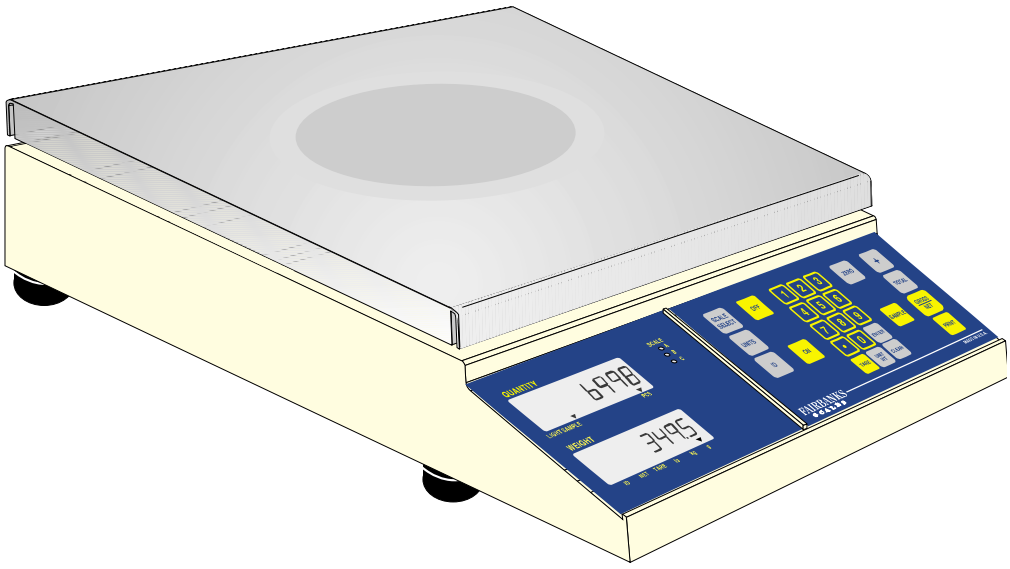
Operating Manual

Sigma Counting Scale

CTG-9850 Series

(AC Powered)



50165
Issue #9 3/04

Amendment Record

Sigma Counting Scale
CTG-9850 Series
50165

Manufactured by Fairbanks Scales Inc.
821 Locust
Kansas City, Missouri 64106

Created

Issue #1

Issue #2

Issue #3

Issue #4

Issue #5

Issue #6 11/99 Added: Bar code Printing became standard

Issue #7 04/01 Added: New software, Bar Code reader is now standard.
Added: New Display & Power Supply specifications

Issue #8 01/04 Added New Printer Information

Issue #9 03/04 Corrected typographical errors

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Disclaimer

Every effort has been made to provide complete and accurate information in this manual. However, although this manual may include a specifically identified warranty notice for the product, Fairbanks Scales makes no representations or warranties with respect to the contents of this manual, and reserves the right to make changes to this manual without notice when and as improvements are made.

Section 1: Introduction

The CTG-9850, is a compact, stand-alone, electronic counting scale designed for fast, convenient use whenever counting and light capacity weighing applications arise. Programming is accomplished by using the front panel keys.

CAUTION: This product is shipped from the factory set for 110-120 VAC operation. For 220-240 VAC operation, settings must be changed before powering up. Please call your Fairbanks Service representative, or call 1-800-471-4107 or go to www.fairbanks.com to locate the nearest representative.

Section 2 : Description

Each Model CTG-9850 counting scale is a computing device designed to count parts by calculating the piece weight from a small, known sample quantity, and dividing it into the bulk quantity weight. While this scale will perform basic weighing functions, its primary design intent is to count items in bulk quantity. The unit can be easily moved from one work site to another, providing quick setup and operation.

The CTG-9850-A, B, C, and D can be optionally equipped with up to two different accessory boards. Models CTG-9850-A1, B1, C1, and D1 come with these two (2) accessories installed.

- Accessory 15316 (ACC 367) enables the instrument to be used with up to two remote platforms, 'B' & 'C'.
- Accessory 15331 (ACC 366) offers two RS232C serial ports for interface to printers,computers, bar code label printers, or bar code readers, plus the ability to use up to two (2) remote platforms.

A. Capacities:

Model #s	Description	Capacity and Grad Size
15280 & 15307	CTG-9850-A & A1	10 lb x 0.001 / 5000 gm x 0.5
15281 & 15308	CTG-9850-B & B1	25 lb x 0.002 / 10 kg x 0.001
15282 & 15309	CTG-9850-C & C1	50 lb x 0.005 / 25 kg x 0.002
15283 & 15310	CTG-9850-D & D1	100 lb x 0.01 / 50 kg x 0.005

B. Specifications:

1. **Weight:** 14 lbs
2. **Size:** 11" wide, 5" high and 14" long
3. **Measuring System:** Strain gauge load cell
4. **Tare, Keyboard Entry:** Enter tare values and press the tare key. Separate tare values may be stored for each platform in the system.
5. **Tare Range:** 100% of the scale capacity
6. **Sampling Modes:** Sample size: operator selectable
7. **Automatic Zero Tracking:** 0.5 division range
8. **Programming:** Front panel calibration and setup
9. **Display:** Dual, 7-segment vacuum fluorescent, each with 6-digits, one display for weight and one for quantity
10. **Measuring Modes:** Weight in gross or net, weight units in Avoirdupois or Metric, accumulated counts
11. **Average Piece Weight:** Displayed upon demand
12. **Overload**: Displays (- - - - - -) at 105% of capacity
13. **Overload Limit:** 300% static load
14. **Operating Temperature/Humidity:** 0 to 40 C, 80% Relative Humidity or less
15. **Power Requirements:** 117 volts AC, 50-60 Hz

C. Accessories for use with 9850 Series:

Cable accessories:

Product No.	Ref No.	Description
15329	ACC 374	Interface cable to PC (8 pin connector, 10 feet)
17239	ACC 391	Interface cable with din connector one end, 10 feet for remote platforms
17241	ACC 392	Interface cable with din connector one end, 25 feet for remote platforms
15326	ACC 371	Interface cable for 3550 Series or 3560 Series printer, 10 feet
15327	ACC 372	Interface cable for 3950 Series printer, 10 feet
16251	ACC 394	Interface cable for 20358 Bar code label printer, 10 feet
22469	**New**	Interface cable for 21784 Bar code reader, 8 feet

I/O upgrade accessories:

Product No.	Ref No.	Description
15311	ACC 366	Bi-directional communications port PC board
15316	ACC 367	B/C Platform connection PC board

Printers: (Requires 15311 and appropriate cable accessory)

Product No.	Ref No.	Description
20358	New	Bar Code Label Printer
20481	3550	Tape Printer
15733	3950	High speed ticket printer
15737	3960	General purpose ticket printer

Bar Code Readers: (Requires 15311 and 22469)

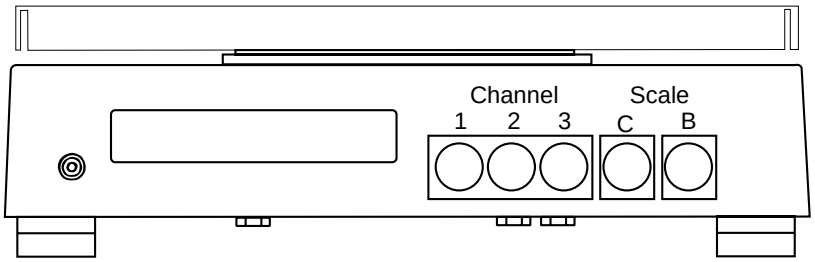
Product No.	Ref No.	Description
21784	**New**	Bar Code reader/decoder
22467	**New**	Wand Scanner
22468	**New**	Laser Scanner

Other:

Product No.	Ref No.	Description
15584	ACC 395	Clear vinyl spill cover
15325	ACC 370	Adapter kit for 1000 lb. portable beam scale (Requires 15311 or 15316 I/O accessory)

D. Features:

Some of the following features can be enabled or disabled through front panel programming. If connections to the indicator are required, they are made through the ports on the back of the indicator. The following features are available on all 9850 Series with the above I/O upgrade accessories installed. The appropriate accessory boards must be installed in the CTG-9850-A, B, C, and D to access the described features.



