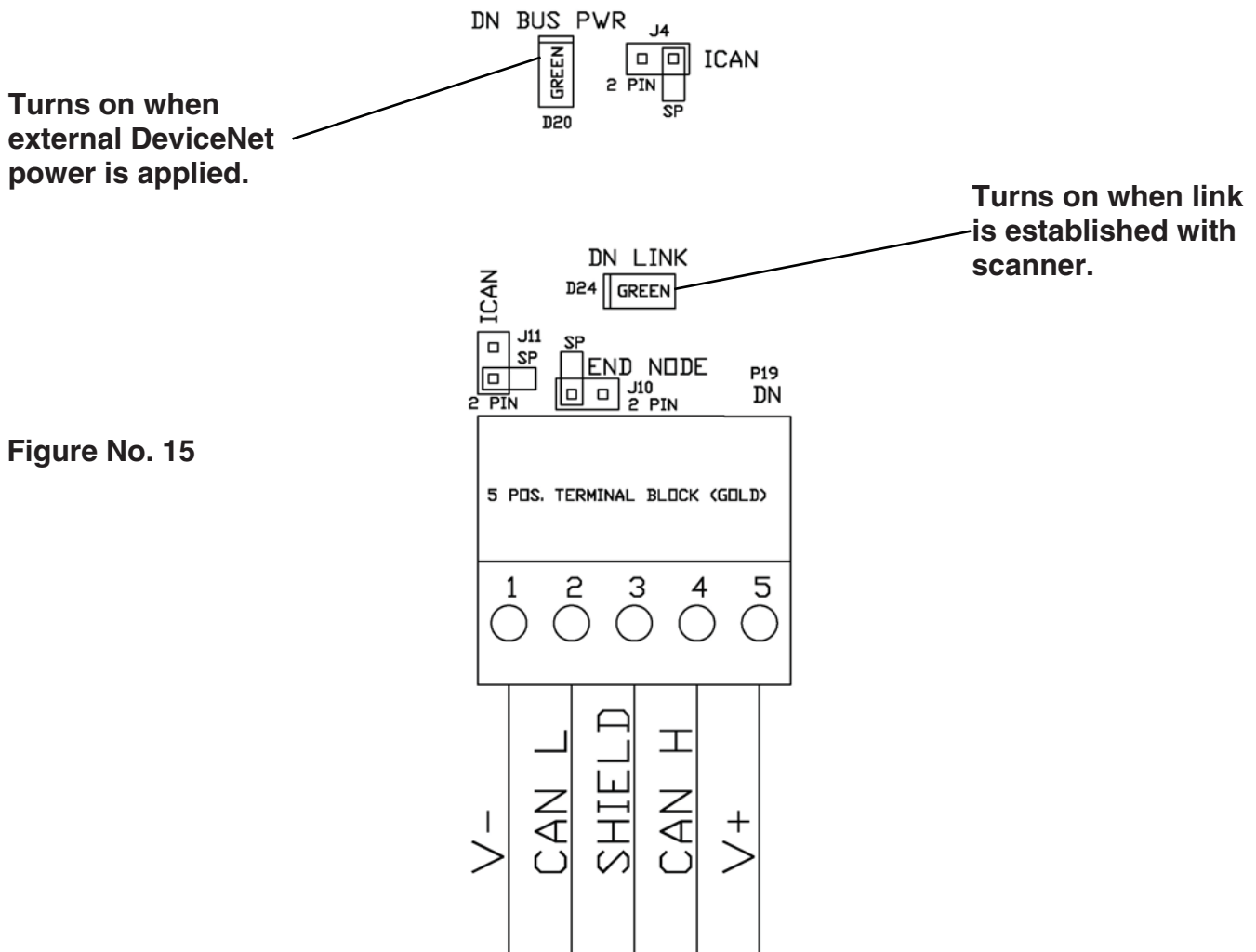
Figure No. 15

INSTALLATION, CONT.

I/O (Input/Output) Terminal Connections – 825 Source Power

Refer to the table and Figure No. 16 below to connect each wire to the terminal block.

INPUT/OUTPUT – TERMINAL P16 (825 SOURCE POWER)

Terminal	Function	Terminal	Function
1	**12v** (12VDC from 825)	6	**OUT1** (Output 1 @ 100mA MAX.)
2	**IN1** (Input 1)	7	**OUT2** (Output 2 @ 100mA MAX.)
3	**IN2** (Input 2)	8	**OUT3** (Output 3 @ 100mA MAX.)
4	**IN3** (Input 3)	9	**OUT4** (Output 4 @ 100mA MAX.)
5	**IN4** (Input 4)	10	**GND** (Ground)

IMPORTANT!

- Install **J1** and **J2** to allow the 825 to supply (source) 12VDC to a solid-state relay or other load (100 mA maximum).

Figure No. 16
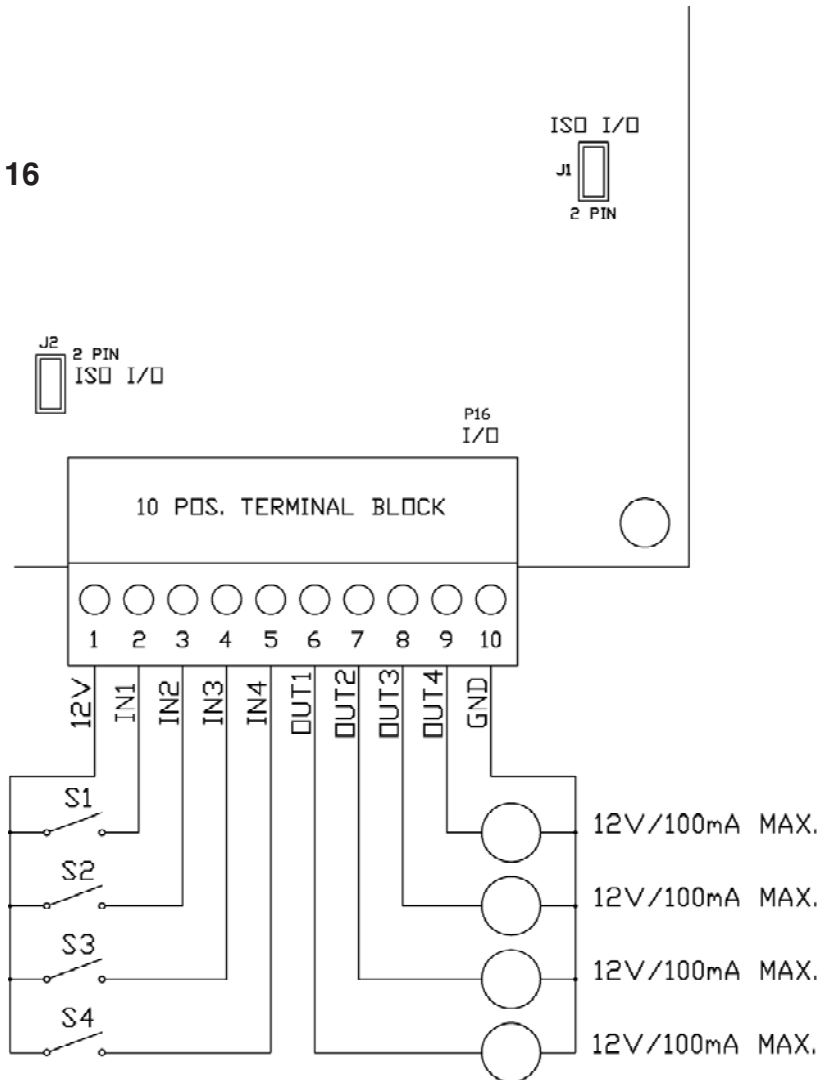
INSTALLATION, CONT.

I/O (Input/Output) Terminal Connections – <u>External</u> Power Source

Refer to the table and Figure No. 17 below to connect each wire to the terminal block.

INPUT/OUTPUT – TERMINAL P16 (EXTERNAL POWER SOURCE)

Terminal	Function	Terminal	Function
1	**12v** (12 to 24VDC)	**6**	**OUT1** (Output 1 @ 100mA MAX.)
2	**IN1** (Input 1)	**7**	**OUT2** (Output 2 @ 100mA MAX.)
3	**IN2** (Input 2)	**8**	**OUT3** (Output 3 @ 100mA MAX.)
4	**IN3** (Input 3)	**9**	**OUT4** (Output 4 @ 100mA MAX.)
5	**IN4** (Input 4)	**10**	**GND** (Ground)

IMPORTANT!

- For completely isolated outputs (when using an external power source), remove **J1** and **J2**.
- Connect 12 to 24VDC to P16 pin 1 and GND to P16 pin 10.
- Load must still be 100 mA maximum.

Figure No. 17
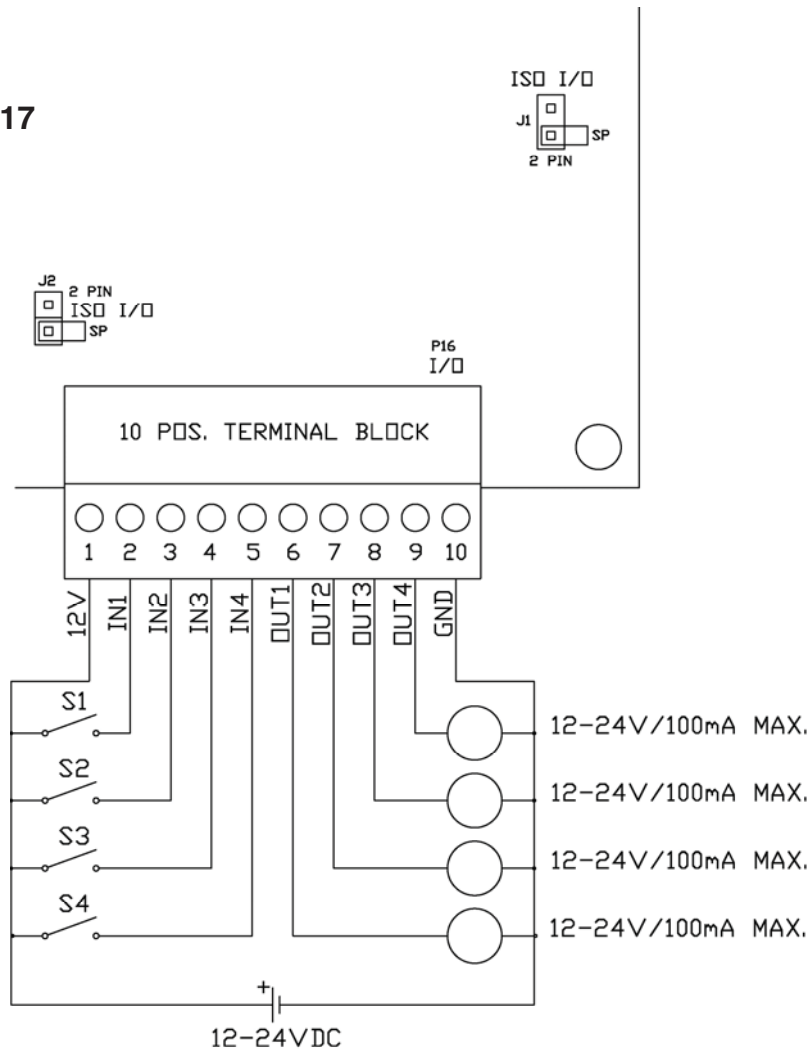
INSTALLATION, CONT.

Re-Installing the Rear Panel

After all terminations have been made;

1. Reinstall the 825-SIB into the enclosure, taking care not to strike the board against the side of the 825 enclosure (see Figure No. 18 below).

2. Secure the 825-SIB to the main PC board with the screw removed earlier.

Figure No. 18
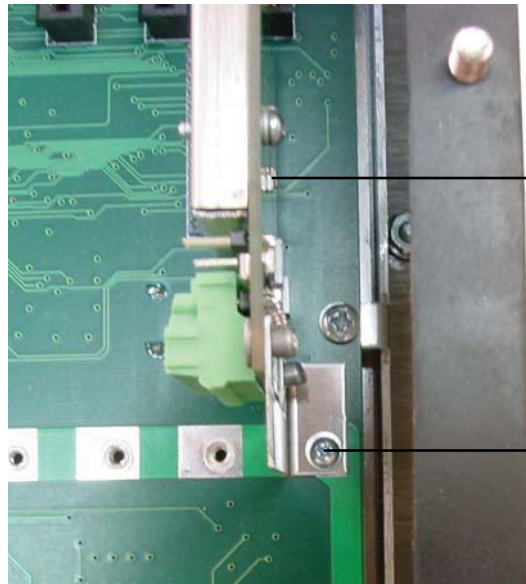
CAUTION!
When installing 825-SIB, be careful not to strike board against side of 825 enclosure.

Secure 825-SIB to main board by installing this screw.

3. Remove the excess cable from the indicator enclosure and securely tighten each of the cable gland connectors.

   • Do not over-tighten these connectors but make certain they are snug.

   • **DO NOT USE TOOLS!** Finger-tighten only!

4. Ensure any unused gland connectors are plugged and replace the rear panel.

5. Secure the rear panel with the 14 acorn nuts removed earlier.

6. Follow a diagonal pattern when tightening the acorn nuts.

MAIN PC BOARD

CAUTION! This board contains static sensitive components. Improper handling can result in damage to or destruction of the components or board. Such actual and/or consequential damage IS NOT covered under warranty.
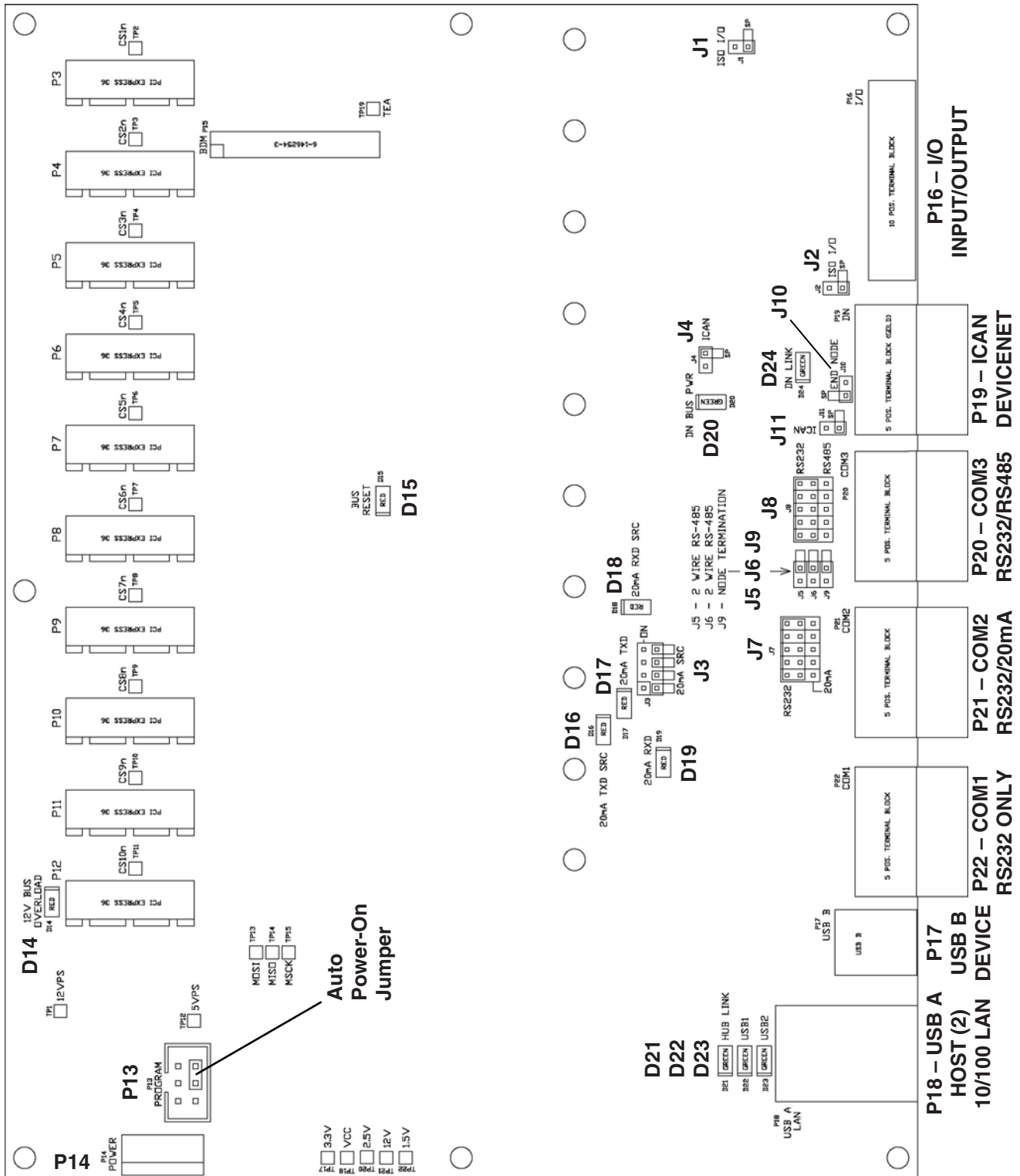
Figure No. 19

MAIN PC BOARD, CONT.

Jumpers

J1 and J2 – ISO I/O

When installed, these jumpers allow the 825 indicator to supply (source) 12VDC to a solid-state relay or other load (100 mA maximum).

To completely isolate the outputs when using an external power source, remove (or place on one pin only) J1 and J2. The external power source must provide 12 to 24 VDC to P16 pin 1 (12V) and a ground return to P16 pin 10 (GND). The load must still be 100 mA maximum.

J3 – 20mA SRC

This bank of 4 individual jumpers control the 20mA TXD and RXD current source and active/isolate status of P21 (COM2) when the J7 shunt has been installed to select 20mA current loop serial protocol for P21 (COM2).

TX 20mA Current Source Enable ———————

RX 20mA Current Source Active/Isolate

TX 20mA Current Source Active/Isolate ———————

RX 20mA Current Source Enable

J3 □ □ □ □ ─ ON

20mA SRC
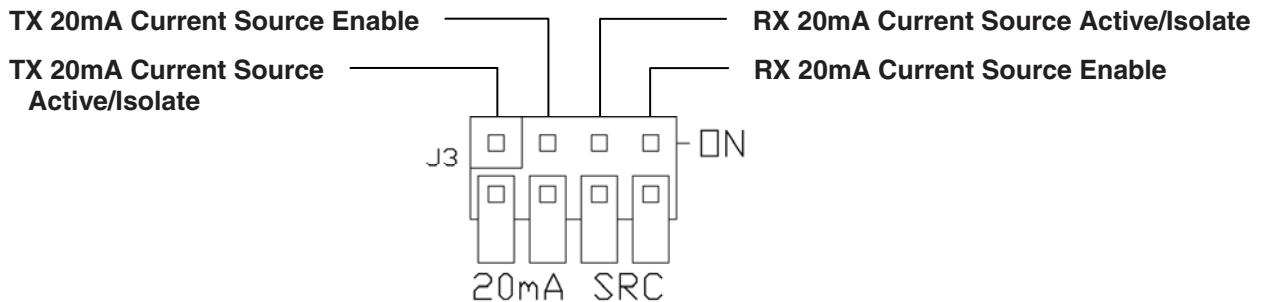
J4 and J11 – ICAN

When J4 and J11 are installed, the ICAN functions of P19 are enabled. To enable the DeviceNet functions of P19, jumpers J4 and J11 must be open (on one pin only or removed).

J5 and J6 – 2 WIRE RS-485 JUMPERS

These jumpers select RS-485 2-wire or 4-wire operation. When installed, the RS-485 operation is 2-wire (half duplex). To enable 4-wire (full duplex) operation, jumpers J5 and J6 must be open (on one pin only or removed).

J7 – RS-232/20mA

This shunt (2x5-pin jumper) controls whether P21 (COM2) uses RS-232 or 20mA current loop serial protocol. When the shunt is installed on the center row of pins and the RS232 row of pins, the RS-232 serial protocol is used. To enable the 20mA current loop serial protocol for P21 (COM2) the shunt must be installed on the center row of pins and the 20mA row of pins.

J7
RS232 □ □ □ □ □
      □ □ □ □ □
      □ □ □ □ □
20mA
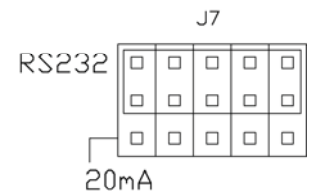
J8 – RS-232/RS485

This shunt (2x5-pin jumper) controls whether P20 (COM3) uses RS-232 or RS-485 serial protocol. When the shunt is installed on the center row of pins and the RS232 row of pins, the RS-232 serial protocol is used. To enable the RS-485 serial protocol for P20 (COM3) the shunt must be installed on the center row of pins and the RS485 row of pins.

J8
□ □ □ □ □ RS232
□ □ □ □ □
□ □ □ □ □ RS485
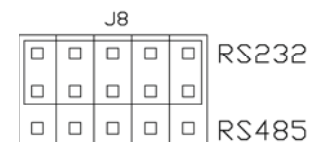
MAIN PC BOARD, CONT.

J9 – NODE TERMINATION

This jumper is for the RS-485 node termination selection. When installed, the RS-485 node is terminated indicating the 825 is the last device on the RS-485 bus. If the 825 is not the last device on the RS-485 bus (e.g., it is in the middle of the bus), then it must be un-terminated and jumper J9 must be open (on one pin only or removed).

J10 – END NODE

This jumper is for the CAN bus end node selection. Install this jumper when the 825 is the last device on the CAN bus. When the 825 is not the last device on the CAN bus (e.g., it is in the middle of the bus), then J10 must be open (on one pin only or removed).

Connectors

P3 = PCI Express connector for standard Scale Input Board (825-SIB).

P4 to P12 = PCI Express connectors for 825 option cards.

P13 = Program connector and auto power-on jumper (pins 2 and 4).

When a jumper is installed across pins 2 and 4 of this connector, whenever power is applied to the indicator, it will turn on automatically without pressing the **ON/OFF** key. This is especially useful if power is lost momentarily and then reapplied.

P14 = Power connector.

P15 = BDM connector (For Factory Use only).

P16 = I/O (Input/Output) 10 position terminal block.

P17 = USB B Device connector.

P18 = USB A Host (2) and 10/100 LAN connector.

P19 = DeviceNet/ICAN 5 position terminal block.

P20 = COM3 (RS-232/RS-485) 5 position terminal block.

P21 = COM2 (RS-232/20mA) 5 position terminal block.

P22 = COM1 (RS-232 only) 5 position terminal block.

Status LED'S

D14 = Turned on to indicate the 12 VDC supply exceeds 2A.

D15 = For Factory Use only.

D16 = Turned on to indicate the 20mA TXD SRC (transmit current source) is enabled.

D17 = Turned on to indicate 20mA is present in TXD (transmit) loop.

D18 = Turned on to indicate the 20mA RXD SRC (receive current source) is enabled.

D19 = Turned on to indicate 20mA is present in RXD (receive) loop.

D20 = Turned on when external DeviceNet power is applied.

D21 = Blinks when the USB hub is enabled.

D22 = Turned on to indicate the USB1 host is enabled.

D23 = Turned on to indicate the USB2 host is enabled.

D24 = Turned on to indicate the DeviceNet link with the PLC is established.

KEYPAD FUNCTIONS

The Model 825 indicator has an interactive (Touch Screen) display, a full "QWERTY" alphanumeric keypad and four navigation keys with an interactive ENTER key. The keypad and touch screen are used to enter commands and data into the indicator. This section describes each key along with its normal function. Refer to Figure No. 20 or the actual indicator while reading this section.

IMPORTANT! The membrane keypad is not to be operated with pointed objects (pencils, pens, fingernails, etc). In addition, the interactive touch screen is glass (fragile) and should not be operated with pointed objects and with excessive force. Damage to the keypad and touch screen resulting from this practice is NOT covered under warranty.

Figure No. 20

ON I/OFF ○ KEY

Pressing the **ON/OFF** key when the 825 is off will turn the indicator ON. If the indicator is already on, you must press and hold the **ON/OFF** key for about four (4) seconds to turn the indicator OFF.

IMPORTANT! If the auto power-on jumper has been installed (across pins 2 and 4 of P13) whenever AC power is applied to the indicator (or the AC cord plugged in), it will turn on automatically without pressing the **ON/OFF** key.

KEYPAD FUNCTIONS, CONT.

Navigation Keys

The Navigation Keys are used to move around and highlight the soft keys and menu selections configured by the Standard indicator and Application programs. During setup and calibration, they are used to select (highlight) the parameter to change and to advance to the next parameter, backup to the previous parameter or exit" to the previous screen.

▽

 Press the Down Arrow key to move "down" to highlight the selection.

△

 Press the UP Arrow key to move "up" to highlight the selection.

◁

 Press the Left Arrow key to move "left" to highlight the selection.

▷

 Press the Right Arrow key to move "right" to highlight the selection.

ENTER
 The Navigation Keys **ENTER** key is used to select and perform the function of a highlighted soft key or menu selection.

 Note that this key and alphanumeric **ENTER** key perform the same functions. Either key can be used when entering or changing data to signal the completion of data entry and process the data entered. During normal operations (as well as Calibration and Setup), pressing the key will retain the current settings for the parameters displayed and advance to next screen.

Alphanumeric Keys

This section describes the alphanumeric keys along with any special functions they have. The alphanumeric keys are used to enter commands and data into the indicator during normal operations as well as during Calibration and Setup.

QWERTY KEYS
 These keys are used to enter alphabetical characters during Calibration and Setup as well as during normal operations.

NUMERIC KEYS (1 to 9 and 0)
 These keys are used to enter numeric data during the setup and calibration as well as during normal operation of the indicator. Note that they have alternate meanings. See the **SHIFT** and **FUNCT** keys

KEYPAD FUNCTIONS, CONT.

Alphanumeric Keys, Cont.

SHIFT⬆

Pressing this key before pressing an alphanumeric key will cause the key to output its alternate meaning.

When combined with the QWERTY (alphabetic) keys, the **SHIFT** key causes a lower case (not a capital letter) to be output. For example, pressing the **SHIFT** key then the **A** key will output a lower case "a" (not a capital letter).

Pressing the **SHIFT** key before pressing a numeric key will cause the key to output the black symbol (upper left of each key). For example, pressing the **SHIFT** key and then the **4** key will output the $ dollar sign.

FUNCT

Pressing the blue **FUNCT** key before pressing a numeric key will cause the key to output the blue symbol (upper right of each key). For example, pressing the **FUNCT** key and then the **7** key will output the **** (backslash) character.

