

DCS Series

Digital Counting Scale

Operation Manual

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Transcell Technology inc.

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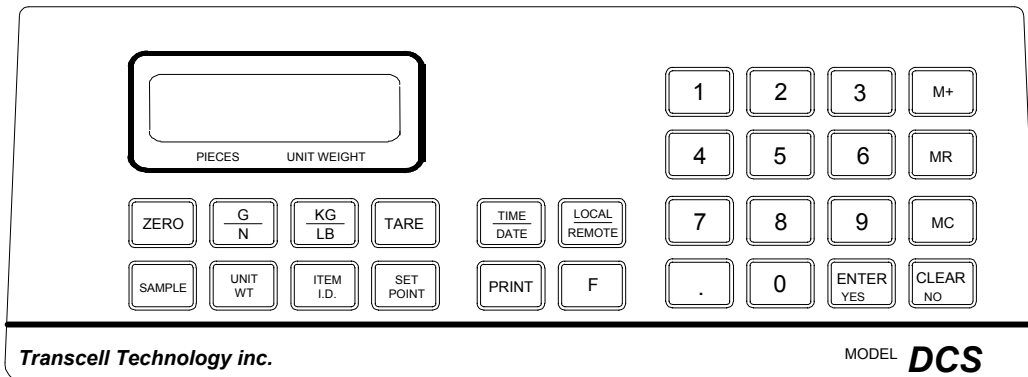
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Introduction

The DCS Series Counting Scale, available in several capacities, is an easy to use, high resolution counting scale featuring dual A/D channels, keyboard tare and unit weight entry, as well as a 100 item ID storage. Housed in a durable plastic enclosure, the unit displays its information on a

dual row Alphanumeric LCD display with back lighting. A 28-key membrane panel contains all of the scale's functions and allows entry of numerical data. A removable 8" x 9" stainless steel platform allows for easy cleaning when used to count greasy or dusty items.



DCS Series Front Panel

Getting Started

After unpacking the scale, a small amount of assembly is required:

- Locate the sub-platform, four (4) Hex screws, and enclosed Allen wrench. Place sub-platform onto scale's load point with all rubber parts facing up. Install and tighten the four Hex screws.

Please Do...

- Place the scale on a firm and stable floor or table.
- Plug the enclosed AC Adapter into the scale first, then into an AC outlet.
- Leave the scale on for at least 30 minutes before using. You will find the ON/OFF switch at the bottom of the scale on the right, towards the back. You may leave the scale on at all times, if you wish.
- Press the **ZERO** key before operating the scale.

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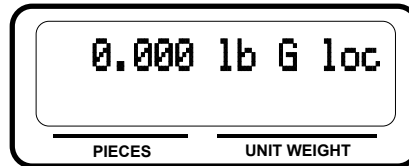
Getting Started / Continued

Please Do Not...

- Share an AC outlet with other noise producing products; i.e. anything with an electrical motor or relay.
- Turn the scale ON with an object already on the platform. You will not be able to **ZERO** the scale.
- Operate the scale...
 - ...in an area with changing ambient temperature.
 - ...in direct sunlight.
 - ...in an area with high humidity.
 - ...in a dusty environment.
 - ...in a windy area.
 - ...in an area with vibration.

Basics of Operation

1. DISPLAY OVERVIEW















DCS Series Display Indication - Normal Mode

INDICATION	MEANING
lb/kg	Indicates the unit of weight.
G/N	Indicates gross or net.
loc/rmt	Indicates which platform the weight reading has been derived from - either local or remote.
Pieces	Indicates the number of pieces on the platform. If a tare has been established, the scale will indicate the NET number of pieces.
Unit Weight	Indicates the unit weight of the pieces on the platform.







Basics of Operation / Continued

2. KEYPAD OVERVIEW

KEY	FUNCTION
	Sets the scale in the correct zero position for accurate operation.
	Toggles the scale indication between net and gross modes.
	Toggles the scale indication between pound and kilogram units. May be disabled. See "Configuration" for more information.
	Establishes either the weight currently on the platform or the current keyed-in value as the tare weight.
	Establishes the current keyed-in value as the piece count of items currently on platform.
	Establishes the current keyed-in value as unit weight.
	Retrieves the keyed-in value's associated item information. Also enters the scale into the function which creates or edits an item from the scale's memory. See "ID Storage" section for more information.
	Allows entry of both a lower and upper weight limit at the conclusion of which the scale enters into a check weighing mode. See "Set Point Operation" for more information.
	Allows the entry of new time or date. Allows viewing of current settings without changing. See "Setting Time and Date" for more information.
	Selects the channel from which the scale derives its weight information. To set up the remote platform, see the DCS Setup Manual .
	Sends the print information out to the serial port, including Date, ID, Gross Weight, Net Weight, Unit Weight, and Piece Count. See "Print Format" for more information.
	Allows "Hot Key" retrieval of an often-used item by selecting a digit between 0 and 9.
Numeric Keys (0-9)	Allows entry of numeric data.

