TRANSCELL TECHNOLOGY, INC.

NEPTUNE-6500 Series

CHECK WEIGHING SCALE

Operation Manual

Revision 2.6
8-6-03

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ATTENTION:

To extend the life of your digital scale, do not drop items to be weighed onto the platform or overload the scale beyond its rated capacity. Shock-loading and overloading may damage the load cell and void the warranty.

Electromagnetic Compatibility Statement for North America

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

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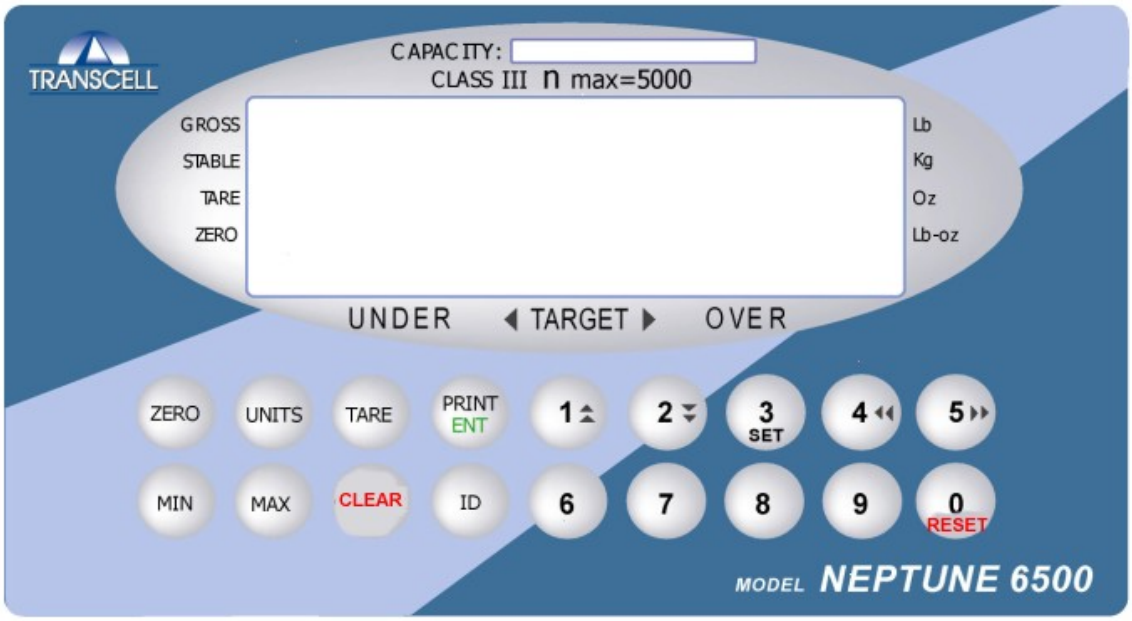
CHAPTER 1: INTRODUCTION TO THE TRANSCELL NEPTUNE 6500 SERIES CHECK-WEIGHER

The Transcell Model **NEPTUNE 6500** Series Checkweigher is an easy to use high speed, wash down, stainless steel bench scale. The main function of the NEPTUNE 6500 is to compare programmed weight readings to pre-set tolerance limits that define an ACCEPTABLE range. If the current weight reading is within an ACCEPTABLE weight range the green **TARGET** LED's light. If the current weight reading is less then the ACCEPTABLE range the amber **UNDER** LED's light. If the current weight reading is greater then the ACCEPTABLE range the red **OVER** LED's light.

The **NEPTUNE 6500** features a full numeric keyboard, storage for up to 100 individual OVER/UNDER/TARGET/TARE values with an easy link to individual ID recall. The **NEPTUNE 6500** also features a simple programmable print format. Utilizing 3-5volt TTL outputs you can readily send out check weight results to a PC or control other external devices. The **NEPTUNE 6500** is available in two platform sizes and four avoirdupois weight capacities.

If you are an installer, the scale's installation and wiring instructions are found in Appendix D. The scale contains two main setup menus: Front panel access is available for simple calibration and configuration. Prior to installing the scale, please read this manual carefully and completely. Store the manual in a safe and convenient place so it will be available if you have questions concerning the setup and operation of the scale.

FIGURE 1-1: Front Panel



MODEL	CAPACITY / GRADUATION	MODEL	CAPACITY / GRADUATION
NEPTUNE 6500-5	5lb (2.5kg) 12"W x 12" L	NEPTUNE 6500-30	30lb (15kg) 18"W x 18" L
NEPTUNE 6500-10	10lb (5kg) 12"W x 12" L	NEPTUNE 6500-50A	50lb (25kg) 18"W x 18" L

NEPTUNE 6500-20	20lb (10kg) 12"W x 12" L	NEPTUNE 6500-100	100lb (50kg) 18”W x 18” L
NEPTUNE 6500-50	50lb (25kg) 12"W x 12" L	NEPTUNE 6500-200	200lb (100kg) 18”W x 18” L

TABLE 1-1: Product Matrix

CHAPTER 2: GETTING STARTED

Step 1. Position the scale in its area of intended use. Observe the following guidelines for suitable location.

1. Choose a firm, stable floor or table.
2. Do not share an AC outlet with electrical noise producing equipment, such as refrigeration units. This includes products with electrical motors and/or relays.
3. Do not place the scale in an area with changing ambient temperature and/or high humidity.
4. Do not place the scale in an area prone to exposure to direct sunlight, wind, or dust.
5. Do not place the scale in an area with vibrating equipment.

Step 2. If applicable, install the serial printer to the COM1 serial port.

Connect the printer to the COM1 port using the optional serial cable. See Appendix B for cabling requirements

and pin outs.

Configure the communication parameters and select the device type as detailed in Section?

Configure the formatting parameters for the printer as detailed in Section? .

Set the current Time and Date as detailed in Section?

Step 3. Plug in the three prong connector to a standard 110 Volt A/C outlet, the scale will then power on to begin use.

2.1 INSTALLATION

2.1.1 STAINLESS STEEL ENCLOSURE (NEPTUNE 6500)

The 6500 is contained in a NEMA 4X stainless steel enclosure, the rear cover must first be removed to make the appropriate connections to the weigh platform, printer, remote display and power supply. To remove the rear cover, simply remove the screws that secure it to the enclosure and set aside.

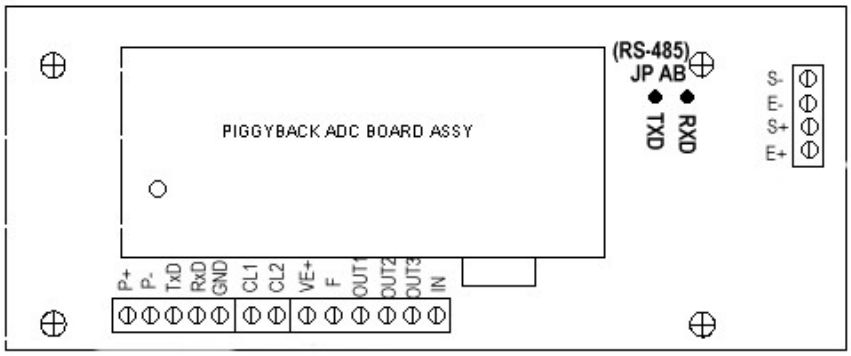


Figure 2-1: NEPTUNE 6500 Main Circuit Board Overview

2.1 CONNECTING THE WEIGH PLATFORM TO THE INDICATOR

1. Connect your shielded load cell cable (not included) to terminal on the main board. Connection assignments for the Load Cell Terminal are shown in Figure 2-2.