1. **Additional Platforms (remote platforms):**
   The CTG-9850 Counting Scale can be configured to use two additional platforms. The scale is equipped with indicator lights on the front panel to show which of three platforms has data being displayed. **The counting scale platform is always the "A" platform. The other two platforms are designated "B" or "C".**
   The “B” or ”C” platforms have a menu with capacities of 1, 200, 600, 1000, 2500, 5000, 10000 or 20000, or Cal Scale to choose from. The platform to be used is selected by pressing the SCALE SELECT key until the appropriate indicator light comes ON. Additional platforms can be thought of as extending the range of the CTG-9850 counting scale. If the counting scale is of small capacity, 10 or 25 pounds, and a large number of items are to be counted, a large capacity scale could be installed. The sampling would be done on the counting scale and the actual counting made on the larger scale.

2. **Sample platform feature:**
   The CTG-9850 counting scale can be configured for the 500 gram or 1 lb sample scale. The sample scale is used when small numbers of small parts are to be counted. The sample scale can be used as the sample device or the counting device.

3. **Auto switching feature:**
   This feature is enabled when an additional platform is installed. The feature instructs the system to switch to the smallest capacity scale when the sample key is pressed. This feature makes the smallest capacity scale the sample scale. Once the sample operation is completed, the system automatically returns to the larger platform for counting. The auto switching feature is enabled or disabled through service programming.

4. **Auto accumulate feature:**
   The feature allows the operator to keep a running total of the number of items counted and displays the number of counting operations performed. The stored total will NOT be lost when the scale is turned OFF.

5. **Limit value:**
   The"Limit Value" is a number or value in "counts" that can be set by the operator. When that number is reached in the count operation, a pulsed tone will sound and the display will flash.

6. **Communications:**
   The CTG-9850 Counting Scale has three RS-232, bi-directional communications ports. These ports can be configured to support a wide variety of printers and computers.
   The communication ports are labeled CHANNEL 1, 2, and 3 on the back of the scale. Each port uses a 9-pin DIN connector. The communications port can be configured for a tape printer, ticket printer, computer, Bar code printer or Bar code scanner. *See Appendix I for protocol information on each of these devices.*

NOTE: Channel 3 is dedicated for the 45-955X high resolution counting scale ONLY.

7. **ID Feature:**
   Each product being counted can be assigned an ID number. This ID number can be used to identify the items on the print-outs. The ID number is entered through the keypad on the indicator or the optional Bar code scanner

Note : This ID will remain in memory until a new ID is entered, or the program mode is entered.

8. **Printing :**
   This feature allows for the data to be printed and/or sent to a computer terminal. See Appendix I for more information about the format and data printed. This feature can be enabled or disabled in programming. Printing will not occur when there is vibration on the platform.

9. **Changing weighing units:**
   The weight units can be changed between pounds and kilograms from the front panel, regardless of the units used to calibrate the scale. Pressing the UNITS key will change the units displayed. The indicator in the weight display will light above the units in use.

10. **Unit weight:**
    This feature allows the operator to view the average piece weight of the items in the current, or last weighment. To view the average piece weight, press and hold the UNIT WT key. The quantity display will show "AP" and the weight display will show the average piece weight. The unit weight is calculated when SAMPLE key is depressed (see Section 4), or can be entered through the keypad on the indicator, or the optional Bar code scanner.The unit weight will not be lost when the scale is turned OFF, or the program mode is entered.

11. **Auto Integrate:**

The "light sample" indicator will flash when the sample weight on the platform is less than 50 divisions. The light sample indicator will stop flashing when the 50 division standard is exceeded by the sample weight on the platform.

12. **Tare Weights:**

A tare weight may be entered via the keypad or optional Bar code scanner for each platform in the counting scale system. This tare weight may be viewed by selecting the scale then pressing and holding the TARE key. The stored tare weight will appear in the weight display. Release the tare key and the scale will return to the weighing mode. The tare weight will not be lost when the scale is turned OFF, or the program mode is entered.

13. **Clear:**

a. Pressing the CLEAR key will delete the last numeric entry.

b. Pressing the CLEAR key twice will return the average piece weight and tare to zero. If repeatedly pressed, the scale will return to the gross weigh mode.

14. **I/O:**

Multiple I/O options are available through the two independently service programmed I/O channels (1 & 2) for any of the following : Tape Printer, Ticket Printer, Computer, Bar code Label Printer, Bar Code Reader, or Maple Terminal. Data will be printed each time the PRINT key is operated (and there is no motion on the weighing platform). It should be noted that if printers are connected to both channels, there will be a noticeable change in the speed of operation. This is normal.

E. Printers:

A standard printed output is available through several options as shown in Appendix I. Operating the PRINT key will initiate an output when the instrument is in the gross, net, or total modes. An ID number, gross weight, quantity and unit weight will be printed when the instrument is in the gross weight mode. An ID number, gross weight, tare weight, net weight, quantity and unit weight will be printed when the instrument is in the net weight mode. An ID number, total number of accumulations, and total quantity will be printed when the instrument is in the total mode. If the instrument has been programmed to update ID numbers, the ID indicator will come on when the PRINT key is pressed. The ID number currently stored in memory will be momentarily displayed. The operator may enter a new ID number up to 12 digits. To complete the printing operation, press the ENTER key.

F. Computer:

Data may be sent to a computer as shown in Appendix I option 3. Operating the PRINT key will initiate an output when the instrument is in the gross, net or total mode. If the instrument has been programmed to update ID numbers, the ID indicator will come on when the PRINT key is pressed and the current ID number will be momentarily displayed. The operator may enter a new ID number. Pressing the ENTER key will send data and the displayed ID to a computer. A computer may request data by transmitting a carriage return (CR). If the scale has been programmed to update ID numbers, the operator will be required to enter the ID number and press the ENTER key to complete the data transfer.

Section 3: Setup

A. Unpacking:

The instrument comes packaged in one box, some assembly is required.

- Unpack the parts carefully and examine for any signs of damage.
- Besides the main instrument assembly, there is a locator plate and cover.
- Remove the instrument and the plastic bag from the box.
- Place the locator plate on the spider so that the 4 corner grommets fit into the depressions. The grounding contact should stick through one of the holes in the locator plate.
- Place the weighing pan on the locator plate.
- Place the instrument on a flat surface where it will be used. With the four leveling feet, level the instrument using the bubble level under the location plate. Lock each foot in place by tightening the upper rubber washer against the bottom of the instrument case.
- Plug the instrument into a properly grounded outlet.
- Press the ON key. The scale will go to the weigh mode with platform “A” active

B. Cautions:

For best results operate the scale in an area that is:

- Free from drafts.
- Not exposed to direct sunlight, radiated heat sources or sudden temperature changes.
- Not subjected to vibrations.
- Not subjected to high humidity or dust.

Section 4: Operation

A. Introduction :

A counting scale is a weighing device that displays the number of similar items in a group, based on the weight of a known sample. The scale calculates the 'average piece weight' for the items by taking the total weight of the sample and dividing by the number of items in the sample. Using this average piece weight, the scale can then calculate the number of items in a group by dividing the total weight by the average piece weight. All of these calculations are done automatically by the scale. Counting scales provide a quick and accurate count of large quantities of similar objects.

1. **Terms & Definitions:**

COUNT: The number of items in a lot that is being counted by the scale. The count is derived by dividing the total weight on the scale by the average piece weight of the items to be counted.

AVERAGE PIECE WEIGHT (APW) : The calculated weight of a piece, derived by dividing the total weight of a sample of pieces by the number of pieces in the sample. This is done automatically by the counting scale. The larger the sample size, the more accurate is the average piece weight. (Shown as “AP” on the display).

SAMPLE SIZE, or SAMPLE : This is the number of items in the sample that is used to get a count. A sample size of “10" is usually used for most items to be counted. However, the size of the sample is determined by the weight of the individual items, unit weight, or the weight consistency of the items being weighed. The sample size is programmable and can be changed. The sample size stored in the scales memory will not be lost when the scale is turned OFF.