⟵/ESC

This key has several functions. When entering data (either during setup and calibration or during normal operation) pressing this key will delete (backspace) the last character entered. If more than the last character is incorrect, press the ⟵**/ESC** key for each character to be deleted. Note that the indicator will ignore pressing this key if no characters have been entered.

When combined with the **SHIFT** key (pressing the **SHIFT** key and then the ⟵**/ESC** key), the display will "escape" (return or backup) to the previous screen.

ENTER

The **ENTER** key is used when entering or changing data to signal the completion of data entry and process the data entered. During normal operations (as well as Calibration and Setup), pressing the key will retain the current settings for the parameters displayed and advance to next screen.

Note that this key and the Navigation Keys **ENTER** key perform the same functions. Either key can be used to select and perform the function of a highlighted soft key or menu selection.

SPACE

This key is used to enter a blank space during alphanumeric data input for setup and calibration as well as during normal operations. In addition, some parameters in setup and calibration require pressing the **SPACE** key to toggle its status or to step through the available selections.

KEYPAD FUNCTIONS, CONT.

Standard Indicator Keys

This section describes the Standard Indicator keys (displayed on the Weight screen) along with their functions as programmed by the 825 **Standard indicator** menu selection. Refer to the actual indicator screen while reading this section.

> **IMPORTANT!** In order to use the Standard Indicator keys, the operator must press the alphanumeric letter key corresponding to the underlined letter on the key (e.g., **Z** for the Zero key) or the first letter on the key (e.g., **O** for Operator) to perform the key function. Note that the Navigation Keys can be used to select (highlight) the key and then after pressing the **ENTER** key, the key function will be performed.

Operator

Pressing the **O** key will prompt for the input of a new operator.

1. The display will change to show the **Login** screen.
2. Enter the login and then press the ▽ Down Arrow to advance to the password prompt.
3. Enter the password and then press the **ENTER** key to proceed.
4. Otherwise, press the **ESC** key to return to the Weight screen.

Scale

Pressing the **S** key (with multiple scales) will toggle through the available scales and, if enabled, the totalizer. Note that pressing this key with only one scale, the screen will display the message **Only one scale**.

Date/Time

Pressing the **D** key allows the operator to change the date and time. For information on changing the date and time, refer to the Setting Date and Time section of this manual.

TARE (Key Entry Tare)

This key allows the operator to enter a tare weight (up to the capacity of the scale). Note that the tare weight is the amount of weight to be subtracted from the gross weight to obtain the net weight.

1. Press the **T** key.
2. The display will change to show the **Set Tare** screen.
3. Using the numeric keys (use the period for the decimal point), enter the tare weight and then press the **ENTER** key.
4. The display will return to the Weight screen, showing the Gross, Tare and Net weights.

> **IMPORTANT!** The tare weight will remain until another tare weight is entered or it is cleared. Clearing the tare weight can be only performed when zero weight is on the scale.
>
> 1. With the zero weight on the scale, press the **A** (**TARE** (Pushbutton Tare) key.
> 2. The display will return to the Weight screen, showing gross weight only.

KEYPAD FUNCTIONS, CONT.

Standard Indicator Keys, Cont.

NET/GROSS

Pressing the **N** key (if in Gross mode) or the **G** key (if in Net mode) will toggle between the Gross weight and Net weight. In the Gross weight mode, the total of all weight placed on the scale since the display was zeroed is displayed. In the Net Weight mode, the Gross, Tare and Net weight is displayed.

IMPORTANT! If a valid tare weight has not been entered, pressing this key will momentarily display the message:

    Cannot show net – tare zero

The display will return to the Weight screen, showing gross weight only

ID

This key allows the operator to enter an ID (identification) for use in printing. Note that after entering an ID, it will be displayed on the Weight screen below the **ID** key.

1. Press the **I** key.
2. The display will change to show the **Set ID** screen.
3. Using the alphanumeric keys, enter up to a ten (10) character ID and then press the **ENTER** key to save it.

IMPORTANT! Once an ID has been entered, it will remain until another ID is entered or it is cleared.

1. To clear an ID, first press the **I** key.
2. With the **Set ID** screen displayed, press the **SPACE** key and then the **ENTER** key.
3. The display will return to the Weight screen with no ID shown below the **ID** key.

ZERO

Pressing the **Z** key allows the operator to reset the Gross weight to zero. **IMPORTANT!** If the gross weight exceeds the zero limit for this key, pressing this key will momentarily display the message:

    CANNOT ZERO –

The display will return to the Weight screen, showing gross weight only

Note that the zero limit may be either 4% or 100% of the scale capacity. This limit is set during setup and calibration (see the **Zero Limit** parameter).

TARE (Pushbutton Tare)

Pressing the **A** key will act as a pushbutton tare and will store the current Gross weight as the new tare weight and will switch the display to the Net weight mode.

KEYPAD FUNCTIONS, CONT.

Standard Indicator Keys, Cont.

UNITS

Pressing the **U** key will change the weighing units to the alternate units if available. For example, with **lb** (pounds) showing, pressing this key will change the weight units to **kg** (kilograms). **IMPORTANT!** This feature must be enabled during setup and calibration (see the **Base Units** and **Conv Units** parameters).

PRINT

Pressing the **P** key will initiate the transmission of weight data to the ticket printer. If displaying Gross weight, the time, date and gross weight are printed. If displaying net weight, the time, date, gross, tare and net weights are printed. **IMPORTANT!** If the weight is less than zero (negative weight), pressing this key will momentarily display the message:

> `Cannot print BELOW ZERO –`

The display will return to the Weight screen, showing gross weight only. Also, if the weight is unstable (motion on the scale), pressing this key will momentarily display the message:

> `Cannot print MOTION –`

The display will return to the Weight screen, showing gross weight only

KEYPAD FUNCTIONS, CONT.

Touch Screen Keys

This section describes the Touch Screen keys along with their functions as programmed by the 825 **Application program** menu selection. Refer to Figure No. 21 below or the actual indicator touch screen while reading this section.

```
┌─────────────────────────────────────────────────────┐
│ ┌───────────┐    ┌───────┐    ┌─────────────┐        │
│ │ Operator  │    │ Scale │    │ Date/Time   │        │
│ │ ADMIN     │    │   1   │    │ 09/08/2008  │        │
│ │           │    │       │    │ 22:20:34    │        │
│ └───────────┘    └───────┘    └─────────────┘        │
│ Max 100000kg  e=10kg                                 │
│ Min 200kg          CENTER ZERO                       │
│ GROSS                    00  kg                      │
│                                                       │
│                                                       │
│   ┌────────┐ ┌────────┐ ┌────────┐ ┌────────┐         │
│   │ MENU   │ │⟨T←TARE │ │ N  NET │ │  ID    │         │
│   └────────┘ └────────┘ └────────┘ └────────┘         │
│   ┌────────┐ ┌────────┐ ┌────────┐ ┌────────┐         │
│   │ →O←    │ │ T TARE │ │ UNITS  │ │○ PRINT │         │
│   │ ZERO   │ │        │ │        │ │        │         │
│   └────────┘ └────────┘ └────────┘ └────────┘         │
└─────────────────────────────────────────────────────┘
```
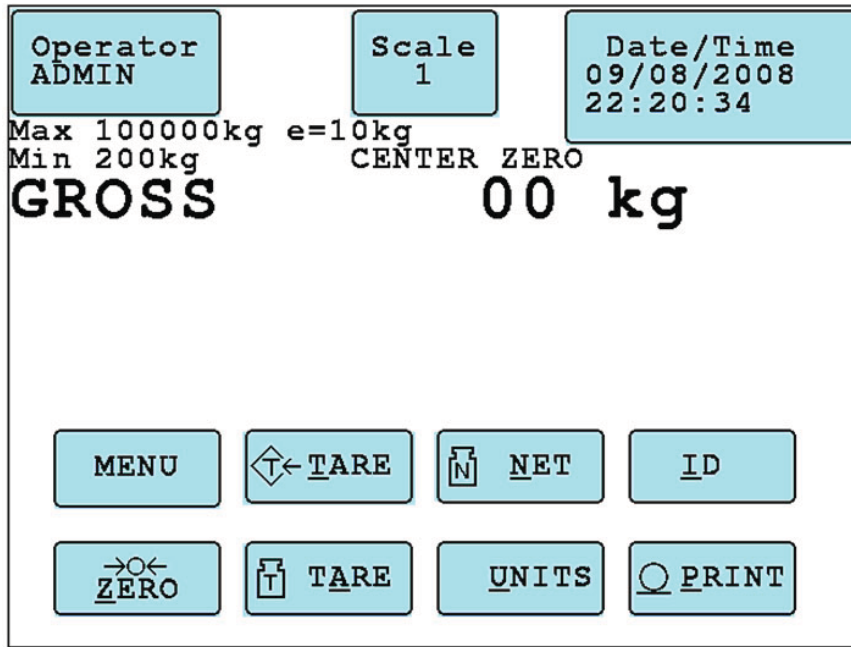
Figure No. 21

Operator

Pressing this key will prompt for the input of a new operator.

1. The display will change to show the **Login** screen.
2. Enter the login and then press the $\triangledown$ Down Arrow to advance to the password prompt.
3. Enter the password and then press the **ENTER** key to proceed.
4. Otherwise, press the **ESC** key to return to the Weight screen.

Scale

Pressing this key (with multiple scales) will toggle through the available scales and, if enabled, the totalizer. Note that pressing this key with only one scale, the screen will display the message **Only one scale**.

Date/Time

Pressing this key allows the operator to change the date and time. For information on changing the date and time, refer to the Setting Date and Time section of this manual.

MENU

Pressing this key allows viewing or clearing the accumulators. For information on viewing or clearing the accumulators, refer to the Accumulators section of this manual.

KEYPAD FUNCTIONS, CONT.

Touch Screen Keys, Cont.

TARE (Key Entry Tare)

Pressing this key allows the operator to enter a tare weight (up to the capacity of the scale). Note that the tare weight is the amount of weight to be subtracted from the gross weight to obtain the net weight.

1. Press the **TARE** key.
2. The display will change to show the `Set Tare` screen.
3. Using the numeric keys (use the period for the decimal point), enter the tare weight and then press the **ENTER** key.
4. The display will return to the Weight screen, showing the Gross, Tare and Net weights.

IMPORTANT! The tare weight will remain until another tare weight is entered or it is cleared. Clearing the tare weight can be only performed when zero weight is on the scale.

1. With the zero weight on the scale, press the **TARE** (Pushbutton Tare) key.
2. The display will return to the Weight screen, showing gross weight only.

NET/GROSS

Pressing the **NET** key (if in Gross mode) or the **GROSS** key (if in Net mode) will toggle between the Gross weight and Net weight. In the Gross weight mode, the total of all weight placed on the scale since the display was zeroed is displayed. In the Net Weight mode, the Gross, Tare and Net weight is displayed.

IMPORTANT! If a valid tare weight has not been entered, pressing this key will momentarily display the message:

```
Cannot show net – tare zero
```

The display will return to the Weight screen, showing gross weight only

ID

Pressing this key allows the operator to enter an ID (identification) for use in printing. Note that after entering an ID, it will be displayed on the Weight screen below the **ID** key.

1. Press the **ID** key.
2. The display will change to show the `Set ID` screen.
3. Using the alphanumeric keys, enter up to a ten (10) character ID and then press the **ENTER** key to save it.

IMPORTANT! Once an ID has been entered, it will remain until another ID is entered or it is cleared.

4. To clear an ID, first press the **ID** key.
5. With the `Set ID` screen displayed, press the **SPACE** key and then the **ENTER** key.
6. The display will return to the Weight screen with no ID shown below the **ID** key.

KEYPAD FUNCTIONS, CONT.

Touch Screen Keys, Cont.

ZERO

This key allows the operator to reset the Gross weight to zero. **IMPORTANT!** If the gross weight exceeds the zero limit for this key, pressing this key will momentarily display the message:

CANNOT ZERO –

The display will return to the Weight screen, showing gross weight only

Note that the zero limit may be either 4% or 100% of the scale capacity. This limit is set during setup and calibration (see the **Zero Limit** parameter).

TARE (Pushbutton Tare)

Pressing this key will act as a pushbutton tare and will store the current Gross weight as the new tare weight and will switch the display to the Net weight mode.

UNITS

Pressing this key will change the weighing units to the alternate units if available. For example, with **lb** (pounds) showing, pressing this key will change the weight units to **kg** (kilograms). **IMPORTANT!** This feature must be enabled during setup and calibration (see the **Base Units** and **Conv Units** parameters).

PRINT

Pressing this key will initiate the transmission of weight data to the ticket printer. If displaying Gross weight, the time, date and gross weight are printed. If displaying net weight, the time, date, gross, tare and net weights are printed. **IMPORTANT!** If the weight is less than zero (negative weight), pressing this key will momentarily display the message:

Cannot print BELOW ZERO –

The display will return to the Weight screen, showing gross weight only. Also, if the weight is unstable (motion on the scale), pressing this key will momentarily display the message:

Cannot print MOTION –

The display will return to the Weight screen, showing gross weight only

ANNUNCIATORS

The annunciators are displayed on the Weight screen to show that the 825 is in the mode corresponding to the annunciator label or that the status indicated by the label is active.

CENTER ZERO

This is shown on the Weight screen to indicate that the displayed (zero) weight is within +/- 1/4 division of the center of zero.

GROSS

This is shown on the Weight screen to indicate that the 825 is in the Gross weight mode.

NET

This is shown on the Weight screen when the 825 is in the Net weight mode. Note that the screen will display the Gross, Tare and Net weights.

TARE

This is shown on the Weight screen to indicate that a Tare weight has been stored. Note that the Gross and Net weights will be displayed also.

tn

This is displayed on the Weight screen to show that the weight units are avoirdupois tons.

lb

This is displayed on the Weight screen to show that the weight unit is pounds.

t

This is displayed on the Weight screen to show that the weight units are tonnes (metric tons).

kg

This is displayed on the Weight screen to show that the weight units are kilograms.

SETTING THE DATE AND TIME

With the Weight screen displayed, press the **Date/Time** key on the touch screen or use the Navigation Keys to select (highlight) the `Date/Time` key and then press the **ENTER** key. The display will change to show the `Set Date/Time` screen.

Year:
>   With the Set Date/Time screen displayed, the current setting for `Year:` will be shown. If the setting displayed is correct, press the ▽ Down Arrow to proceed to `Month:`.
>
>   Otherwise, use the numeric keys to enter the year (e.g., 2008) and then press the ▽ Down Arrow to advance to `Month:`.

Month:
>   With the Set Date/Time screen displayed, the current setting for `Month:` will be shown. If the setting displayed is correct, press the ▽ Down Arrow to proceed to `Day:`.
>
>   Otherwise, use the numeric keys to enter the month (1 = Jan, 2 = Feb...12 = Dec) and then press the ▽ Down Arrow to advance to `Day:`.

Day:
>   With the Set Date/Time screen displayed, the current setting for `Day:` will be shown. If the setting displayed is correct, press the ▽ Down Arrow to proceed to `Hour:`.
>
>   Otherwise, use the numeric keys to enter the day of the month (1 to 31) and then press the ▽ Down Arrow to advance to `Hour:`.

Hour:
>   With the Set Date/Time screen displayed, the current setting for `Hour:` will be shown. If the setting displayed is correct, press the ▽ Down Arrow to proceed to `Minute:`.
>
>   Otherwise, use the numeric keys to enter the hour in 24 hour time (e.g., 3 p.m. = 15) and then press the ▽ Down Arrow to advance to `Minute:`.

Minute:
>   With the Set Date/Time screen displayed, the current setting for `Minute:` will be shown. If the setting displayed is correct, press the ▽ Down Arrow to proceed to `Second:`.
>
>   Otherwise, use the numeric keys to enter the minutes (0 to 59) and then press the ▽ Down Arrow to advance to `Second:`.

Second:
>   With the Set Date/Time screen displayed, the current setting for `Second:` will be shown. If the setting displayed is correct, press the **ENTER** key to save <u>all</u> of the new settings and return to the Weight screen.
>
>   Otherwise, use the numeric keys to enter the seconds (0 to 59) and then press the **ENTER** key to save <u>all</u> of the new settings and return to the Weight screen.

SETUP AND CALIBRATION

Your 825 indicator has been thoroughly tested and calibrated before being shipped to you. If you received the indicator attached to a scale, calibration is not necessary. If the indicator is being connected to a scale for the first time or recalibration is necessary for other reasons, proceed as indicated.

Calibration and Setup of the indicator is accomplished entirely by the keypad. However, it may require changing the position of the calibration switch depending on the method of sealing required by your local metrology laws.

Calibration Switch

The calibration switch is located on the edge of the 825 circuit board and can **only** be accessed by removing the rear panel of the indicator. See Figure No. 22 for the location of the calibration switch. Refer to the table below and Figure No. 22 for the switch settings.

When the calibration mode is selected, the indicator will display:

`Hardware calibration enabled`

to indicate that the calibration switch is in the calibrate position and calibration can take place. Note that the switch can be left in this position in which case the Category 1 event counter security seal is activated and is to be used as the sealing method.

If a lead-wire security seal is to be used, the switch is placed in the opposite position. Now, when the calibration mode is selected, the indicator will display:

`Hardware calibration disabled`

which indicates that you cannot perform the calibration unless you break the lead-wire security seal to access the calibration switch and move it to the other position to enable the hardware calibration. Refer to the table below:

Table of Calibration Switch Settings

Calibration Switch Position	Sealing Method Used	Calibration Enabled?	Display when calibration mode is accessed
UP	Category 1 Lead-Wire Seal	No	`Hardware calibration disabled`
DOWN	Category 1 Event Counters	Yes	`Hardware calibration enabled`

SETUP AND CALIBRATION, CONT.
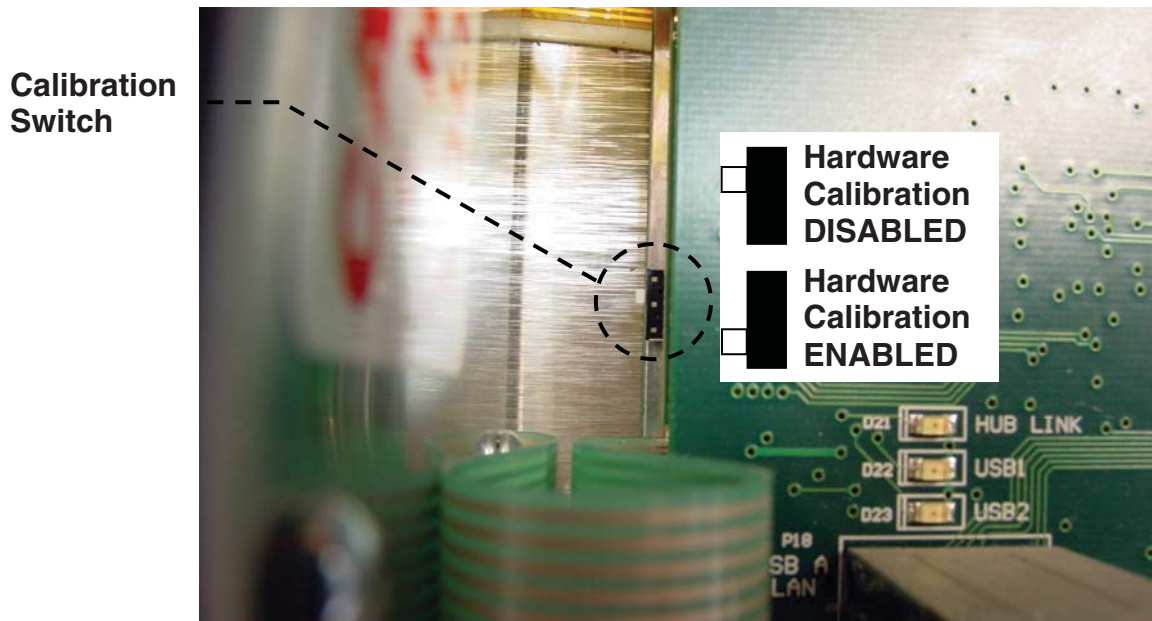
Figure No. 22

⚠️ **IMPORTANT!** With the calibration switch in the **Hardware Calibration DISABLED** position, the display will show:

`Hardware calibration disabled`

after selecting **3. Calibration** on the Setup Menu, and **1. Scale 1** on the Setup Scale Number screen.

If you continue to try to perform calibration by selecting **2. Calibrate** on the Scale 1 – Calibration Options screen, the display will show:

CALIBRATION SEAL
`Calibration locked by hardware switch`
`Inside enclosure.`

`Press any key`

SETUP AND CALIBRATION, CONT.

⚠ **The membrane keypad is not to be operated with pointed objects (pencils, pens, fingernails, etc). In addition, the interactive touch screen is glass and should not be operated with pointed objects and with excessive force. Damage to the keypad and touch screen resulting from this practice is NOT covered under warranty.**
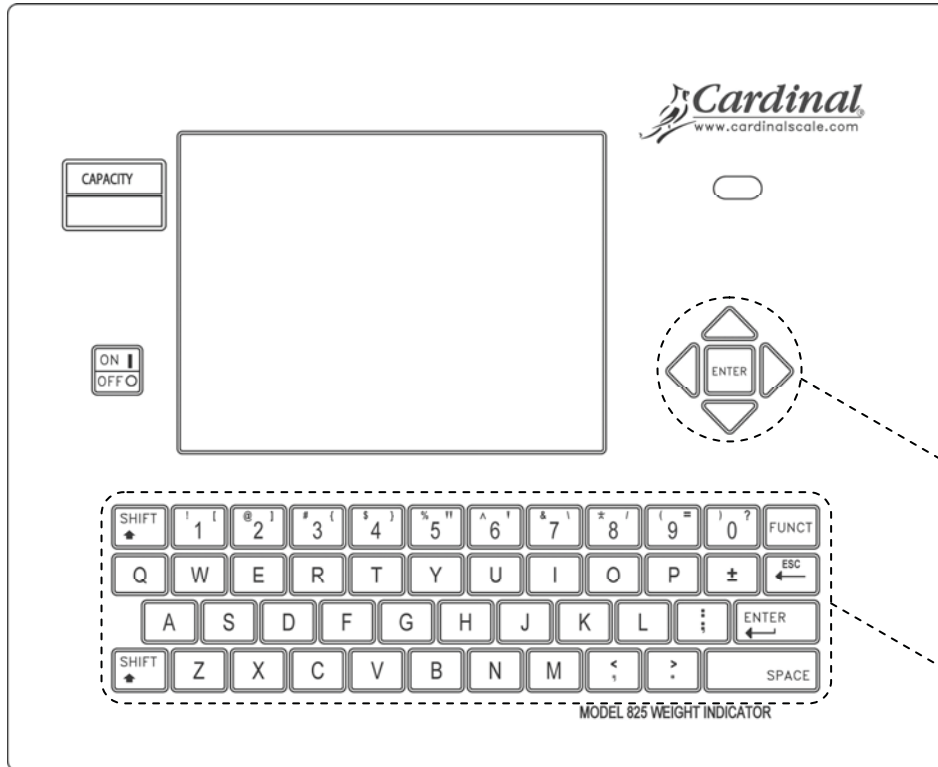
Figure No. 23

- Use the Navigation Keys to select (highlight) the parameter to change or press the number key corresponding to the parameter to change.
- Press the Navigation Keys ▽ Down Arrow to "advance" to the next parameter selection.
- Press the Navigation Keys △ UP Arrow to "backup" to the previous parameter selection.
- Press the Navigation Keys ◁ Left Arrow to "exit" to the previous screen.
- Pressing the alphanumeric or Navigation Keys **ENTER** key <u>without</u> entering a new value will retain the current setting and return to the previous or next screen.
- Use the alphanumeric keys to enter new values for parameters requiring data input.
- Some parameters require pressing the **SPACE** key to toggle its status or to step through the available selections.
- After entering (or selecting) a new value, press the Navigation Keys ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous or next screen.
- Press the **ESC/**⟵ (backspace) key to delete an incorrect value or character entered.

SETUP AND CALIBRATION, CONT.

To Begin Setup and Calibration

1. Press the **ON/OFF** key to turn on the 825. The display will perform a short self-test and then change to the Startup screen showing the software versions and status of the main board and option cards.

```
CARDINAL 825  Loader: 1.08s
              OS: 10.10.21
Mainboard      ver: 1.17 status: good
Option cards:  2 slots: II_____
Slot:  1 SIB   ver: 0.06 status: good
Slot:  2 DIO   ver: 0.02 status: good




Press:

1. Application program

2. Standard indicator

3. Legal metrology information / Setup

MAC Address: 00:CF:53:29:CF:01
```

⚠ **IMPORTANT!** When the 825 is initially started, a countdown starting at 7 seconds will appear to the right of the **1. Application program** selection. When the countdown is complete, the application program mode will automatically start.

2. Press the Navigation Keys ▽ Down Arrow or △ UP Arrow to stop the countdown to allow unlimited time to review the Startup screen.

3. The screen will display the status of the main board and the option cards. The status will show "good" if there is no error indicated or an error code if there is an error. Refer to the Error Codes section of this manual for more information.

4. If no error code is shown, press the Navigation Keys ▽ Down Arrow or △ UP Arrow to (highlight) the **3. Legal metrology information / Setup** option and then press the **ENTER** key or press the **3** key to select the **3. Legal metrology information / Setup** option.

5. The display will change to show the **Legal metrology information / Setup** screen.

SETUP AND CALIBRATION, CONT.

```
Legal metrology information / Setup
Press:
1. View event counters
2. View certifications / ID information
3. Setup menu




MAC Address: 00:CF:53:29:CF:01
```

Press the Navigation Keys ▽ Down Arrow or △ UP Arrow to (highlight) the **3.Setup menu** option and then press the **ENTER** key or press the **3** key to select the **3. Setup menu** option. The display will change to show the login and password prompt screen.

```
Login                        24/07/2008
Login:        _
Password:











MAC Address: 00:50:C2:88:E0:26
```

1. With the **Login** screen and prompt displayed, use the alpha-numeric keys to enter the login and then press the ▽ Down Arrow to advance to the password prompt

2. Enter the password using the alphanumeric keys and then press the **ENTER** key to proceed with Calibration and Setup.