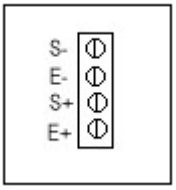


Figure 2-2: Connection assignments for the Load Cell Terminal

Color	Wire Name
RED	+Excitation
BLK	- Excitation
GRN	+Signal
WHT	- Signal

Figure 2-2: Color Codes for Shielded Load Cell Cable

1. If you do not wish to use the shielded load cell cable, you may use your own, following the pin assignments shown in Figure 2-3. (A 14-pin Male Centronics-type connector is required).

Pin Nos.	Pin Name
1/8	+Excitation
3/10	- Excitation
5/12	+Signal
7/14	- Signal

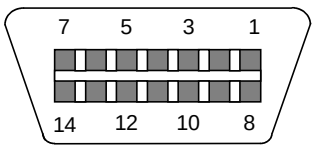


Figure 2-3: Pin assignments for the Load Cell Port

2.2 CONNECTING THE SERIAL PRINTER, REMOTE DISPLAY OR COMPUTER

The NEPTUNE 6500 series indicator comes standard with a serial port, designated COM1 and a second port specified for the TTL outputs designated as COM2. COM1 is a full duplex, RS-232 port designed for connection to either a PC or a serial printer. COM2 is a 5 volt TTL port for connection to external relays.

Figure 2-1 shows the serial port connections to the main board.

2.3 CONNECTING THE POWER SUPPLY

1. The indicator ships standard with an internal AC to DC adapter. Simply plug the AC line cord into a standard wall outlet.
2. Make sure that the AC voltage appearing at the wall outlet matches the input voltage marked on the AC adapter.

CHAPTER 3: BASICS OF OPERATION

3.1 DISPLAY

The Model NEPTUNE 6500 scale utilizes a 1” High, Bright Red LED (Light Emitting Diode Display) capable of being viewed from up to 50’ away in brightly or darkly lit areas.

3.1.1 LIGHT EMITTING DIODE DISPLAY (LED)

Figure below shows the display detail of the NEPTUNE 6500 Series. As shown in Figure, the scale
displays weight information as well as UNDER/TARGET/OVER Bar Graph annunciators. The table lists the various annunciators you may see and their meanings.

3.2 KEYBOARD

The keyboard is composed of eighteen keys, including 10 multi purpose numeric keys.

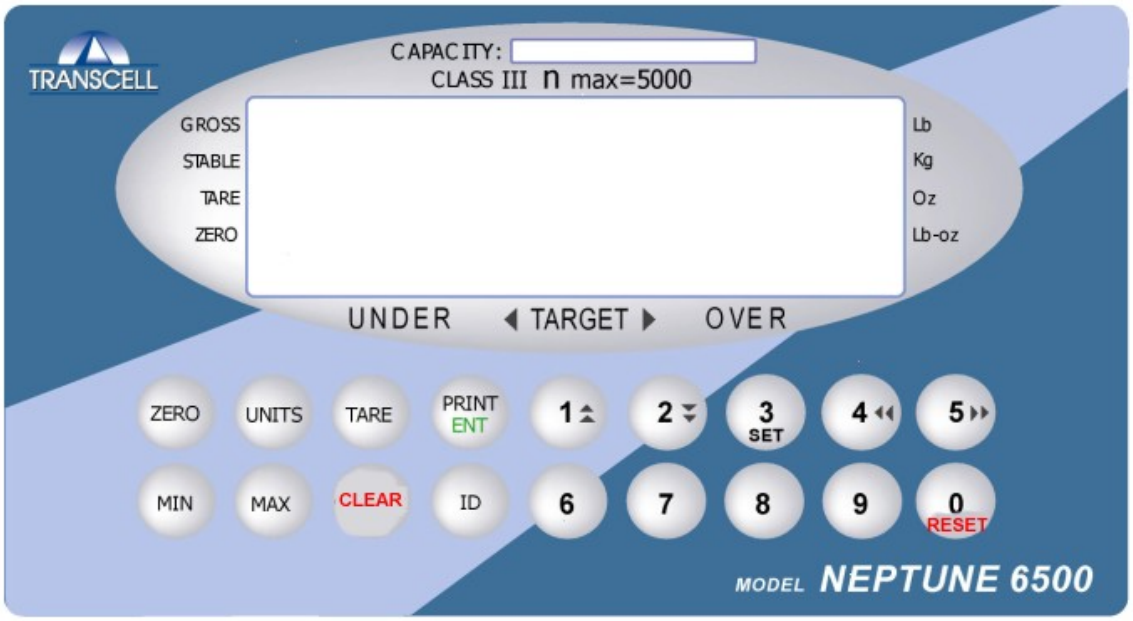


Figure 3-1: KEYBOARD DETAIL

TABLE 2-1: KEYPAD FUNCTIONS

KEYS	*MEANING*
ZERO	The **ZERO** key sets the current Gross weight to Zero, provided the amount of weight to be removed is within the specified Zero range and the scale is not in motion.
UNITS	The **UNITS** key switches the weight display to an alternate unit. The alternate units can be Lb, Kg, Oz, Lb-Oz, Gross, Tare.
TARE	The **TARE** key is used to establish a pushbutton Tare provided the scale is not at or below Gross Zero.
PRINT **ENT**	The **PRINT/ENT** key has two functions first it can be used to transmit an on demand output through the serial port to a printer or other peripheral device. Secondly, under the Print is ENT which represents ENTER. This allows you to store information into an Item ID memory file.
1 ↑	The numeral **One** key has two functions first it can be used to enter in the value of 1 when entering in a known Tare or Over/Under/Target value. Secondly, on this key there is an additional symbol of an upward pointing arrow. The arrow is utilized in the F and A setup menu's allowing the operator to toggle through individual parameters.
2 ↓	The numeral **Two** key has two functions first it can be used to enter in the value of 2 when entering in a known Tare or Over/Under/Target value. Secondly, on this key there is an additional symbol of a downward pointing arrow. The arrow is utilized in the F and A setup menu's allowing the operator to enter into specific setup parameters.
3 **SET**	The numeral **Three** key has three functions first it can be used to enter in the value of 3 when entering in a known Tare or Over/Under/Target value. Secondly, the **SET** text on this key acts a a SAVE command when in the setup parameters or when saving OVER/UNDER/TARGET values. The third function allows the operator to reset the scale, but only when the scale is in the Gross weighing mode.
4 ←	The numeral **Four** key has two functions first it can be used to enter in the value of 4 when entering in a known Tare or Over/Under/Target value. Secondly, on this key there is an additional symbol of a pointing West. The arrow is utilized in the F and A setup menu's allowing the operator to toggle backwards through the setup parameters.
5 →	The numeral **Five** key has two functions first it can be used to enter in the value of 5 when entering in a known Tare or Over/Under/Target value. Secondly, on this key there is an additional symbol of a pointing West. The arrow is utilized in the F and A setup menu's allowing the operator to toggle backwards through the setup parameters.
6,7,8,9,0	Keys six through nine and zero are used to enter numeric values only.
MIN	The **MIN** key displays the current "UNDER TOLERENCE" value and allows the operator to enter in a new UNDER value if desired.
MAX	The **MAX** key displays the current "OVER TOLERENCE" value and allows the operator to enter in a new OVER value if desired.
CLEAR	Used to reset the scale to normal weighing operation. Clears current min and max values but does not affect database information.
TARGET	Used to clear incorrect key input. Backs up one character at a time.