Basics of Operation / Continued

2. KEYPAD OVERVIEW / Continued

	Allows entry of decimal point position when entering numeric data.
	Adds the current number displayed in the PIECES window to the accumulator. If no pieces are display, adds the current weight reading to the accumulator. (Memory +)
	Recalls the current value from the accumulator. (Memory Recall)
	Clears the contents of the accumulator. (Memory Clear)
	Used when entering numeric data into the scale or as a “Yes” response to a question.
	Acts as a backspace key when entering numeric data. Also clears the unit weight and set point values or acts as a “No” response to a question.

Tare Operation

In order to subtract the weight of the container or vessel from the scale's reading, it is necessary to enter that weight as the tare weight. This value can be entered into the DCS Series Counting Scale by either the **push button tare** method or the **keyboard tare** method.

For greater accuracy, it is suggested that the push button tare method be used.

To use the push button tare method:

1. Place the empty container on the platform.
2. Press the **TARE** key. The scale switches to NET mode and sets the displayed weight to zero.

To use the keyboard tare method:

1. Enter the known tare weight in pounds into the scale using the numeric and decimal point keys. This value will appear in the PIECES display window.
2. Press the **TARE** key. The scale switches to NET mode and the WEIGHT display window shows the keyed-in tare weight as a negative value.

To clear the tare weight from the scale:

1. Remove all weight from the platform and press the **TARE** key. The scale switches back to GROSS mode and the WEIGHT display window again shows zero.

Possible Tare Operation Errors:

You cannot enter a tare weight that is greater than the scale's full capacity. For example, for the DCS-12, you cannot enter, say, 13.000 lbs.

Also, you cannot key in a decimal point value higher than the resolution of the scale. For ex-

ample, for the DCS-12, you cannot enter 0.0005 lbs. since the resolution is 0.001 lbs.

In both cases, the scale will display an error message.

Piece Counting Operation

In order to determine the number of pieces, the scale must first establish the unit weight of each piece. There are two ways to do this. A unit weight value can be keyed into the DCS Series Counting Scale by using the **keyboard entry** method. Alternatively, the **sampling** method may be used.

For greater accuracy, the sampling method

should be used. The accuracy of this operation depends upon part consistency and sample weight. When using the sampling method, always count the parts in your hand and place them on the platform all at once.

Both the sample weight and the unit weight have limits to assure accuracy. The limits for these are found at the bottom of the page.

To use the sampling method:

1. Place a pre-determined number of pieces on the platform. The WEIGHT display window shows the total weight.
2. Key in the number of pieces you have placed on the platform. This value will be shown in the PIECES display window.
3. Press the **SAMPLE** key. The UNIT WEIGHT display window now shows the calculated unit weight, while the PIECES display window shows the actual number of pieces on the platform.

To use the keyboard entry method:

1. Key in the pre-determined unit weight. This value will be shown in the PIECES display window.
2. Press the **UNIT WT** key. The UNIT WEIGHT display window now shows the keyed-in unit weight value.

To clear the unit weight from the scale:

1. Press the **CLEAR** key. The UNIT WEIGHT and PIECES display windows are now blank.

Piece Count Sample Weight Guide:

The scale has both a minimum piece weight and a minimum sample weight to ensure accuracy. To obtain the minimum piece weight, multiply the scale's graduation by 0.8. To obtain the minimum sample weight, multiply the scale's graduation by 15. Shown below is an example for a 12 lb scale:

Capacity / Graduation	Minimum Piece Weight	Minimum Sample Weight
12 lbs x 0.001-lbs	0.0008-lbs	0.015-lbs

Accumulator Function Operation

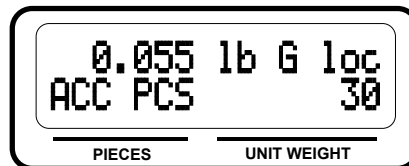
The DCS Series Counting Scale comes equipped with a handy accumulator function which works in conjunction with the piece counting operation.

The accumulator uses a memory to store piece counts. Much like a pocket calculator, this memory can be added to, displayed, and cleared at any time.

