



TRANSCELL TECHNOLOGY, INC.



MODEL **TCS3T SERIES**

DIGITAL COUNTING SCALE

User Manual

Revision 1.3
March 17, 2014

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I. Introduction

Transcell Technology, Inc., founded in 1981, is an ISO 9001 registered enterprise group which manufactures precision weighing instruments and sensors. Our major products include load cells, digital indicators, scales, and automated control equipment. Our products have been placed in service throughout the world including North and South America, Europe, South and East Asia and Australia. Through our dedication and expertise in high-quality manufacturing, we will continue to bring our customers products and services well beyond their expectations.

With its high precision load cell, proprietary software (developed by our American R&D) and its Texas Instruments MPU, the TCS series is characterized by its high resolution, fast but steady weighing performance and its precision counting. As an ideal weighing and counting tool, the TCS series is designed for industrial, laboratory and classroom applications.

In order to help you use our instrument properly, thus prolonging its life, please read the entire user manual carefully and be sure to keep it in a handy place.

II. Specifications

1. Load cell: FATS Series
2. Product Matrix:

Model	Weighing specification	Size (cm)
TCS-6LB	6 lb x 0.0002 lb (3 kg x 0.1 g)	13.4" x 11.8" x 4.3"
TCS-12LB	12 lb x 0.0005 lb (6 kg x 0.2 g)	13.4" x 11.8" x 4.3"
TCS-30LB	30 lb x 0.001 lb (15 kg x 0.5 g)	13.4" x 11.8" x 4.3"
TCS-60LB	60 lb x 0.002 lb (30 kg x 1 g)	13.4" x 11.8" x 4.3"

3. Integrated functions:

Counting

Accumulator

Tare and preset tare function

4. Rated voltage

AC 120V ($\pm 10\%$) , 60Hz ($\pm 1\text{Hz}$)

DC 6V/4Ah rechargeable battery

5. Power consumption: 0.24W


6. Operating temperature range: 0°C to 40°C (32°F to 104°F)

7. Humidity

Storage: $\leq 70\%$ RH non-condensing

Operating: $\leq 90\%$ RH non-condensing

8. Low battery warning:

If a solid “” appears on the upper left hand corner, the battery voltage is too low and it needs to be recharged. When the back lighting shuts off and the scale displays “LO BAT”, it means that the battery has been exhausted to its limit and will be damaged if used any longer. When this occurs, you must switch off the scale and then recharge the battery immediately.

9. Charging:

The battery can be recharged by plugging the AC cord into a 120 VAC power outlet. The battery will be fully charged within 8-10 hours. The scale can be used for about 100 hours when the battery is fully charged.

III. Safety Tips



THIS EQUIPMENT CONTAINS NO USER SERVICEABLE COMPONENTS.

Servicing of the equipment must only be carried out by trained and authorized personnel.

Use scale only with 120 VAC power outlets.



Routine maintenance

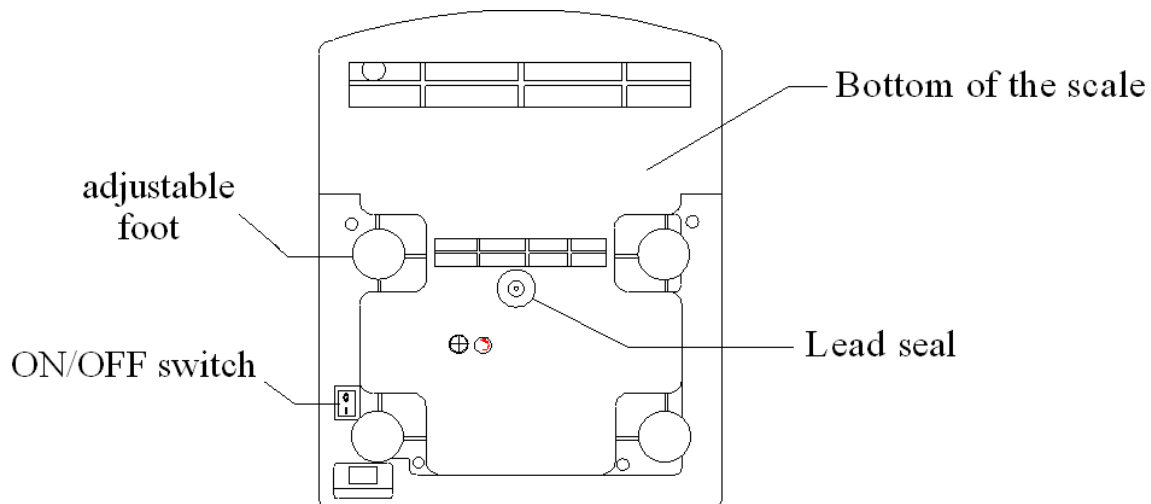
Harsh abrasives, solvents, scouring cleaners and alkaline cleaning solutions should not be used; especially on the display window.