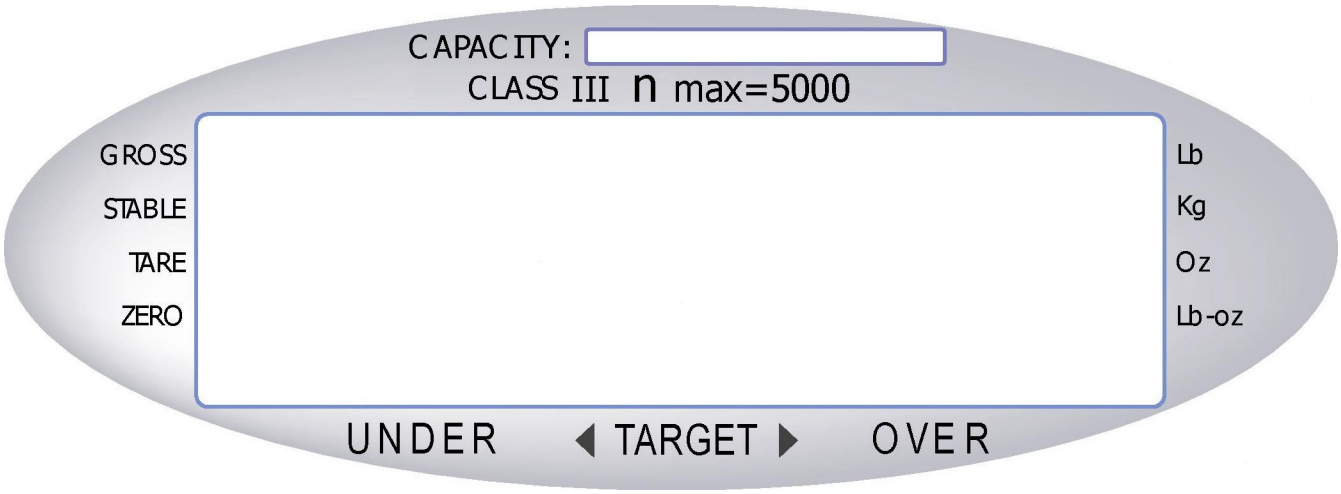


Figure 3.2: ANNUCIATOR DETAIL

Table 3-1: ANNUNCIATOR DEFINITIONS

Annunciators	MEANING
GROSS	Indicates the scale is displaying the Gross weight.
STABLE	Indicates that the scale is in a stable weight mode condition, and therefore seeing no motion.
TARE	Indicates that a tare has been established in the system.
C-ZERO	Indicates that the current displayed weight reading is+/- 0.25% displayed division of the acquired zero.
UNDER	The amber LED segments above the UNDER insignia indicate an underweight condition in the check weighing mode.
TARGET	The green LED segments above the TARGET insignia indicate an acceptable weight condition in the check weighing mode.
OVER	The red LED segments above the OVER insignia indicate an overweight condition in the check weighing mode.
Lb-Oz	Indicates the scale is in the pound-ounce weighing mode.
OZ	Indicates the scale is in the ounce weighing mode.
KG	Indicates the scale is in the kilogram weighing mode.
Lb	Indicates the scale is in the pound weighing mode.

3.3 GENERAL SCALE OPERATION

3.3.1 WEIGHING AN ITEM

If necessary, press the Zero soft key to obtain a weight reading of zero.
Place the object to be weighed on the scale's platter and allow the weight indication to stabilize. If the item weight exceeds the scale's weight capacity, it displays "**000000**". Read the weight shown on the display. **Note:** If you wish to change the unit of measure, press the **UNIT** key.

3.3.2 TARING AN ITEM OF UNKNOWN WEIGHT

To weigh an item in a container, the weight of that container must first be subtracted from the overall weight to obtain an accurate weight reading. This is known as a Tare.

1. If necessary, press the **ZERO** to obtain a weight reading of zero.
2. Place the empty container on the scale's platter and allow the weight indication to stabilize.
3. Press the **TARE** key.
4. The display shows ZERO weight value and turns on the TARE and NET annunciators.
5. Place the material to be weighed in the container and allow the weight indication to stabilize.
6. Read the weight shown on the display.

3.3.3 TARING AN ITEM OF KNOWN WEIGHT

If the weight of the container or object is known, you may enter this weight via the keyboard. This value must be rounded to the nearest scale division. For example, on a 60 x 0.002 lb scale, you must enter the tare weight value to the nearest 0.002 lb.

1. If necessary, press the **ZERO** to obtain a weight reading of zero.
2. Press the TARE key.
3. Enter the TARE weight using the numeric keys.
4. Press the TARE key.
3. The display shows a negative weight value and turns on the TARE and NET annunciators.
4. Place the material to be weighed in the container and allow the weight indication to stabilize.
5. Read the weight shown on the display

3.3.4 CLEARING A TARE

1. Remove all weight from the scale platform. Press the **TARE** key. The TARE and NET annunciators disappear and the gross weight is displayed.

3.3.5 ENTERING A MAX AND MIN VALUE

1. Press the MIN button. Enter the minimum values and press the MIN button. Scale temporarily displays SET.
2. Press the MAX button. Enter the maximum value and press the MAX button. Scale temporarily displays SET.
3. The scale now operates in the check weigh mode. The amber lights are on when the weight is < min value, the green lights are on when the weight is >= min but < max

3.3.6 ENTERING A SINGLE TARGET VALUE

1. Press the MIN key. Enter the single target value. The under lights are on when the weight is less than the min value, the target (accept) lights are on when the weight is equal to the target value and the over lights are on when the weight is greater than the target value.

CHAPTER 4: ADVANCED FEATURES AND OPERATION

4.1 ITEM ID STORAGE

Your scale can store UNDER/OVER//TARE/UNIT information for up to 100 items. These items are stored and retrieved under a Product ID number. The ID numbers are assigned by the scale operator. Each ID record may contain:

- **UNDER** tolerance value
- **OVER** tolerance value
- **TARE** value
- Product ID number – up to 6 numeric characters

4.1.1 ADDING A NEW ITEM ENTRY

Make sure the scale is in the weighing mode and does not have a max or min value entered. To clear any old information, press and hold the 0/CLR key for three seconds. Press the MIN key, enter a minimum weight value and press MIN.
Press the MAX key, enter a maximum weight value and press MAX.
If keyboard tare is required, press the TARE key, enter the tare value and press TARE. If known tare is available, place object on scale and press TARE.
Enter an ID number up to 6 digits and press ID KEY to store item record. Scale displays SET while storing information and then displays the number of records stored. If you make any key in errors, press the TARGET key to back up one character. To return to weighing only mode, press and hold the 0/CLR key for three seconds.