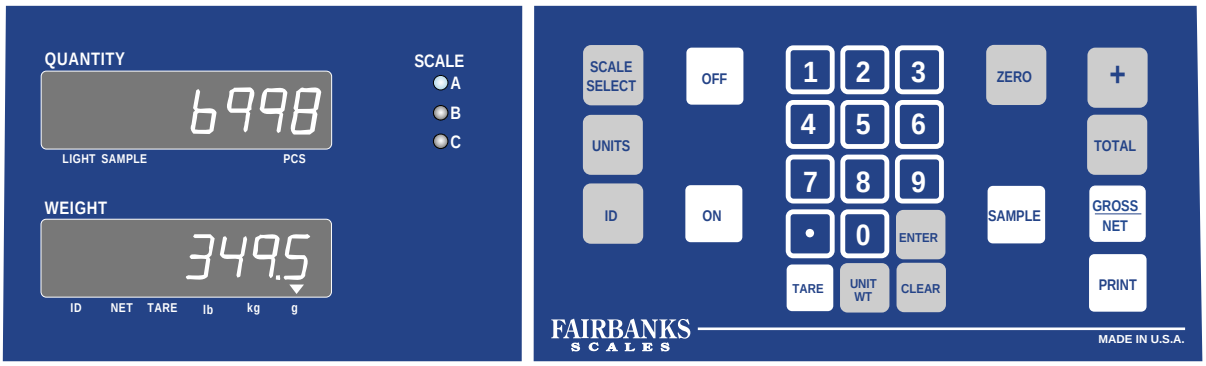
a. The lighter the item, the larger the sample should be. If pieces of paper are to be counted, a sample size of 20 or 50 would be preferable to 10, since each piece of paper is light in weight. If nuts and bolts are being counted, a sample size of 10 would be sufficient. A larger sample size results in a more accurate count.

b. Some items that are to be counted may have variable unit weights. This might be true of large bolts. The weight of a bolt may be different from each of the other bolts. Accuracy of the count can be achieved by using a larger number in the sample.

B. Start Up:

1. Plug the scale into a grounded 117 volt outlet.
2. Press the ON key. The warm-up sequence will display all "8888"s and all indicator lights will be ON for about 5 seconds.
3. The scale will then switch to the weigh mode with platform "A" active.

NOTE: The scale will emit an audible tone each time a command is accepted by the scale. Wait for the "Tone" before proceeding to the next step.



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C. Keys:

CLEAR:
This key will clear the last number entered

GROSS/NET:
This key switches the scale between the gross mode and the net mode.

OFF:
This key turns the scale OFF.

ON:
This key turns the scale ON.

UNITS:
This key toggles the programmed units; lbs, kg, or g.

SAMPLE:
This key is a dual function key. It is used to initiate the precision sample measurement sequence and secondly, it is used when entering a new sample count size into memory.

ZERO:
This key is used to zero the scale. It sets the weight and the piece count displays to zero.

TOTAL:
This key is used to display accumulated totals resulting from the add function. The top display will show the total number of successful product addition operations, while the bottom display shows the total number of pieces accumulated.

(+) PLUS:
This key is used to add the displayed count to the accumulated total in memory. It also causes the total number of successful product addition operations value to be incremented. This key is also used to display the Limit Value after the TOTAL key has been pressed.

TARE:
This key has two functions.

(1) It is used when entering values into TARE memory from the keyboard and automatically places the instrument in the net weight mode.

(2) If pressed after tare data has been entered, it will cause the stored tare value to be displayed and the Tare indicator to light.

(.) Decimal Point:
This key is used during data entry from the keyboard to correctly position the decimal point. NOT recommended for ID entry

SELECT:
This key is used to select either the A scale, B scale, or C scale, (if the B or C scale is enabled).

PRINT:
This key is used to transmit data from the scale to a remote device, via output Channels 1or 2.

0 through 9:
These keys are used to enter numeric data, such as tare or unit weight.

UNIT WT:
Used when entering unit weights from the keyboard. Used to display the currently stored unit weight.

ENTER:
Used to enter information into memory when certain data is entered through the keypad as part of the product ID and total functions.

ID:
Used to enter a product ID number to be sent to a printer or computer. Up to 12 digits in the ID are allowed.

D. Operation feedback Indicators:

The counting scales use an internal beeper to indicate to the operator that the pressed key has been recognized. The scale also uses display prompts to guide the operator through programming and basic operational steps. Additionally, the scale has status indicators, i.e., lighted triangle(s) above the indicator legend indicates the item is active.

1. Indicators in the *lower* display:

Weight ID:
The displayed number is a Product ID number.

NET:
This indicator tells the operator that the scale is in the NET mode.

TARE:
This indicator tells the operator that the value in the weight display is the current TARE value stored in memory.

POUNDS (lb):
Tells the operator that the displayed value is in pounds.

KILOGRAM (kg):
Tells the operator that the displayed value is in kilograms.

GRAM (g):
Tells the operator that the displayed value is in grams.

2. Indicators in the *upper* display:

LIGHT SAMPLE:

Tells the operator that the total sample weight is too light for accurate determination of a unit weight.

PCS:

Indicates the number of pieces on the platform.

3. A/B/C Scale:

This indicator tells the operator which scale is presently selected and operating. Only the data from the selected scale will be displayed.

E. Weighing modes:

1. Standard Counting, With No Container:

The standard counting operation is used when things are to be counted with NO container used.

a. With the counting scale ON and warmed-up, press the ZERO key to set both displays at zero.
b. Press the SAMPLE key. The quantity display will flash the sample size to be placed on the platform.
c. Place the indicated number of items on the platform and wait for the display to stop flashing.
d. Add to the sample on the platform until the required quantity is reached. The display will show the number of items on the platform.

e. Remove the items on the platform. To repeat the counting process with the same kind of items, place a new batch on the platform and the display will show the count. Add to the batch or remove items from the batch to achieve the required count. The process can be repeated over and over, with the same type of items.

2. Standard Counting With A Container:

Standard counting with a container might be used if a certain number of small parts were going to be put into a box on the platform.

a. With the counting scale ON and warmed-up place the box to be used as a container on the platform.
b. Press the ZERO key to set both displays at zero.
c. Press the SAMPLE key. The display will flash the sample size.
d. Place the required number of items in the box. The counting scale will automatically calculate the average piece weight. The display will show the sample count.
e. When the flashing stops, add items to the container until the required number is achieved.
f. Remove the container and the contents. Place a new, empty container on the platform, and press the ZERO key.
g. Fill the new container until the required number of items is displayed.
h. Repeat steps f and g for each new container of the same type.

F. Operator Functions:

1. **Changing ID numbers:**

An ID number (up to 12 digits) can be assigned to each product being counted. This ID number can be used to identify the items on the print outs and information sent to a computer.

a. To enter an ID number via the keypad:

1). With the scale in the weigh mode enter the ID number through the keypad.

2). The number will be displayed in the quantity and weight display. Press the ID key and the number will be stored in memory.

3). The display will return to the weigh mode. When the count information is sent to a printer or computer terminal, the ID number will be part of the transmission.

4). To change the ID number when the PRINT key is depressed, enter a new number from the keypad and press the ENTER key. To keep the same ID number simply press the ENTER key.

b. To enter an ID number via the bar code scanner:

1). With the scale in the weigh mode and the scanner connected to channel 1 or 2, scan the bar code for a part number created by the Bar code printer or comparable bar code label that is the same format as shown Appendix I section D2.

2). If the scan is successful, you will hear a beep from the scale and the number will be displayed in the quantity and weight display momentarily.

3). The display will return to the weigh mode. When the count information is sent to a printer or computer terminal, the ID number will be part of the transmission if the ID programming mode was enabled during Programming.

4). To change the ID number when the PRINT key is pressed, enter a new number from the keypad and press the ENTER key. To keep the same ID number simply press the ENTER key.

2. Changing Sample Size:

It is sometimes desirable to change the size of the sample. To change the sample size:

a. With the counting scale warmed-up and displaying zero, press the SAMPLE key. The quantity display will flash “PU xx” where xx is the current sample size.

b. While the display is flashing, press the appropriate numbers and then press the ENTER key. The numerals will appear in the quantity display.

c. Press the SAMPLE key again. The quantity display will flash “PU” and the new sample size. Place the indicated quantity on the platform. Following a short delay the display will stop flashing, signaling it is ready to count.

3. Auto Integrate:

This scale uses the light sample update feature. The light sampling Indicator can be enabled or disabled. If enabled, the light sample indicator will flash if the sample on the platform is too small to get an accurate piece weight value. If the sample weight on the platform is less than 50 divisions, the light sample indicator will flash. If the weight is changed by 5 divisions, the light sample indicator will stop flashing.

a. With the light sample indicator flashing in the gross mode, press the SAMPLE key. This activates the Auto Integrate feature. The quantity display will indicate "A0". The "A0 xx" means to add to the sample on the platform. (The "xx" is a number). Add UP to this number of pieces to the sample on the platform. It is NOT necessary to count out the sample. Slowly add pieces to the platform. The display will continually update the count. Repeat until the light sample indicator goes Off. The sampling process is complete. This new sample size number will be requested on each succeeding sampling operation.

b. The alternative method is to change the sample size. When the light sample legend flashes, remove the sample from the platform. The scale will default back to the mode it was in before the sampling process was started. Increase the sample size to a number sufficiently large so the weight of the sample is at least 50 scale divisions.