The outside of the product may be wiped down with a clean cloth, moistened with water containing a small amount of soap.

1. Ensure that the scale is placed securely on a flat and level surface.
2. Scale is intended for indoor use only.
3. Avoid installing the scale in areas of direct sunlight and high humidity. Also avoid drafts, vibrations and dusty conditions.
4. To extend the life of your digital scale, do not drop items to be weighed onto the tray or overload the scale beyond its rated capacity. Shock-loading and overloading may damage the load cell and void the warranty.
5. Please charge the battery before use. If the scale is not to be used often, then please charge the battery once every three months.
6. A transparent cover is provided and is capable of preventing dust and indirect water spray from penetrating the scale. To install, remove the tray and place the cover over the scale housing. Please make sure that the cover does not touch the tray as this likely will influence the weighing results.

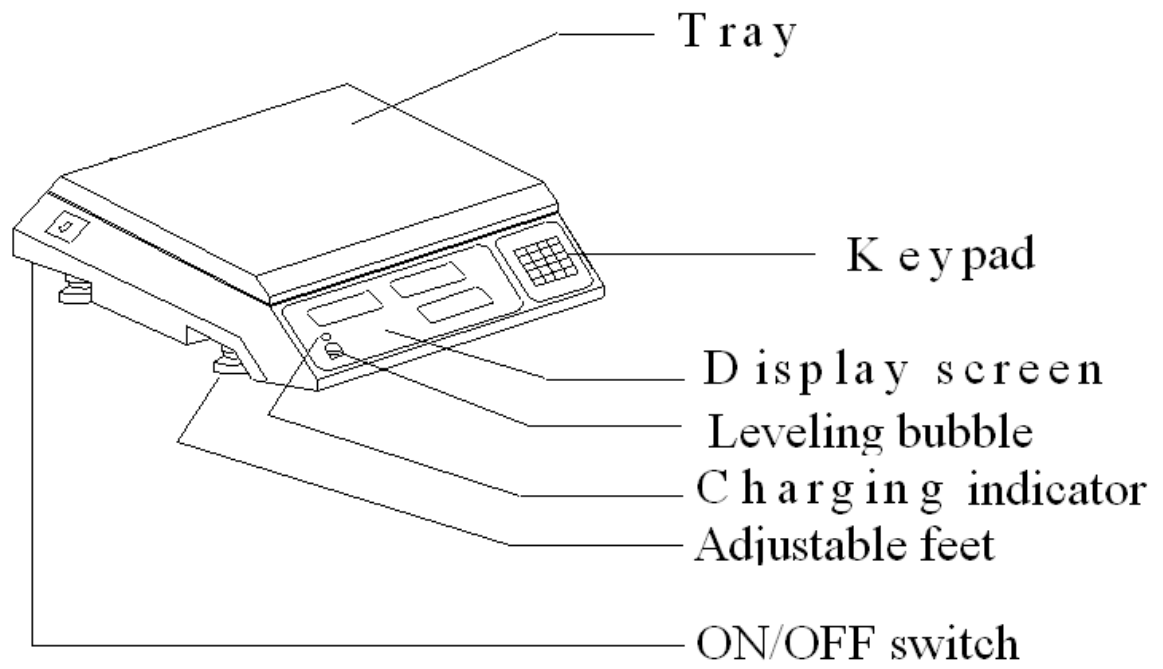
IV. Preparing the scale for use

Refer to the following figure for the following instructions.