4.1.2 RECALLING AN EXISTING ID ITEM ENTRY

Enter a stored ID number and press ID key.

The scale automatically recalls the stored information.

NOTE: If you do not know the Product ID number, press the 0 key and the ID key. The scale displays the
first item ID stored. You can view the min, max and tare values by press the 5(right arrow) key. To select another stored item, press the 2(down arrow) key. When the desired ID is found, press ENT key to activate that ID and begin check weighing.

4.1.3 DELETING AN EXISTING ID ITEM ENTRY

Press and hold the **SET** key. The scale displays DEL 1 d.
Enter the Product ID number to delete. Press and hold the ID key for 2 second's.
Scale displays del and the item record is deleted from memory.

4.1.4 EDITING AN EXISTING ITEM ID

1. Enter an existing Product ID and press ID key.
2. Enter a new min, max or tare value or change unit of measure. (lb/kg/oz)
3. Enter the Product ID number and press ID to save changes.

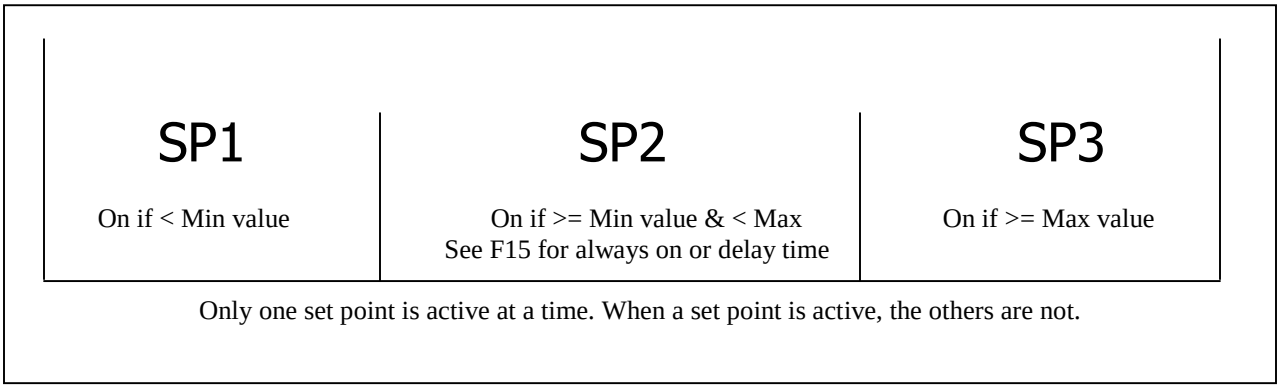
4.2 TTL SET POINT OUTPUTS

This function works utilizing three 5Volt TTL outputs and allows your scale to work within a specialized system. This is useful if you are filling individual containers to a pre-determined TARGET weight value, or if you are check weighing individual portions, you can utilize the set points to activate an internal buzzer that will sound when the TARGET set point is reached.

Each output is an open-collector circuit, capable of sinking 250mA when ON. All logic levels are active low. The circuits include +-5 V resistors to drive TTL or 5 V CMOS logic without additional hardware.

4.2.1 SETPOINT OUTPUTS

The Neptune 6500 has three annunciators on the front display to indicate UNDER, ACCEPT or OVER. If you want to use an external device to signal the check weigh condition, use the external TTL outputs. The same condition that drives the internal annunciators will drive the external device. Setup step F15 allows control over external set point number 2. A value of 0 (zero) will cause the set point to remain high when the condition is met. You may enter a value of 1/10s of a second to cause SP2 to alternate high and low when the condition is met. An common example of how this delay is used would be to flash a light on and off when the accept condition is met. Over and under would show a steady light.



CHAPTER 5: CALIBRATION

5.1 CALIBRATION OVERVIEW

The indicator is calibrated by following the procedures embedded in F16 (Zero) and F17 (Span) of the Setup Menu. Each procedure enters a value into the indicator's non-volatile memory - F16 the zero value (deadweight) and F17 the span value (test weight). The minimum test weight that can be used is 1% of full-scale capacity. After the two calibration procedures are executed successfully, you should record both calibration values in Table 6-1 using the F18 View procedure.

In the unlikely event that either value is lost while in the field, the setup menu makes provisions for re-entering these values via F19 and F20, thus eliminating the need for re-calibration with test weights.

NOTE: This chapter assumes that the indicator is in Setup ("F") Menu mode. If the indicator is not in Setup Menu mode, refer to Chapter 3 for instructions.

5.2 ZERO CALIBRATION (F16)

1. While in the Setup mode, scroll to "**F 16**", then scroll down once using the **DOWN ARROW (2)** key to enter zero calibration menu. The display will momentarily show "**C 0**" followed by a value. This value is the internal A/D count and can prove useful when trying to troubleshoot setup problems. Record this value where you can find it again.
2. After making sure that there is no weight on the platform, press the ZERO key to zero out the displayed value.
3. Press the SET key to save the zero point value. The display will show **"SAVE"** then "**EndC0**" momentarily, then revert back up to F16. At this time, proceed to the F17 span calibration to complete indicator calibration.

5.3 SPAN CALIBRATION (F17)

1. While in the Setup mode, scroll to "**F 17**", then scroll down once using the **DOWN ARROW (2)** key to enter span calibration menu.
2. The display will momentarily show "**C 1**" for the span calibration, followed by a value with one flashing digit. This value will be zero with the Decimal Point parameter selected in F10. Place the test weight on the scale platform.
3. Use the four directional keys (shown in Figure 6-1 below) to adjust the displayed value to the actual test weight value. Increase the flashing digit by pressing the **UP ARROW (1)** key. Decrease the flashing digit by pressing the **DOWN ARROW (2)** key. Pressing the **LEFT ARROW (4)** key or the **RIGHT ARROW (5)** key will change the position of the flashing digit.
4. Place the test weight on the scale and press the **SET** key.
5. If the calibration was successful, the display will show SAVE, then "**EndC1**" momentarily. You can now end the calibration process or proceed through a three point calibration.

   For three point calibration - the scale will momentarily show "**C 2**". See steps 3, 4 and 5. The scale displays **C 3.** See steps 3, 4 and 5.

   To end as a single point calibration, press the SET key at C 2 and again at C 3. The scale returns to F17.

6. If the calibration was *not* successful, one of the error messages below will appear. Take the indicated action to correct the problem, then perform a new calibration.

   "**Err0**" - The calibration test weight or the adjusted keyed-in weight is larger than the full capacity of the scale. Change the calibration test weight or check the input data.

   "**Err1**" - The calibration test weight or the adjusted keyed-in weight is smaller than 1% of the full capacity of the scale. Change the calibration test weight or check the input data.

   "**Err2**" - The internal resolution of the scale is not high enough to accept the calibration value. Select a larger parameter for the Span Gain (F2). SEE APPENDIX C FOR MORE INFORMATION.

5.4 VIEW CALIBRATION VALUES (F18)

Note: The values displayed in this procedure are valid only after a successful calibration has been performed using F16 and F17.