To use the accumulator function:

1. Establish the Unit Weight of the objects you wish to count by one of the methods listed under "Piece Counting Operation."
2. Press the **MC** key to clear the accumulator memory.
3. Place the objects to count on the platform. The number of pieces will be shown in the PIECES display window.
4. Press the **M+** key to add this value to the accumulator's memory.
5. Repeat steps 3 & 4 until all pieces are counted.
6. Press the **MR** to view the contents of the accumulator. The display shows the information in the following format:

The bottom display row briefly shows the accumulator total.



DCS Series Display - Memory Recall

Set Point Operation

The DCS Series Counting Scale comes equipped with a set point function which allows the scale to act as a check weigher.

The DCS uses a memory to store two weight limits which are entered using the numeric keys. Once set, the scale sounds an alarm when the weight is less than or greater than the two stored limits. This function was designed for packing and filling applications.

To enter the set point values:

1. Press the **SET POINT** key.

The scale prompts you to enter the lower weight limit.

2. Key in the lower weight limit value. This value will be shown on the bottom row of the display window.

3. When done entering the lower weight limit value, press the **ENTER** key.

The display briefly shows "SET" then prompts for you to enter the upper weight limit.

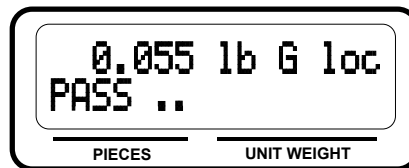
4. When done entering the upper weight limit value, press the **ENTER** key.

The display briefly shows "SET" then the scale functions as a check weigher.

To use the check weigh mode:

1. Place the item to be weighed on the platform.

If the item is within the two entered weight limits, the scale will display the current weight along with a "PASS" message. Otherwise the scale will display a "NOT PASS" message. While the scale is showing a "NOT PASS" message, it will "beep" repeatedly.



DCS Series Display - Within Set Point Limits

To clear the set point values and return to normal operating mode:

1. Press the **CLEAR** key.

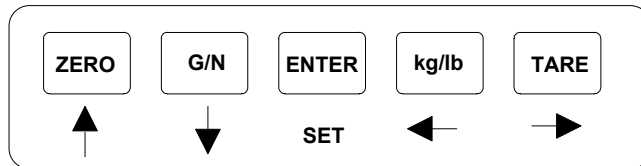
Configuration

The DCS includes a menu which allows the user to alter the serial port settings, disable some keys and specify the time and date formats. This menu consists of 9 separate menu selections, each with its own sub-menu of choices.

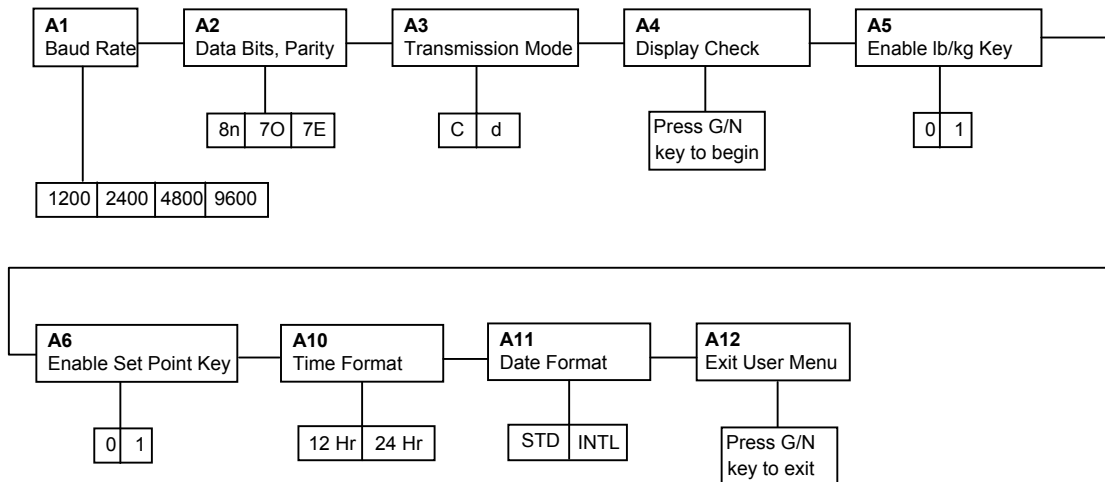
To make these changes, you must enter the User menu mode. Once there, four of the front panel keys become directional navigators to move around in the menus, and one key is used to save or SET the selections. Complete directions start below.