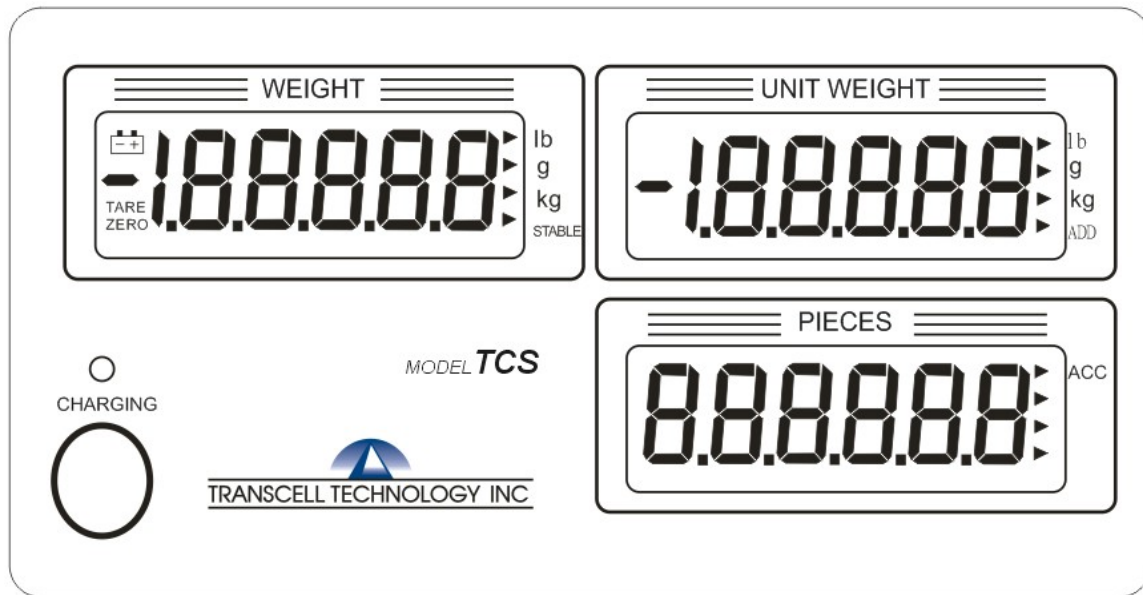


1. Please place the scale on a steady table.
2. Place the tray onto the scale and adjust the four feet until the scale does not rock back and forth on the table. Be sure also that the leveling bubble is in the center.
3. Recharge the battery by plugging the scale into a 120 VAC outlet. Continue charging until the  symbol disappears.
4. Make sure that nothing is on the tray when the scale is switched ON.
5. When first switched ON, the scale will enter a self-check mode. During this mode the display will count down from 999999 to 000000. Once complete, the scale is ready for use.

V. Parts Illustration



VI. Display Information



Digital display screens

1. Weight

There are 5-1/2 digits in total to display the weight on the tray.


2. Unit weight

There are 5-1/2 digits in total to display the unit weight.

3. Pieces

There are 6 digits to display the quantity of the parts on the tray.

Annunciators (“ ▶ ”)

1. **TARE**: indicates the weight of the goods without packaging;
2. **ZERO**: indicates that the scale is at a zero condition;
3.  : If this symbol does not appear, it means that the battery is fully charged. If this symbol appears, it means that the battery voltage is too low and it needs to be recharged. When the back lighting shuts off and the scale displays “LO BAT”, it means that the battery has been exhausted to its limit and will be damaged if used any longer. When this occurs, you must switch off the scale and then recharge the battery immediately;