1. While in the Setup mode, scroll to "**F 18**", then scroll down once using the **DOWN ARROW (2)** key to enter View calibration menu.
2. The display will momentarily show "**CAL 0**" followed by a value. This value is the **zero calibration value** and should be recorded in the table below.
3. Press DOWN ARROW (2) again. Scale will momentarily show "**CAL 1**" followed by another value. This value is the **span calibration value** and should also be recorded in the table below. Press the up arrow key to return to upper level (F18).

INDICATOR	ZERO CALIBRATION VALUE	SPAN CALIBRATION VALUE
S/N:		

Table 6-1: Calibration Value Table

5.5 KEY-IN ZERO CALIBRATION VALUE (F19)

Note: This procedure is intended for emergency use only in the case of non-volatile memory loss. A valid zero calibration value, obtained from a successful F16 calibration procedure, must be used.

1. While in the Setup mode, scroll using the right or left arrow keys to "**F 19**", then scroll down once using the **DOWN ARROW (2)** key.
2. The display will momentarily show "**CAL 0**", followed by a flashing zero. Use the four directional keys (shown in Figure 6-1) to adjust the displayed value to the zero calibration value.
3. After setting the exact value, press the **ENT** key to save the value.
4. The display will show "**E CAL 0**" momentarily, then revert back up to F19.

5.6 KEY-IN SPAN CALIBRATION VALUE (F20)

Note: This procedure is intended for emergency use only in the case of non-volatile memory loss. A valid span calibration value, obtained from a successful F17 calibration procedure, must be used.

5.6 KEY-IN CALIBRATION VALUE (F20)

Note: This procedure is intended for emergency use only in the case of non-volatile memory loss. A valid span calibration value, obtained from a successful F17 calibration procedure, must be used.

1. While in the Setup mode, scroll to "**F 20**", then scroll down once using the **DOWN ARROW** key.
2. The display will momentarily show **"ET C1",** followed by the right digit flashing. Use the numeric keyboard to adjust the displayed value to the original calibration value.
3. After setting the exact value, press the **ENT** key to save the value.
4. If the entered value is greater than zero, the display will show "**E E C1**" momentarily, then displays "**E T C2"**. Press **ENT** key and the display will show "**E E C3**" momentarily, then displays "**E T C3"**. Press **ENT** key and the scale then displays "**E E C3**" and goes back to F20.

If a value of zero is entered, the indicator will briefly show "**Err 5**", then revert back to the screen described above in Step # 2..

CHAPTER 6: CONFIGURATION

6.1 CONFIGURATION OVERVIEW

The indicator contains two main setup menus: The Setup ("F") menu which configures the indicator to your weigh platform and the User ("A") menu which configures the serial communication port and enables some user options. The Setup and User menus consist of several menu selections, each with its own sub-menu of choices.

To set up the indicator, you must first enter the appropriate menu mode. Once there, four of the front panel keys become directional navigators to move around in the menus, and one key is used to save or SET the selections.

6.2 SETUP ("F") MENU & "A" MENU

6.2.1 ENTERING/EXITING THE SETUP MENU

1. Power off the indicator by unplugging the power source.
2. Remove two screws holding the small cover plate
3. Slide the switch to the left
4. Power on the indicator by plugging in the power source. The indicator shows " F 1" to indicate that you are in Setup Menu mode. The "A" menu follows the "F" menu. Press the right arrow key to step through all the "F" parameters to get to the "A" menu.
5. After completing changes in the setup menu slide the switch to its original position, this will return the indicator to normal weighing mode. There is no need to power down the indicator after returning the switch to the original position.

6.2.2 NAVIGATING IN THE SETUP MENU

Use the directional keys shown in Figure 6-1 to move around in the Setup Menu Chart shown in Figure 6-3 on the following page.

1. To move to a new "F" or "A" heading, use the 4 (left) or 5 (right) arrow key to move right or left in the Setup Menu Chart.
2. To move to the selection level, press the 2 (down) arrow key once. The current saved selection is shown or the selected process will begin.
3. To view the available selections for the current "F" or "A" heading, use the 4 (left) or 5 (right) arrow key to move through the selection field.
4. To save a new selection, press the 3 (Set) key followed by the 1(up) arrow key. To exit without saving, press the 1 (up) arrow key to return to the current "F" or "A" heading.
5. Repeat Steps 1 through 4 until the Setup Menu is programmed.