⚠ **IMPORTANT! The 825 will arrive from the factory with the calibration access locked by the "login" and "password" prompts protection. The factory default login and password are "ADMIN" and "81440".**

SETUP AND CALIBRATION, CONT.

```
Setup Menu
Press:
1. Date/Time
2. Communication
3. Calibration
4. Update software menu
5. Preferences
6. Diagnostics
7. Operators



MAC Address: 00:CF:53:29:CF:01
```

1. Date/Time

With the Setup Menu displayed, press the **1** key or use the Navigation Keys to select (highlight) **1. Date/Time** and then press the **ENTER** key. The display will change to show the **Set Date/Time** screen.

Year:

With the Set Date/Time screen displayed the current setting for the **Year:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the year (e.g., 2008) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

Month:

With the Set Date/Time screen displayed the current setting for the **Month:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the month (1 = Jan, 2 = Feb...12 = Dec) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

Day:

With the Set Date/Time screen displayed the current setting for the **Day:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the day of the month (1 to 31) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

SETUP AND CALIBRATION, CONT.

`Hour:`

With the Set Date/Time screen displayed the current setting for the **`Hour:`** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the hour in 24 hour time (e.g., 3 p.m. = 15) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

`Minute:`

With the Set Date/Time screen displayed the current setting for the **`Minute:`** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the minutes (0 to 59) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

`Second:`

With the Set Date/Time screen displayed the current setting for the **`Second:`** parameter will be shown. If the setting displayed is acceptable, press the **ENTER** key or the Navigation Keys ◁ Left Arrow to return to the previous screen.

Otherwise, use the numeric keys to enter the seconds (0 to 59) and then press the **ENTER** key to save the new setting and return to the previous screen.

SETUP AND CALIBRATION, CONT.

2. Communication

With the Setup Menu displayed, press the **2** key or use the Navigation Keys to select (highlight) **2. Communication** and then press the **ENTER** key. The display will change to show the **Communication Menu** screen.

```
Communication Menu
Press:

1.  Network
2.  Comm Port 1 Defaults
3.  Comm Port 2 Defaults
4.  Comm Port 3 Defaults
5.  DeviceNet




MAC Address: 00:50:C2:88:E0:26
```

1. Network

With the Communication Menu displayed, press the **1** key or use the Navigation Keys to select (highlight) **1. Network** and then press the **ENTER** key. The display will change to show the **Setup Network** screen.

DHCP:

With the Setup Network screen displayed the current setting for the **DHCP:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to toggle its status (select YES or NO) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

DHCP: Yes
Select Yes for automatic IP assignment from a DHCP server connected to your network

DHCP: No
Selecting NO allows manual entry of the Client IP, Gateway, Netmask, Broadcast, and Nameserver values

⚠ **IMPORTANT! If No is selected for DHCP:, the following additional parameters will be shown and require data to be entered. Otherwise, proceed to the Web Server: parameter.**

SETUP AND CALIBRATION, CONT.

`Client IP:`

With No selected for DHCP: the current setting for **`Client IP:`** will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys (and the period key) to enter the IP address for this indicator and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. The format for the IP address is: ## . # . # . ## (e.g., 90.1.2.68). **IMPORTANT!** No other device on the network should have this IP address.

`Gateway:`

With No selected for DHCP: the current setting for **`Gateway:`** will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys (and the period key) to enter the gateway address and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. The format for the gateway address is: # . # . # . # (e.g., 0.0.0.0).

`Netmask:`

With No selected for DHCP: the current setting for **`Netmask:`** will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys (and the period key) to enter the Netmask and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. **IMPORTANT!** The Netmask of the indicator should match the Netmask of the other computers on your network. The format for the Netmask is: ### . ### . ### . # (e.g., 255.255.252.0).

`Broadcast:`

With No selected for DHCP: the current setting for **`Broadcast:`** will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys (and the period key) to enter the broadcast address and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. The format for the gateway address is: ## . # . # . # (e.g., 90.1.2.3).

`Nameserver:`

With No selected for DHCP: the current setting for **`Nameserver:`** will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys (and period key) to enter the address of a name server to translate names into IP addresses and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. The format for the Nameserver is: ## . # . # . # (e.g., 90.1.2.8).

SETUP AND CALIBRATION, CONT.

Web Server:

With the Setup Network screen displayed the current setting for the **Web Server:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to toggle its status (select YES or NO) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

    Web Server: Yes   **Web Server: No**
      Startup Web Server is Enabled.   Startup Web Server is Disabled.

Weight Server:

With the Setup Network screen displayed the current setting for the **Weight Server:** parameter will be shown. If the setting displayed is acceptable, press the **ENTER** key or the Navigation Keys ◁ Left Arrow to return to the previous screen.

Otherwise, press the **SPACE** key to toggle its status (select YES or NO) and then press the **ENTER** key to save the new setting and return to the previous screen.

    Weight Server: Yes   **Weight Server: No**
      Startup Weight Server is Enabled.   Startup Weight Server is Disabled.

SETUP AND CALIBRATION, CONT.

`2. Comm Port 1 Defaults`
`3. Comm Port 2 Defaults`
`4. Comm Port 3 Defaults`

With the Communication Menu displayed, press the **2, 3** or **4** key or use the Navigation Keys to select (highlight) the Com port to be configured and then press the **ENTER** key. The display will change to show the setup screen for the Com port selected.

Baud:

With the Setup Com port screen displayed the current setting for the `Baud:` parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to step through and select the baud rate and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen display. Supported Baud rates are:

1200	**4800**	**19200**	**57600**
2400	**9600**	**38400**	**115200**

Parity:

With the Setup Com port 1 screen displayed, the current setting for the `Parity:` parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to step through and select the parity and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. Supported Parity is:

None (No Parity)	**Even**	**Odd**

Data Bits:

With the Setup Com port 1 screen displayed, the current setting for the `Data Bits:` parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the data bits and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. Supported Data Bits are **7** or **8**.

Stop Bits:

With the Setup Com port 1 screen displayed, the current setting for the `Stop Bits:` parameter will be shown. If the setting displayed is acceptable, press the **ENTER** key or the Navigation Keys ◁ Left Arrow to return to the previous screen.

Otherwise, use the numeric keys to enter the stop bits and then press the **ENTER** key to save the new setting and return to the previous screen. Supported Stop Bits are **1** or **2**.

SETUP AND CALIBRATION, CONT.

5. DeviceNet

With the Communication Menu displayed, press the **5** key or use the Navigation Keys to select (highlight) **5. DeviceNet** and then press the **ENTER** key. The display will change to show the **DeviceNet** screen.

Enable:

With the DeviceNet screen displayed, the current setting for the **Enable:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to toggle its status (select YES or NO) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

Enable: Yes	**Enable: No**
Select Yes to Enable the DeviceNet	Select No to Disable the DeviceNet

⚠ **IMPORTANT! Jumpers J4 and J11 on the main PC board must be removed to use connector P19 for DeviceNet.**

Node Address:

With the DeviceNet screen displayed, the current setting for the **Node Address:** will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the Node Address and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. Supported Node Addresses are **0** to **63**.

Baud:

With the DeviceNet screen displayed, the current setting for the **Baud:** parameter will be shown. If the setting displayed is acceptable, press the **ENTER** key or the Navigation Keys ◁ Left Arrow to return to the previous screen.

Otherwise, press the **SPACE** key to step through and select the baud rate and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. Supported Baud rates are:

125K **250K** **500K**

SETUP AND CALIBRATION, CONT.

3. Calibration

With the Setup Menu displayed, press the **3** key or use the Navigation Keys to select (highlight) `3. Calibration` and then press the **ENTER** key. The display will change to show the `Setup Scale Number` screen.

Scale Number:

With the Setup Scale Number screen displayed, the current setting for the `Scale Number:` will be shown. If the setting displayed is acceptable, press the **ENTER** key to proceed to the next screen or the Navigation Keys ◁ Left Arrow to return to the previous screen.

Otherwise, use the numeric keys to enter the scale number to configure and/or calibrate and then press the **ENTER** key to save the new setting and proceed to the next screen.

The display will briefly show:

```
Waiting for parameters
Waiting for multi interval
settings
```

and then change to show the `Scale 1 – Calibrations Options` screen.

```
Scale 1 — Calibration Options
Press:


1. Parameters
2. Calibrate
3. Fine span
4. Review




Hardware calibration enabled
```

SETUP AND CALIBRATION, CONT.

1. Parameters

With the Scale 1 – Calibration Options screen displayed, press the **1** key or use the Navigation Keys to select (highlight) **1. Parameters.** and then press the **ENTER** key. The display will change to show the **Scale 1 – Calibration General** screen.

Scale 1 – Calibration – General

Capacity:

With the Scale 1 - Calibration – General screen displayed the current setting for the **Capacity:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the maximum weight that may be weighed on the scale and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. Note that the Capacity cannot exceed 7 digits. Allowable values are **1** through **9,999,999**.

Base Units:

With the Scale 1 - Calibration – General screen displayed the current setting for the **Base Units:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to step through and select the Base Units and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. Supported Base Units are:

<u>**Base Units Selections**</u>

lb (pounds)	**tn (tons)**	**Custom***
kg (kilograms	**tonne (metric tons)**	

* If Custom is selected for **Base Units:**, the following additional parameter will be shown (below the Base Units: parameter) and requires data to be entered. Otherwise, proceed to the **Interval:** parameter.

Custom Label:

With Custom selected for **Base Units:** the current setting for **Custom label:** will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the alpha-numeric keys to enter a new description for the Base Units Custom label (up to 4 characters, e.g., **Gal.** for Gallons) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

SETUP AND CALIBRATION, CONT.

`Interval:`

With the Scale 1 - Calibration – General screen displayed the current setting for the **`Interval:`** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter. **NOTE!** If using multiples intervals, this is the low interval.

Otherwise, use the numeric keys to enter the interval (or minimum increment of weight reading) and then press the $\triangledown$ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. Allowable values are **1**, **2**, **5**, **10**, **20**, **50** or **100**.

`Interval Dec:`

With the Scale 1 - Calibration – General screen displayed the current setting for the **`Interval Dec:`** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the interval decimal places and then press the $\triangledown$ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. Allowable values are **0** to **5**.

0 = #######	2 = #####.##	4 = ###.####
1 = ######.#	3 = ####.###	5 = ##.#####

`Conv Units:`

With the Scale 1 - Calibration – General screen displayed the current setting for the **`Conv Units:`** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to step through and select the Conv Units and then press the $\triangledown$ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. Supported Conv Units are:

Conv Units Selections

lb (pounds)	**tn (tons)**	**None**
kg (kilograms	**tonne (metric tons)**	**Custom***

* If Custom is selected for **`Conv Units:`**, an additional parameter (below the Conv Units: parameter) and the conversion setup screen will be shown. Otherwise, proceed to the **`Scale 1 - Calibration – Filtering`** screen.

`Custom Label:`

With Custom selected for **`Conv Units:`** the current setting for **`Custom label:`** will be shown. If the setting displayed is acceptable, press the **ENTER** key to proceed to the next screen or the Navigation Keys $\triangleleft$ Left Arrow to return to the previous screen.

Otherwise, use the alphanumeric keys to enter a new description for the Conv Units Custom Label (up to 5 characters, e.g., **`Litre`** for Litre) and then press the **ENTER** key to save the new setting and proceed to the next screen.

SETUP AND CALIBRATION, CONT.

Scale 1 - Calibration – Conversion

Conv Factor:

The Conv Factor (conversion factor) is a number that the Base Units (or Conv Units) must be multiplied by to obtain the Custom unit of measurement.

For example:

Water weighs 8 lb per 1 Gallon.

To compute the conversion factor, you would divide 1 gallon by 8 pounds, with the result being 0.125.

Therefore, if the weight displayed were **27.65 lb**, pressing the **UNITS** key would change the display to show **3.45625 gal.** (27.65 x 0.125 = 3.45625). The **gal.** in the example stands for gallons. Refer to the Custom Label next prompt for information on entering the custom units label.

With the Scale 1 – Calibration – Conversion screen displayed the current setting for the **Conv Factor:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the conversion factor and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. Note that the conversion factor cannot exceed 7 digits (including the decimal point).

Sec Interval:

With the Scale 1 – Calibration – Conversion screen displayed the current setting for the **Sec Interval:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter. **NOTE!** If using multiples intervals, this is the low interval.

Otherwise, use the numeric keys to enter the interval (or minimum increment of weight reading) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. Allowable values are **1**, **2**, **5**, **10**, **20**, **50** or **100**.

Sec Interval Dec:

With the Scale 1 – Calibration – Conversion screen displayed the current setting for the **Sec Interval Dec:** parameter will be shown. If the setting displayed is acceptable, press the **ENTER** key to proceed to the next screen or the Navigation Keys ◁ Left Arrow to return to the previous screen.

Otherwise, use the numeric keys to enter the interval decimal places and then press the **ENTER** key to save the new setting and proceed to the next screen. Allowable values are **0** to **5**.

0 = #######	2 = #####.##	4 = ###.####
1 = ######.#	3 = ####.###	5 = ##.#####

SETUP AND CALIBRATION, CONT.

Scale 1 - Calibration – Filtering

Zero Track:

With the Scale 1 – Calibration – Filtering screen displayed the current setting for the `Zero Track:` parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to step through and select the zero tracking range and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. Available selections are **Off, 0.5 div., 1 div., 2 div., 3 div., 4 div., 5 div., 6 div., 7 div., 8 div.,** and **9 div**.

Motion Range:

With the Scale 1 – Calibration – Filtering screen displayed the current setting for the `Motion Range:` parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the motion range (the number of divisions of change permitted before indicating unstable) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and proceed to the next screen. Allowable values are **0** to **9**. Note that entering zero (**0**) disables the motion range.

Filtering:

With the Scale 1 – Calibration – Filtering screen displayed the current setting for the `Filtering:` parameter will be shown. If the setting displayed is acceptable, press the **ENTER** key to proceed to the next screen or the Navigation Keys ◁ Left Arrow to return to the previous screen.

Otherwise, press the **SPACE** key to step through and select the digital filtering and then press the **ENTER** key to save the new setting and proceed to the next screen. Allowable selections are **Off, Minimal, Moderate,** and **Custom**.

Off	Disabled (NO Filtering)
Minimal	Minimal Filtering (Sample Rate = 2)
Moderate	Moderate Filtering (Sample Rate = 1)
Custom	Custom Filtering (Additional Parameters Displayed)

⚠ **IMPORTANT!** When Custom Filtering (`Custom`) has been selected, the following parameters, `Filter Value:` and `Filter Break:` will be displayed.

SETUP AND CALIBRATION, CONT.

Filter Value:

With **Custom** selected for **Filtering:**, the current setting for the **Filter Value:** parameter will be shown on the Scale 1 – Calibration – Filtering screen. The filter value is a number from 1 to 255 that corresponds to the level of filtering with 255 being the greatest filtering and 1 the least. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the value for the filter value and then press the **ENTER** key to save the new setting and proceed to the next screen. Allowable values are **0** to **255**.

Filter Break:

With **Custom** selected for **Filtering:**, the current setting for the **Filter Break:** parameter will be shown on the Scale 1 – Calibration – Filtering screen. The filter break range is a number from 1 to 64 that corresponds to the number of division changes to break out of the filtering. If the setting displayed is acceptable, press the **ENTER** key to proceed to the next screen or the Navigation Keys ◁ Left Arrow to return to the previous screen.

Otherwise, use the numeric keys to enter the value for filter break range and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and proceed to the next screen. Allowable values are **0** to **64**.

SETUP AND CALIBRATION, CONT.
Filter Setting Recommendations

Non-Critical Sample Rate

If the sample rate is not critical, as in static weighing, set `Filtering:` to:

- `Filtering: Off`
    (**NO** Filtering)
- `Filtering: Minimal`
    (`Filter Value: 6`, `Filter Break: 12`, `Sample Rate: 2`/Sec) or
- `Filtering: Moderate`
    (`Filter Value: 6`, `Filter Break: 8`, `Sample Rate: 1`/Sec).

Critical Sample Rate

With a critical sample rate, as in a filling operation, use (`Filtering: Custom`).

1. `Sample Rate:` (1 to 200 samples/second) determination:

   Set the sample rate as close as possible to produce a display graduation change for every graduation of material added to the scale.

   $$\frac{\text{Material Flow Rate (lbs/second)}}{\text{Interval}} = \textbf{Sample Rate:}$$

   EXAMPLE: $\dfrac{100\text{lbs/sec}}{10\text{lbs}} = 10\text{s/s} = \textbf{Sample Rate:}$

2. `Filter Value:` (0 to 255) determination: Set to desired results.

3. `Filter Break:` (1 to 64 graduations) determination:

   Turn the filtering off by setting `Filtering: Off`. Operate the system as it will be normally used and, by observation, determine the number of graduations of instability that needs to be filtered out. Set the `Filter Break:` range to that value.

   $$\frac{\text{Weight Change}}{\text{Interval}} = \textbf{Filter Break:}$$

   EXAMPLE: 20,000 x 10lb capacity scale with 800lb variation in the weight display.

   $$\frac{800}{10} = \textbf{Filter Break: 80}$$

4. If stability is unacceptable with any setting of `Filter Value:`, reduce the `Sample Rate:` and/or increase the `Filter Break:` range setting for increased filtering.

SETUP AND CALIBRATION, CONT.

Scale 1 - Calibration – Options

Sample Rate:

With the Scale 1 – Calibration – Options screen displayed the current setting for the **Sample Rate:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the sample rate in samples per seconds and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and proceed to the next screen. Allowable values are **1** to **200**.

NOTE! The Sample Rate: will automatically be set to a 2 when Minimal **Filtering:** has been selected, or a 1 when Moderate has been selected for **Filtering:**.

Num Cal Pts:

Calibration of the scale can be performed using multiple calibration points to obtain a more precise weight reading over the entire span of the scale.

With the Scale 1 – Calibration – Options screen displayed the current setting for the **Num Cal Pts** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the number of calibration points and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and proceed to the next screen. Allowable values are **1** to **4**.

IMPORTANT! The **Num Cal Pts** parameter is used to set the calibration points in addition to the zero (no load) weight calibration point. **DO NOT** include the zero (no load) weight calibration point when selecting the number of calibration points. For example, selecting 2 for the **Num Cal Pts** parameter, you would have a total of three calibration points, the zero (no load) weight and two calibrations points that could correspond to a mid-point weight and the test (load) weight.

SETUP AND CALIBRATION, CONT.

OIML:

With the Scale 1 – Calibration – Options screen displayed the current setting for the **OIML:** parameter will be shown. This parameter determines whether the indicator will be used in an application requiring an OIML Compliance. If the setting displayed is acceptable, press the **ENTER** key to proceed to the next screen or the Navigation Keys ◁ Left Arrow to return to the previous screen.

Otherwise, press the **SPACE** key to toggle its status (select YES or NO) and then press the **ENTER** key to save the new setting and proceed to the next screen.

OIML: Yes	**OIML: No**
OIML Compliance Enabled	OIML Compliance Disabled
Manual Tare Entry (PT is displayed and printed)	Manual Tare Entry (MAN WT is displayed and printed)
Single Interval weight displays:	Single Interval weight displays:
Max (Maximum Capacity)	Scale Capacity and Interval
Min (Minimum Capacity)	
e (Scale Interval)	

Selecting Yes meets International Organization of Legal Metrology (OIML) compliance. When YES is selected, serial port COM3 will be dedicated to outputting scale gross weight whenever the application program is executing. The application program cannot manipulate this output in any way. The serial port communications parameters will default to 9600 baud, 8 data bits, no parity bits and 1 stop bit. Note that the serial port communication parameters can be change in the Communication setup. The data will be sent out at a rate of 2 times per second.

SETUP AND CALIBRATION, CONT.

Scale 1 - Calibration – Other Options

Zero Limit:

With the Scale 1 – Calibration – Other Options screen displayed the current setting for the **Zero Limit:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to toggle its status (select YES or NO) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

Zero Limit: Yes
Select Yes to limit push button zero and zero tracking to ± 2% of capacity

Zero Limit: No
Full capacity (no limit on push button zero and zero tracking)

USA:

With the Scale 1 – Calibration – Other Options screen displayed the current setting for the **USA:** parameter will be shown. This parameter selects whether the indicator is used in the USA (domestic) or outside the USA (international). If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to toggle its status (select YES or NO) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

USA: YES
OC = 104% of scale capacity

USA: NO
OC = scale capacity + 9 grads

2nd Order Lin:

With the Scale 1 – Calibration – Other Options screen displayed the current setting for the **2nd Order Lin:** parameter will be shown. 2nd Order Linearization is a method used to correct for nonlinearity in the load cell signal. An extra term, which is proportional to the square of the load cell signal, is used in the conversion of load cell signal into a weight value. If the setting displayed is acceptable, press the **ENTER** key to proceed to the next screen or the Navigation Keys ◁ Left Arrow to return to the previous screen.

Otherwise, press the **SPACE** key to toggle its status (select YES or NO) and then press the **ENTER** key to save the new setting and proceed to the next screen.

2nd Order Lin: Yes
2nd Order Linearization is Enable. The **COEFF** option will be added to Fine Span screen.

2nd Order Lin: No
2nd Order Linearization is Disabled. Fine Span screen contains only Up, Down, Zero and Quit options.

IMPORTANT! In order for 2nd Order Linearization to take effect, calibration must be performed with at least a total of three calibration points (no load and two load points with different weights). If only two calibration points (no load and load) are used, the **COEFF** option will NOT be added to the Fine Span screen.

SETUP AND CALIBRATION, CONT.

`Scale 1 - Calibration – Multi Interval`

`Intervals:`

With the Scale 1 – Calibration – Multi Interval screen displayed the current setting for the `Intervals:` parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to step through and select the Interval (number of weight ranges to use). Allowable selections are `One`, `Two`, or `Three`.

`One`

Select `One` for Single Interval and then press the **ENTER** key to save the new setting and proceed to the `Calibrate Scale` screen.

After pressing the **ENTER** key, the display will briefly show:

`Setting Parameters` and then **`Setting Multi-Interval`**

and then change to the `Calibrate Scale` screen.

`Two`

If `Two` is selected, two (2) additional parameters will be displayed on the screen. Press the ▽ Down Arrow to advance to the;

`Low Interval Capacity:`

This is the weight capacity for the low range interval. If the setting displayed is acceptable, press the ▽ Down Arrow to advance to the `Middle Interval Value:`.

Otherwise, use the numeric keys to enter the weight capacity for the low range interval and then press the ▽ Down Arrow to advance to the next parameter. Note that the value entered cannot exceed 7 digits and must be less than the overall capacity.

`Middle Interval Value:.`

This is the middle range interval value. If the setting displayed is acceptable, press the **ENTER** key to save the setting and proceed to the `Calibrate Scale` screen.

Otherwise, use the numeric keys to enter the middle interval weight increment value (the value entered must be bigger than the low interval value) and then press the **ENTER** key to save the new setting.

In either case, after pressing the **ENTER** key, the display will briefly show:

`Setting Parameters` and then **`Setting Multi-Interval`**

and then change to the `Calibrate Scale` screen.

⚠ **IMPORTANT!** The error message `Invalid two interval settings` will be displayed after pressing the **ENTER** key, if incorrect values have been entered for `Low Interval Capacity:` and `Middle Interval Value:`. To change the settings, press the ⟵/**ESC** key to return to the `Intervals:` screen.

SETUP AND CALIBRATION, CONT.

`Intervals:`

`Three`

If **`Three`** is selected, four (4) additional parameters will be displayed on the screen. Press the ▽ Down Arrow to advance to the;

`Low Interval Capacity:`

This is the weight capacity for the low range interval. If the setting displayed is acceptable, press the ▽ Down Arrow to advance to **`Middle Interval Value:`**.

Otherwise, use the numeric keys to enter the weight capacity for the low range interval and then press the ▽ Down Arrow to advance to the next parameter. Note that the value entered cannot exceed 7 digits and must be less than the overall scale capacity.

`Middle Interval Value:.`

This is the middle range interval value. If the setting displayed is acceptable, press the ▽ Down Arrow to advance to the **`Middle Interval Capacity:`**.

Otherwise, use the numeric keys to enter the middle interval weight increment value and then press the ▽ Down Arrow to advance to the next parameter. Note that the value entered must be bigger than the low interval value.

`Middle Interval Capacity:`

This is the weight capacity for the middle range interval. If the setting displayed is acceptable, press the ▽ Down Arrow to advance to the **`High Interval Value:`**.

Otherwise, use the numeric keys to enter the weight capacity for the middle range interval and then press the ▽ Down Arrow to advance to the next parameter. Note that the value entered cannot exceed 7 digits and must be less than the overall capacity and greater than the low capacity.

`High Interval Value:`

This is the middle range interval value. If the setting displayed is acceptable, press the **ENTER** key to save the setting and proceed to the **`Calibrate Scale`** screen.

Otherwise, use the numeric keys to enter the high interval weight increment value (the value entered must be bigger than the middle interval value) and then press the **ENTER** key to save the new setting and proceed to the **`Calibrate Scale`** screen.

In either case, after pressing the **ENTER** key, the display will briefly show:

`Setting Parameters` and then **`Setting Multi-Interval`**

and then change to the **`Calibrate Scale`** screen.

IMPORTANT! The error message **`Invalid three interval settings`** will be displayed after pressing the **ENTER** key, if incorrect values have been entered for **`Low Interval Capacity:`**, **`Middle Interval Value:`**, **`Middle Interval Capacity:`** and **`High Interval Value:`**. To change the settings, press the ←——/ESC key to return to the **`Intervals:`** screen.

SETUP AND CALIBRATION, CONT.

Totalizer Function

The Totalizer function will sum the weights of two or more scales and make the total available to the application program. The Totalizer can be referenced as if it were another scale.

T. Total

With the Setup Scale Number screen displayed, press the **T** key or use the Navigation Keys to select (highlight) `T. Total` and then press the **ENTER** key. The display will change to show the `Setup Scales for Totalize` screen.

```
Setup Scales for Totalize

Scale Include Capacity
   1:    Yes     10000

   2:    Yes     10000

   3:    Yes     10000
```

Scale Include Capacity

With the Setup Scales for Totalize screen displayed, the current setting for each `Scale` will be shown. If the setting displayed is acceptable, press the **ENTER** key to proceed to the next screen or the Navigation Keys ◁ Left Arrow to return to the previous screen.

Otherwise, press the **SPACE** key to `Include` the first scale (toggle from NO to YES) and then press the ▷ Right Arrow to advance to the `Capacity` setting. Use the numeric keys to enter the scale capacity and then press the ▽ Down Arrow to proceed to the next scale.

Repeat the above steps for each scale to be included in the Totalize and then press the **ENTER** key to save the new settings and proceed to the next parameter .