4. Average Piece Weight:

If the average piece weight, or unit weight, is known, the value can be entered directly into the counting scale. This speeds the operation, since it avoids the sampling techniques described earlier. The operator does not have to count out the sample quantity.

a. To enter a Unit weight via the keyboard:

1). Select the lb or kg weighing mode using the UNIT key.

2). Enter the average piece weight through the keypad. The entered value will show in the quality display.

3). Press the UNIT WT key. The average piece weight will be entered into memory and the display will return to the weigh mode.

4). When the next group of objects are placed on the platform to be counted, the average piece weight entered will be used to arrive at a count.

5). This average piece weight will be used in counting until a new average piece weight is entered or the SAMPLE key is pressed and a new sample put on the platform. To clear the unit weight memory, enter "0" through the keypad and press the UNIT WT key.

b. To enter a Unit weight via the Bar code scanner:

1). With the scale in the weigh mode and the scanner connected to channel 1 or 2, scan the bar code for a piece weight created by the Bar code printer or comparable Bar code label that is the same format as shown Appendix I section D2.

2). If scan is successful, you will hear a beep from the scale, the number will be stored in memory and then displayed in the quantity and weight display momentarily.

3). The display will return to the weigh mode.

4). When the next group of objects are placed on the platform to be counted, the average piece weight entered will be used to arrive at a count.

5). This average piece weight will be used in counting until a new average piece weight is entered or the SAMPLE key is pressed and a new sample put on the platform. To clear the unit weight memory, enter "0" through the keypad and press the UNIT WT key.

5. Tares:

When containers are used to hold the items to be counted and the total weight of items and container must be known, it is sometime faster if the weight of the container is stored as a tare weight in the counting scale memory. Always complete the sampling process prior to placing the empty container onto the platform and entering it's weight into tare memory.

a. To enter a keyboard tare:

1). Remove all items from the platform and zero the scale by pressing the ZERO key.

2). Place the empty container on the platform, and enter the displayed weight through the keypad, then press the TARE key.The scale will automatically change to the net weigh mode. The display will show "0".

3). Items added to the container will be displayed in the quantity display and the weight of these items will be shown in the weight display.

4). Press the GROSS/NET key to return the scale to the gross weigh mode and the total weight of items and container will be displayed in the weight display.

5). To clear the tare memory enter 0 through the keypad and press the TARE key.

b. To enter a tare via the Bar code scanner:

1). With the scale in the weigh mode and the scanner connected to channel 1 or 2, scan the bar code for tare created by the Bar code printer or comparable Bar code label that is the same format as shown Appendix I section D2.

2). If scan is successful, you will hear a beep from the scale and the number will be stored in memory and then displayed in the quantity and weight display momentarily.

3). The scale will automatically change to the NET weigh mode.

4). When the count information is sent to a printer or computer terminal, the tare weight will be part of the transmission if the scale is in the “NET” mode.

6. A/B/C Platforms:

Multiple platform counting operations are often used. One platform is used to count the sample and a second platform is used to actually count large quantities of the items

7. Removing Pieces From An Unknown Quantity:

a. Place the unknown quantity, with/without container, onto the platform.

b. Press the SAMPLE key.

c. Remove the required number of pieces.

d. Once the display stops flashing remove all the pieces. The number of pieces removed will be displayed as count.

8. Auto Accumulate:

a. To reset the current accumulator values to zero,

1.) Press the TOTAL key.

2.) Then press the CLEAR key.

3.) To return to the weigh mode, press the TOTAL key again. The accumulator values will also be reset to zero anytime a new ID number has been entered or the unit weight is changed.

b. To accumulate the number of pieces counted;

1.) When a group of items has been counted, press the PLUS key. The number of pieces in the count will be added to the total register and one will be added to the accumulator register.

2.) Remove the weight from the scale and place the new group of items to be counted on the scale.

3.) Press the PLUS key and the new count will be added to the total, and one added to the accumulator. If a triple tone is heard, the add operation was not performed. Remove the pieces from the platform, verify the displayed weight changes are more than 50 graduations, then return the pieces to the platform. Once the weight reading is stable, press the PLUS key again.

c. To check the accumulated totals;

1.) Press the TOTAL key. The quantity display will show “AC x” where “x” is the number of times a count operation had been performed. The weight display will show the total number of items counted.

2.) Press the TOTAL key again to return to the weigh mode.

9. Limit Value:

a. To reset the current limit value to zero.

1.) Press the TOTAL key.

2.) Then press the PLUS key.

3.) Then press the CLEAR key.

4.) To return to the weigh mode, press the ENTER key.

b. To change the current Limit value:

1.) Press the TOTAl key then press the PLUS key, and the quantity display will show “LI”. This is the “limit” prompt. The weight display will show the number currently stored in memory.

2.) Use the numeric keypad to enter a new value.

3.) Press the ENTER key to store the new value.

4.) To return to the weigh mode, press the ENTER key.

APPENDIX I: CHANNELS 1 AND 2 OUTPUT OPTIONS

A. Option "1", 20481 (3550 Series) Tape Printers or 50-3715 (Obsolete) 50-3930 (Obsolete) and 15737 (50-3960) Ticket Printers:

1. **RS232 Specifications**

Baud Rate : 2400
Data Bits : 8
Stop Bits : 1
Parity : None

2. **Output Format**
Fixed as shown below:

Gross Mode

```
ID 123456789012
   4.996 lb GR
Quantity   22665
0.00022046 lbs Unit Weight
```

Net Mode

```
ID 123456789012
   4.996 lb GR
   2.500 lb TA
   2.496 lb NT
Quantity   11327
0.00022046 lbs Unit Weight
```

Total Mode

```
ID 123456789012
Number of Accumulations     5
TOTAL 544364
```

2367a

3. **Wiring**
See Appendix II

4. **Printer Set-Up Tape Printers**

a. 50-3715 (Obsolete)

	Open (OFF)	Closed (ON)
8 Position Switch DS1	1, 2, 3, 4, 5, 6, 8	7
8 Position Switch DS2	1, 3, 4, 6, 8	2, 5, 7

b. 3550 Series

	Open (OFF)	Closed (ON)
10 Position Switch DS1	1, 5, 7, 9,10	2, 3, 4, 6, 8
8 Position Switch DS2	6, 7, 8	1, 2, 3, 4, 5

c. 590 Series

Printer set-up for TMU 590
Use cable ACC 371, Part Number 15326

	Open (OFF)	Closed (ON)
DSW1	1, 2,4,5,6,8	3,7
SDW2	1,2,3,4,5,6,7,8	None

Set the Indicator Protocal to:

- •9600 baud
- •8 character
- •no parity
- •1 stop bit

d. 295 Series

Printer set-up for TMU 295
Use cable ACC 371, Part Number 15326

	Open (OFF)	Closed (ON)
DSW1	2,4,5,6,7,8,9,10	1,3

Set the Indicator Protocal to:

- •9600 baud
- •8 character
- •no parity
- •1 stop bit

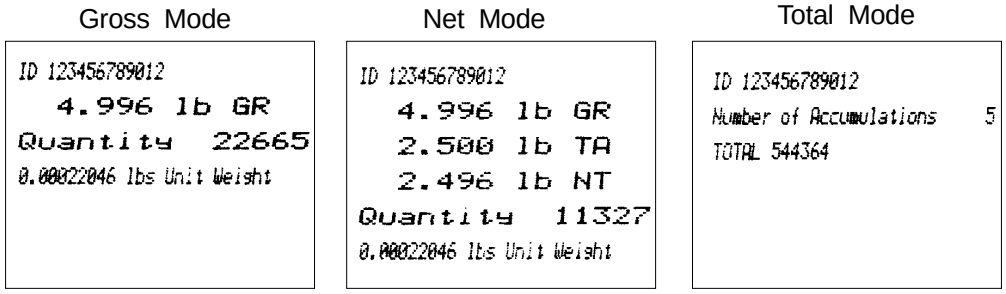
5. **Printer Set-Up for 50-3930 / 50-3960**

	Open (OFF)	Closed (ON)
50-3930 10 Position Switch	4, 5, 7, 9, 10	1, 2, 3, 6, 8
50-3960 10 Position Switch	4, 5, 6, 9, 10	1, 2, 3, 8

B. Option "2", 15733 (PTR-3950) and 50-3925 (Obsolete) Ticket Printer:

1. **RS232 Specifications**
   Baud Rate : 2400
   Data Bits : 7
   Stop Bits : 1
   Parity : Odd

2. **Output Format**
Fixed as shown below:



2367a

3. **Wiring**
See Appendix II

4. **Printer Set-Up**

		Closed (ON)	**Open (OFF)**
50-3925 (Obsolete) 9 Position Switch:		2, 3, 4, 5, 7, 9	1, 6, 8
PTR-3950 (2) 8 pos switches	SW1	2, 3, 7	1, 4, 5, 6, 8
	SW2	1, 4, 5, 7	2, 3, 6, 8

C. Option "3" Computer Interface:

1. **RS232 Specifications**

Baud Rate : Programmable
Data Bits : 8
Stop Bits : 1
Parity : Programmable

2. **Output Format when in Net or Gross weighing modes**

String 1 Status Characters

Character	Description
1	Status Character A
2	Status Character B
3	Status Character C
4	Status Character D
5	Status Character E
6	Status Character F
7	Carriage Return
8	Line Feed

String 2 Gross Weight

Character	Description
1 through 6	6 character weight data field, characters "0" thru "9"
7	Carriage Return
8	Line Feed

String 3 Tare Weight

Character	Description
1 through 6	6 character weight data field, characters 0 through 9
7	Carriage Return
8	Line Feed

String 4 Net Weight

Character	Description
1 through 6	6 character weight data field, characters 0 through 9
7	Carriage Return
8	Line Feed

String 5 Number Of Pieces

Character	Description
1 through 6	6 character data field, characters 0 through 9 Leading zeros will be spaces
7	Carriage Return
8	Line Feed

String 6 Average Piece Weight

Character	Description
1 through 6	6 character weight data field, characters 0 through 9
7	Status Character G
8	Carriage Return
9	Line Feed

String 7 Identification Number

Character	Description
1 through12	12 character data field, characters 0 through 9 Leading non-ID zeros will be spaces
13	Carriage Return
14	Line Feed

String 8 Terminator

Character	Description
1	Carriage Return
2	Line Feed

3. **Output Format When In Total Mode**

String 1 Status Characters, Number Of Accumulations

Character	Description
1	Status Character C
2	Status Character D
3	Status Character E
4	Status Character F
5 Through 10	6 character data field, characters 0 through 9
11	Carriage Return
12	Line Feed

String 2 Total Quantity

Character	Description
1 Through 6	6 character data field, characters 0 through 9
7	Carriage Return
8	Line Feed

String 3 Identification Number

Character	Description
1 Through 12	12 character data field, characters 0 through 9 Leading non-ID zeros will be spaces
13	Carriage Return
14	Line Feed

String 4 Terminator

Character	Description
1	Carriage Return
2	Line Feed

4. **Wiring**

See Appendix II.

5. **Definition of Status Words A Through G**

a. **Status Word A**

		Bits							
								MSB	
		0	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Decimal Point and Dummy Location									
	X00	1	1	1					
	X0	1	0	0					
	X	0	0	0					
	X.X	0	1	0					
	X.XX	1	1	0					
	X.XXX	0	0	1					
	X.XXXX	1	0	1					
	X.XXXXX	0	1	1					
Count Increment	**Size**								
	1				1	0			
	2				0	1			
	5				1	1			
Print Switch Status									
	Not Operative						0		
	Operative						1		
Fixed								1	1

b. **Status Word B**

	Bits							
							MSB	
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Weigh Units								
kg	0	0						
lb	1	0						
grams	0	1						
Displayed Weight Status								
Displayed weight is Gross			0					
Displayed Weight is Net			1					
Gross Weight Sign								
Gross Weight is Positive				0				
Gross Weight is Negative				1				
Net Weight Sign								
Net Weight is Positive					0			
Net Weight is in Overcapacity					1			
Overcapacity Status								
Weight is in Range						0		
Weight is in Overcapacity						1		
Motion Status								
No Motion							0	
Motion							1	
Fixed								1

c. **Status Word C**

	Bits							
							MSB	
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Fixed	1	1	1	1	1	1	1	1

d. **Status Words D** (Channel 1), **E** (Channel 2) **and F** (Channel 3)

	Bits							
							MSB	
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Output Device								
Channel OFF	0	0	0					
3715 Tape Printer	1	0	0					
3925 Ticket printer	0	1	0					
Computer	1	1	0					
3740 Label Printer	0	0	1					
9510 Bar Code Scanner	1	0	1					
Unformatted Output	0	1	1					
Spare	1	1	1					
Baud Rate								
2400				0	0	0		
300				1	0	0		
600				0	1	0		
1200				1	1	0		
2400				0	0	1		
4800				1	0	1		
9600				0	1	1		
19200				1	1	1		
Parity								
None							0	0
Even							1	0
Odd							0	1
Forced						1	1	

e. **Status Word G** (Average Piece Weight Status)

	Bits							
							MSB	
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Decimal Point Location								
X.X	0	1	0					
X.XX	1	1	0					
X.XXX	0	0	1					
X.XXXX	1	0	1					
X.XXXXX	0	1	1					
Average Piece Weight Units								
grams				0				
lb/1000				1				
Fixed					1	1	1	1

6. **Protocol**

Standard XON - XOFF protocols are followed, that is, transmission can be suspended by transmitting an XOFF character and restarted by receipt of an XON character.

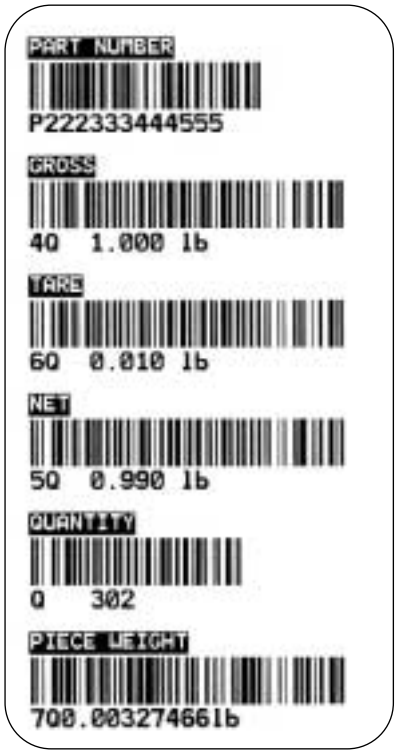
D. Option "4" PTR-2742, PTR-2642, and 2844 Bar Code Label Printer:

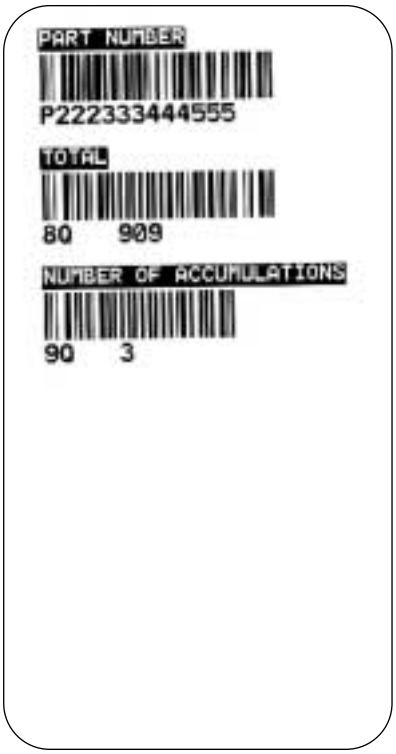
1. **RS232 Channel Specifications**

Baud Rate : 9600
Data Bits : 8
Stop Bits : 1
Parity : None

2. **Output Format**

Fixed as shown below:





3. **Wiring**

See Appendix II
Cable No. 16251

4. **Printer Set-Up**

The 2642, 2742 and 2844 have **NO** switch settings.

E. Option "5" 21784 Bar Code Scanner:

1. **RS232 Channel Specifications**

   Baud Rate :9600
   Data Bits :7
   Stop Bits :2
   Parity :Even

2. **Scanner Configuration**

   a. **Bar Codes**

   Code 128 . . . . . .Enabled
   Code 39 . . . . . .Enabled
   Full ASCII . . . . . .Enabled
   I 2 of 5 . . . . . .Disabled
   UPC/EAN . . . . . .Enabled
   Code 93 . . . . . .Disabled

   b. **Operating Parameters**

   Beep Volume . . . . . .Medium
   Codabar . . . . . .Disabled
   MSI/Plessey . . . . . .Disabled
   Transmission Mode . . . .Full Duplex
   Mag Stripe . . . . . .None

   c. **Protocol**

   Polled - No ACK/NAK . .Enabled
   Data Format . . . . . .RS-232 ASCII
   Intercharacter Delay . . .None

   d. **Character Definitions**

   Polled ID Character . . .p
   Terminator Character . .CR

3. **Wiring:**

   “See Appendix II.”
   Cable No. 22469

4. **Scanner Programming:**

   To program the bar code scanner, simply scan in the bar codes as per the bar code scanner manual.