Figure 6-1: "F" CONFIGURATION MENU

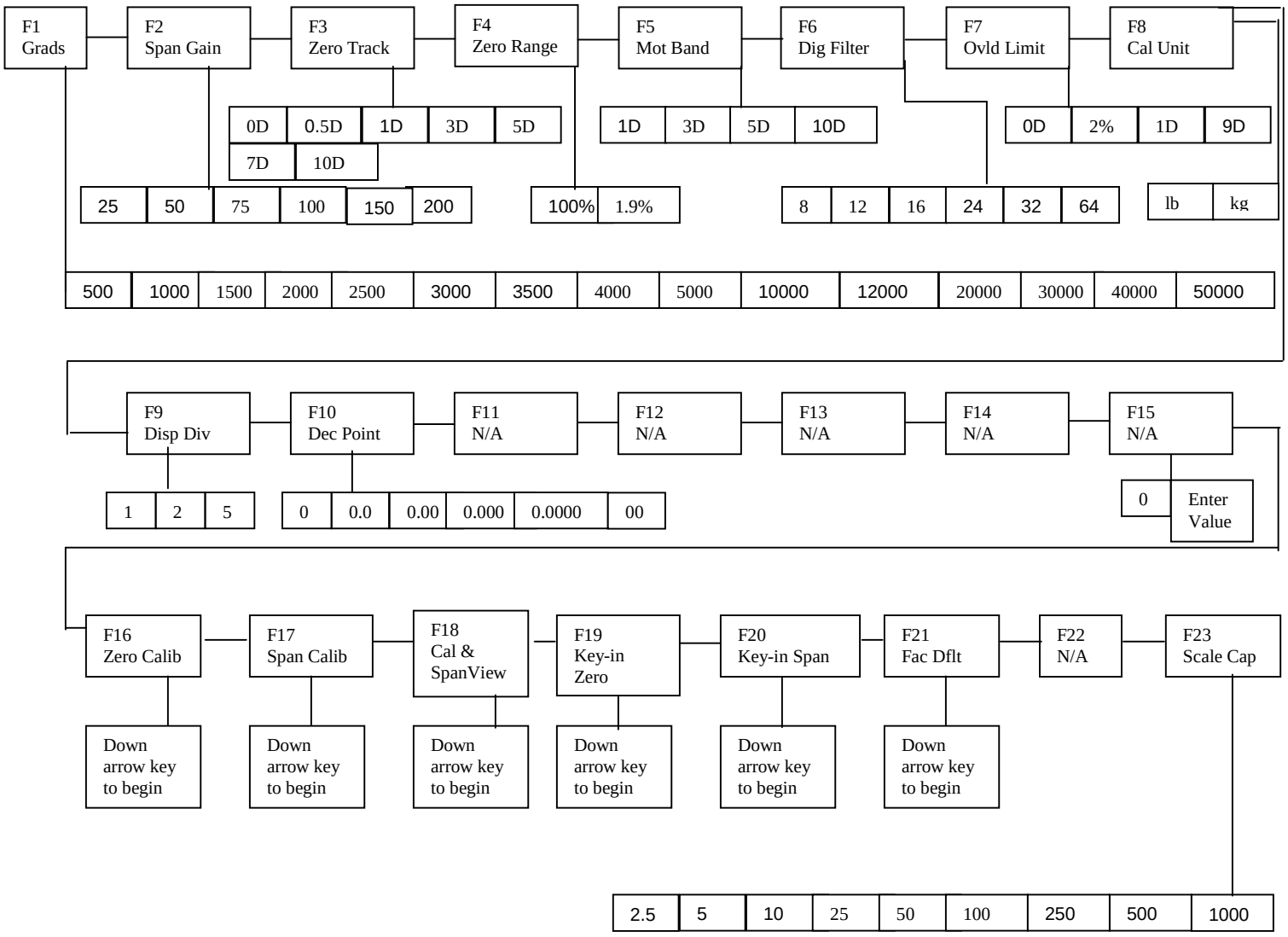
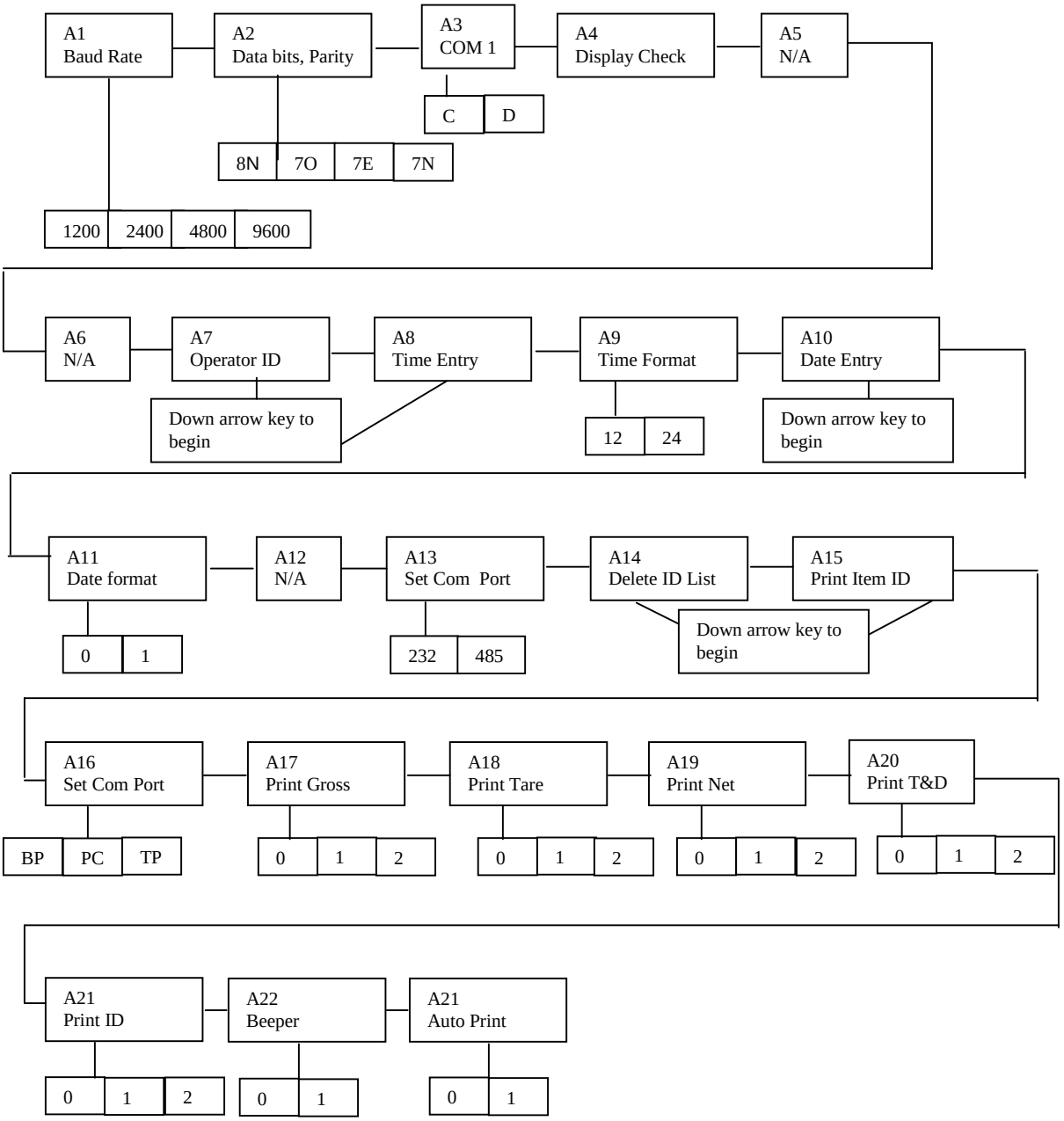


Figure 6-2: **"F" CONFIGURATION MENU**

NAME/CODE	DESCRIPTION	CODE/VALUE
F1 Graduations	Specifies number of full-scale graduations. Value should be consistent with legal requirements and environmental limits on the useful system resolution.	500 1,000 1,500 2,000 2,500 3,000 4,000 **5,000**√ 6,000 8,000 10,000 12,000 20,000 30,000 40,000 50,000
F2 Span Gain	Span Gain is related to A/D integration time. The larger the span gain, the higher the internal resolution, but the slower the update speed. Note that the scale must be re-calibrated whenever this parameter is altered. See Appendix C for more information.	25 50 **75**√ 100 150 200
F3 Zero Track Band	Selects the range within which the scale will automatically zero. Note that the scale must be in standstill to automatically zero. Selections are in Display Divisions.	0d 5d **0.5d**√ 7d 1d 10d 3d
F4 Zero Range	Selects the range within which the scale may be zeroed. Note that the indicator must be in standstill to zero the scale.	**100%**√ 1.9%
F5 Motion Band	Sets the level at which motion is detected by comparing the present display update with the previous one. If motion is not detected for two seconds or more, scale is in standstill and can process a Print or Zero command. Maximum value varies depending on local regulations.	**1d**√ 3d 5d 10d
F6 Digital Filter	Averages weight readings to produce higher stability. The higher the filter setting, the greater the stability but the slower the indicator's response time. Choose 8 unless a very fast response is needed.	8 24 12 32 **16**√ 64
F7 Overload Limit	Selects the desired formula which determines the point at which the indicator shows overload. All selections are based on the primary unit selected in F8. "FS" = Full scale in primary units.	FS **FS + 2%**√ FS + 1d FS + 9d
F8 Calib. Unit	Selects the primary base unit to be used in the calibration process. Also the default unit for normal operation. "1" = primary unit is lb. "2" = primary unit is in kg.	**1**√ 2
F9 Display Divisions	Determines the desired weight increments.	**1**√ 2 5
F10 Decimal Pt.	Determines location of the decimal point.	**0**√ 0.0 0.00 0.000 0.0000 00