SETUP AND CALIBRATION, CONT.

`Total – Calibration – General`

Base Units:

With the Total – Calibration – General screen displayed the current setting for the `Base Units:` parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to select the Base Units and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and proceed to the next screen.

Interval:

With the Total – Calibration – General screen displayed the current setting for the `Interval:` parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter. **NOTE!** If using multiples intervals, this is the low interval.

Otherwise, use the numeric keys to enter the interval (or minimum increment of weight reading) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and proceed to the next screen. Allowable values are **1**, **2**, **5**, **10**, **20**, **50** or **100**.

Interval Dec:

With the Total – Calibration – General screen displayed the current setting for the `Interval Dec:` parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the interval decimal places and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and proceed to the next screen. Allowable values are **0** to **5**.

0 = #######	**2** = #####.##	**4** = ###.####
1 = ######.#	**3** = ####.###	**5** = ##.#####

Conv Units:

With the Total – Calibration – General screen displayed the current setting for the `Conv Units:` parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to select the Conv Units and then press the **ENTER** key to save the new setting and proceed to the next screen.

SETUP AND CALIBRATION, CONT.

Total - Calibration – Filtering

Zero Track:

With the Total – Calibration – Filtering screen displayed the current setting for the **Zero Track:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to step through and select the zero tracking range and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and proceed to the next screen. Available selections are **Off, 0.5 div., 1 div., 2 div., 3 div., 4 div., 5 div., 6 div., 7 div., 8 div.,** and **9 div**.

Motion Range:

With the Total – Calibration – Filtering screen displayed the current setting for the **Motion Range:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the motion range (the number of divisions of change permitted before indicating unstable) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and proceed to the next screen. Allowable values are **0** to **9**. Note that entering zero (**0**) disables the motion range.

Filtering:

With the Total – Calibration – Filtering screen displayed the current setting for the **Filtering:** parameter will be shown. If the setting displayed is acceptable, press the **ENTER** key to proceed to the next screen or the Navigation Keys ◁ Left Arrow to return to the previous screen.

Otherwise, press the **SPACE** key to step through and select the digital filtering and then press the **ENTER** key to save the new setting and proceed to the next screen. Allowable selections are **Off, Minimal, Moderate,** and **Custom**.

Off	Disabled (NO Filtering)
Minimal	Minimal Filtering (Sample Rate = 2)
Moderate	Moderate Filtering (Sample Rate = 1)
Custom	Custom Filtering (Additional Parameters Displayed)

⚠ **IMPORTANT!** When Custom Filtering (**Custom**) has been selected, the following parameters, **Filter Value:** and **Filter Break:** will be displayed.

SETUP AND CALIBRATION, CONT.

Filter Value:

With **Custom** selected for **Filtering:**, the current setting for the **Filter Value:** parameter will be shown on the Total – Calibration – Filtering screen. The filter value is a number from 1 to 255 that corresponds to the level of filtering with 255 being the greatest filtering and 1 the least. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the value for the filter value and then press the **ENTER** key to save the new setting and proceed to the next screen. Allowable values are **0** to **255**.

Filter Break:

With **Custom** selected for **Filtering:**, the current setting for the **Filter Break:** parameter will be shown on the Total – Calibration – Filtering screen. The filter break range is a number from 1 to 64 that corresponds to the number of division changes to break out of the filtering. If the setting displayed is acceptable, press the **ENTER** key to proceed to the next screen or the Navigation Keys ◁ Left Arrow to return to the previous screen.

Otherwise, use the numeric keys to enter the value for filter break range and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and proceed to the next screen. Allowable values are **0** to **64**.

Total - Calibration – Options
Sample Rate:

With the Total – Calibration – Options screen displayed the current setting for the **Sample Rate:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the sample rate in samples per seconds and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and proceed to the next screen. Allowable values are **1** to **200**.

NOTE! The Sample Rate: will automatically be set to a 2 when Minimal **Filtering:** has been selected, or a 1 when Moderate has been selected for **Filtering:**.

SETUP AND CALIBRATION, CONT.

Num Cal Pts:

Calibration of the scale can be performed using multiple calibration points to obtain a more precise weight reading over the entire span of the scale.

With the Total – Calibration – Options screen displayed the current setting for the **Num Cal Pts** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the number of calibration points and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and proceed to the next screen. Allowable values are **1** to **4**.

IMPORTANT! The **Num Cal Pts** parameter is used to set the calibration points in addition to the zero (no load) weight calibration point. **DO NOT** include the zero (no load) weight calibration point when selecting the number of calibration points. For example, selecting 2 for the **Num Cal Pts** parameter, you would have a total of three calibration points, the zero (no load) weight and two calibrations points that could correspond to a mid-point weight and the test (load) weight.

OIML:

With the Total – Calibration – Options screen displayed the current setting for the **OIML:** parameter will be shown. This parameter determines whether the indicator will be used in an application requiring an OIML Compliance. If the setting displayed is acceptable, press the **ENTER** key to proceed to the next screen or the Navigation Keys ◁ Left Arrow to return to the previous screen.

Otherwise, press the **SPACE** key to toggle its status (select YES or NO) and then press the **ENTER** key to save the new setting and proceed to the next screen.

OIML: Yes	**OIML: No**
OIML Compliance Enabled	OIML Compliance Disabled
Manual Tare Entry (PT is displayed and printed)	Manual Tare Entry (MAN WT is displayed and printed)
Single Interval weight displays:	Single Interval weight displays:
Max (Maximum Capacity)	Scale Capacity and Interval
Min (Minimum Capacity)	
e (Scale Interval)	

Selecting Yes meets International Organization of Legal Metrology (OIML) compliance. When YES is selected, serial port COM3 will be dedicated to outputting scale gross weight whenever the application program is executing. The application program cannot manipulate this output in any way. The serial port communications parameters will default to 9600 baud, 8 data bits, no parity bits and 1 stop bit. Note that the serial port communication parameters can be change in the Communication setup. The data will be sent out at a rate of 2 times per second.

SETUP AND CALIBRATION, CONT.

Total - Calibration – Other Options

Zero Limit:

With the Total – Calibration – Other Options screen displayed the current setting for the **Zero Limit:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to toggle its status (select YES or NO) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and proceed to the next screen.

Zero Limit: Yes	Zero Limit: No
Select Yes to limit push button zero and zero tracking to ± 2% of capacity	Full capacity (no limit on push button zero and zero tracking)

USA:

With the Total – Calibration – Other Options screen displayed the current setting for the **USA:** parameter will be shown. This parameter selects whether the indicator is used in the USA (domestic) or outside the USA (international). If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to toggle its status (select YES or NO) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and proceed to the next screen.

USA: YES	USA: NO
OC = 104% of scale capacity	OC = scale capacity + 9 grads

2nd Order Lin:

With the Total – Calibration – Other Options screen displayed the current setting for the **2nd Order Lin:** parameter will be shown. 2nd Order Linearization is a method used to correct for nonlinearity in the load cell signal. An extra term, which is proportional to the square of the load cell signal, is used in the conversion of load cell signal into a weight value. If the setting displayed is acceptable, press the **ENTER** key to proceed to the next screen or the Navigation Keys ◁ Left Arrow to return to the previous screen.

Otherwise, press the **SPACE** key to toggle its status (select YES or NO) and then press the **ENTER** key to save the new setting and proceed to the next screen.

2nd Order Lin: Yes	2nd Order Lin: No
2nd Order Linearization is Enable. The **COEFF** option will be added to Fine Span screen.	2nd Order Linearization is Disabled. Fine Span screen contains only Up, Down, Zero and Quit options.

IMPORTANT! In order for 2nd Order Linearization to take effect, calibration must be performed with at least a total of three calibration points (no load and two load points with different weights). If only two calibration points (no load and load) are used, the **COEFF** option will NOT be added to the Fine Span screen.

SETUP AND CALIBRATION, CONT.

`Total - Calibration – Multi Interval`

`Intervals:`

> With the Total – Calibration – Multi Interval screen displayed the current setting for the **`Intervals:`** parameter will be shown. If the setting displayed is acceptable, press the **ENTER** key to save the setting and proceed to the next screen.
>
> Otherwise, press the **SPACE** key to step through and select the Interval (number of weight ranges to use). Allowable selections are **`One`**, **`Two`**, or **`Three`**.

`One`

> Select **`One`** for Single Interval and then press the **ENTER** key to save the new setting and proceed to the **`Totalizer`** screen.
>
> After pressing the **ENTER** key, the display will briefly show:
>> **`Setting Parameters`** and then **`Setting Multi-Interval`**
>
> and then change to the **`Totalizer`** screen.

`Two`

> If **`Two`** is selected, two (2) additional parameters will be displayed on the screen. Press the ▽ Down Arrow to advance to the;

`Low Interval Capacity:`

> This is the weight capacity for the low range interval. If the setting displayed is acceptable, press the ▽ Down Arrow to advance to the **`Middle Interval Value:`**.
>
> Otherwise, use the numeric keys to enter the weight capacity for the low range interval and then press the ▽ Down Arrow to advance to the next parameter. Note that the value entered cannot exceed 7 digits and must be less than the overall capacity.

`Middle Interval Value:.`

> This is the middle range interval value. If the setting displayed is acceptable, press the **ENTER** key to save the setting and proceed to the **`Totalizer`** screen.
>
> Otherwise, use the numeric keys to enter the middle interval weight increment value (the value entered must be bigger than the low interval value) and then press the **ENTER** key to save the new setting.
>
> In either case, after pressing the **ENTER** key, the display will briefly show:
>> **`Setting Parameters`** and then **`Setting Multi-Interval`**
>
> and then change to the **`Totalizer`** screen.

> ⚠ **IMPORTANT!** The error message **`Invalid two interval settings`** will be displayed after pressing the **ENTER** key, if incorrect values have been entered for **`Low Interval Capacity:`** and **`Middle Interval Value:`**. To change the settings, press the ⟵/**ESC** key to return to the **`Intervals:`** screen.

SETUP AND CALIBRATION, CONT.

`Intervals:`

`Three`

If **`Three`** is selected, four (4) additional parameters will be displayed on the screen. Press the ▽ Down Arrow to advance to the;

`Low Interval Capacity:`

This is the weight capacity for the low range interval. If the setting displayed is acceptable, press the ▽ Down Arrow to advance to **`Middle Interval Value:`**.

Otherwise, use the numeric keys to enter the weight capacity for the low range interval and then press the ▽ Down Arrow to advance to the next parameter. Note that the value entered cannot exceed 7 digits and must be less than the overall scale capacity.

`Middle Interval Value:`.

This is the middle range interval value. If the setting displayed is acceptable, press the ▽ Down Arrow to advance to the **`Middle Interval Capacity:`**.

Otherwise, use the numeric keys to enter the middle interval weight increment value and then press the ▽ Down Arrow to advance to the next parameter. Note that the value entered must be bigger than the low interval value.

`Middle Interval Capacity:`

This is the weight capacity for the middle range interval. If the setting displayed is acceptable, press the ▽ Down Arrow to advance to the **`High Interval Value:`**.

Otherwise, use the numeric keys to enter the weight capacity for the middle range interval and then press the ▽ Down Arrow to advance to the next parameter. Note that the value entered cannot exceed 7 digits and must be less than the overall capacity and greater than the low capacity.

`High Interval Value:`

This is the middle range interval value. If the setting displayed is acceptable, press the **ENTER** key to save the setting and proceed to the **`Totalizer`** screen.

Otherwise, use the numeric keys to enter the high interval weight increment value (the value entered must be bigger than the middle interval value) and then press the **ENTER** key to save the new setting and proceed to the **`Totalizer`** screen.

In either case, after pressing the **ENTER** key, the display will briefly show:

`Setting Parameters` and then **`Setting Multi-Interval`**

and then change to the **`Totalizer`** screen.

⚠ **IMPORTANT!** The error message **`Invalid three interval settings`** will be displayed after pressing the **ENTER** key, if incorrect values have been entered for **`Low Interval Capacity:`**, **`Middle Interval Value:`**, **`Middle Interval Capacity:`** and **`High Interval Value:`**. To change the settings, press the ⟵/**ESC** key to return to the **`Intervals:`** screen.

SETUP AND CALIBRATION, CONT.

Totalizer

Capacity:

    With the Totalizer screen displayed the current setting for the **Capacity:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

    Otherwise, use the numeric keys to enter the Totalizer capacity and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the Setup Scale Number screen. Note that the Capacity cannot exceed 7 digits. Allowable values are **1** through **9,999,999**.

With the Setup Scale Number screen displayed, use the numeric keys to enter the number for the scale to calibrate or press the ▽ Down Arrow and then press the **ENTER** key to select the scale to calibrate.

SETUP AND CALIBRATION, CONT.

Calibration Methods

The 825 has two methods to enter the calibration procedure. One method is performed after entering the calibration setup parameters. The other method is selected from the Setup Menu screen and skips entering the calibration setup parameters.

Calibration of the scale can be performed using up to four calibration points in addition to the zero (no load) weight. The number of calibration points is determined by the `Num Cal Pts` parameter. When one point is used, only screen prompts for Weight 1 and Weight 2 will be displayed. If more than one point is used, additional screen prompts for Weight 3, Weight 4 and Weight 5 will be displayed. Note that one weighing must be zero (no load) weight.

The following examples use two calibration points in addition to the zero (no load) weight. The two points could correspond to a mid-point weight and the test (load) weight.

Calibration after Entering Scale Parameters

1. With the Calibrate Scale screen displayed, the current setting `Calibrate: NO` will be shown. If calibration is desired, press the **SPACE** key to toggle its status from `No` to `Yes` and then press the **ENTER** key to proceed with calibration. Otherwise, press the **ENTER** key to return to the `Scale 1 - Calibration Options` screen.

2. The display will change to show the `Scale 1 - Calibration Weight 1` screen.

3. If this is the zero weight (no load), press the **0** key and then press the **ENTER** key. Otherwise, place the weights on the scale and then using the numeric keys, enter the current weight on the scale and then press the **ENTER** key.

4. The display will show the percentage of completion and a dashed line proceeding from left to right for this step. When this step has been completed, the display will change to show the `Scale 1 - Calibration Weight 2` screen.

5. If this is the zero weight (no load), press the **0** key and then press the **ENTER** key. Otherwise, place the weights on the scale and then using the numeric keys, enter the current weight on the scale and then press the **ENTER** key.

6. The display will show the percentage of completion and a dashed line proceeding from left to right for this step. When this step has been completed, the display will change to change to show the `Scale 1 - Calibration Weight 3` screen.

7. If this is the zero weight (no load), press the **0** key and then press the **ENTER** key. Otherwise, place the weights on the scale and then using the numeric keys, enter the current weight on the scale and then press the **ENTER** key.

8. The display will show the percentage of completion and a dashed line proceeding from left to right for this step. When this step has been completed, the display will change to show the `Scale 1 - Fine Span` screen. **NOTE!** If Span Adjustment <u>is</u> required, proceed to the FINE SPAN ADJUSTMENT.

SETUP AND CALIBRATION, CONT.

Calibration from the Setup Menu

1. From the Startup screen, press the **3** key or use the Navigation Keys to select (highlight) **3. Legal metrology information / setup** option and then press the **ENTER** key.

2. From the Legal metrology information / Setup screen, press the **3** key or use the Navigation Keys to select (highlight) **3. Setup menu** and then press the **ENTER** key.

3. Enter the Login and Password if the **Login** screen is displayed.

4. With the Setup Menu screen displayed, press the **3** key or use the Navigation Keys to select (highlight) **3. Calibration** and then press the **ENTER** key.

5. With the Setup Scale Number screen displayed, verify the correct scale number is shown and then press the **ENTER** key. Otherwise, use the numeric keys to enter the scale number and then press the **ENTER** key.

6. The display will change to show the **Scale 1 – Calibration Options** screen, press the **2** key or use the Navigation Keys to select (highlight) **2. Calibration** and then press the **ENTER** key.

7. The display will change to show the **Scale 1 – Calibration Weight 1** screen.

8. If this is the zero weight (no load), press the **0** key and then press the **ENTER** key. Otherwise, place the weights on the scale and then using the numeric keys, enter the current weight on the scale and then press the **ENTER** key.

9. The display will show the percentage of completion and a dashed line proceeding from left to right for this step. When this step has been completed, the display will change to show the **Scale 1 – Calibration Weight 2** screen.

10. If this is the zero weight (no load), press the **0** key and then press the **ENTER** key. Otherwise, place the weights on the scale and then using the numeric keys, enter the current weight on the scale and then press the **ENTER** key.

11. The display will show the percentage of completion and a dashed line proceeding from left to right for this step. When this step has been completed, the display will change to change to show the **Scale 1 – Calibration Weight 3** screen.

12. If this is the zero weight (no load), press the **0** key and then press the **ENTER** key. Otherwise, place the weights on the scale and then using the numeric keys, enter the current weight on the scale and then press the **ENTER** key.

13. The display will show the percentage of completion and a dashed line proceeding from left to right for this step. When this step has been completed, the display will change to show the **Scale 1 – Fine Span** screen. **NOTE!** If Span Adjustment <u>is</u> required, proceed to the FINE SPAN ADJUSTMENT.

SETUP AND CALIBRATION, CONT.

Scale 1 – Fine Span

If Fine Span adjustment <u>is</u> desired, with the **Scale 1 – Fine Span** screen displayed, place a calibrated test weight on the scale.

Use the Navigation Keys to select (highlight) the Fine Span adjustment option and then press the **ENTER** key to perform the function or;

Press the **U** key (U. Up) to increase displayed weight.

Press the **D** key (D. Down) to decrease the displayed weight,

Press the **Z** key (Z. Zero) to zero the scale.

Press the **Q** key (Q. Quit) to save the current settings and Quit.

The display will return to the **Scale 1 – Calibration Options** screen.

If **2nd Order Linearization** was enabled and the **Num Cal Pts** parameter is set for 2 or more, then a **COEFF** option will be added to the Fine Span screen. This option is used to make adjustments to the displayed weight after linearization testing has shown an error in a specific range of weight.

Press the **C** key (C. Coeff) or use the Navigation Keys to select (highlight) the **C. Coeff** option and then press the **ENTER** key to proceed to the **Coefficient** screen.

Linear Coefficient:

The Linear Coefficient is applied to the load cell signal to calculate weight. If the current setting displayed for this coefficient is acceptable, press the ▽ Down Arrow to advance to the **2nd Order Coeff:** parameter.

Otherwise, use the numeric keys to enter a new Linear Coefficient and then press the ▽ Down Arrow to advance to the next parameter.

2nd Order Coeff:

This coefficient is applied to the square of the load cell signal to calculate weight. If the current 2nd Order Coeff setting displayed is acceptable, press the ▽ Down Arrow to advance to the **Tweak low weight:** parameter.

Otherwise, use the numeric keys to enter a new 2nd Order Coeff and then press the ▽ Down Arrow to advance to the next parameter.

⚠️ **WARNING! Changing the Linear Coefficient or the 2nd Order Coeff will affect the indicator's ability to display the proper weight. Please consult the factory before making any changes.**

SETUP AND CALIBRATION, CONT.

`Tweak low weight:`

This is the low end of the range of weight that requires adjusting. For example, if after performing linearization testing, the displayed weight is 5 lbs low between 10,000 lbs and 15,000 lbs, the value for the tweak low weight is 10000.

If the setting displayed is acceptable, press the ▽ Down Arrow to advance to the **`Tweak high weight:`** parameter.

Otherwise, use the numeric keys to enter the tweak low weight and then press the ▽ Down Arrow to advance to the next parameter.

`Tweak high weight:`

This is the high end of the range of weight that requires adjusting. Using the example above, the value for the tweak high weight is 15000.

If the setting displayed is acceptable, press the ▽ Down Arrow to advance to the **`Tweak weight:`** parameter.

Otherwise, use the numeric keys to enter the tweak high weight and then press the ▽ Down Arrow to advance to the next parameter.

`Tweak weight:`

This is the amount of weight that needs to be added (or subtracted) from the range of weight to bring the displayed weight into tolerance. Again, using the example above, the Tweak Weight would be 5.

If the setting displayed is acceptable, press the **ENTER** key to return to the **`Scale 1 – Fine Span`** screen.

Otherwise, use the numeric keys to enter a new tweak weight and then press the **ENTER** key to return to the **`Scale 1 – Fine Span`** screen.

PREFERENCES

1. Press the **ON/OFF** key to turn on the 825. The display will perform a short self-test and then change to the Startup screen showing the software versions and status of the option cards.

2. Press the Navigation Keys ▽ Down Arrow to "advance" to (highlight) the `Legal metrology information / Setup menu` option and then press the **ENTER** key or press the **3** key to select the `Legal metrology information / Setup` option. The display will change to show the `Legal metrology information / Setup` screen.

   IMPORTANT! If the Login and Password protection feature has been enable, the `Login` screen will be displayed instead of the `Legal metrology information / Setup` screen. Enter the login and then press the ▽ Down Arrow to advance to the password prompt. Enter the password and then press the **ENTER** key to proceed to the Legal metrology information / Setup.

3. From the Legal metrology information / Setup screen, press the **3** key or use the Navigation Keys to select (highlight) `3. Setup menu` and then press the **ENTER** key.

4. With the Setup Menu displayed, press the **5** key or use the Navigation Keys to select (highlight) `5. Preferences` and then press the **ENTER** key. The display will change to show the `Preferences Menu` screen.

```
Preferences Menu

Press:

1. Date/Time

2. Color Scheme

3. Color Palette

4. LCD Settings

5. Sound Settings




MAC Address: 00:50:C2:88:E0:26
```

1. Date/Time

With the Preferences Menu displayed, press the **1** key or use the Navigation Keys to select (highlight) `1. Date/Time` and then press the **ENTER** key. The display will change to show the `Setup Preferences` screen for the Date and Time.

PREFERENCES, CONT.

Date Format:
    With the Setup preferences screen displayed the current setting for the **Date Format:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

    Otherwise, press the **SPACE** key to step through and select the date format and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. The formats available are:

     Day Month Year   **Year Month Day**   **Month Day Year**

Date Separator:
    With the Setup preferences screen displayed the current setting for the **Date Separator:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

    Otherwise, use the alphanumeric keys to enter a new character for the date separator and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

Time Format:
    With the Setup preferences screen displayed the current setting for the **Time Format:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

    Otherwise, press the SPACE key to toggle between the 12 Hour or 24 Hour time format and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

Time Separator:
    With the Setup preferences screen displayed the current setting for the **Time Separator:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

    Otherwise, use the alphanumeric keys to enter a new character for the time separator and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

a.m.:
    With the Setup preferences screen displayed the current setting for the **a.m.:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

    Otherwise, use the alphanumeric keys to specify the text for a.m. time and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

PREFERENCES, CONT.

p.m.:

With the Setup preferences screen displayed the current setting for the **p.m.:** parameter will be shown. If the setting displayed is acceptable, press the **ENTER** key or the Navigation Keys ◁ Left Arrow to return to the previous screen.

Otherwise, use the alphanumeric keys to specify the text for p.m. time and then press the **ENTER** key to save the new setting and return to the previous screen.

PREFERENCES

Sound Settings

The sound settings parameters allow you to customize the beep that occurs each time a key is pressed. The duration of the beep as well as the note and octave produced can be set or the key beep can be turned off.

5. Sound Settings

With the Preferences Menu displayed, press the **5** key or use the Navigation Keys to select (highlight) **5. Sound Settings** and then press the **ENTER** key. The display will change to show the **Setup Sound Preferences** screen.

Key sound time:

With the Setup Sound Preferences screen displayed, the current setting for the **Key sound time:** parameter will be shown. This is the length of time the beep sounds each time a key is pressed. The key sound time (key beep duration) can be from no beep or off to a full one second. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to step through and select the key sound time and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting. The available selections are **None** (no key beep), **31.25ms**, **62.5ms**, **125ms**, **250ms**, **500ms** and **1sec**. Note that **ms** = millisecond (1/1000 of a second).

Key sound freq:

With the Setup Sound Preferences screen displayed, the current setting for the **Key sound freq:** parameter will be shown. This is the note and octave of the key beep sound. If the setting displayed is acceptable, press the **ENTER** key or the Navigation Keys ◁ Left Arrow to return to the previous screen.

Otherwise, press the **SPACE** key to step through and select the keynote and octave and then press the **ENTER** key to save the new setting and return to the previous screen. The available selections are **None** (no key beep), **31.25ms**, **62.5ms**, **125ms**, **250ms**, **500ms** and **1sec**. Note that **ms** = millisecond or 1/1000 of a second. The available selections are **C5**, **D5**, **E5**, **F5**, **G5**, **A5**, **B5**, **C6**, **E6**, **G6**, **A6**, **C7**, **D7**, and **E7**.

After Pressing the ENTER key

After pressing the **ENTER** key (at either parameter), the display will change to show:

```
Power off and on for changes
to take effect.
```

Press and hold (about 4 seconds) the **ON/OFF** key to turn off the indicator. Wait a few seconds and then press it again to turn the indicator back ON. The sound settings have been saved and are now effective.

OPERATORS

The Model 825 supports up to eight operators. One operator, the Administrator has full access to all functions and features of the 825. The remaining seven can be configured to allow or prevent access to various functions and features. Note that only the login name and password can be changed for the Administrator operator.

1. Press the **ON/OFF** key to apply power to the 825. The display will perform a short self-test and then change to the Startup screen showing the software versions and status of the option cards.

2. Press the Navigation Keys ▽ Down Arrow to "advance" to (highlight) the **Legal metrology information / Setup** option and then press the **ENTER** key or press the **3** key to select the **Legal metrology information / Setup** option. The display will change to show the **Legal metrology information / Setup** screen.

   IMPORTANT! If the Login and Password protection feature has been enable, the **Login** screen will be displayed instead of the **Legal metrology information / Setup** screen. Enter the login (ADMIN) and then press the ▽ Down Arrow to advance to the password prompt. Enter the password and then press the **ENTER** key to proceed to the Legal metrology information / Setup.

3. From the Legal metrology information / Setup screen, press the **3** key or use the Navigation Keys to select (highlight) **3. Setup menu** and then press the **ENTER** key.

4. With the Setup Menu displayed, press the **7** key or use the Navigation Keys to select (highlight) **7. Operators** and then press the **ENTER** key. The display will change to show the **Setup Operators** screen.

```
Setup Operators
Press:

1. List Operators
2. Add Operator
3. Edit Operator
4. Delete Operator
5. Set Default Operator




MAC Address: 00:50:C2:88:E0:26
```

OPERATORS, CONT.