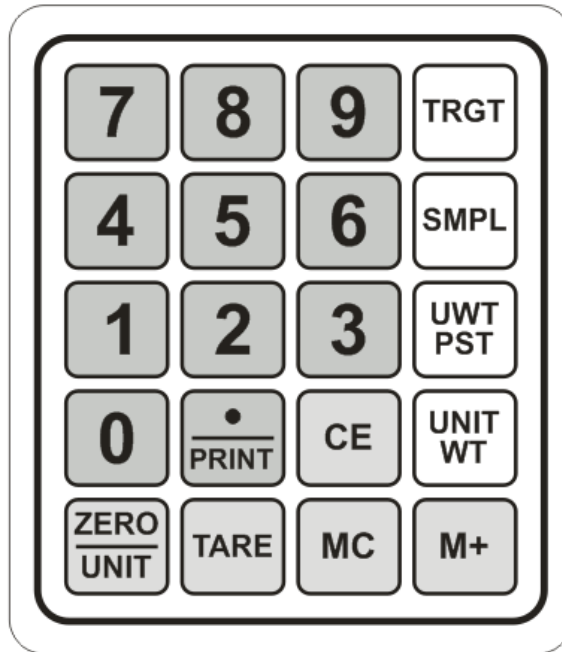
Annunciators (“ ▶ ”) / Continued

4. **STABLE**: Indicates that the scale is stable;
5. **ACC**: Indicates that the accumulator is in use;
6. **ADD**: If the weight on the tray is less than the minimum piece weight, this symbol will appear which means that the item on the tray is too light to count. Although the scale will still work, the piece count will not be accurate;
7. **lb**: unit of weight is grams;
8. **g**: unit of weight is grams;
9. **Kg**: unit of weight is kilograms;
10. **ERR**: operation error.

Remarks

- minimum sample weight must be $> 20d$
- minimum piece weight must be $> 0.2d$ (d= one scale division)

VII. Keypad Information



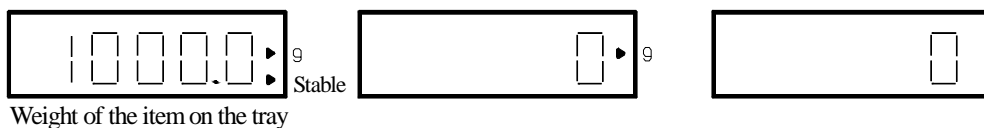
1. **TRGT:** Used to set a target quantity prior to counting. Key-in the target quantity and then press TRGT. When the number of items placed on the tray exceeds the target quantity, the scale sounds an alarm and flashes “- 0.00 -”;
2. **SMPL:** Used to sample parts for counting. Key-in the quantity of items on the tray and then press SMPL;
3. **UNIT WT:** Used to key-in a known piece weight for counting. Key-in the piece weight and then press UNIT WT;
4. **UWT PST:** Used to recall or program a preset unit weight for counting;
5. **M+:** Used to accumulate multiple weighments or pieces.
6. **MC:** Used to clear the accumulator;
7. **CE:** Returns scale to weighing mode if in piece counting mode. Also can be used to clear the piece weight, the accumulator or last number entered;
8. **ZERO/UNIT:** Press this key once to zero the scale when nothing is on the tray. Press and hold this key to temporarily switch units from kg to lb or from lb to kg;
9. **TARE:** Pressing this key subtracts the weight of the package on the tray. Key-in the tare weight and then press TARE if the weight is known;
10. **0~9:** Used to enter numeric data as needed;
11. **• /PRINT:** Used to insert Decimal Point. Also acts as a Print key;

VIII. Main Functions

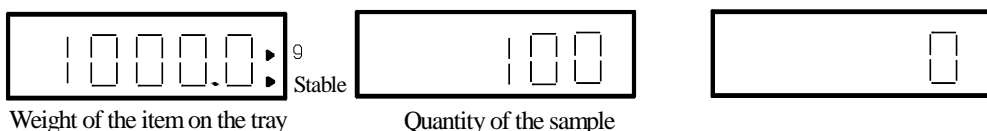
Counting

1. Piece weight is unknown

(1) Place the items you are sampling onto the tray



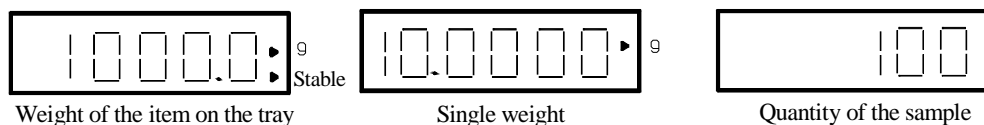
(2) Enter the quantity of the sample currently on the tray



(3) The scale calculates the piece weight

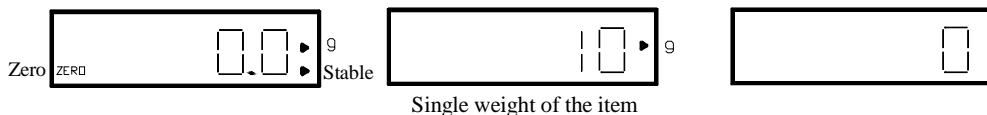


(4) The piece weight is now set; you can now remove the sample and continue counting