F. Option "6" General Purpose:

1. **RS232 Channel Specifications**

Baud Rate	Programmable
Data Bits	8
Stop Bits	1
Parity	Programmable

2. **Output format When in the Gross or Net Weighing Modes**

String 1 Identification Number

Character	Description
1	Carriage Return
2	Line Feed
3	I
4	D
5	Space
6 through17	12 character ID data field, characters 0 through 9 and leading non-ID characters are spaces
18	Carriage Return
19	Line Feed

String 2 Gross Weight

Character	Description
1 through 7	7 character data field, characters 0 through 9, decimal point and minus sign. The minus sign will appear in the first character location. Insignificant zeros will be replaced with spaces.
8	Space
9 and 10	2 character units legend data field, characters lb, kg, gr
11	Space
12	G
13	R
14	Carriage Return
15	Line Feed

String 3 Tare Weight - Net Weigh Mode Only

Character	Description
1 through 7	7 character data field, characters 0 through 9, decimal point and minus sign. The minus sign will appear in the first character location. Insignificant zeros will be replaced with spaces.
8	Space
9 and 10	2 character units legend data field, characters lb, kg, or, gr.
11	Space
12	T
13	A
14	Carriage Return
15	Line Feed

String 4 Net Weight - Net Weigh Mode Only

Character	Description
1 through 7	7 character data field, characters 0 through 9, decimal point and minus sign. The minus sign will appear in the first character location. Insignificant zeros will be replaced with spaces.
8	Space
9 and 10	2 character units legend data field, characters lb, kg, gr
11	Space
12	N
13	T
14	Carriage Return
15	Line Feed

String 5 Quantity

Character	Description
1	Q
2	u
3	a
4	n
5	t
6	i
7	t
8	y
9	Space
10 thru 15	6 character data field, characters 0 through 9
16	Carriage Return
17	Line Feed

String 6 Unit Weight, LB Weighing Mode

NOTE: See also String 6 Unit Weight, KG Weighing Mode

Description in Order of Transmission

1. 7 to 10 character unit weight data field.
   Characters 0 through 9 and decimal point. Leading zeros are spaces.
2. Space
3. L
4. b
5. s
6. Space
7. U
8. n
9. i
10. t
11. Space
12. W
13. e
14. i
15. g
16. h
17. t
18. Carriage Return
19. Line Feed

String 6 Unit Weight, KG Weighing Mode

NOTE: See also, String 6 Unit Weight, LB Weighing Mode

Character	Description
1 through 7	7 character unit weight data field.Characters 0 through 9 and decimal point. Leading zeros are spaces.
8	Space
9	G
10	r
11	a
12	m
13	s
14	Space
15	U
16	n
17	i
18	t
19	Space
20	W
21	e
22	i
23	g
24	h
25	t
26	Carriage Return
27	Line Feed

String 7 Terminator

Character	Description
1	Carriage Return
2	Line Feed

NOTES:

1. Strings 3 and 4 will not be transmitted when in the GROSS weighing mode.
2. String 1 will not be transmitted when the ID option is disabled.
3. Output Format When in the Total Mode

String 1 Identification Number

Character	Description
1	Carriage Return
2	Line Feed
3	I
4	D
5	Space
6 thru 17	12 character ID data field, characters 0 through 9 and leading non-ID characters are spaces
18	Carriage Return
19	Line Feed

String 2 Number Of Accumulations

Character	Description
1	N
2	u
3	m
4	b
5	e
6	r
7	Space
8	o
9	f
10	Space
11	A
12	c
13	c
14	u
15	m
16	u
17	l
18	a
19	t
20	i
21	o
22	n
23	s
24	Space
25 thru 30	6 character data field, characters 0 through 9 - Leading zeros are spaces
31	Carriage Return
32	Line Feed

4. **Wiring**

See Appendix II.

G. Option “7” Maple Terminal (Inquiry):

1. **RS232 Channel Specifications**

Baud Rate 2400
Data Bits 8
Stop Bits 1
Parity . . . . . .None

APPENDIX II: CABLE ASSEMBLIES

Channel 1 and 2 Din Plug, Pin Connections (viewed from rear of scale):

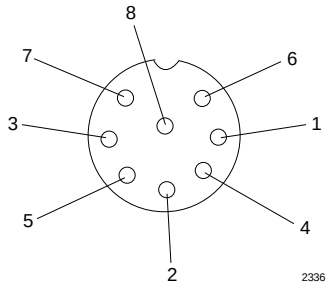
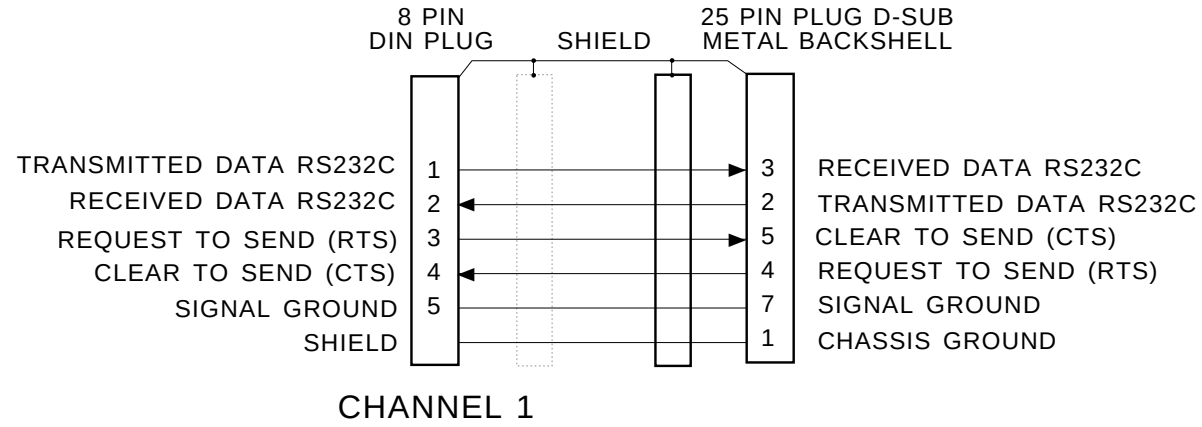
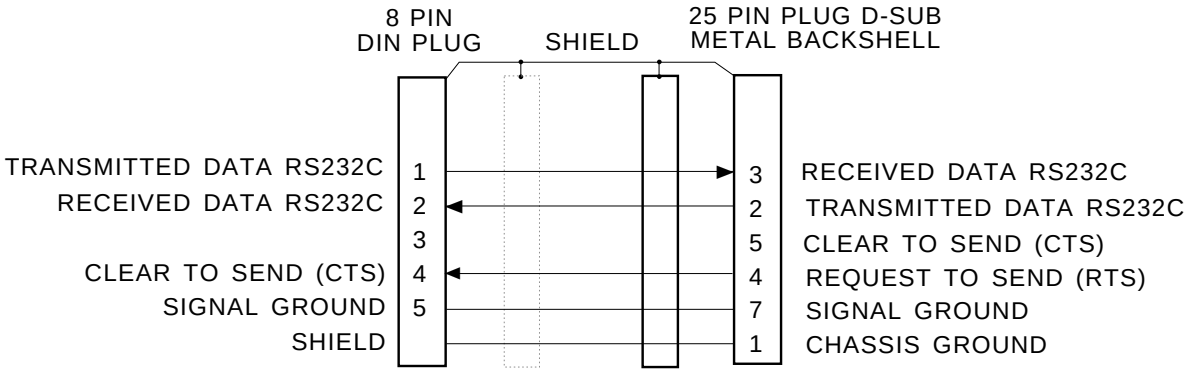