1. List Operators

1. With the Setup Operators screen displayed, press the **1** key or use the Navigation Keys to select (highlight) `1. List Operators` and then press the **ENTER** key.

2. The display will change to show the `Operator List` screen for the current programmed operators.

3. After viewing the list, press any key to return to the `Setup Operators` screen.

2. Add Operator

When you add an operator to the indicator, you are allowing that individual to have access to functions and features of the indicator.

With the Setup Operators screen displayed, press the **2** key or use the Navigation Keys to select (highlight) `2. Add Operator` and then press the **ENTER** key. The display will change to show the `Add Operator` screen.

```
Add Operator
Login:        _           Config:      Yes
Password:                 File Mgr:    Yes
Zero:         Yes         Custom 1:    No
Keybd tare:Yes            Custom 2:    No
Push tare: Yes            Custom 3:    No
Print:        Yes         Custom 4:    No
Units:        Yes         Custom 5:    No
Sel Scale: Yes            Custom 6:    No
Date/time: Yes            Custom 7:    No
Enter login ID
```

Login:
Use the alphanumeric keys to enter a login (name) for the operator (up to 8 characters, e.g., CARDINAL) and then press the ▽ Down Arrow to advance to the next parameter.

Password:
Use the alphanumeric keys to enter a password for the operator (up to 8 characters) and then press the ▽ Down Arrow to advance to the next parameter. Note that if a password is not required (or desired), it can be left blank. **IMPORTANT!** The password will be visible while entering it. During operations, a row of asterisks will be shown when entering the password.

IMPORTANT! To change the displayed setting on the following parameters, press the **SPACE** key to toggle between Yes and No or press the **Y** key for Yes or the **N** key for No.

OPERATORS, CONT.

Zero:

With the Add Operator screen displayed, the current setting for **Zero:** will be shown. If the operator is allowed to zero the scale, press the ▽ Down Arrow to proceed to the next parameter.

Otherwise, press the **SPACE** key (or the **Y** or **N** key) to toggle between the **Yes** and **No** and then press the ▽ Down Arrow to advance to the next parameter.

Keybd tare:

With the Add Operator screen displayed, the current setting for **Keybd tare:** will be shown. If the operator is allowed to manually enter a tare weight, press the ▽ Down Arrow to proceed to the next parameter.

Otherwise, press the **SPACE** key (or the **Y** or **N** key) to toggle between the **Yes** and **No** and then press the ▽ Down Arrow to advance to the next parameter.

Push tare:

With the Add Operator screen displayed, the current setting for **Push tare:** will be shown. If the operator is allowed to use the Push Button tare function to enter a tare weight, press the ▽ Down Arrow to proceed to the next parameter.

Otherwise, press the **SPACE** key (or the **Y** or **N** key) to toggle between the **Yes** and **No** and then press the ▽ Down Arrow to advance to the next parameter.

Print:

With the Add Operator screen displayed, the current setting for **Print:** will be shown. If the operator is allowed to print a ticket, press the ▽ Down Arrow to proceed to the next parameter.

Otherwise, press the **SPACE** key (or the **Y** or **N** key) to toggle between the **Yes** and **No** and then press the ▽ Down Arrow to advance to the next parameter.

Units:

With the Add Operator screen displayed, the current setting for **Units:** will be shown. If the operator is allowed to select the alternate weighing units, press the ▽ Down Arrow to proceed to the next parameter.

Otherwise, press the **SPACE** key (or the **Y** or **N** key) to toggle between the **Yes** and **No** and then press the ▽ Down Arrow to advance to the next parameter.

Sel Scale:

With the Add Operator screen displayed, the current setting for **Sel Scale:** will be shown. In a multiple scale operation, if the operator is allowed to choose between available scales, press the ▽ Down Arrow to proceed to the next parameter.

Otherwise, press the **SPACE** key (or the **Y** or **N** key) to toggle between the **Yes** and **No** and then press the ▽ Down Arrow to advance to the next parameter.

OPERATORS, CONT.

`Date/Time:`

    With the Add Operator screen displayed, the current setting for **`Date/Time:`** will be shown. If the operator is allowed to change the date and time, press the **ENTER** key to save the settings and return to the previous screen.

    Otherwise, press the **SPACE** key (or the **Y** or **N** key) to toggle between the **`Yes`** and **`No`** and then press the **ENTER** key to save the settings and return to the previous screen.

`Config:`

    With the Add Operator screen displayed, the current setting for **`Config:`** will be shown. If the operator is allowed to change the configuration, press the **ENTER** key to save the settings and return to the previous screen.

    Otherwise, press the **SPACE** key (or the **Y** or **N** key) to toggle between the **`Yes`** and **`No`** and then press the **ENTER** key to save the settings and return to the previous screen.

`File Mgr:`

    With the Add Operator screen displayed, the current setting for **`File Mgr:`** will be shown. If the operator is allowed to access the File Manager function, press the **ENTER** key to save the settings and return to the previous screen.

    Otherwise, press the **SPACE** key (or the **Y** or **N** key) to toggle between the **`Yes`** and **`No`** and then press the **ENTER** key to save the settings and return to the previous screen.

OPERATORS, CONT.

3. Edit Operator

The Edit Operator screen allows to you to change the operators previously configured access to functions and features of the indicator.

1. With the Setup Operators screen displayed, press the **3** key or use the Navigation Keys to select (highlight) **3. Edit Operator** and then press the **ENTER** key. The display will change to show the **Edit Operator** screen and prompt for the operator login (name).

```
Edit Operator

Login:        _




```

2. Enter the operator login and then press the **ENTER** key. The display will change to the Edit Operator screen and show the current settings.

```
Edit Operator
Login:        USER     Config:     No
Password:              File Mgr:   No
Zero:         Yes      Custom 1:   No
Keybd tare:Yes         Custom 2:   No
Push tare: Yes         Custom 3:   No
Print:        Yes      Custom 4:   No
Units:        Yes      Custom 5:   No
Sel Scale: No          Custom 6:   No
Date/time: Yes         Custom 7:   No
Enter login ID
```

OPERATORS, CONT.

`Login:`

    With the Edit Operator screen displayed, the current login (name) will be shown. If the login displayed is acceptable, proceed to the next parameter.

    Otherwise, use the alphanumeric keys to enter a new login for the operator (up to 8 characters) and then press the ▽ Down Arrow to advance to the next parameter.

> **IMPORTANT!** Changing the login REPLACES the current login. It DOES NOT create a new login in addition to existing login. It will however, retain the settings from the old login for the new login (e.g., **`Zero: Yes`**, **`Keybd tare: No`**, etc...).

`Password:`

    With the Edit Operator screen displayed, the current password will be shown. If the password displayed is acceptable, proceed to the next parameter.

    Otherwise, use the alphanumeric keys to enter a new password for the operator (up to 8 characters) and then press the ▽ Down Arrow to advance to the next parameter. Note that if a password is not required (or desired), it can be left blank. **IMPORTANT!** The password will be visible while entering it. During operations, a row of asterisks will be shown when entering the password.

IMPORTANT! To change the displayed setting on the following parameters, press the **SPACE** key to toggle between Yes and No or press the **Y** key for Yes or the **N** key for No.

`Zero:`

    With the Edit Operator screen displayed, the current setting for **`Zero:`** will be shown. If the setting displayed is acceptable, proceed to the next parameter.

    Otherwise, press the **SPACE** key (or the **Y** or **N** key) to toggle between the **`Yes`** and **`No`** and then press the ▽ Down Arrow to advance to the next parameter.

`Keybd tare:`

    With the Edit Operator screen displayed, the current setting for **`Keybd tare:`** will be shown. If the setting displayed is acceptable, proceed to the next parameter.

    Otherwise, press the **SPACE** key (or the **Y** or **N** key) to toggle between the **`Yes`** and **`No`** and then press the ▽ Down Arrow to advance to the next parameter.

`Push tare:`

    With the Edit Operator screen displayed, the current setting for **`Push tare:`** will be shown. If the setting displayed is acceptable, proceed to the next parameter.

    Otherwise, press the **SPACE** key (or the **Y** or **N** key) to toggle between the **`Yes`** and **`No`** and then press the ▽ Down Arrow to advance to the next parameter.

OPERATORS, CONT.

Print:

    With the Edit Operator screen displayed, the current setting for **Print:** will be shown. If the setting displayed is acceptable, proceed to the next parameter.

    Otherwise, press the **SPACE** key (or the **Y** or **N** key) to toggle between the **Yes** and **No** and then press the ▽ Down Arrow to advance to the next parameter.

Units:

    With the Edit Operator screen displayed, the current setting for **Units:** will be shown. If the setting displayed is acceptable, proceed to the next parameter.

    Otherwise, press the **SPACE** key (or the **Y** or **N** key) to toggle between the **Yes** and **No** and then press the ▽ Down Arrow to advance to the next parameter.

Sel Scale:

    With the Edit Operator screen displayed, the current setting for **Sel Scale:** will be shown. If the setting displayed is acceptable, proceed to the next parameter.

    Otherwise, press the **SPACE** key (or the **Y** or **N** key) to toggle between the **Yes** and **No** and then press the ▽ Down Arrow to advance to the next parameter.

Date/Time:

    With the Edit Operator screen displayed, the current setting for **Date/Time:** will be shown. If the setting displayed is acceptable, proceed to the next parameter.

    Otherwise, press the **SPACE** key (or the **Y** or **N** key) to toggle between the **Yes** and **No** and then press the **ENTER** key to save the settings and return to the previous screen.

Config:

    With the Edit Operator screen displayed, the current setting for **Config:** will be shown. If the setting displayed is acceptable, proceed to the next parameter.

    Otherwise, press the **SPACE** key (or the **Y** or **N** key) to toggle between the **Yes** and **No** and then press the **ENTER** key to save the settings and return to the previous screen.

File Mgr:

    With the Edit Operator screen displayed, the current setting for **File Mgr:** will be shown. If the setting displayed is acceptable, proceed to the next parameter.
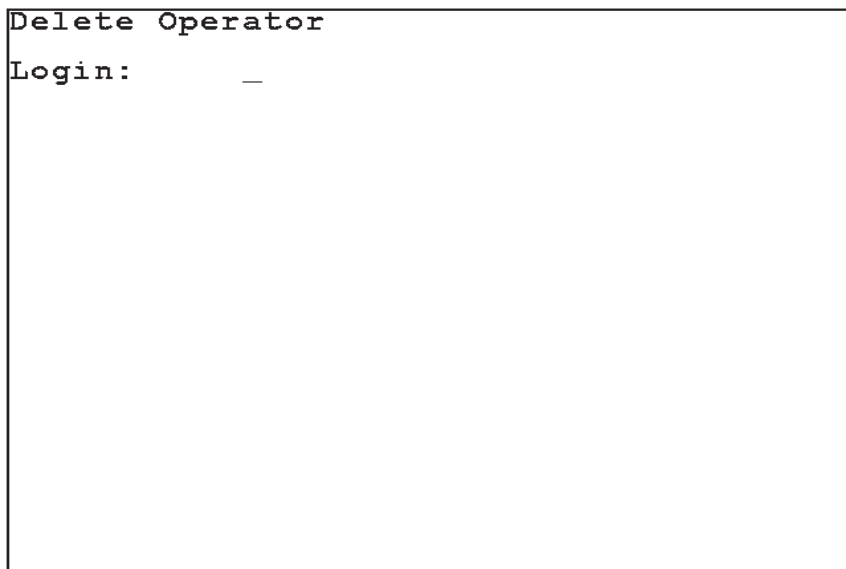
    Otherwise, press the **SPACE** key (or the **Y** or **N** key) to toggle between the **Yes** and **No** and then press the **ENTER** key to save the settings and return to the previous screen.

OPERATORS, CONT.

4. Delete Operator

The Delete Operator screen allows you to delete (remove) an operator login and all previously configured settings for that login.

1. With the Setup Operators screen displayed, press the **4** key or use the Navigation Keys to select (highlight) **4. Delete Operator** and then press the **ENTER** key. The display will change to show the **Delete Operator** screen and prompt for the operator login (name).

```
Delete Operator

Login:      _
```

2. Enter the operator login and then press the **ENTER** key.

3. The display will change to show

   Are you sure?

4. To delete the login, press the **Y** key (for Yes) and then press the **ENTER** key.

5. The display will change to show the Setup Operators screen. All settings for that operator login have been deleted.

6. Otherwise, press the **N** key (for No) and then press the **ENTER** key to return to the Setup Operators screen.

OPERATORS, CONT.

5. Set Default Operator

The Set Default Operator screen allows to you to select which operator login the 825 will use when it is first turned on.

With the Setup Operators screen displayed, press the **5** key or use the Navigation Keys to select (highlight) **5. Set Default Operator** and then press the **ENTER** key. The display will change to show the **Set Default Operator** screen and the current default operator login (name).

```
Set Default Operator

Default Login: ADMIN




```

Default Login:

With the Set Default Operator screen displayed, the current login (name) will be shown. If the login displayed is acceptable, press the **ENTER** key to return to the Setup Operators screen.

Otherwise, use the alphanumeric keys to enter a new login for the default operator login and then press the **ENTER** key to return to the Setup Operators screen.

CONFIGURATION

Configuration is used to: Calibrate the touch screen, Show the touch screen tracking (a target, the "+" sign will appear where the screen is touched), Set the color settings, Configure the weight server (the TCP/IP server, the serial ports and to view the Electronic Talley Roll), configure Ticket Settings and Configure the application menu.

To Begin Configuration

1. Press the **ON/OFF** key to apply power to the 825. The display will perform a short self-test and then change to the Startup screen showing the software versions and diagnostics of the option cards.

2. When the 825 is initially started, a countdown staring at 7 seconds will appear to the right of **1. Application Program**. Allow the countdown to complete or press the **ENTER** key or press the **1** key to select the **Application Program** option. The display will change to show:

   Starting application mode

   and then change to show:

   Cardinal 825-loading...

   Starting...

   and then change to show the **Application Menu**.

```
┌─────────────────────────────────────────────┐
│ Application Menu                 ver 1.17     │
│ ┌─────────────────────────────────────────┐ │
│ │ 1. Truck Storage                        │ │
│ ├─────────────────────────────────────────┤ │
│ │ 2. DFC Batcher                          │ │
│ ├─────────────────────────────────────────┤ │
│ │ 3. Checkweigher                         │ │
│ ├─────────────────────────────────────────┤ │
│ │ 4. 788 Compatibility                    │ │
│ ├─────────────────────────────────────────┤ │
│ │ 5. Configuration                        │ │
│ ├─────────────────────────────────────────┤ │
│ │ 6. File Manager                         │ │
│ ├─────────────────────────────────────────┤ │
│ │ 7. Slide Show                           │ │
│ └─────────────────────────────────────────┘ │
│ IP: 90.1.2.165                               │
└─────────────────────────────────────────────┘
```

IMPORTANT! The Application Menu screen may consist of more than one screen. Press the NEXT >>> key to view additional selections. Press the <<< Prev key to return to the first screen.

CONFIGURATION, CONT.

Configuration

3. With the Application Menu displayed, press the **5** key or use the Navigation Keys to select (highlight) **5 Configuration** and then press the **ENTER** key. The display will change to show the **Configuration** screen.

```
Configuration                      ver 1.49

  ┌─────────────────────────────────────────┐
  │ 1. Calibrate touch screen               │
  └─────────────────────────────────────────┘
  ┌─────────────────────────────────────────┐
  │ 2. Show touch screen tracking           │
  └─────────────────────────────────────────┘
  ┌─────────────────────────────────────────┐
  │ 3. Set color settings                   │
  └─────────────────────────────────────────┘
  ┌─────────────────────────────────────────┐
  │ 4. Configure weight server              │
  └─────────────────────────────────────────┘
  ┌─────────────────────────────────────────┐
  │ 5. Ticket settings                      │
  └─────────────────────────────────────────┘
  ┌─────────────────────────────────────────┐
  │ 6. Configure menu                       │
  └─────────────────────────────────────────┘
```
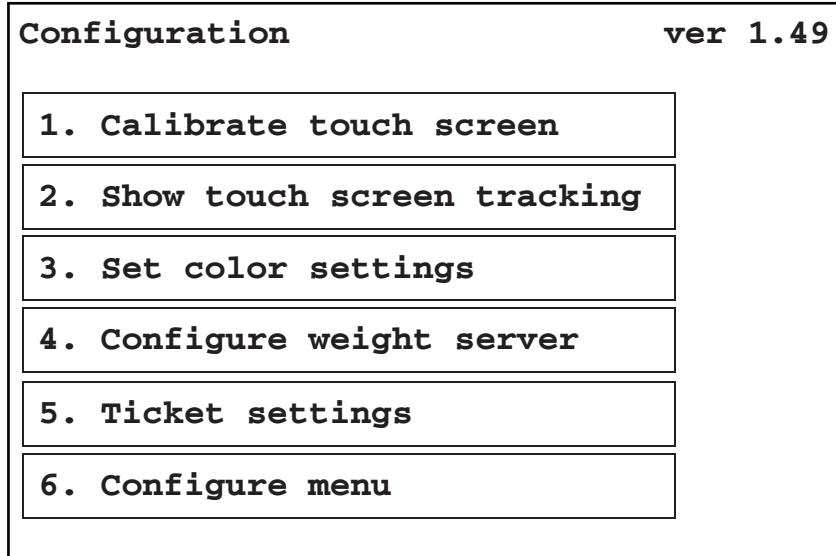
1. Calibrate touch screen

With the Configuration screen displayed, press the **1** key or use the Navigation Keys to select (highlight) **1. Calibrate touch screen** and then press the **ENTER** key. The display will change to show the **Touch screen calibration** screen.

1. With the Touch screen calibration screen displayed, the target, a plus sign "+" will be shown in the upper left corner of the display.

```
+




            Touch screen calibration
      Touch target or press ESC to quit



```
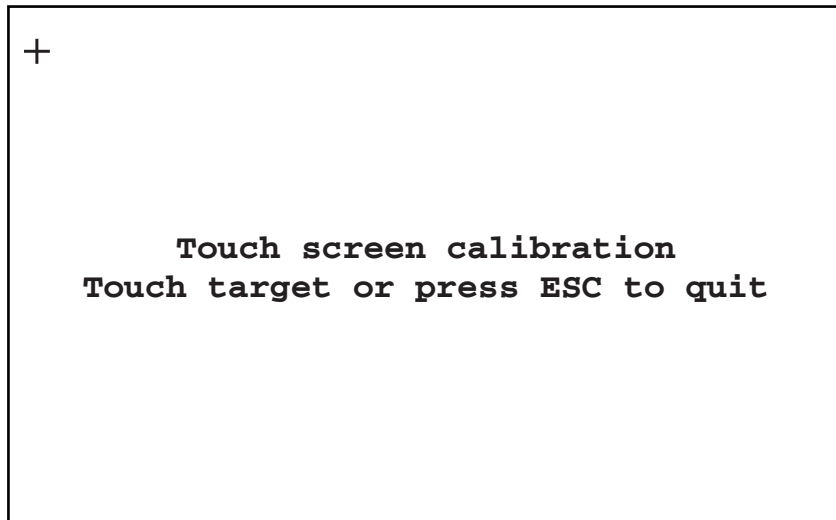
2. Press the target firmly and accurately at each location on the screen. The target will continue to move until the screen is calibrated.

IMPORTANT! Best accuracy will be obtained using a stylus (e.g. from a Pocket PC).

CONFIGURATION, CONT.

2. Show touch screen tracking

With the Configuration screen displayed, press the **2** key or use the Navigation Keys to select (highlight) **2. Show touch screen tracking** and then press the **ENTER** key. The display will change to show a tracking screen. Note that the screen will be blank except for a message (**Press [ESC] exit**) at the top center of the display.

```
                    Press [ESC] exit






```
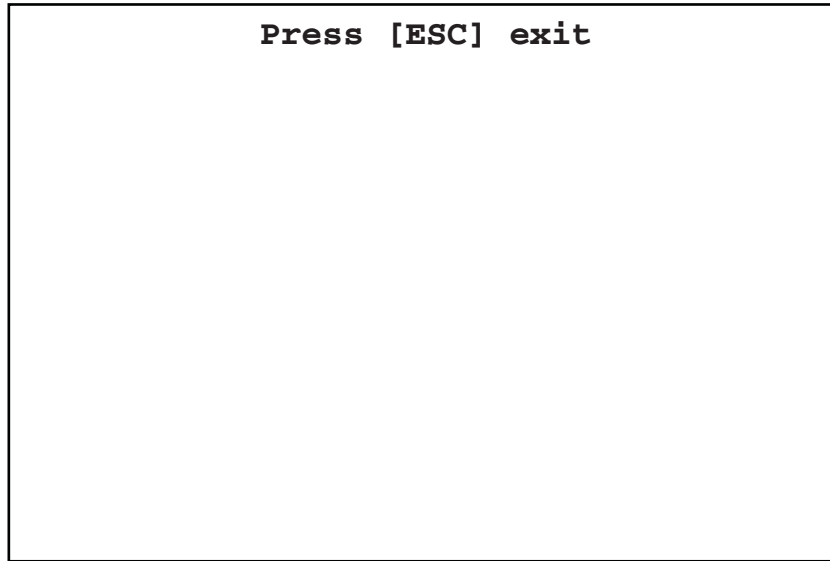
1. With the blank tracking screen displayed, touch the screen in several locations.

2. The target, a plus sign "+" will move to each location touched.

```
                    Press [ESC] exit
```
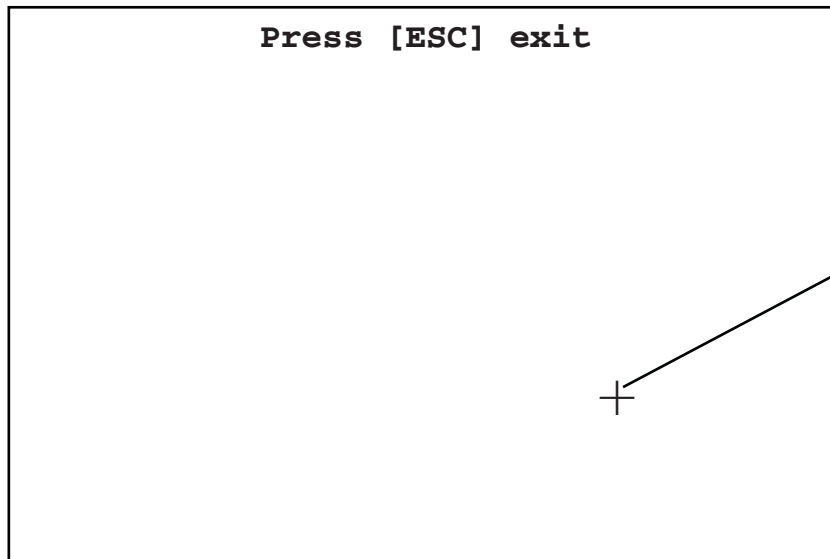
The + sign indicates the screen was touched here

```
                             +
```

3. After checking several locations on the screen, press the **ESC** key to return to the Configuration screen.

CONFIGURATION, CONT.

3. Set color settings

    With the Configuration screen displayed, press the **3** key or use the Navigation Keys to select (highlight) **3. Set color settings** and then press the **ENTER** key. The display will change to show the color selection screen.

> **1. Use application colors**
>
> **2. White on black**
>
> **3. Black on white**
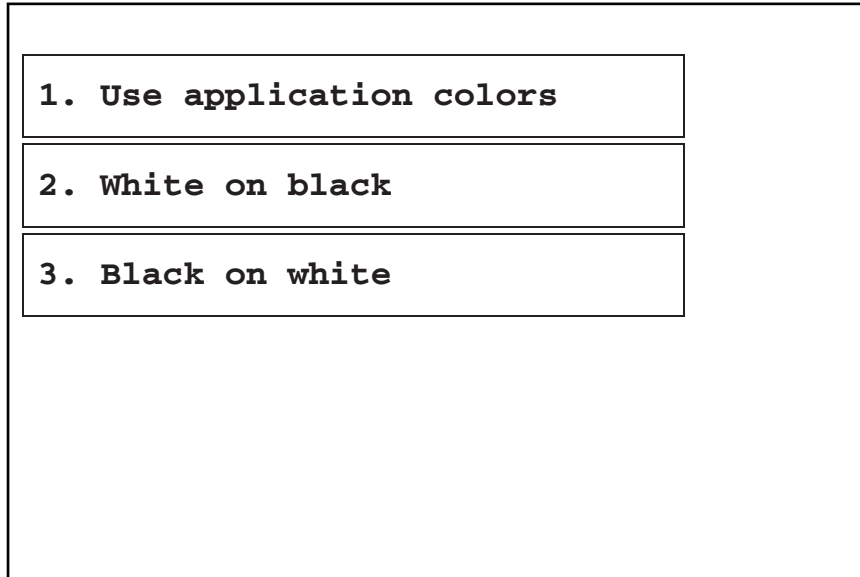
1. Use application color

    If the screen colors are to be controlled by the application program, press the **1** key or use the Navigation Keys to select (highlight) **1. Use application color** and then press the **ENTER** key. The screen will change to the new colors.

2. White on black

    If it is desired to have white characters on a black background for the screen colors, press the **2** key or use the Navigation Keys to select (highlight) **2. White on black** and then press the **ENTER** key. The screen will change to the white characters on a black background.

    White on black

3. Black on white

    If it is desired to have black characters on a white background for the screen colors, press the **3** key or use the Navigation Keys to select (highlight) **3. Black on white** and then press the **ENTER** key. The screen will change to a white background with black characters on it.

    Black on white

After setting the screen colors, press the **ESC** key to return to the Configuration screen.

CONFIGURATION, CONT.

4. Configure Weight Server

With the Configuration screen displayed, press the **4** key or use the Navigation Keys to select (highlight) **4. Configure Weight Server** and then press the **ENTER** key. The display will change to show the **Configure Weight Server** screen.

```
Configure Weight Server


    1. Configure TCP/IP Server

    2. Configure Serial Ports

    3. Electronic Talley Roll



```

1. Configure TCP/IP Server

With the Configure Weight Server screen displayed, press the **1** key or use the Navigation Keys to select (highlight) **1. Configure TCP/IP Server** and then press the **ENTER** key. The display will change to show the **Select TCP/IP Server** screen.

```
Select TCP/IP Server
Num Sc Type          Port

  1. 0 Custom         1100

  2. 1 On Demand      1101

        ** Add Server **


```

CONFIGURATION, CONT.