2. Piece weight is known

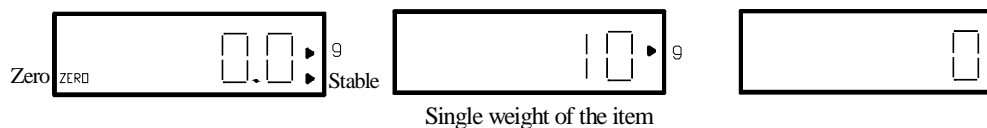
(1) Enter the unit weight using the “0-9” keys



(2) Press “UNIT WT” key



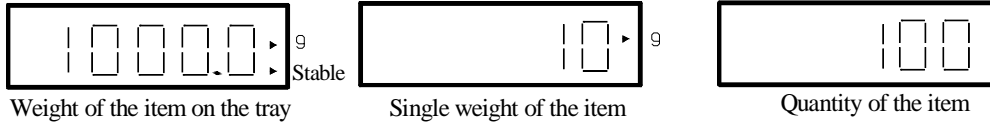
(3) The scale is now in counting mode



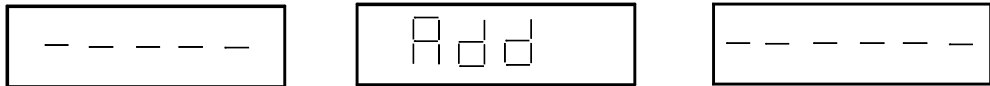
Accumulator (M+)

Piece accumulator (scale must be in counting mode)

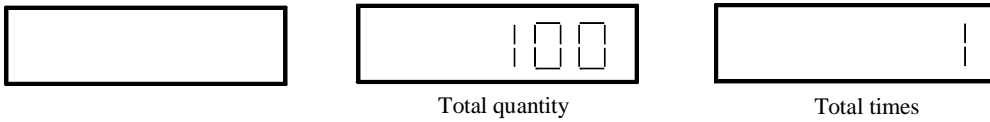
(1) Place the items on the tray



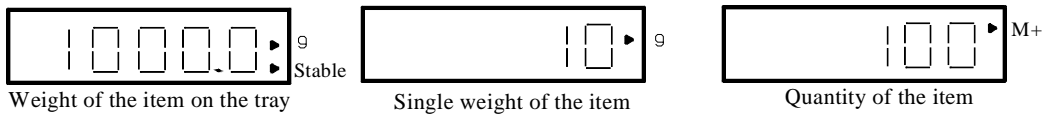
(2) Press the “M+” key



(3) After accumulation

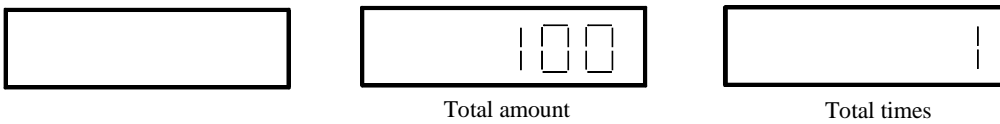


(4) After 3 seconds, the scale returns to counting mode

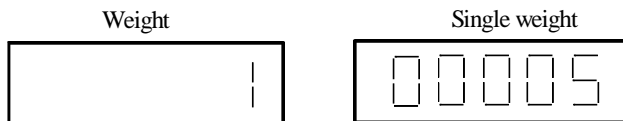


Recalling the accumulator value for pieces

When the scale is at zero, press the “M+” key to recall the accumulator value.



If the accumulator quantity is over 99999, the display will scroll. For example, if the accumulator quantity is 100005, it will display as follows:



Clearing accumulator value for pieces

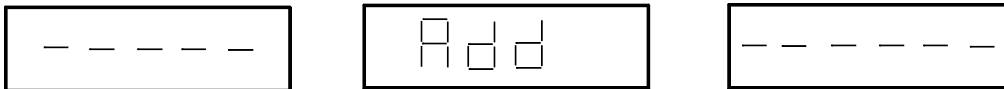
Press the “MC” key to clear the accumulator value and the symbol “▶”.