F15 Setpoint 2 delay time	Allows user to set time delay in 1/10s of a second to cause SP 2 to alternate high and low when SP2 condition is met. A 0 (zero) value is always on.	**0**√ Enter value
F16 Zero Calibration	Places indicator into the zero calibration routine. Use the down arrow key to begin the procedure.	Press down arrow key to begin sequence
F17 Span Calibration	Places indicator into the span calibration routine. Use the down arrow key to begin the procedure.	Press down arrow key to begin sequence
F18 View Calibra-tion	Actuates the function that allows you to view both the zero and span calibration value. The values displayed in this function are valid only after Calibration (F16 & F17) has been successfully completed. Use the down arrow key to begin the procedure.	Press down arrow key to begin sequence
F19 Key-in Zero	Allows you to key-in known zero calibration value in case of memory loss in the field. Use the down arrow key to begin the procedure.	Press down arrow key to begin sequence
F20 Key-in Span	Allows you to key-in a known span calibration value in case of mem-ory loss in the field. Use the down arrow key to begin the procedure.	Press down arrow key to begin sequence
F21 Factory Reset	This sub-menu will reset all parameters in the “F” and “A” menu to the default settings. USE WITH CAUTION!	Press down arrow key to begin sequence.
F23 Scale Capacity	Allows user to set the capacity of the scale.	2.5, 5, 10, 25, 50, 100, 250, 500, 1000

Figure 6-3: "A" USER MENU



6.4 **USER MENU DESCRIPTIONS**

NAME/CODE	DESCRIPTION	CODE/VALUE
A1 Baud Rate	Selects the baud rate for data transmission through serial port.	1200 2400 4800 **9600**√
A2 Data Bits and Parity	Selects the number of data bits and parity of serial transmission. "8n" = 8 data bits with no parity bit and one stop bit "7O" = 7 data bits with odd parity bit and one stop bit "7E" = 7 data bits with even parity bit and one stop bit "7n" = 7 data bits with no parity bit and two stop bits	**8n**√ 7O 7E 7n
A3 COM1 Mode	Selects the mode of the COM1 serial port: "0" = ON Demand "1" = Continuous	**0**√ 1
A4 Display Check	Automatically checks all display segments. Use down arrow key to begin.	
A5 **N/A**		
A6 **N/A**		
A7 Enter Operator ID	Allows the user to Enter an operator ID number up to 6 digits. Refer to A21 to include in print format. Press down arrow key to begin. Use numeric keypad to enter. Press ENT to save.	Down arrow key to begin
A8 Time Entry	Actuates the function that allows entry of the current time. Use the left or right arrow keys to select the digit and the up/down arrow keys to change the value. Save by pressing the SET Key.	Down arrow key to begin
A9 Time Format	Actuates the operator to set the clock as a 12hr or 24 hr setting. "0" = 12 hour "1" = 24 hour	**0**√ 1
A10 Date Entry	Actuates the function that allows entry of the current date. Use the left or right arrow keys to select the digit and the up/down arrow keys to change the value. Save by pressing the SET Key.	Down arrow key to begin
A11 Date Format	Selects the format for current date. "0" = mm/dd/yy "1" = dd/mm/yy	**0**√ 1
A12 **N/A**	.	
A13 Set COM Port	Actuates the function that set either RS-232 or RS-485. Save by pressing the SET Key	**RS-232**√ RS-485
A14 Delete ID List	Actuates the function that DELETES all existing stored ID's. CAUTION: pressing the Down arrow key automatically starts the delete process and **cannot be undone**.	

A15 Print ID List	Actuates the function that PRINTS all existing stored ID's to dot matrix printer Pressing the Down arrow key automatically starts the print process	Down arrow key to begin
A16 Set Com Prot	Allows operator to set communications port to either printer or computer. BP – Eltron TLP 2742/2842 bar code printer PC - displayed output MP-20 or Epson ticket printer, ticket format is set with A17 – A21.	BP√ **bar code prntr** PC computer TP tape printer
A17 Print Gross	Allows operator to print the GROSS weight value. "0"	**0√ Disable** 1 Text Only 2 Text & Bar code
A18 Print Tare	Allows operator to print the TARE value. "0"	**0√ Disable** 1 Text Only 2 Text & Bar code
A19 Print Net	Allows operator to print the NET weight value. "0"	**0√ Disable** 1 Text Only 2 Text & Bar code
A20 Print Time & Date	Allows operator to print the TIME & DATE	**0√ Disable** 1 Text Only 2 Text & Bar code
A21 Print Operator ID	Allows operator to print the Operator ID value. Refer to A7	**0√ Disable** 1 Text Only 2 Text & Bar code
A22 Beeper	Allows operator to enable or disable internal beeper which indicates an accept condition for checkweighing	**0√ Disable** 1 Enable
A23 Auto Print	Allows operator to enable or disable auto print when at accept condition and display is stable	**0√ Disable** 1 Enable

APPENDIX A: SPECIFICATIONS

ANALOG SPECIFICATIONS

Full Scale Input Signal	30mV, including dead load
Input Impedance	30MΩ, typical
Internal Resolution – Neptune 6500	Approximately 260,000 counts
Display Resolution	50,000 display division max
Measurement Rate	10 Meas/sec, nominal
System Linearity	Within 0.02% of FS
Calibration Method	Software Calibration, with long term storage in EEPROM
Excitation Voltage – Neptune 6500	+10 VDC, 4 x 350Ω load cells

SERIAL COMMUNICATIONS

Serial Port	Full Duplex, 1200, 2400, 4800, 9600 Baud 8 data bits, no parity, 1 stop bit 7 data bits, odd parity, 1 stop bit 7 data bits, even parity, 1 stop bit 7 data bits, no parity, 2 stop bits

OPERATOR INTERFACE

Display – LCD Indicators	0.8" (20 mm) 7-segment, Liquid Crystal, 6 Digit
Additional Symbols	Net, Gross, Stable, Tare, lb, kg, Zero, PCS
Keyboard	18-key flat membrane panel

POWER

AC Adapter – Neptune 6500	12 VDC, 800mA Female

ENVIRONMENTAL

Operating Temperature	–10° to +40° C
Storage Temperature	-25° to +70° C

MECHANICAL

Overall Dimensions (L x W x H) – Neptune 6500	10" x 3” x 6"

APPENDIX B: SERIAL PORT INFORMATION

B.1 SERIAL PORT MODES

B.1.1 FULL DUPLEX MODE

The Full Duplex Mode provides a Demand serial transmission mode and is selected by setting A3 to “d” and A16 to “PC”. The Demand mode allows control from a host device, usually a PC. Figure B-1 shows a suggested cable diagram for interface to a PC. Figure B-2 shows the serial data format for the Demand Mode.