Select TCP/IP Server

　　With the Select TCP/IP Server screen displayed, press the **1** key or use the Navigation Keys to select (highlight) and then press the **ENTER** key to select Num 1. The display will change to show the **Setup TCP/IP Server 1** screen.

Setup TCP/IP Server 1

Enable:

　　With the Select TCP/IP Server 1 screen displayed, the current setting for the **Enable:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

　　Otherwise, press the **SPACE** key to toggle its status. Select YES* to enable TCP/IP Server 1 or NO to disable TCP/IP Server 1 and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

　　* If Yes is selected for **Enable:**, the following additional parameters will be shown (below the Enable: parameter) and requires data to be entered. Otherwise, press the **ENTER** key to return to the **Select TCP/IP Server** screen.

Port:

　　With the Select TCP/IP Server 1 screen displayed, the current setting for the **Port:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

　　Otherwise, use the numeric keys to enter the TCP/IP port number and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

Scale:

　　With the Select TCP/IP Server 1 screen displayed, the current setting for the **Scale:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

　　Otherwise, use the numeric keys to enter the scale number for the server to use and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

CONFIGURATION, CONT.

Type:

With the Select TCP/IP Server 1 screen displayed, the current setting for the `Type:` parameter will be shown. If the setting displayed is acceptable, press the **ENTER** key to return to the `Select TCP/IP Server` screen.

Otherwise, press the **SPACE** key to step through and select the communication type and then press the **ENTER** key to save the new setting and return to the `Select TCP/IP Server` screen. Available types are:

SMA	**Computer Fmt**	**SB80**	**SB200**
SB250	**SB250M**	**SB300**	**SB400**
SB500	**SB500M**	**Custom**	**On Demand**

Setup TCP/IP Server 2

With the Select TCP/IP Server screen displayed, press the **2** key or use the Navigation Keys to select (highlight) and then press the **ENTER** key to select Num 2. The display will change to show the `Setup TCP/IP Server 2` screen.

The setup parameters for TCP/IP Server 2 are the same as TCP/IP Server 1. Refer to the Setup TCP/IP Server 1 parameters.

** Add Server **

With the Select TCP/IP Server screen displayed, press the **A** key or use the Navigation Keys to select (highlight) and then press the **ENTER** key to select ** Add Server **. The display will change to show the `Setup TCP/IP Server 3` screen.

The setup parameters for adding an additional TCP/IP Server are the same as the setup for TCP/IP Server 1. Refer to the Setup TCP/IP Server 1 parameters.

CONFIGURATION, CONT.

2. Configure Serial Ports

With the Configure Weight Server screen displayed, press the **2** key or use the Navigation Keys to select (highlight) **2. Configure Serial Ports** and then press the **ENTER** key. The display will change to show the **Select Serial** screen.

```
Select Serial
Num Sc Type          Port

  1. 0 On Demand      COM1


          ** Add Serial **

```

Select Serial

With the Select Serial screen displayed, press the **1** key or use the Navigation Keys to select (highlight) and then press the **ENTER** key to select Num 1. The display will change to show the **Setup Serial 1** screen.

Setup Serial 1

Enable:

With the Select Serial 1 screen displayed, the current setting for the **Enable:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to toggle its status. Select YES[*] to enable the serial item or NO to disable the serial item and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

✱ If Yes is selected for **Enable:**, the following additional parameters will be shown (below the Enable: parameter) and requires data to be entered. Otherwise, press the **ENTER** key to return to the **Select Serial** screen.

CONFIGURATION, CONT.

Port:

With the Select Serial 1 screen displayed, the current setting for the **Port:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, press the **SPACE** key to step through and select the port to use for serial 1 and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. Available ports are:

COM1	COM2	COM3	USB-PRT1
USB-PRT2	USB-PRT3	USB-PRT4	USB-PRT5
USB-PRT6	USB-PC	NONE (blank)	

Scale:

With the Select Serial 1 screen displayed, the current setting for the **Scale:** parameter will be shown. If the setting displayed is acceptable, proceed to the next parameter.

Otherwise, use the numeric keys to enter the scale number for the serial port to use and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

Type:

With the Select Serial 1 screen displayed, the current setting for the **Type:** parameter will be shown. If the setting displayed is acceptable, press the **ENTER** key to return to the **Select Serial** screen.

Otherwise, press the **SPACE** key to step through and select the communication type and then press the **ENTER** key to save the new setting and return to the **Select Serial** screen. Available types are:

SMA	Computer Fmt	SB80	SB200
SB250	SB250M	SB300	SB400
SB500	SB500M	Custom	On Demand

** Add Serial **

With the Select Serial screen displayed, press the **A** key or use the Navigation Keys to select (highlight) and then press the **ENTER** key to select ** Add Serial **. The display will change to show the **Setup Serial 2** screen.

The setup parameters for adding an additional Serial port are the same as the setup for Serial 1. Refer to the Setup Serial 1 parameters.

CONFIGURATION, CONT.

Configuration of Weight Server Complete

To return to the Weight Screen and resume normal weighing operations, with the Select Serial screen (or the Select TCP/IP Server screen) displayed, press the Navigation Keys ◁ Left Arrow two (2) times. The display will change to show the Restart Weight Server screen.

```
Restart Weight Server

Restart Weight Server: N








Restart the weight server

```
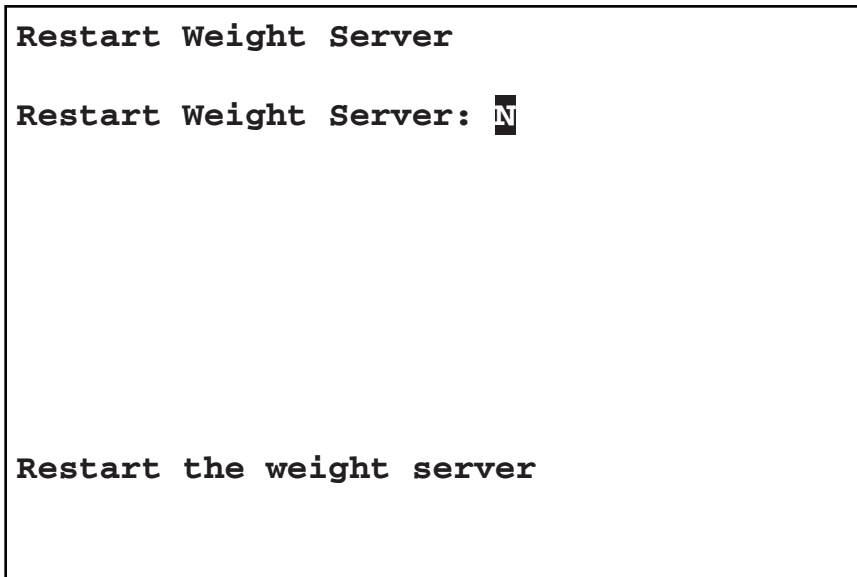
1. With the Restart Weight Sever screen displayed, the current setting `Restart Weight Server: N` will be shown. If you are finished with the Configuration parameters, press the **SPACE** key to toggle its status from `No` to `Yes` and then press the **ENTER** key to restart the weight server.

   Otherwise, press the **ENTER** key to return to the `Configuration` screen.

2. The display will change to show:

   `Stopping weight server`

   and then show:

   `Starting weight server`

   and then change to show the `Configuration` screen.

3. With the Configuration screen displayed, press the Navigation Keys ◁ Left Arrow to return to the `Application Menu`.

4. With the Application Menu displayed, press the key corresponding to the application to run and then press the **ENTER** key or use the Navigation Keys to select (highlight) the application to run and then press the **ENTER** key.

5. The application will be loaded and the display will change to the application screen.

TICKET SETTINGS

With the Application Menu displayed, press the **6** key or use the Navigation Keys to select (highlight) **6 Configuration** and then press the **ENTER** key. The display will change to show the **Configuration** screen.

5. Ticket settings

With the Configuration screen displayed, press the **5** key or use the Navigation Keys to select (highlight) **5. Ticket settings** and then press the **ENTER** key. The display will change to show the **Configure Ticket** screen.

Configure Ticket	
1. Standard	**6. Special 2**
2. Alternate	**7. Special 3**
3. First Pass	**8. Special 4**
4. Log	**9. Special 5**
5. Special 1	**A. Special 6**

IMPORTANT! The setup parameters for the following tickets are the same.

1. Standard	**4. Log**	**7. Special 3**	**A. Special 6**
2. Alternate	**5. Special 1**	**8. Special 4**	
3. First Pass	**6. Special 2**	**9. Special 5**	

After selecting the desired ticket to configure, refer to the following steps and parameters.

With the Configure Ticket screen displayed, press the key corresponding to the ticket to be configured and then press the **ENTER** key or use the Navigation Keys to select (highlight) the ticket to be configured and then press the **ENTER** key. The display will change to show the selected configure ticket screen.

Format:

With the configure ticket screen displayed, the current setting for **Format:** will be shown. If the setting displayed is acceptable, press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to return to the previous screen.

Otherwise, use the alphanumeric keys to enter the form name to use (up to 8 characters) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

TICKET SETTINGS, CONT.

`Port:`

With the configure ticket screen displayed, the current setting for the **`Port:`** parameter will be shown. If the setting displayed is acceptable, press the **ENTER** key to return to the previous screen.

Otherwise, press the **SPACE** key to step through and select the port to use for the standard ticket and then press the **ENTER** key to save the new setting and return to the previous screen. Available ports are:

COM1-RS232	**COM1-Bluetooth**	**COM2**	**COM3**
USB-PRT1	**USB-PRT2**	**USB-PRT3**	**USB-PRT4**
USB-PRT5	**USB-PRT6**	**USB-PC**	**Custom**＊

＊ If Custom is selected, an additional parameter (below the Port:) will be shown.

`Custom:`

With the configure ticket screen displayed and Custom selected for the Port: parameter, the current setting for **`Custom:`** will be shown. If the setting displayed is acceptable, press the **ENTER** key to return to the previous screen.

Otherwise, use the alphanumeric keys to enter the port name to use and then press the **ENTER** key to save the new setting and return to the previous screen.

`Ticket:`

With the Ticket Coordinates screen displayed, the current setting for the **`Ticket:`** parameter will be shown. If the setting displayed is acceptable, press the **ENTER** key to return to the previous screen.

Otherwise, press the **SPACE** key to step through and select the ticket to use and then press the **ENTER** key to save the new setting and return to the previous screen. Available tickets are:

Default＊	**Standard**	**Alternate**	**First Pass**
Log	**Special 1**	**Special 2**	**Special 3**
Special 4	**Special 5**	**Special 6**	

＊ If Default is selected, the display will change to the **`Configure tabs page 1`** screen. This is the screen to input the Print Tabs Settings.

TICKET SETTINGS, CONT.
PRINT TABS SETTING (General Format Information)

The general format for the input is:

Label: Row, **Col**, **Len**, **Label**

    Where:

        Row = the number of lines down.

        Col = the number of spaces to the right.

        Len = the number of data characters.

        Label = the characters identifying the data printed.

        NOTE! Enter 0 in **Row**, **Col** or **Len** to disable the data from printing.
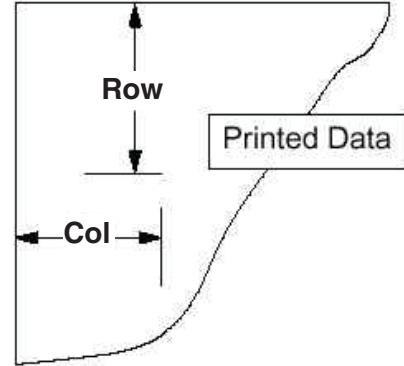
Configure tabs page 1

With the Ticket Coordinates screen displayed, and Default selected for the Ticket: parameter, the display will change to the **Configure tabs page 1** screen.

```
Configure tabs page 1
               Row   Col   Len   Label
Gross:          1     1     7    Gross:

Tare:           2     1     7     Tare:

Net:            3     1     7     Net:

Dsp Wt:         █     0     7

Cnv. Gross:     0     0     0

Cnv. Tare:      0     0     0

Cnv. Net:       0     0     0

Cnv. Dsp Wt:    0     0     0

Display wt row coordinate
```

If the setting displayed for each label is acceptable, press the **ENTER** key to advance to the **Configure tabs page 2** screen or press the press the ◁ Left Arrow to return to the previous screen.

Otherwise, use the numeric keys to enter the Row, Col and Len, pressing the ▷ Right Arrow to advance between each parameter and then press the ▷ Right Arrow to advance to the Label. Use the alphanumeric keypad for the Label characters.

Press the ▽ Down Arrow to advance to the next parameter.

NOTE! Use the △ UP Arrow key to "backup" to the previous coordinate or parameter.

TICKET SETTINGS, CONT.

Configure tabs page 2

With the Configure tabs page 1 screen displayed, press the **ENTER** key to advance to the **Configure tabs page 2** screen.

```
Configure tabs page 2
               Row   Col   Len   Label
G Accum:        0     0    10
N Accum:        0     0    10
Cnv G Accum:    0     0    0
Cnv N Accum:    0     0    0
Time:           5     1    8     Time:_
Date:           6     1    10    Date:
ID:             0     0    10
Consec #:       0     0    10
Time label
```

If the setting displayed for each label is acceptable, press the **ENTER** key to advance to the **Configure tabs page 3** screen or press the press the ◁ Left Arrow to return to the previous screen.

Otherwise, use the numeric keys to enter the Row, Col and Len, pressing the ▷ Right Arrow to advance between each parameter and then press the ▷ Right Arrow to advance to the Label. Use the alphanumeric keypad for the Label characters.

Press the ▽ Down Arrow to advance to the next parameter.

NOTE! Use the △ UP Arrow key to "backup" to the previous coordinate or parameter.

TICKET SETTINGS, CONT.

Configure tabs page 3

> With the Configure tabs page 2 screen displayed, press the **ENTER** key to advance to the **Configure tabs page 3** screen.

```
Configure tabs page 3
              Row   Col   Len   Label
Piece Cnt:     0     0     10

Tot Cnt:       0     0     10

ID 1:          0     0     10

ID 2:          0     0     10

ID 3:          0     0     10

Prompt 1:      0     0     10

Prompt 2:      0     0     10

Prompt 3:      0     0     10

Piece count row coordinate
```

> If the setting displayed for each label is acceptable, press the **ENTER** key to advance to the **Configure tabs page 4** screen or press the press the ◁ Left Arrow to return to the previous screen.
>
> Otherwise, use the numeric keys to enter the Row, Col and Len, pressing the ▷ Right Arrow to advance between each parameter and then press the ▷ Right Arrow to advance to the Label. Use the alphanumeric keypad for the Label characters.
>
> Press the ▽ Down Arrow to advance to the next parameter.
>
> **NOTE!** Use the △ UP Arrow key to "backup" to the previous coordinate or parameter.

TICKET SETTINGS, CONT.

Configure tabs page 4

With the Configure tabs page 3 screen displayed, press the **ENTER** key to advance to the **Configure tabs page 4** screen.

```
Configure tabs page 4
Header 1 - Row: ▓   Col:0
:
Header 2 - Row: 0   Col:0
:
Header 3 - Row: 0   Col:0
:
Header 4 - Row: 0   Col:0
:
Header 5 - Row: 0   Col:0
:


Header 1 row coord
```

If the setting displayed for each label is acceptable, press the **ENTER** key to advance to the **Configure tabs page 5** screen or press the press the ◁ Left Arrow to return to the previous screen.

Otherwise, use the numeric keys to enter the Row and pressing the ▷ Right Arrow to advance between each parameter and then press the ▽ Down Arrow to advance to the header description.

Use the alphanumeric keys to enter the description (up to 35 characters) for the header and then press the ▽ Down Arrow to advance to the next Header.

Continue using the above steps to enter the Row, Col and description for each Header, pressing the ▽ Down Arrow key to advance to the next line.

Note that pressing the △ UP Arrow key will "backup" to the previous parameter or line.

TICKET SETTINGS, CONT.

Configure tabs page 5

With the Configure tabs page 4 screen displayed, press the **ENTER** key to advance to the **Configure tabs page 5** screen.

```
Configure tabs page 5

Footer 1 - Row: 0    Col:0
:

Footer 2 - Row: 0    Col:0
:

Footer 3 - Row: 0    Col:0
:

Footer 4 - Row: 0    Col:0
:

Footer 5 - Row: 0    Col:0
:


Footer 1 row coord

```

If the setting displayed for each label is acceptable, press the **ENTER** key to advance to the **Configure tabs page 6** screen or press the press the ◁ Left Arrow to return to the previous screen.

Otherwise, use the alphanumeric keys to enter the description (up to 35 characters) for the first line of the header and then press the ▽ Down Arrow to advance to the next line. Note that pressing the △ UP Arrow key will "backup" to the previous line.

Continue using the alphanumeric keys to enter the description for each line of the Header and Footer, pressing the ▽ Down Arrow key to advance to the next line.

When the description for all lines of the Header and Footer have been entered, press the **ENTER** key to save the new settings and return to the **Configure Ticket** screen.

TICKET SETTINGS, CONT.

Configure tabs page 6

With the Configure tabs page 5 screen displayed, press the **ENTER** key to advance to the
Configure tabs page 6 screen.

```
Configure tabs page 6

Begin Print Codes
1:  _
2:
3:
4:
5:

End Print Codes
1:
2:
3:
4:
5:



Begin Print Codes 1

```

If the setting displayed for each line of the Begin Print Codes or the End Print Codes is
acceptable, press the **ENTER** key to return to the **Configure Ticket** screen.

Otherwise, use the alphanumeric keys to enter Begin Print Codes (up to 35 characters) for
the first line and then press the ▽ Down Arrow to advance to the next line. Note that
pressing the △ UP Arrow key will "backup" to the previous line.

Continue using the alphanumeric keys to enter the codes for each line of the Begin Print
Codes and End Print Codes, pressing the ▽ Down Arrow key to advance to the next line.

When all Begin and End Print Codes have been entered, press the **ENTER** key to save the
new settings and return to the **Configure Ticket** screen.

CONFIGURE APPLICATION MENU

With the Application Menu displayed, press the **6** key or use the Navigation Keys to select (highlight) **6 Configuration** and then press the **ENTER** key. The display will change to show the **Configuration** screen.

6. Configure menu

With the Configuration screen displayed, press the **6** key or use the Navigation Keys to select (highlight) **6. Configure menu** and then press the **ENTER** key. The display will change to show the **Configure Application Menu** screen.

```
┌─────────────────────────────────────────────────────────┐
│  Configure Application Menu                              │
│                                                          │
│  ┌────────────────────────────────────────────────┐     │
│  │  1. Enable/Disable menu items                  │     │
│  └────────────────────────────────────────────────┘     │
│  ┌────────────────────────────────────────────────┐     │
│  │  2. Configure custom menu items                │     │
│  └────────────────────────────────────────────────┘     │
│                                                          │
│                                                          │
│                                                          │
│                                                          │
│                                                          │
└─────────────────────────────────────────────────────────┘
```
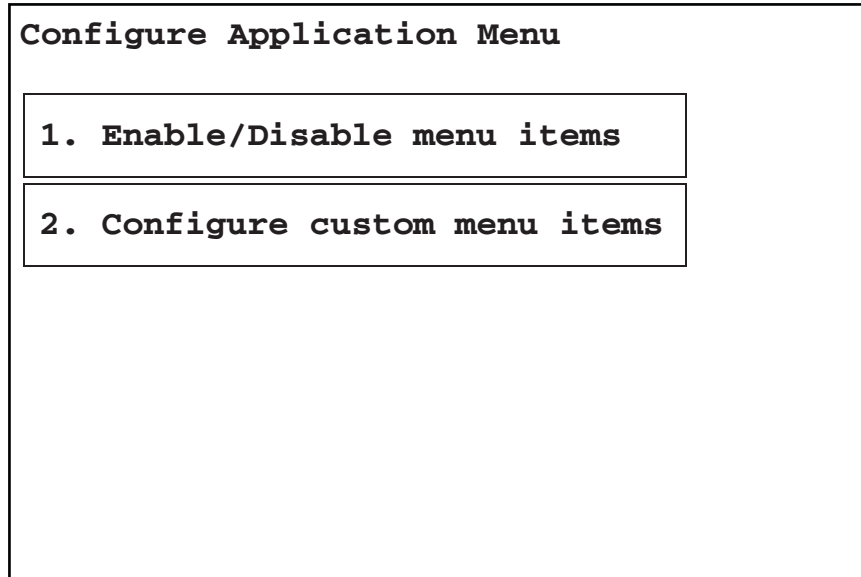
1. Enable/Disable menu items

With the Configure Application Menu displayed, press the **1** key or use the Navigation Keys to select (highlight) **1. Enable/Disable menu items** and then press the **ENTER** key. The display will change to show the **Configure Menu** screen.

Application:

With the Configure Menu screen displayed, the current setting for the **Application:** parameter will be shown. If the setting displayed is acceptable, press the ▽ Down Arrow to proceed to the next parameter.

Otherwise, press the **SPACE** key to step through and select the applications to be shown on the Application Menu screen and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. Available applications are:

All	**None**	**Truck Storage**
DFC Batcher	**Checkweigher**	**788 Compatibility**

CONFIGURE APPLICATION MENU, CONT.

Custom Activity:

With the Configure Menu screen displayed, the current setting for the **Custom Activity:** parameter will be shown. If the setting displayed is acceptable, press the ▽ Down Arrow to proceed to the next parameter.

Otherwise, press the **SPACE** key to toggle its status (select ALL or NONE) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

Custom Activity: All	**Custom Activity: None**
Custom Activity is enabled for ALL applications.	With None selected, Custom Activity is disable.

File Manager:

With the Configure Menu screen displayed, the current setting for the **File Manager:** parameter will be shown. If the setting displayed is acceptable, press the ▽ Down Arrow to proceed to the next parameter.

Otherwise, press the **SPACE** key to toggle its status (select YES or NO) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

File Manager: Yes	**File Manager: No**
Select Yes to include the File Manager selection on the Application Menu.	The File Manager selection is not displayed on the Application Menu.

Transfer:

With the Configure Menu screen displayed, the current setting for the **Transfer:** parameter will be shown. If the setting displayed is acceptable, press the ▽ Down Arrow to proceed to the next parameter.

Otherwise, press the **SPACE** key to toggle its status (select YES or NO) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

Transfer: Yes	**Transfer: No**
Select Yes to include the Transfer Utility selection on the Application Menu.	The Transfer Utility selection is not displayed on the Application Menu.

CONFIGURE APPLICATION MENU, CONT.

`Slide Show:`

   With the Configure Menu screen displayed, the current setting for the **`Slide Show:`** parameter will be shown. If the setting displayed is acceptable, press the ▽ Down Arrow to proceed to the next parameter.

   Otherwise, press the **SPACE** key to toggle its status (select YES or NO) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

`Slide Show: Yes`	**`Slide Show: No`**
Select Yes to include the Slide Show selection on the Application Menu.	The Slide Show selection is not displayed on the Application Menu.

`Reboot:`

   With the Configure Menu screen displayed, the current setting for the **`Reboot:`** parameter will be shown. If the setting displayed is acceptable, press the ▽ Down Arrow to proceed to the next parameter.

   Otherwise, press the **SPACE** key to toggle its status (select YES or NO) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen.

`Reboot: Yes`	**`Reboot: No`**
Select Yes to include the Return to Startup selection on the Application Menu.	The Return to Startup selection is not displayed on the Application Menu.

`Auto run:` *

   With the Configure Menu screen displayed, the current setting for the **`Auto run:`** parameter will be shown. If the setting displayed is acceptable, press the **ENTER** key or the Navigation Keys ◁ Left Arrow to return to the previous screen.

   Otherwise, press the **SPACE** key to step through and select the application to auto run (automatically load and run from the Application Menu screen) and then press the ▽ Down Arrow to advance to the next parameter or press the **ENTER** key to save the new setting and return to the previous screen. Available applications are:

None	**Truck / ID Storage**	**DFC Batcher**
Checkweigher	**788 Compatibility**	**Configuration**
File Manager	**Transfer**	**Slide Show**
Return to Startup		

* If an application is selected to "auto run", an additional parameter (below the Auto run:) will be shown.

CONFIGURE APPLICATION MENU, CONT.

`Auto run secs:`

    With the Configure Menu screen displayed and an application selected to "auto run", the current setting for **`Auto run secs:`** will be shown. If the setting displayed is acceptable, press the **ENTER** key to return to the previous screen.

    Otherwise, use the numeric keys to enter the number of seconds before the application automatically loads and runs (countdown timer on the Application Menu screen) and then press the **ENTER** key to save the new setting and return to the previous screen. Supported countdown times are 2 through 90 seconds.

APPLICATION MENU SCREEN

The Application Menu screen may consist of more than one screen. Press the NEXT >>> key to view additional selections. Press the <<< Prev key to return to the first screen.

```
Application Menu                    ver 1.17
┌────────────────────────────────────────┐
│ 1. Truck / ID Storage                  │
├────────────────────────────────────────┤
│ 2. DFC Batcher                         │
├────────────────────────────────────────┤
│ 3. Checkweigher                        │
├────────────────────────────────────────┤
│ 4. 788 Compatibility                   │
├────────────────────────────────────────┤
│ 5. Configuration                       │
├────────────────────────────────────────┤
│ 6.                                     │
└────────────────────────────────────────┘
                              ┌───────────┐
                              │ Next >>>  │
                              └───────────┘
IP: 90.1.2.165
```

With the Application Menu displayed, press the **Next >>>** key or use the Navigation Keys to select (highlight) **Next >>>** and then press the **ENTER** key. The display will change to show the **Application Menu** screen for the additional applications.

```
Application Menu                    ver 1.09
┌────────────────────────────────────────┐
│ 1. File Manager                        │
├────────────────────────────────────────┤
│ 2. Slide Show                          │
└────────────────────────────────────────┘




┌─────────────┐
│ <<< Prev    │
└─────────────┘
IP: 90.1.2.165
```

TROUBLESHOOTING

The 825 is equipped with diagnostic software that tests various portions of the indicator's circuitry and verifies proper operation. Should a problem be detected, an error or status message will be displayed alerting the operator to that condition. The following lists these status messages and errors and their meaning.

Weight Status Messages (Displayed concurrently with weight)

MOTION
> The scale is in motion based on motion range parameter.

BELOW ZERO
> The gross scale weight reading is below zero.

CENTER ZERO
> The gross scale weight reading is at center of zero.