Figure 1: Null Modem Cable for PC



CHANNEL 1



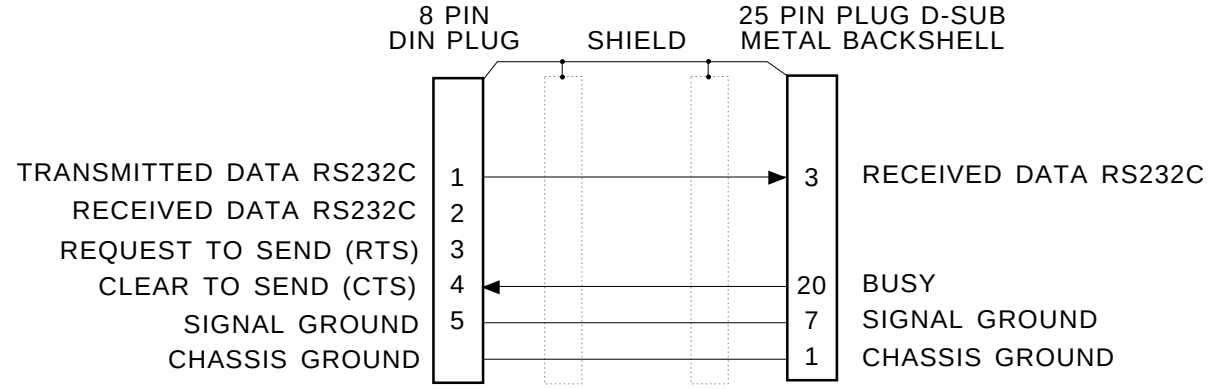
CHANNEL 2

NOTE:

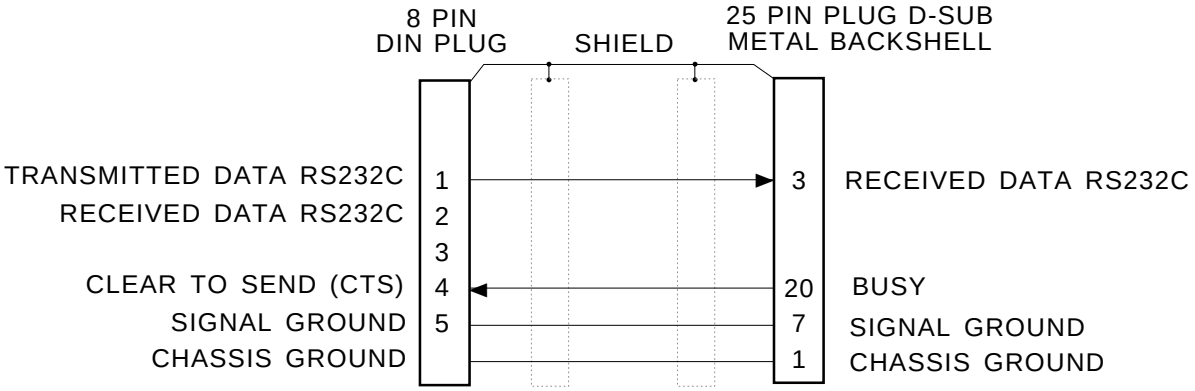
THE METAL BACKSHELL IS CONNECTED T0 THE SHIELD TO ACHIEVE ELECTROSTATIC DISCHARGE (ESD) PROTECTION

50585-13

Figure 2: Cable for 50-3715, 3550 Series Tape Printers, 50-3930, 50-3960, 295 & 590 Ticket Printers.



CHANNEL 1



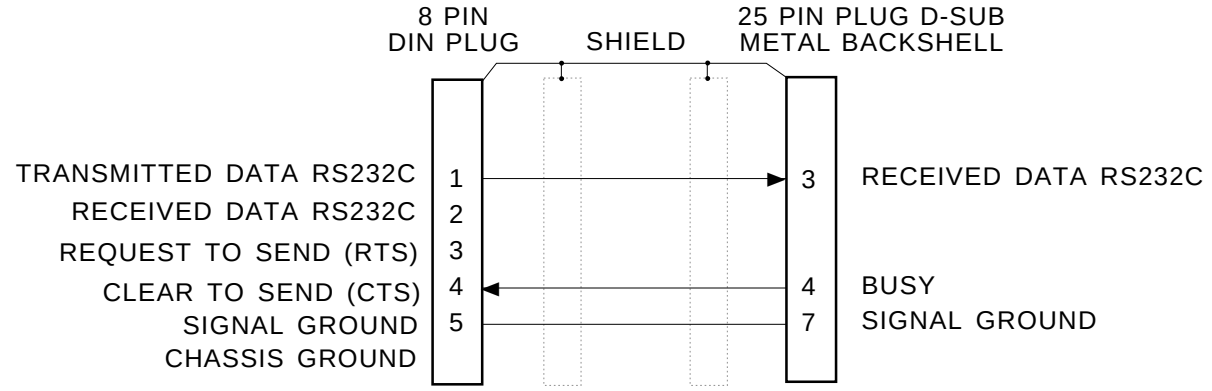
CHANNEL 2

NOTE:

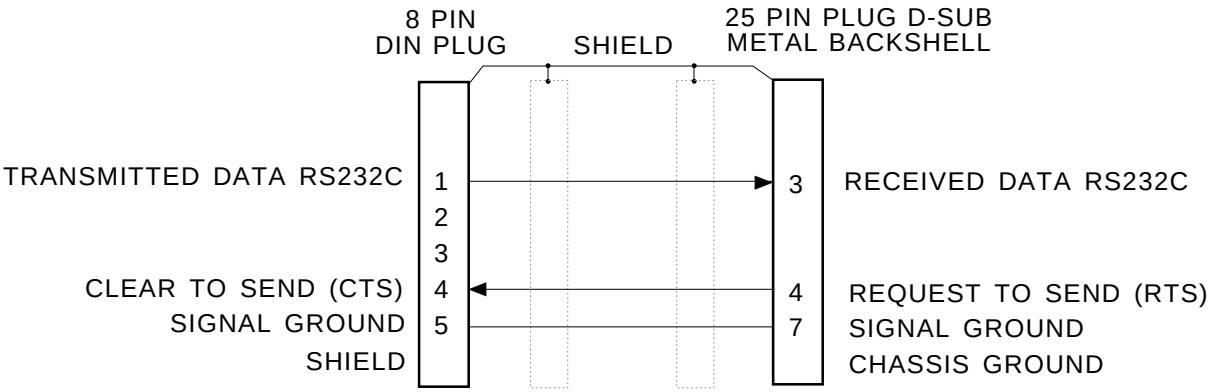
THE METAL BACKSHELL IS CONNECTED T0 THE SHIELD TO ACHIEVE ELECTROSTATIC DISCHARGE (ESD) PROTECTION

2365d

Figure 3: Cable for 50-3925 and PTR-3950 Ticket Printers



CHANNEL 1



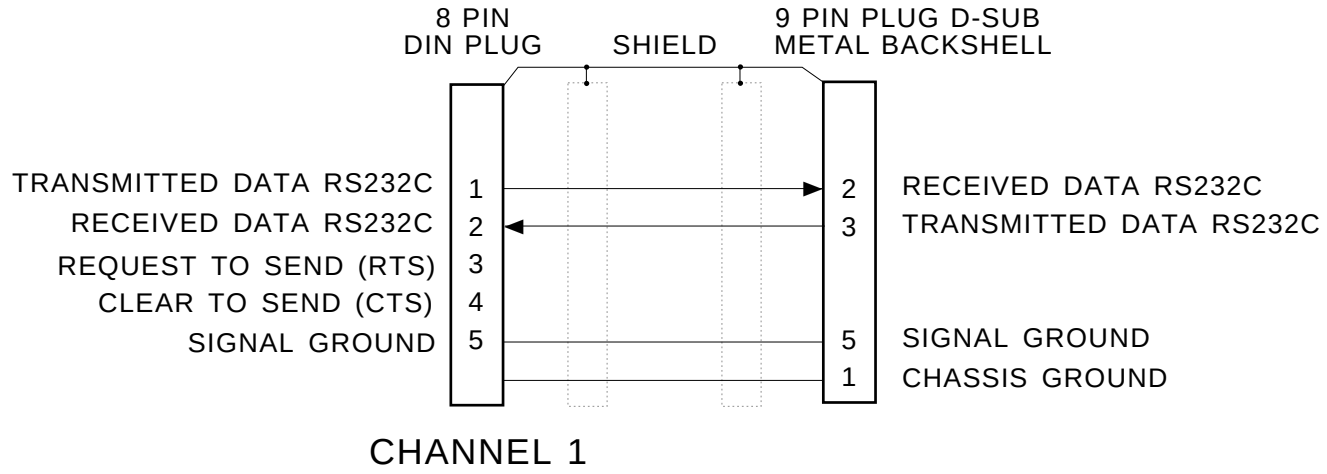
CHANNEL 2

NOTE:

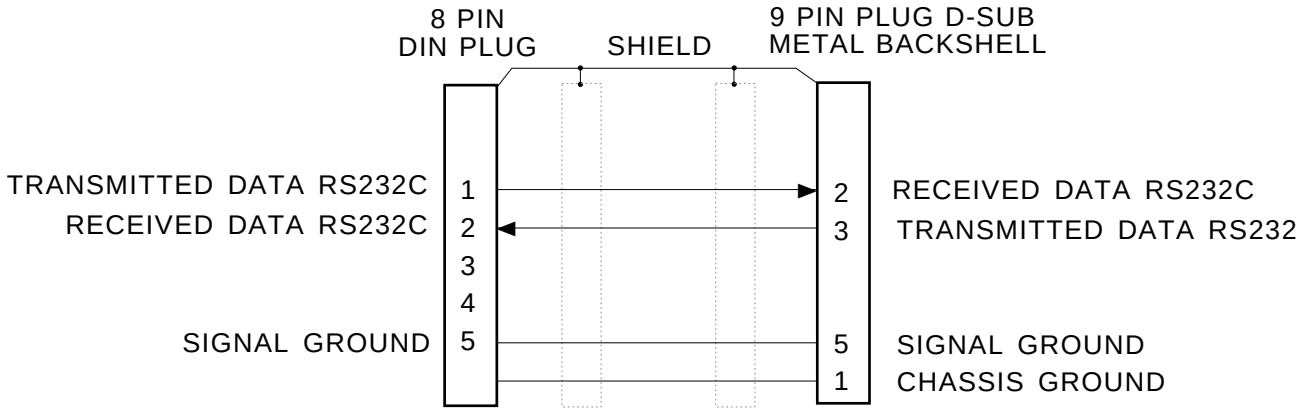
THE METAL BACKSHELL IS CONNECTED T0 THE SHIELD TO ACHIEVE ELECTROSTATIC DISCHARGE (ESD) PROTECTION

2366c

Figure 4: Cable for PTR-2642, PTR-2742 and 2844 Bar Code Printer



CHANNEL 1



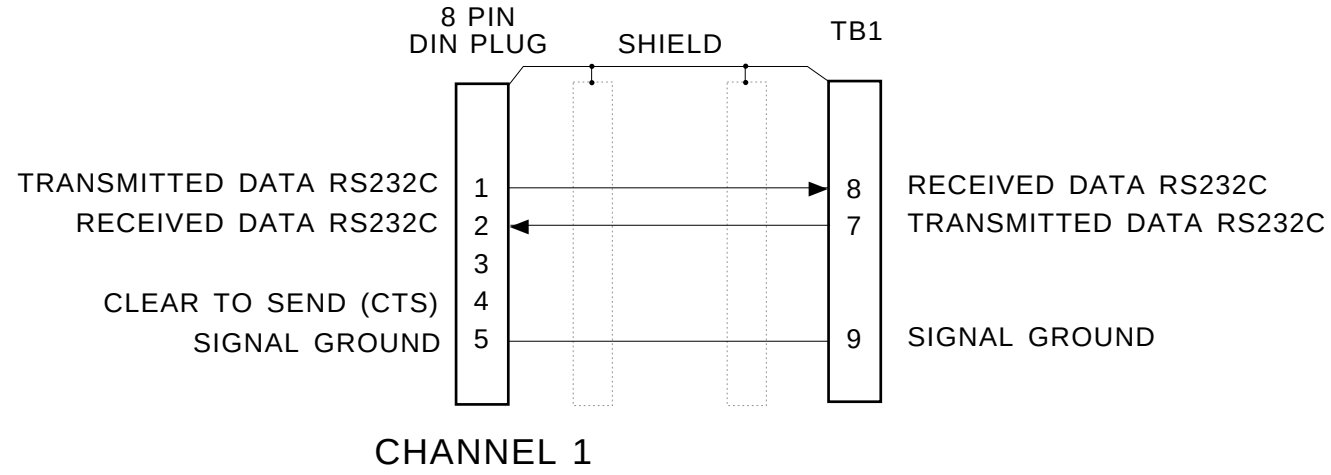
CHANNEL 2

NOTE:

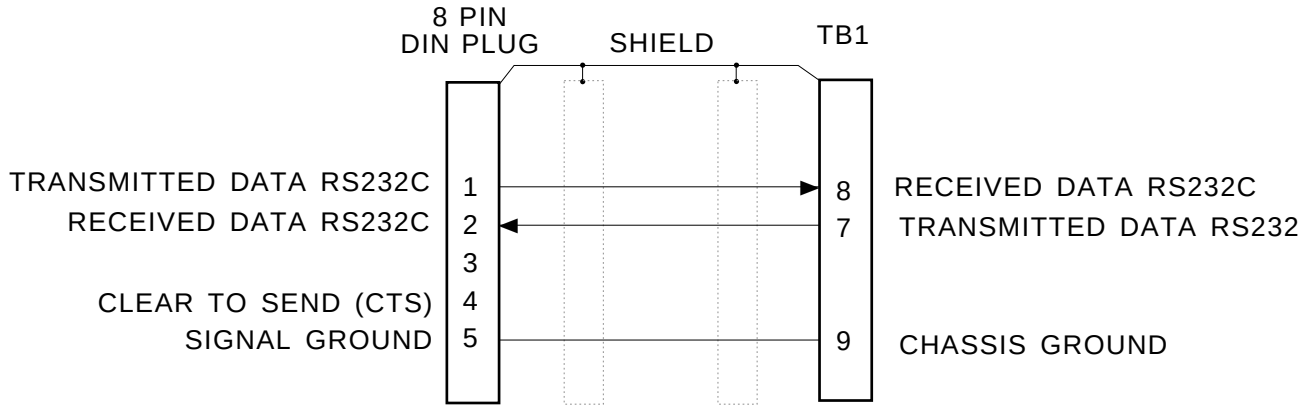
THE METAL BACKSHELL IS CONNECTED T0 THE SHIELD TO ACHIEVE ELECTROSTATIC DISCHARGE (ESD) PROTECTION

50585-12

Figure 5: Cable for Maple Terminal



CHANNEL 1



CHANNEL 2

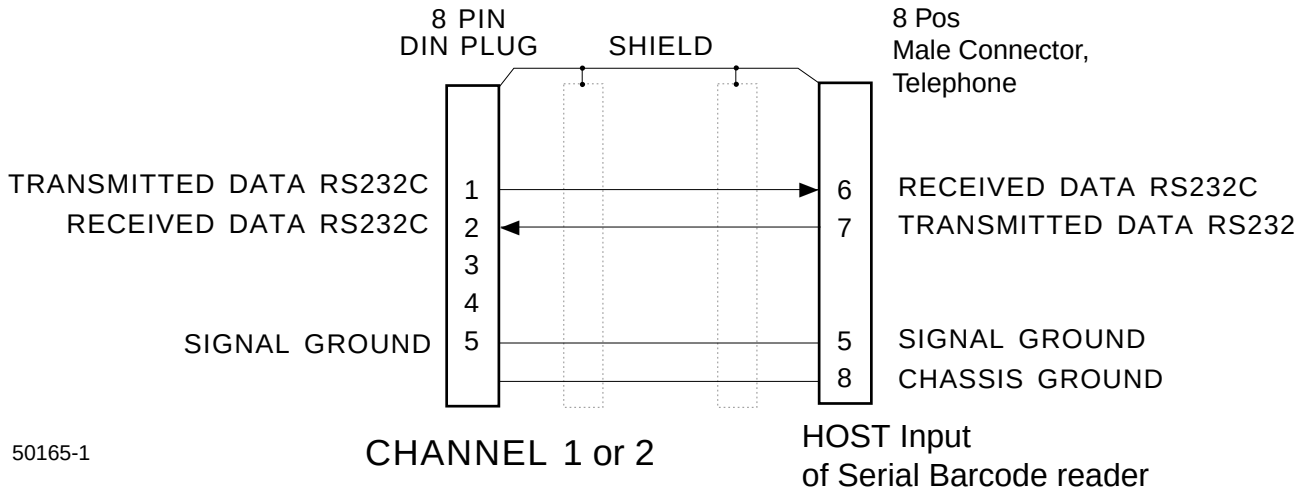
NOTE:

THE METAL BACKSHELL IS CONNECTED T0 THE SHIELD TO ACHIEVE ELECTROSTATIC DISCHARGE (ESD) PROTECTION

2367e

Figure 6: Cable for 21784 Bar Code Scanner

Cable No. 22469



APPENDIX III: COUNT INCREMENTS

* Platform Count Capacity	Count Increment
0 - 99,999 pieces	1
100,000 - 199,999 pieces	2
200,000 - 499,999 pieces	5
500,000 - 999,999 pieces	10

Counts in excess of 999,999 will be displayed as " - - - - - - ".

***** The Platform Count Capacity is derived by dividing the platform's weight capacity by the "Unit Weight" (average piece weight).