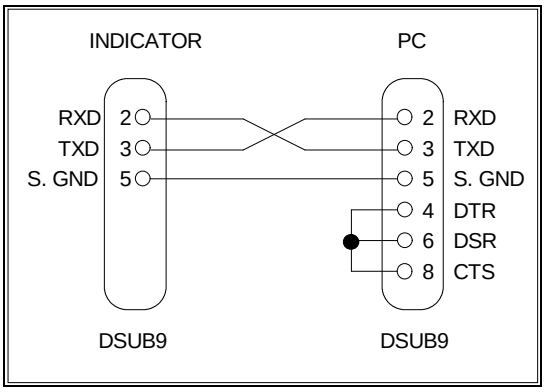


FIGURE B-1. Cable Diagram for Indicator to IBM PC

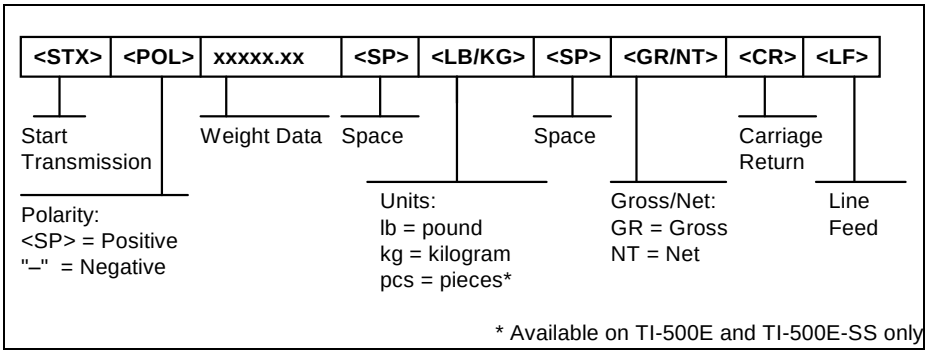


FIGURE B-2. Consolidated Controls Demand Mode

B.1.1.1 RECOGNIZED HOST COMMANDS

"P" - This command is sent to the indicator to print the indicated display. The indicator will not respond if the scale is in motion, positive overload or negative overload.

"Z" - This command is sent to the indicator to zero the scale. The indicator will not respond if the scale is in motion, positive overload or negative overload. The indicator will also not respond if it is not in gross mode or within the zero range specified in F4 of the Setup Menu.

"T" - This command is sent to the indicator to tare the scale. The indicator will not respond if the scale is in motion, positive overload or negative overload. The indicator will also not respond if it displaying a negative gross value.

"C" - This command is sent to the indicator to toggle among the configured units.

B.1.2 PRINT TICKET MODE

For printers with limited buffers, this mode supports DTR pin handshaking. The DTR pin from the serial printer is wired to the indicator's RXD pin which then functions as a CTS pin. Figure B-4 shows a suggested cable diagram for interfacing to a serial printer. Refer to the printer's user manual to confirm which pin is the DTR pin.

NOTES:

1. The TARE and NET fields are not printed unless a tare has been established in the system.
2. The ID number field is not printed if it is disabled in A7 of the User Menu.

```
ID. NO.    123456
GROSS       25.00 LB
TARE         1.48 LB
NET         23.52 LB
Time & Date
```

FIGURE B-3. Print Ticket

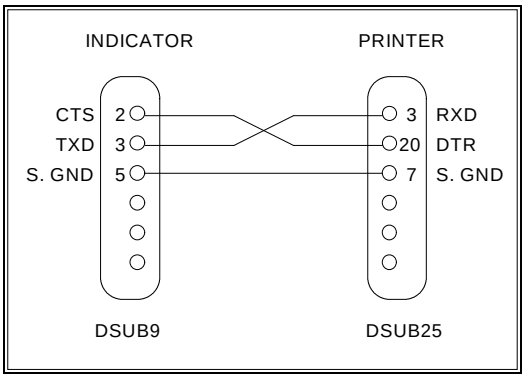


FIGURE B-4. Cable Diagram for Indicator to Printer

B.1.3 SIMPLEX MODE

The Simplex Mode provides a continuous serial transmission mode and is selected by setting A3 to “C” and A16 to “PC”. The Continuous mode is used to interface to computers, scoreboards, and other remote devices requiring constant data updating. The transmission occurs at the end of each display update. Figure B-5 shows the serial data format for Continuous Mode.

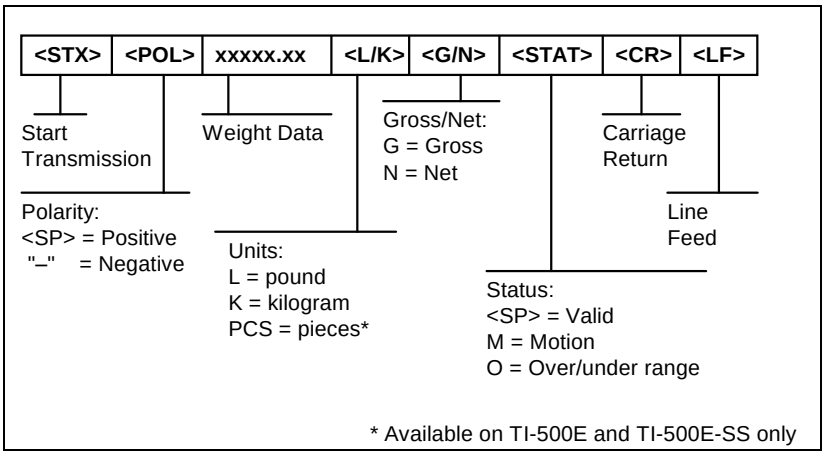


FIGURE B-5. Consolidated Controls Continuous Mode

LIMITED WARRANTY

Seller warrants that the NEPTUNE Series Digital Indicator line will conform to written specifications, drawings, and other descriptions made by the manufacturer, including any modifications thereof. The Seller warrants the goods against faulty workmanship and defective materials. If any goods fail to conform to these warranties, Seller will, as its sole and exclusive liability hereunder, repair or replace such goods if they are returned within the following warranty period:

Twelve (12) months from date of shipment from manufacturer.

These warranties are made upon the following TERMS and CONDITIONS:

This warranty is limited to the original equipment manufactured by TRANSCELL TECHNOLOGY, INC. Items not covered under this warranty are batteries and normal wear items like connectors, shrouds, front panels and fuses. For the first sixty (60) days from the date of installation, the warranty covers parts, on-site labor, and limited travel time and mileage. (3 hrs/150 miles maximum per occurrence). After sixty (60) days, the warranty covers the cost of replacement parts only. However, at the discretion and prior approval of TRANSCELL, certain equipment may be returned , freight pre-paid, for repair, free of any parts or labor charges.

TRANSCELL's responsibility is confined to repair, replacement or credit of equipment of parts. The warranty does not extend coverage to labor, material, freight or service charges involved in removal, shipping or reinstallation of equipment or parts.

CONDITIONS WHICH VOID LIMITED WARRANTY:

This warranty shall not apply to equipment which:

A. Examination of such goods discloses that the nonconformity exists and was caused by accident, misuse, neglect, alteration, improper installation improper or unauthorized repair, improper testing, or an act of GOD including lightning and such goods have not been modified, altered, or changed by any person other than the Seller or its duly authorized repair agents.

Transcell Technology, Inc. will have a reasonable time to repair or replace such goods.

THESE WARRANTIES EXCLUDE ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ORAL OR WRITTEN, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SELLER WILL NOT IN ANY EVENT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

IN ACCEPTING THIS WARRANTY, THE PURCHASER OR BUYER AGREES TO WAIVE ANY AND ALL OTHER CLAIMS FOR RIGHT TO WARRANTY FROM TRANSCELL TECHNOLOGY, INC. SHOULD THE SELLER BE OTHER THAN TRANSCELL TECHNOLOGY, INC., THE BUYER AGREES TO LOOK ONLY TO THE SELLER FOR WARRANTY CLAIM OR CLAIMS.

No terms, conditions, understanding, or agreements purporting to modify the terms of this warranty shall have any legal effect unless made in writing and signed by a corporate officer of the Seller.