Weight Status Messages (Displayed in place of weight)

OVER CAPACITY
> The scale weight is over capacity (104% of calibrated capacity).

WEIGHT ERROR
> Weight input signal is out of acceptable range. This may indicate a disconnected or failing load cell.

> ⚠ **IMPORTANT!** The Totalizer display shows the individual weighing element status in abbreviated form **— MO** = MOTION, **BZ** = BELOW ZERO, **CZ** = CENTER ZERO, **OVERCAP** = OVER CAPACITY. The Total weight display status is displayed as above.

Operation Messages (Momentarily displayed after operator attempts an action)

CANNOT ZERO – MOTION
> Attempt to zero scale while in motion.

CANNOT ZERO – OUT OF RANGE
> Attempt to zero beyond allowed range.

Cannot set tare
> Tare value invalid.

Cannot change weight units
> Scale configured for single weight units: custom, lb, or kg.

TROUBLESHOOTING, CONT.

Operation Messages, Cont.

Cannot show net – no tare
The "NET" key operation to show gross, tare, and net weights is not permitted when there is no tare weight.

Cannot print MOTION
 Attempt to print ticket while scale is in motion.

Cannot print OVER CAPACITY
Attempt to print ticket while scale is over capacity.

Cannot print BELOW ZERO
Attempt to print ticket while scale is below zero.

Cannot print WEIGHT ERROR
Attempt to print ticket during WEIGHT ERROR condition.

Operator not allowed to change scale
The current operator login does not permit changing the current scale selection.

Operator not allowed tare
The current operator login does not permit using the keypad tare selection.

Operator not allowed push button tare
The current operator login does not permit using the push-button tare selection.

Operator not allowed to set date/time
The current operator login does not permit setting the date/time.

Operator not allowed to chg units
The current operator login does not permit changing the current unit selection.

Operator not allowed to print
The current operator login does not permit using the print function.

TROUBLESHOOTING, CONT.

Error Codes (Diagnostic Messages)

ERROR – LOST
COMMUNICATION
WITH MAINBOARD

The operator interface board did not receive response from main board before timeout. This could indicate a problem with the main board processor, power connections, or connections between main board and operator interface board.

Error Codes (During Startup)

Mainboard Test Program

The main board is loaded with diagnostic test software. Weight indicator functions are not possible.

Cannot receive status from mainboard

The operator interface board requested status from the main board and there was no response before a timeout occurred. This could indicate a problem with the main board processor, power connections, or connections between main board and operator interface board.

Mainboard status: good

Initial startup response from main board indicates no problems.

Mainboard status: A000

Initial startup response from main board indicates main board bootloader software is present, but main board program is not present or damaged. Weight indicator functions are not possible.

SIB status: good

Initial startup response from main board indicates no problems with scale interface card.

Press ENTER or self-test in X secs (X = countdown)

Operator interface board flash memory indicates the unit has not completed initial board tests successfully. Press enter before countdown completes to bypass testing. However, this message will continue to appear upon power-up until testing is completed successfully.

Error Codes (During View Audit Trail)

Mnbd reports 01 EEPROM corrupt

The checksum failed. There may be a problem with the EEPROM chip on the mainboard.

TROUBLESHOOTING, CONT.

Error Codes (During Add Operator)

`Cannot use same login as existing operator`

An attempt was made to enter a new operator using the same login as an existing operator.

`No space for new operator`

An attempt was made to add a new operator when all operator login spaces are filled. The Model 825 supports a total of eight operators. One operator is the Administrator (with full access to all functions and features). The remaining seven are for users and can be configured to allow or prevent access to various functions and features.

Error Codes (During Edit Operator / Delete Operator / Set Default Operator)

`Operator not found`

The operator login entered does not exist.

`Cannot delete ADMIN operator`

An attempt was made to delete the administer login. The administrator login cannot be deleted.

Before You Call Service

The Model 825 indicator has been designed to provide you with years of trouble-free operation. In spite of this, troubles sometimes happen. Before calling for service assistance, you should make some initial checks to verify that a problem does exist. The following describes several types of symptoms along with suggested remedies.

PROBLEM	POSSIBLE SOLUTIONS
Display does not turn on	Is the AC power cord fully inserted into the wall receptacle? Check wall receptacle for proper AC power. Try another electrical appliance in the same receptacle. Does it work? Check the circuit breaker. Has there been power failure?
Incorrect weight displayed	Has the indicator been calibrated? Insure that the scale platform is not touching an adjacent object. Check the load cell connector wiring. If using four (4) wire load cells, insure the sense lead jumpers (J1 and J3) on the 825-SIB are installed. Have proper operation procedures been followed?
Indicator will not display weight	Refer to Weight Status Messages section and make certain that the **OVER CAPACITY** message is not displayed. If so, and scale is not loaded, perform the calibration procedure.

DIAGNOSTICS

Startup Screen

1. Press the **ON/OFF** key to turn on the 825.
2. The display will perform a short self-test and then change to the Startup screen. Note that when the 825 is initially started, a countdown starting at 7 seconds will appear to the right of **1. Application program**. When the countdown is complete, the application program will automatically start.
3. To allow unlimited time to review the Startup screen, press the Navigation Keys ▽ Down Arrow or △ UP Arrow to stop the countdown.
4. The following describes the Startup screen.

```
CARDINAL  825   Loader: 1.08s
                       OS: 10.10.21
Mainboard       ver: 1.17 status: good
Option cards:   2 slots: ▯▯▯▯▯▯▯▯▯▯
Slot:  1 SIB    ver: 0.06 status: good
Slot:  2 DIO    ver: 0.02 status: good




Press:

1. Application program

2. Standard indicator

3. Legal metrology information / Setup

MAC Address: 00:CF:53:29:CF:01
```
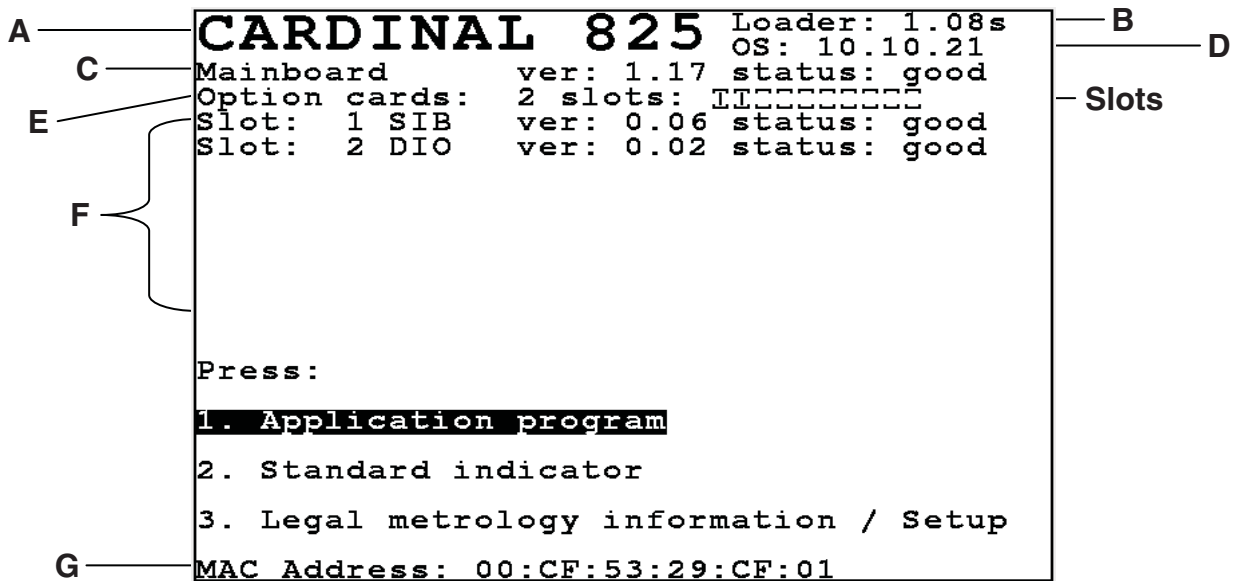
A. The top left of the diagnostic screen displays the indicator model number, Cardinal 825.

B. The top right item identifies the version of the boot loader software (e.g., Loader: 1.08s).

C. This is the main board software version and status report. The main board software performs some diagnostics upon startup, and will show **status: good** if no errors are detected. If an error is detected, a value will be displayed instead of **good**. Refer to the Troubleshooting section of this manual for more information.

D. This is the operating system version (e.g., OS: 10.10.21).

E. This line identifies how many option cards are installed into the main board and what slots they are installed in. A graphic representation of the 10 slots is shown with the filled ones indicator. From the left to right, the slots are numbered one through ten.

F. This part of the screen lists the installed option cards. Each option card is shown on one line along with the version and status of the card. The status will show **good** if no error has been detected or an error code if there is an error. Refer to the Troubleshooting section of this manual for more information.

G. This is the MAC Address of the indicator.

DIAGNOSTICS, CONT.

To Begin Diagnostics

With the Startup screen showing, press the Navigation Keys ▽ Down Arrow to "advance" to (highlight) the `Setup menu` option and then press the **ENTER** key or press the **3** key to select the `Setup menu` option. The display will change to show the `Setup Menu` screen.

> **IMPORTANT!** If the Login and Password protection feature has been enable, the `Login` screen will be displayed instead of the `Setup Menu` screen. Enter the login and then press the ▽ Down Arrow to advance to the password prompt. Enter the password and then press the **ENTER** key to proceed to the Setup Menu.

```
Setup Menu
Press:
1.  Date/Time
2.  Communication
3.  Calibration
4.  Update software menu
5.  Preferences
6.  Diagnostics
7.  Operators



MAC Address: 00:CF:53:29:CF:01
```

Diagnostic Menu

> With the Setup Menu displayed, press the **6** key or use the Navigation Keys to select (highlight) `6. Diagnostics` and then press the **ENTER** key. The display will change to show the `Diagnostics Menu` screen.

```
Diagnostics Menu
Press:
1.  Mainboard comm. test
2.  Mainboard I/O test
3.  SDRAM test
4.  NOR Flash test
```

DIAGNOSTICS, CONT.

Mainboard comm test

With the Diagnostics Menu displayed, press the **1** key or use the Navigation Keys to select (highlight) **1. Mainboard comm. test** and then press the **ENTER** key. The display will change to show the **Mainboard comm. test** screen.

```
Mainboard comm. test
Testing    Action     Address     Errors
```

Test Mainboard I/O

With the Diagnostics Menu displayed, press the **2** key or use the Navigation Keys to select (highlight) **2. Mainboard I/O test** and then press the **ENTER** key. The display will change to show the **Test Mainboard I/O** screen.

```
Test Mainboard I/O

This test cycles digital outputs and
reads inputs. Loop-back connections
are required to prevent errors.

I/O Code From:      0

I/O Code To:        15

Card (0 mnbd):      0




Enter the starting code
out1=1,out2=2,out3=4,out4=8
example 5=out1 and 3
```

DIAGNOSTICS, CONT.

SDRAM Test

With the Diagnostics Menu displayed, press the **3** key or use the Navigation Keys to select (highlight) `3. SDRAM test` and then press the **ENTER** key. The display will change to show the `Test SDRAM` screen.

```
Test SDRAM

Address from:        40020000

Address to:          41F7FFFF

Address increment: 00000001

Starting value:      0

Value increment:     1




Enter the starting address
in hexadecimal.

```

NOR Flash Test

With the Diagnostics Menu displayed, press the **4** key or use the Navigation Keys to select (highlight) `4. NOR Flash test` and then press the **ENTER** key. The display will change to show the `Test NOR Flash` screen.

```
Test NOR Flash
This test ERASES the boot-loader
and operating sytem. This test must
be performed only at properly equipped
programming stations.


NOR test password: _




Enter the password

```

✳ ✳ ✳ WARNING! ✳ ✳ ✳

Performing the `Test NOR Flash` test will ERASE the boot-loader and operating system. This test must be performed only at properly equipped programming stations.

FINE SPAN ADJUSTMENT

If after performing linearization testing, an error in the overall weight (span setting of the scale) or an error in a specific range of weight is found, adjustments can be made using the procedures described below.

1. Press the **ON/OFF** key to turn on the 825. The display will perform a short self-test and then change to the Startup screen showing the software versions and diagnostics of the option cards.

2. Press the Navigation Keys ▽ Down Arrow to "advance" to (highlight) the `Legal metrology information / Setup` option and then press the **ENTER** key or press the **3** key to select the `Legal metrology information / Setup` option. The display will change to show the `Legal metrology information / Setup` screen.

   IMPORTANT! If the Login and Password protection feature has been enable, the `Login` screen will be displayed instead of the `Legal metrology information / Setup` screen. Enter the login and then press the ▽ Down Arrow to advance to the password prompt. Enter the password and then press the **ENTER** key to proceed to the Setup Menu.

3. With the Setup Menu displayed, press the **3** key or use the Navigation Keys to select (highlight) `3. Calibration` and then press the **ENTER** key. The display will change to show the `Setup Scale Number` screen.

4. With the Setup Scale Number screen displayed, verify the correct scale number is shown and then press the **ENTER** key. Otherwise, use the numeric keys to enter the scale number and then press the **ENTER** key.

5. The display will change to show the `Scale 1 – Calibration Options` screen.

6. From the Scale 1 – Calibration Options screen, press the **3** key or use the Navigation Keys to select (highlight) `3. Fine Span` and then press the **ENTER** key.

7. With the `Scale 1 – Fine Span` screen displayed, place a calibrated test weight on the scale.

   Use the Navigation Keys to select (highlight) the Fine Span adjustment option and then press the **ENTER** key to perform the function or;

   > Press the **U** key (U. Up) to increase displayed weight.

   > Press the **D** key (D. Down) to decrease the displayed weight,

   > Press the **Z** key (Z. Zero) to zero the scale.

   > Press the **Q** key (Q. Quit) to save the current settings and Quit.

   The display will return to the `Scale 1 – Calibration Options` screen.

FINE SPAN ADJUSTMENT, CONT.

If **2nd Order Linearization** was enabled and the **Num Cal Pts** parameter is set for 2 or more, then a **COEFF** option will be added to the Fine Span screen. This option is used to adjust the displayed weight after testing has shown an error in a specific range of weight.

Press the **C** key or use the Navigation Keys to select (highlight) the **Coeff** option and then press the **ENTER** key to proceed to the **Coefficient** screen.

Linear Coefficient:
   The Linear Coefficient is applied to the load cell signal to calculate weight. If the current setting displayed for this coefficient is acceptable, press the ▽ Down Arrow to advance to the **2nd Order Coeff:** parameter.

   Otherwise, use the numeric keys to enter a new Linear Coefficient and then press the ▽ Down Arrow to advance to the next parameter.

2nd Order Coeff:
   This coefficient is applied to the square of the load cell signal to calculate weight. If the current 2nd Order Coeff setting displayed is acceptable, press the ▽ Down Arrow to advance to the **Tweak low weight:** parameter.

   Otherwise, use the numeric keys to enter a new 2nd Order Coeff and then press the ▽ Down Arrow to advance to the next parameter.

⚠ **WARNING! Changing the Linear Coefficient or the 2nd Order Coeff will affect the indicator's ability to display the proper weight. Please consult the factory before making any changes.**

Tweak low weight:
   This is the low end of the range of weight that requires adjusting. For example, if after performing linearization testing, the displayed weight is 5 lbs low between 10,000 lbs and 15,000 lbs, the value for the tweak low weight is 10000.

   If the setting displayed is acceptable, press the ▽ Down Arrow to advance to the **Tweak high weight:** parameter.

   Otherwise, use the numeric keys to enter the tweak low weight and then press the ▽ Down Arrow to advance to the next parameter.

Tweak high weight:
   This is the high end of the range of weight that requires adjusting. Using the example above, the value for the tweak high weight is 15000.

   If the setting displayed is acceptable, press the ▽ Down Arrow to advance to the **Tweak weight:** parameter.

   Otherwise, use the numeric keys to enter the tweak high weight and then press the ▽ Down Arrow to advance to the next parameter.

FINE SPAN ADJUSTMENT, CONT.

Tweak weight:

This is the amount of weight that needs to be added (or subtracted) from the range of weight to bring the displayed weight into tolerance. Again, using the example above, the Tweak Weight would be 5.

If the setting displayed is acceptable, press the **ENTER** key to return to the **Scale 1 – Fine Span** screen.

Otherwise, use the numeric keys to enter a new tweak weight and then press the **ENTER** key to return to the **Scale 1 – Fine Span** screen.

EVENT COUNTERS

A Category 1 Event Counter is provided on the 825 with two counters that increment when a change is made to features that are required by NTEP or OIML to be sealed. One counter is designated for calibration parameters and one is designated for configuration changes as required in NCWM Publication 14, 2007. Each event counter has a capacity to record 999 changes. The data for the counters is maintained in non-volatile memory and can be viewed by a weights and measures inspector. When selected, the display will show the number of changes and the date and time of the last update to the Calibrate and Config counters.

To View the Event Counters

1. Press the **ON/OFF** key to turn on the 825. A self-test will be performed showing the software versions and status of the option cards and then display the Startup screen.

```
CARDINAL 825  Loader: 1.08s
                     OS: 10.10.21
Mainboard      ver: 1.17 status: good
Option cards:  2 slots: II_____
Slot:  1 SIB   ver: 0.06 status: good
Slot:  2 DIO   ver: 0.02 status: good




Press:

1. Application program

2. Standard indicator

3. Legal metrology information / Setup

MAC Address: 00:CF:53:29:CF:01
```

2. Press the Navigation Keys ▽ Down Arrow to "advance" to (highlight) the `Legal metrology information / Setup` option and then press the **ENTER** key or press the **3** key to select the `Legal metrology information / Setup` option. The display will change to show the `Legal metrology information / Setup` screen.

```
Legal metrology information / Setup

Press:

1. View event counters

2. View certifications / ID information

3. Setup menu








MAC Address: 00:CF:53:29:CF:01
```

EVENT COUNTERS, CONT.

3. With the Legal metrology information / Setup displayed, press the **1** key or press the **ENTER** key. The display will change to show the `Event Counters` screen.

```
Event Counters


                    Last Update
            Count    Date      Time

Calibrate       1 10/26/2010 03:21:23 p.m.

Config          2 10/26/2010 03:20:38 p.m.

Press any key or 'P' to print
```

4. After viewing the Event Counters, press the **P** key to print the counters (using COM1 at the default baud rate) or press any key to return to the `Legal metrology information / Setup` screen.

Return to Normal Operations

To return to the Weight Screen and resume normal weighing operations, with the Legal metrology / Setup screen displayed, press the Navigation Keys ◁ Left Arrow to return to the Startup screen.

```
CARDINAL 825 Loader: 1.08s
                       OS: 10.10.21
Mainboard        ver: 1.17 status: good
Option cards:    2 slots: II
Slot:  1 SIB     ver: 0.06 status: good
Slot:  2 DIO     ver: 0.02 status: good




Press:

1. Application program

2. Standard indicator

3. Legal metrology information / Setup

MAC Address: 00:CF:53:29:CF:01
```

CERTIFICATIONS / ID INFORMATION

To View the Certifications / ID Information

1. Press the **ON/OFF** key to turn on the 825. A self-test will be performed showing the software versions and status of the option cards and then display the Startup screen.

```
CARDINAL 825  Loader: 1.08s
                OS: 10.10.21
Mainboard       ver: 1.17 status: good
Option cards:   2 slots: II▯▯▯▯▯▯▯▯
Slot:  1 SIB    ver: 0.06 status: good
Slot:  2 DIO    ver: 0.02 status: good




Press:

1. Application program

2. Standard indicator

3. Legal metrology information / Setup

MAC Address: 00:CF:53:29:CF:01
```

2. Press the Navigation Keys ▽ Down Arrow to "advance" to (highlight) the `Legal metrology information / Setup` option and then press the **ENTER** key or press the **3** key to select the `Legal metrology information / Setup` option. The display will change to show the `Legal metrology information / Setup` screen.

```
Legal metrology information / Setup

Press:

1. View event counters

2. View certifications / ID information

3. Setup menu








MAC Address: 00:CF:53:29:CF:01
```

3. With the Legal metrology information / Setup displayed, press the **2** key to select `View certifications / ID information` or press the ▽ Down Arrow and then the **ENTER** key to select `View certifications / ID information`. The display will change to show the `Certifications / ID Information` screen.

```
Certifications / ID Information

NTEP certificate:    08-046

CANADA certificate: AM-5700C

OIML certificate:    DK0199.160


Serial Number:

Sales Order:

Press any key




MAC Address: 00:CF:53:29:CF:01
```

5. After viewing the Certifications / ID Information, press any key to return to the `Legal metrology information / Setup` screen.

Return to Normal Operations

To return to the Weight Screen and resume normal weighing operations, with the Legal metrology / Setup screen displayed, press the Navigation Keys ◁ Left Arrow to return to the Startup screen.

```
CARDINAL 825  Loader: 1.08s
               OS: 10.10.21
Mainboard      ver: 1.17 status: good
Option cards:  2 slots: II☐☐☐☐☐☐☐☐
Slot:  1 SIB   ver: 0.06 status: good
Slot:  2 DIO   ver: 0.02 status: good





Press:

1. Application program

2. Standard indicator

3. Legal metrology information / Setup
MAC Address: 00:CF:53:29:CF:01
```

ELECTRONIC TALLEY ROLL (ETR) FILE

The 825 is equipped with an Electronic Talley Roll (ETR) file, which stores transaction data each time the indicator receives a Talley command from the computing peripheral. The data is maintained in non-volatile memory for viewing by a weights and measures inspector.

Each time the indicator receives an ETR request (SMA XT command), an internal consecutive transaction number (that cannot be modified), the date, time, and the current weight will be stored in memory. The 825 has memory capacity to store up to 7000 transactions in the ETR file. Note that when its capacity is reached, the newest transaction will replace the oldest.

To View the Electronic Talley Roll (ETR) File

1. Press the **ON/OFF** key to apply power to the 825. The display will perform a short self-test and then change to the Startup screen showing the software versions and diagnostics of the option cards.

2. When the 825 is initially started, a countdown staring at 7 seconds will appear to the right of **1. Application Program**. Allow the countdown to complete or press the **ENTER** key or press the **1** key to select the **Application Program** option. The display will change to show:

        Starting application mode

    and then change to show:

        Cardinal 825-loading...

            Starting...

    and then change to show the **Application Menu** with the countdown seconds appearing to the right of the last menu selection.

```
┌─────────────────────────────────────────────┐
│ Application Menu                  ver 1.17   │
│ ┌───────────────────────────────────────────┐ │
│ │ 1. Truck / ID Storage                     │ │
│ ├───────────────────────────────────────────┤ │
│ │ 2. DFC Batcher                            │ │
│ ├───────────────────────────────────────────┤ │
│ │ 3. Checkweigher                           │ │
│ ├───────────────────────────────────────────┤ │
│ │ 4. 788 Compatibility                      │ │
│ ├───────────────────────────────────────────┤ │
│ │ 5. Configuration                          │ │
│ ├───────────────────────────────────────────┤ │
│ │ 6. File Manager                           │ │
│ ├───────────────────────────────────────────┤ │
│ │ 7. Slide Show                  (secs X)   │ │
│ └───────────────────────────────────────────┘ │
│ IP: 90.1.2.165                               │
└─────────────────────────────────────────────┘
```

ELECTRONIC TALLEY ROLL (ETR) FILE, CONT.

Configuration

3. With the Application Menu displayed, press the **5** key or use the Navigation Keys to select (highlight) **5. Configuration** and then press the **ENTER** key. The display will change to show the **Configuration** screen.

```
Configuration                    ver 1.49


  1. Calibrate touch screen

  2. Show touch screen tracking

  3. Set color settings

  4. Configure weight server

  5. Ticket settings

  6 Configure menu


```

4. Configure Weight Server

With the Configuration screen displayed, press the **4** key or use the Navigation Keys to select (highlight) **4. Configure Weight Server** and then press the **ENTER** key. The display will change to show the **Configure Weight Server** screen.

```
Configure Weight Server


  1. Configure TCP/IP Server

  2. Configure Serial Ports

  3. Electronic Talley Roll




```

ELECTRONIC TALLEY ROLL (ETR) FILE, CONT.

3. Electronic Talley Roll

With the Configure Weight Server screen displayed, press the **3** key or use the Navigation Keys to select (highlight) **3. Electronic Talley Roll** and then press the **ENTER** key. The display will change to show the **Select ETR Range** screen.

Select ETR Range

From:

With the Select ETR Range screen displayed, the setting for **From:** (the ETR range starting number) will be shown. If the number displayed is acceptable, press the ▽ Down Arrow to proceed to the **To:** parameter.

Otherwise, use the numeric keys to enter the ETR starting number and then press the ▽ Down Arrow to "advance" to the **To:** parameter.

To:

With the Select ETR Range screen displayed, the setting for **To:** (the ETR range ending number) will be shown. If the number displayed is acceptable, press the **ENTER** key to proceed to the **ETR Report** screen.

Otherwise, use the numeric keys to enter the ETR ending number and then press the **ENTER** key to proceed to the **ETR Report** screen.

Output:

With the Select ETR Range screen displayed, the current setting for the **Output:** parameter will be shown. If the setting displayed is acceptable, press the **ENTER** key to proceed to the **ETR Report** screen.

Otherwise, press the **SPACE** key to toggle its status (select View or Print).

If Print is selected, press the ▽ Down Arrow to advance to the next parameter and then press the **SPACE** key to select the Output port. Available output ports are:

COM1-RS232	**COM1-Bluetooth**	**COM2**
COM3	**USB-PRT1**	**USB-PRT2**
USB-PRT3	**USB-PRT4**	**USB-PRT5**
USB-PRT6		

When the desired output port has been selected, press the **ENTER** key to proceed to the **ETR Report** screen.

ELECTRONIC TALLEY ROLL (ETR) FILE, CONT.

ETR Report

After viewing the ETR Report for the number or range of numbers entered, press any key to return to the `Select ETR Range` screen.

```
ETR Report

  Num     Date        Time        Weight



Press any key




```

Return to Normal Operations

To return to the Weight Screen and resume normal weighing operations, with the Select ETR Range screen displayed, press the Navigation Keys ◁ Left Arrow three (3) times to return to the `Application Menu`.

```
Application Menu                    ver 1.17
  1. Truck / ID Storage
  2. DFC Batcher
  3. Checkweigher
  4. 788 Compatibility
  5. Configuration
  6. File Manager
  7. Slide Show                   (secs X)
IP: 90.1.2.165
```

With the Application Menu displayed, press the number key of the application to run or use the Navigation Keys to select (highlight) the application to run and then press the **ENTER** key. The display will change to show the Weight screen. Normal weighing operations can now resume.