Weighment Accumulator

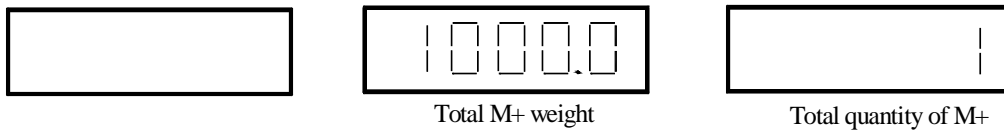
(1) Place the item on the tray when the scale is at zero



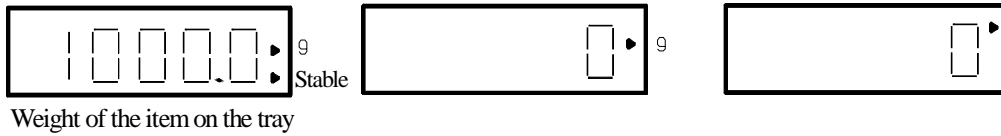
(2) Press the “M+” key



(3) After stable

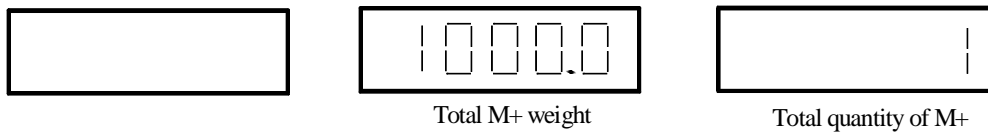


(4) After 3 seconds, the scale returns to weighing mode

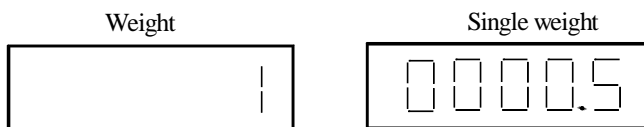


Recall the weighment accumulator value


When scale is at zero, press the “M+” key to display the accumulator value.



If the total weight is over 99999, the display will scroll, e.g., if the accumulator value is 10000.5g, the display is as follows:



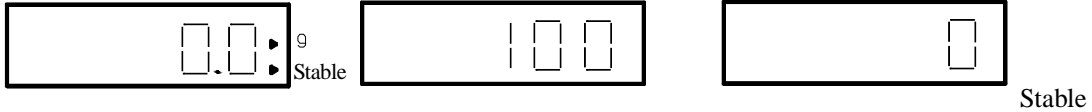
Clearing the accumulator value

Press “MC” key to clear the accumulator value and the symbol “”.

Programming the preset slots for known unit weights

To preset up to 10 groups of piece weights, you switch to counting mode and then save the values in slots “1-10”.

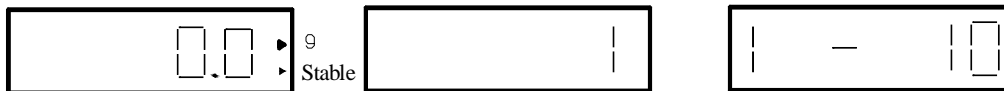
(1) Input the piece weight using the “0-9” keys



(2) Press “UWT PST” key



(3) Input any value from “1-10” using the “0-9” keys.



(4) Press “UWT PST” key to save the piece weight into the preset location you have selected above



Recalling a preset piece weight

(1) Press the “UWT PST” key



(2) Press the desired preset slot using the “0-9” keys



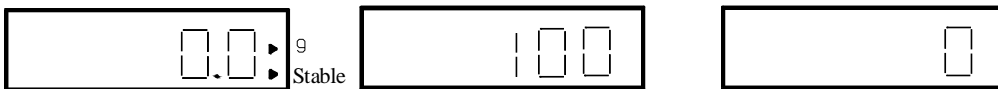
(3) Press “UWT PST” key to recall the preset piece weight



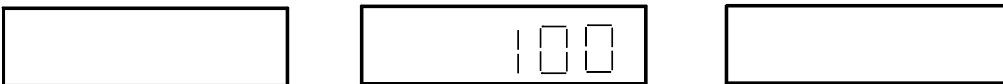
Target Setup

Program the target value when scale is in counting mode. An alarm sounds when the number of pieces on the tray exceeds the programmed target value. In addition, the display flashes - 0.00 - .

(1) Input the target value using the “0-9”keys, e.g. 100.