LEAD AND WIRE SECURITY SEAL INSTALLATION

If your Model 825 indicator is used in a commercial application and your local metrology laws require the use of physical sealing, a lead and wire security seal can be installed to prevent the rear panel from being removed from the indicator. Refer to the Figure No. 24 for a suggested location and details on the installation of the security seal.

> **NOTE!** In order to install the lead and wire security seal, two (2) acorn nuts on the rear panel MUST be replaced with drilled acorn nuts. They are available from the Cardinal Scale Mfg. Parts Department. The part number is 8200-B026-08 (NUT HEX #10-32 ACORN SS DRILLED).
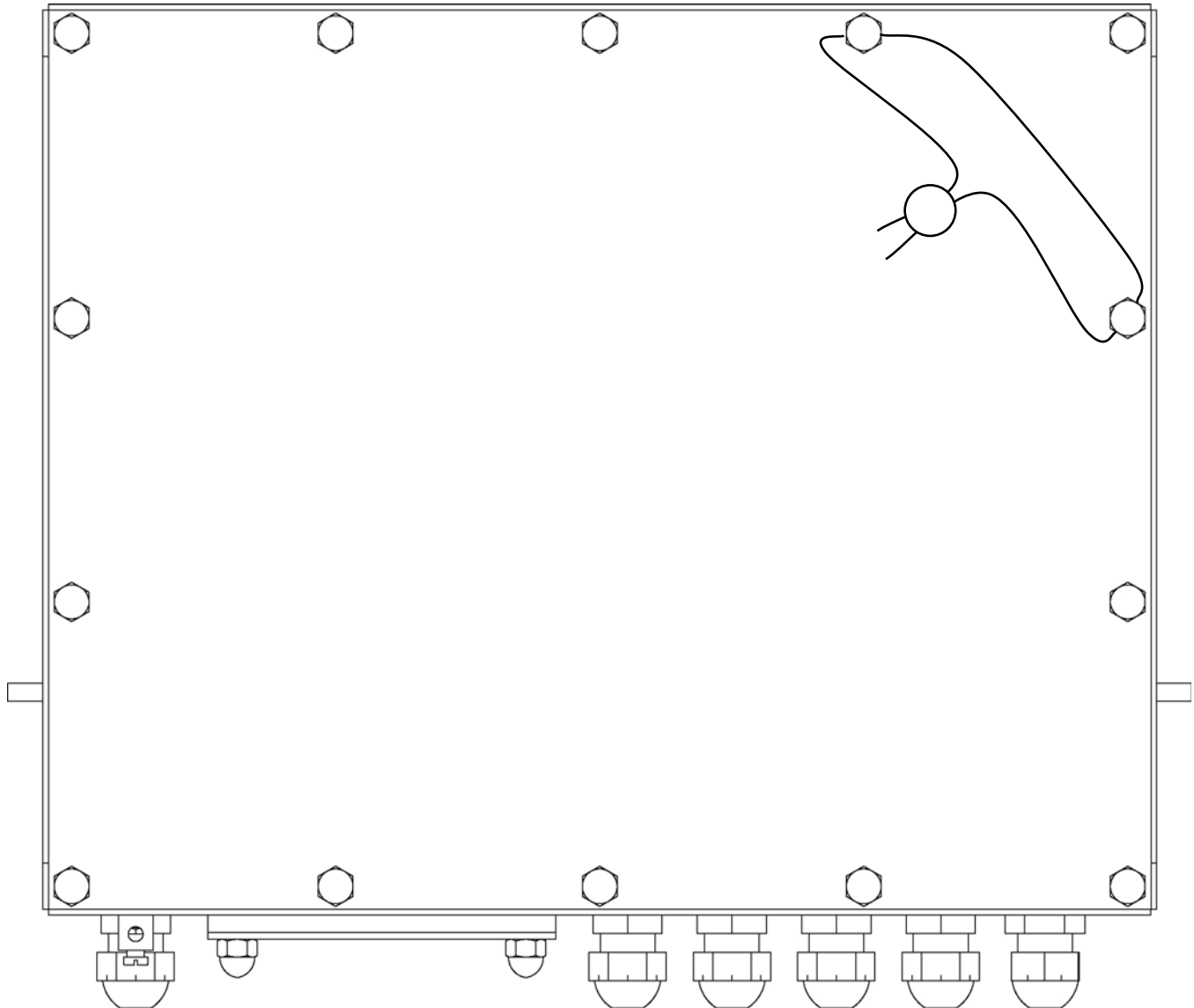
Figure No. 24

NOTES

NOTES

PART IDENTIFICATION

ITEM #	QTY.	PART NUMBER	DESCRIPTION
1	26	6013-0039	NUT #6-32 HEX
2	1	6013-0297	NUT #10-32 HEX
3	18	6013-0433	NUT #10-32 HEX ACORN LOCK SS
4	1	6024-0037	WASHER LOCK HELICAL SP #10 REG SS
5	10	6024-1022	WASHER FLAT #6 Z/P
6	14	6024-1078	WASHER FLAT #6 NEOPRENE BACKING SS
7	1	6610-1506	CONN GLAND .160-.310 GRIP .60 MTG NICKEL
8	5	6610-2248	CONN GLAND .187-.312 GRIP .599 MTG BLK
9	1	6610-5002	GROUND LUG L-35
10	12	6680-0004	WASHER LOCK INT TOOTH #6 TYPE A Z-PL
11	4	6680-0220	SPACER #6 x .875
12	1	6980-1030	POWER CORD 18/3 SVT CEE 6.3 FT.
13	1	8545-B810-08	ACCESS PLATE
14	1	8545-B814-08	ACCESS PLATE GASKET
15	1	8545-C815-08	REAR PANEL
16	1	8545-C816-08	REAR PANEL GASKET
17	1	8545-C822-0A	BEZEL WELDMENT
18	1	8545-C834-0A	POWER SUPPLY ASSEMBLY
19	1	8545-D835-0A	SUB-CHASSIS ASSEMBLY
20	1	8545-D810-08	KEYPAD: 825 INDICATOR
21	1	8545-D833-0A	FRONT ENCLOSURE WELDMENT
22	4	6540-1104	HOLE PLUG, 0.173-0.240
23	✳	6710-0030	TAPE, DBL. SIDED 0.5" WIDE
24	1	593GR986	SERIAL TAG ASSY.
25	1	6650-0087	LABEL, MADE IN THE USA
26	1	6610-5084	TERMINAL BLOCK, 3 POS.

✳Amount required to extend past edge of enclosure. See illustration on the next page.
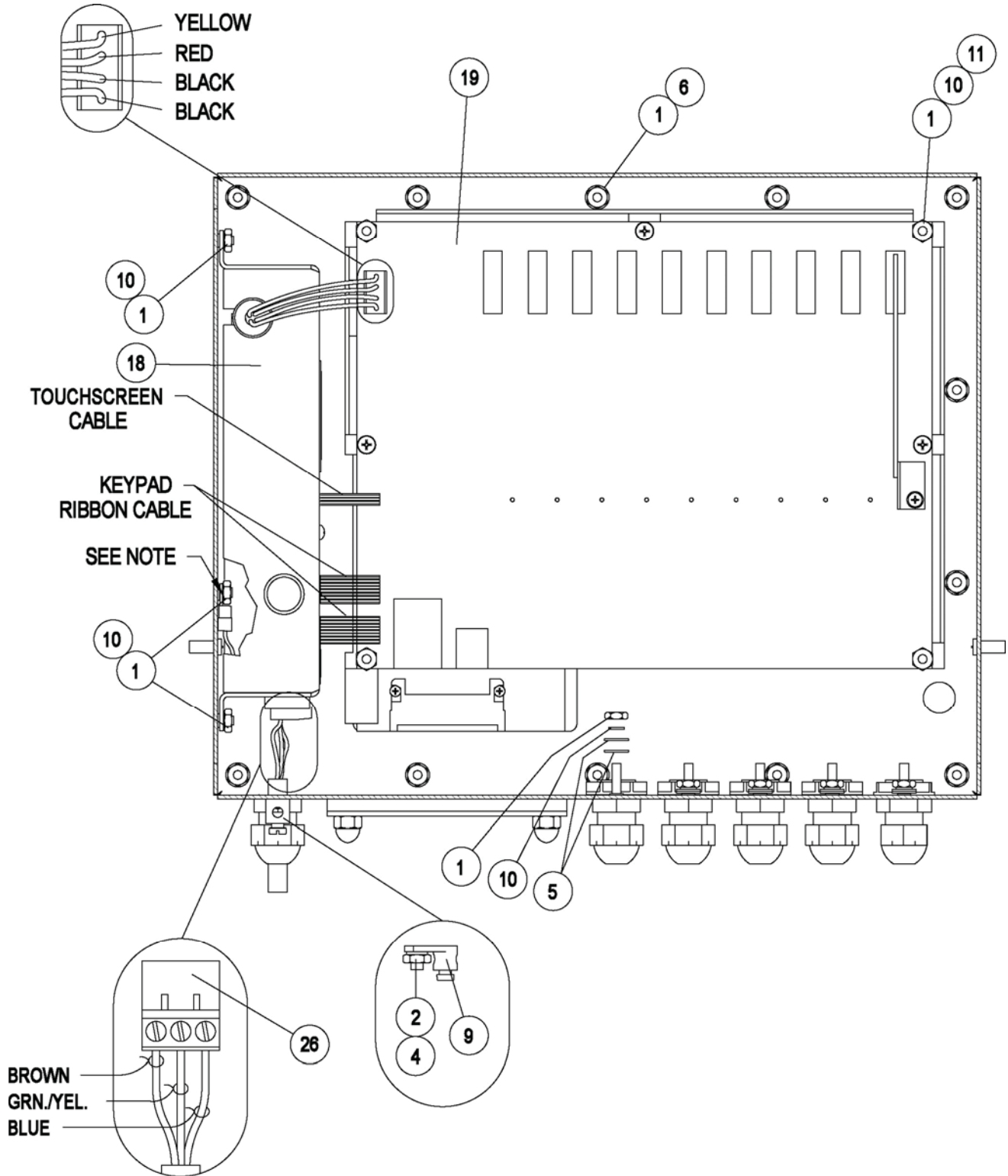
PART IDENTIFICATION
(Mounting Touch Screen Cable)
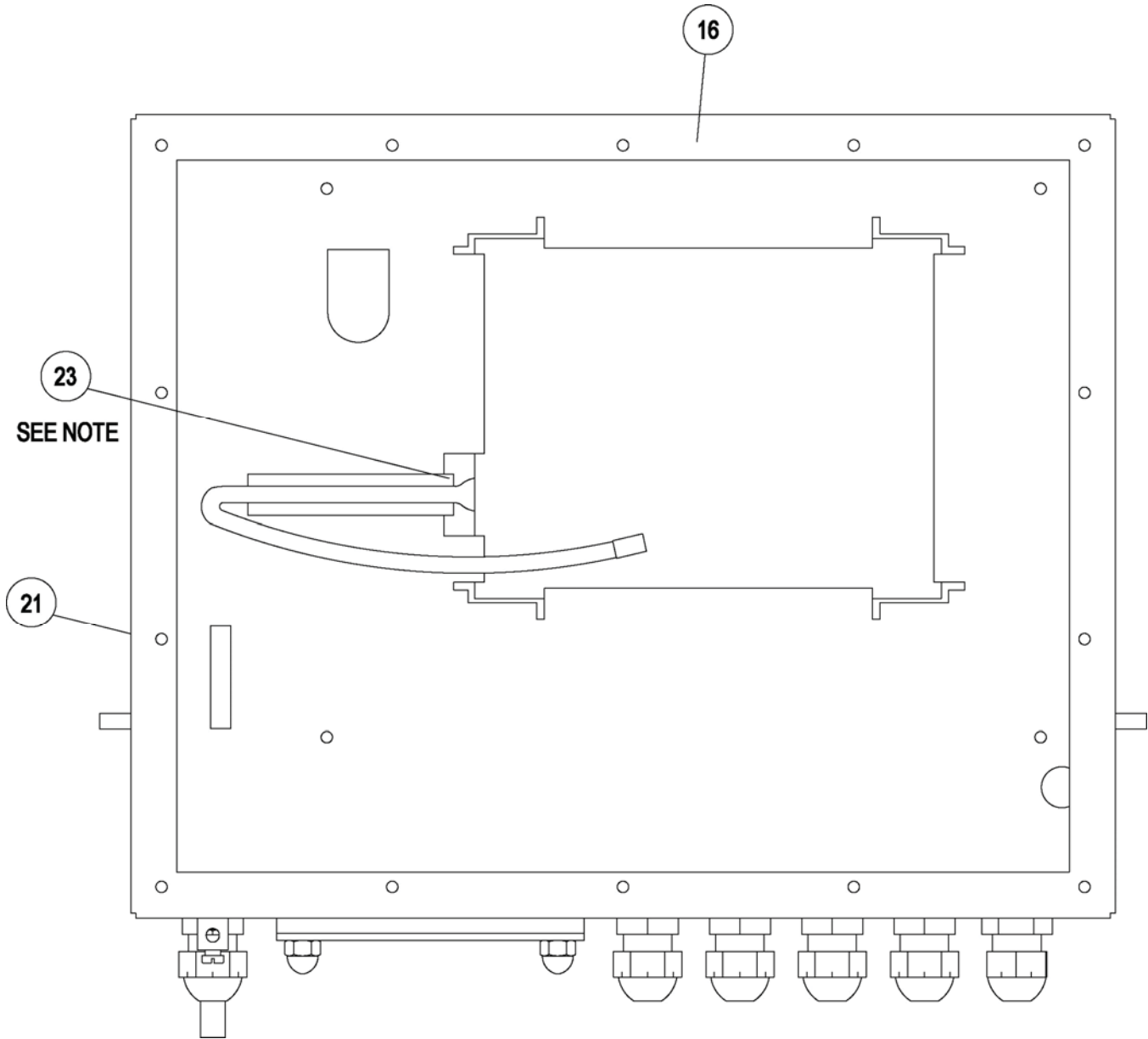
NOTE! Tape must extend past the edge of enclosure as shown.
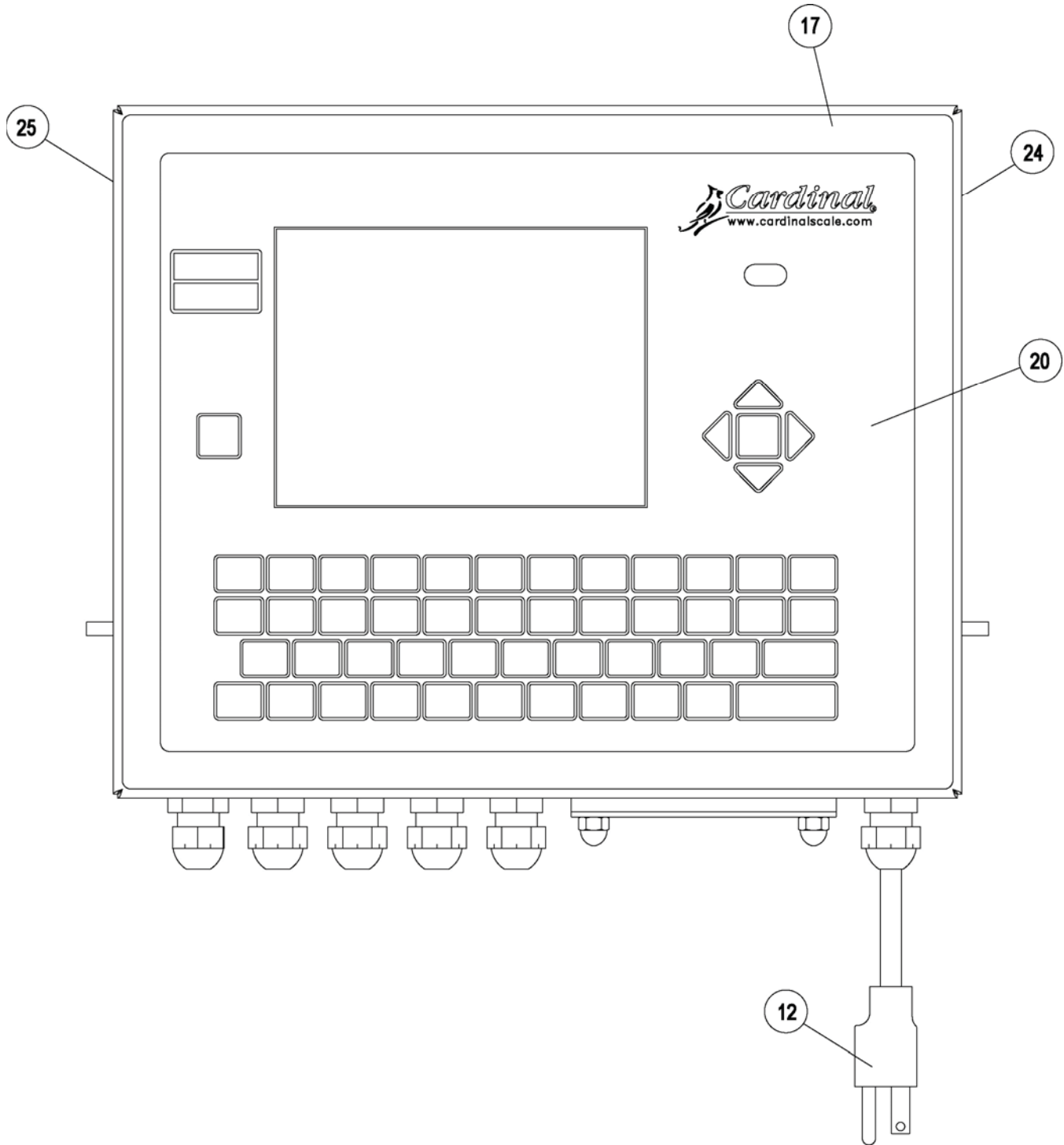
PART IDENTIFICATION

(Rear – Inside View)

YELLOW
RED
BLACK
BLACK

19

6

1

11

10

1

10

1

18

TOUCHSCREEN
CABLE

KEYPAD
RIBBON CABLE

SEE NOTE

10

1

1

10

5

1

10

5

26

BROWN
GRN./YEL.
BLUE

2

4

9

NOTE! The ground wire for the power supply is attached to the enclosure wall at the ground lug located under the power supply housing as show.

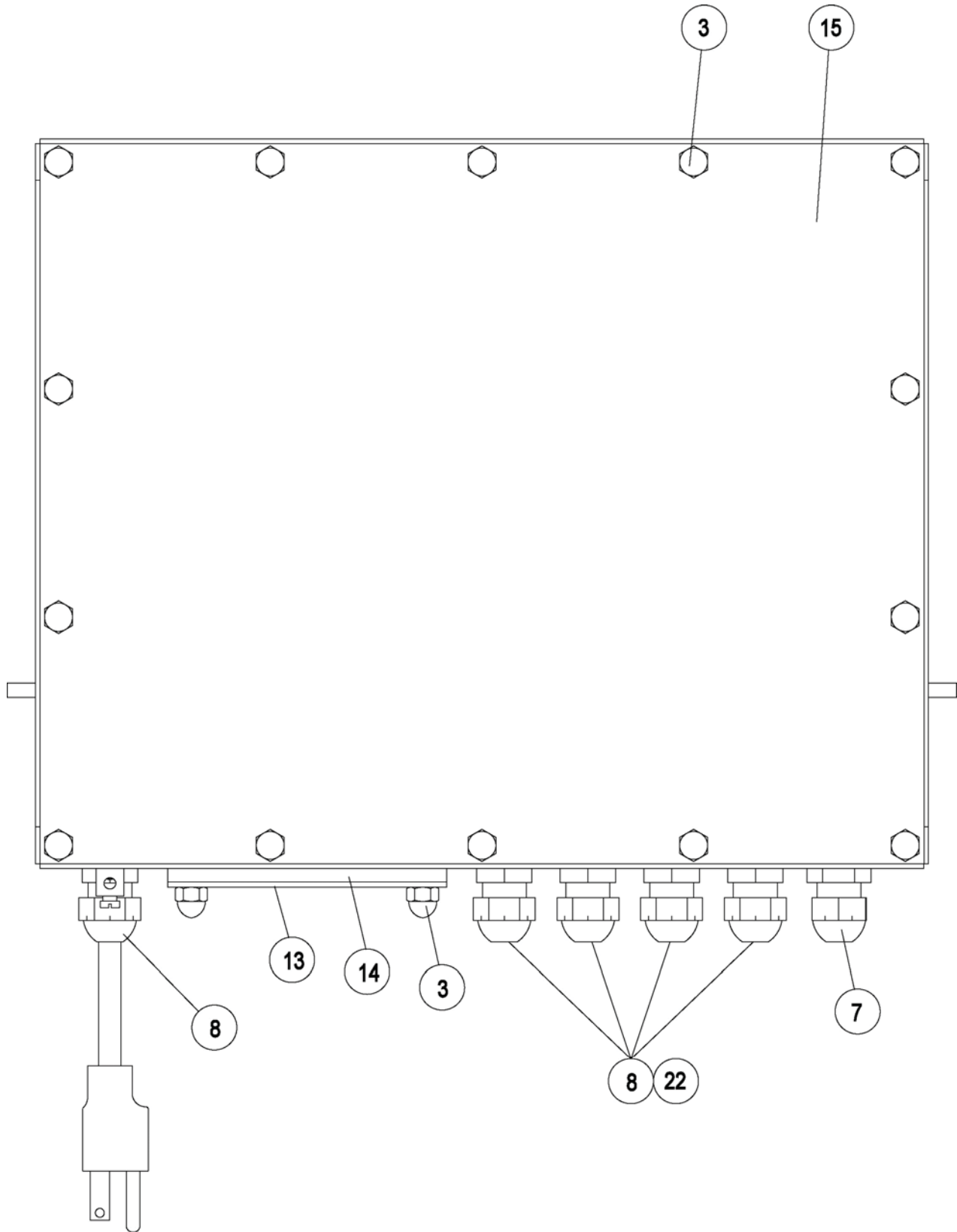# PART IDENTIFICATION
(Front View)

PART IDENTIFICATION
(Rear View)

STATEMENT OF LIMITED WARRANTY

WARRANTY TERMS

Cardinal Scale Manufacturing Company warrants the equipment we manufacture against defects in material and workmanship. The length and terms and conditions of these warranties vary with the type of product and are summarized below:

PRODUCT TYPE	TERM	MATERIAL AND WORKMANSHIP	LIGHTNING DAMAGE See note 9	WATER DAMAGE See note 7	CORROSION See note 4	ON-SITE LABOR	LIMITATIONS AND REQUIREMENTS
VEHICLE SCALE WEIGHT INDICATORS	1 YEARS	YES	YES	YES	YES	NO	1, 2, 3, 5, 6 A, B, C, D
VEHICLE SCALE LOAD CELLS Ex. Hydraulic	5 YEARS	YES	YES	YES	YES	90 DAYS	1, 2, 3, 5, 6 A, B, C, D
HYDRAULIC LOAD CELLS	LIFE	YES	YES	YES	YES	90 DAYS	1, 5, 6, 8 A, B, C, D
VEHICLE SCALE STRUCTURE	5 YEARS	YES	YES	YES	YES	90 DAYS	1, 2, 3, 5, 6 A, B, C, D, E
ALL OTHER CARDINAL PRODUCTS	1 YEAR	YES	NO	YES	YES	NO	1, 2, 5, 6 A, B, C, D, E
REPLACEMENT PARTS	90 DAYS	YES	NO	YES	YES	NO	1, 2, 4, 5, 6 A, B, C, D
IN-MOTION VEHICLE SCALES	1 YEAR	YES	NO	YES	YES	90 DAYS	1, 2, 5, 6 A, B, C, D

APPLICABLE LIMITATIONS AND REQUIREMENTS

1. This warranty applies only to the original purchaser. The warranty does not apply to equipment that has been tampered with, defaced, damaged, or had repairs or modifications not authorized by Cardinal or has had the serial number altered, defaced or removed.
2. This warranty is not applicable to equipment that has not been grounded in accordance with Cardinal's recommendations.
3. This equipment must be installed and continuously maintained by an authorized Cardinal dealer.
4. Applies only to components constructed from stainless steel.
5. This warranty does not apply to equipment damaged in transit. Claims for such damage must be made with the responsible freight carrier in accordance with freight carrier regulations.
6. Warranty term begins with date of shipment from Cardinal.
7. Only if device is rated NEMA 4 or better or IP equivalent.
8. Lifetime warranty applies to damages resulting from water, lightning, and voltage transients and applies only to the hydraulic load cell structure itself (does not include pressure transducers, rubber seals, o-rings, and associated wiring).
9. Except for hydraulic load cells, warranty coverage for damage resulting from lightning is valid ONLY when the device is installed in strict accordance with Cardinal's installation instructions including the use of recommended grounding and surge suppression circuitry.

Cardinal
Cardinal Scale Manufacturing Co.

Ph. (800) 441-4237
E-mail: cardinal@cardet.com
203 E. Daugherty
Webb City, MO 64870

09/10
Printed in USA
315-WARRANTY-CAR-F

EXCLUSIONS

A.)   This warranty does not include replacement of consumable of expendable parts. The warranty does not apply to any item that has been damaged due to unusual wear, abuse, improper line voltage, overloading, theft, fire, lightning, water, prolonged storage or exposure while in purchaser's possession or acts of God unless otherwise stated herein.

B.)   This warranty does not apply to peripheral equipment not manufactured by Cardinal. This equipment will normally be covered by the equipment manufacturer's warranty.

C.)   This warranty sets forth the extent of our liability for breach of any warranty or deficiency in connection with the sale or use of our product. Cardinal will not be liable for consequential damages of any nature, including but not limited to loss of profit, delays or expenses, whether based on tort or contract. Cardinal reserves the right to incorporate improvements in material and design without notice and is not obligated to incorporate said improvements in equipment previously manufactured.

D.)   This warranty is in lieu of all other warranties expressed or implied including any warranty that extends beyond the description of the product including any warranty of merchantability or fitness for a particular purpose. This warranty covers only those Cardinal products installed in the forty-eight contiguous United States and Canada.

E.)   This warranty does not cover paint coatings due to the variety of environmental conditions.

- Page 2 -

Cardinal®
Cardinal Scale Manufacturing Co.

DESIGNED & MANUFACTURED IN U.S.A.