(2) Press “TRGT” key

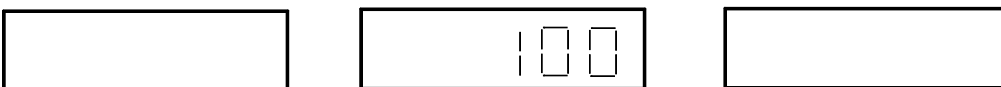


(3) After 2 seconds, the scale returns to counting mode



Recalling the target value (scale must be in counting mode)

Press the “TRGT” key; the display shows the current target value



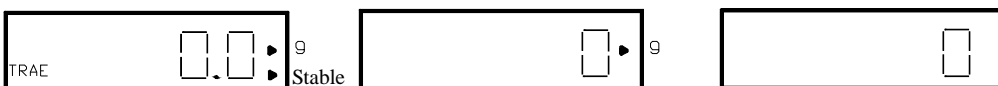
Subtracting the weight of the container (taring)

The weight of the container is unknown

(1) Place the packing container on the tray



(2) Press the “TARE” key to subtract the weight of the container



The weight of the container is known

(1) When the scale is at zero, input the weight of the container using the “0-9”keys.



(2) Press the “TARE” key



(3) Display after 2 seconds



Clearing the tare value

After removing both the item and the container from the tray, the display will show a negative value. Press the “TARE” key to cancel the tare and make the weight zero; the symbol TARE disappears.

Zero

Occasionally, there may be zero drift during operation. Press the “ZERO/UNIT” key to make the scale return to zero.

Zero range = 100% of weighing capacity

Weighing after zero= the rated capacity of the scale is not extended, e.g. On a 6 kg scale, if a 2 kg weight is zeroed off, the weighing range of the scale is now 4 kg.

Backlighting setup

Press and hold the “TARGET” key for 3 seconds. The display will show AUTO, ON or OFF. Press the “4” or “6” key to select the mode you want and then press the “M+” key to save.

AUTO = backlighting will come on automatically during operation and will shut off after approximately 10 seconds of inactivity.

ON = backlighting is ON all of the time. (**NOTE:** this setting will diminish the battery’s charge)

OFF = backlighting is OFF all of the time. (**NOTE:** this setting will help save the battery’s charge)

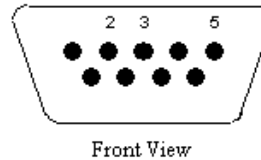
IX . Serial Port Information

The TCS is plug and play compatible with the Transcell MP-20 printer. If you have a different printer, use the following information to make the proper connections:

Hardware

The TCS serial port is realized in an RS-232C compatible male DSUB9 connector. See illustrations below for pin outs:

Pin No.	Pin Name	Signal Level
2	Receive Data	RS-232
3	Transmit Data	RS-232
5	Signal Ground	RS-232



Communication Parameters (Default)

- Baud Rate, 9600
- Data Bits, 8
- Parity, None
- Stop Bits, 1

Operation

1. Whenever the **/PRINT** key is pressed the scale prints a ticket as shown in the following illustration.

GROSS	25.00 lb
TARE	1.48 lb
NET	23.52 lb

2. Whenever the M+ key is pressed and an item is added to the accumulator, the scale prints a one line summary. Whenever the Memory Recall function is invoked, the scale prints a single total line. Following is an example of a complete print ticket with 5 weighment lines and 1 total line:

+	0.4405 LB
+	4.4075 LB
+	2.4435 LB
+	1.6595 LB
+	0.6470 LB
5T	9.5980 LB

X . Limited Warranty

Seller warrants that the TCS Series Digital Counting Scale 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 express condition that:

- 1) Transcell Technology, Inc. is given prompt written notice upon discovery by Buyer of such non-conformity, with a detailed explanation of the alleged deficiencies;
- 2) Such goods are returned to the Seller at the expense of the Buyer;
- 3) Examination of such goods by Seller discloses that the nonconformity actually exists and was not caused by accident, misuse, neglect, alteration, improper installation improper or unauthorized repair, or improper testing, and
- 4) Such goods have not been modified, altered, or changed by any person other than the Seller or its duly authorized repair agents.
- 5) 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 TRANSCCELL TECHNOLOGY, INC. SHOULD THE SELLER BE OTHER THAN TRANSCCELL 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.

XI. Troubleshooting

No.	Fault Description	Cause of fault	Solution
1	Scale is not stable	A breeze, draft, vibration or other kind of interference is present in the area of use	Eliminate the source of the interference <i>or</i> move the scale to another area
		There are foreign objects wedged between the tray and upper housing	Remove the tray, inspect and remove the foreign objects
2	Scale does not operate	Internal battery is discharged	Recharge the battery
		The power switch is not in the ON position	Place the power switch (located underneath scale) into the ON position

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