To place the unit in User menu mode:

1. Turn off the scale.
2. While turning the scale back on, press and hold the **ENTER** key.
3. When the display shows "A1", the unit is in Setup menu mode, and you may release the **ENTER** key. Shown at right are the directional and SET key assignments.



USER MENU CHART



To place the unit back into the Normal Operating mode:

1. While in User menu mode, toggle to **A12** and press the **G/N** key.
2. The display will go through a digit check, then settle into Normal Operating mode.
3. All front panel keys will now return to their normal mode of operation.

User Menu Descriptions

NAME / CODE	DESCRIPTION	CODE / VALUE
A1 Baud Rate	Selects the baud rate for data transmission through the 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 "7O" = 7 data bits with odd parity bit "7E" = 7 data bits with even parity bit	8n 7O 7E
A3 Mode of Serial Transmission	Selects when data will be sent out of the serial port to a printer or computer: "C" = Continuous mode; send data continuously "d" = Demand mode; send data when a PRINT command is issued from the printer, computer, or indicator.	C d
A4 Display Check	Actuates the function which illuminates all digit segments, decimal points, and LCD annunciators in a test sequence. Pressing the G/N key to scroll down one level begins the test sequence.	Press G/N key to begin sequence
A5 Disable the lb/kg Key	Allows the lb/kg key to be disabled so that an operator cannot accidentally press the key and change the displayed units. "0" = Disable the lb/kg key "1" = Enable the lb/kg key	0 1
A6 Disable the Set Point Key	Allows the set point key to be disabled so that an operator cannot enter the scale into check weight function. "0" = Disable the set point key "1" = Enable the set point key	0 1
A10 Time Format	Selects the format in which the time is displayed and/or printed. "12 Hr" = Shows AM/PM "24 Hr" = Military style	12 Hr 24 Hr
A11 Date Format	Selects the format in which the date is displayed and/or printed. "STD" = mm/dd/yy "INTL" = dd/mm/yy	STD INTL
A12 Exit User Mode	Allows user to exit User Mode and enter Normal Operating Mode. Scrolling down with the G/N key one level exits User Mode.	Press G/N key to exit

Setting Time and Date

The DCS comes standard with time and date entry which will be printed on the ticket (See “Print Format” for more information). An optional calendar chip, which keeps track of time and date, is also available. The format in which the time and date are displayed and/or printed is selectable in the User menu. See “Configuration” for more information.

To view or change the current settings for time and date:

1. While in normal operating mode, press the **TIME/DATE** key.

The scale displays the current time setting on the bottom display row in the format selected in the User menu.

2. If you wish to change the time, key-in the new time in military style using the following format:

hh mm where hh is the hour and mm is the minute. **NOTE:** Four digits must be keyed-in.

3. Press the **ENTER** key

The scale displays the new time setting on the bottom display row in the format selected in the User menu. If the new time setting is correct, you may proceed to the next step. If the new time is *not* correct, you may repeat Step # 2.

4. Press the **TIME/DATE** key again.

The scale displays the current date setting on the bottom display row in the format selected in the User menu.

5. If you wish to change the date, key-in the new date using the following format:

mm dd yy where mm is the month, dd is the day, and yy is the year. **NOTE:** Six digits must be keyed-in.

6. Press the **ENTER** key

The scale displays the new date setting on the bottom display row in the format selected in the User menu. If the new date setting is correct, you may proceed to the next step. If the new date is *not* correct, you may repeat Step # 5.

7. Press the **TIME/DATE** key again to exit to normal operating mode.

Item ID Storage

The DCS can store information for up to 100 items of your choosing. These item entries are stored and retrieved under an Item ID number. Each item entry stores the following information:

- Item Label (Alphanumeric Name of Item)
- Tare Weight of Container
- Unit Weight of the item
- Hot key designation (F?)

After sampling an item and establishing, if applicable, the container tare weight, you can store this information automatically when creating a new item entry. Once created, you can recall and/or modify this information by Item ID number. You can also recall information using a “Hot Key” if desired, by pressing the **F** key followed by a number (0-9).

To retrieve an existing item entry:

1. Using the numeric keys, key-in the ITEM ID number, then press the **ITEM I.D.** key.
– OR –
2. Press the F key followed by the hot key number (0-9) which was programmed while creating the entry.

The scale first acknowledges that it is loading the item, then updates the display to reflect the current piece count, unit weight, and tare weight.

To create a new item entry or modify an existing item entry:

1. If desired, establish either a Unit weight or Tare weight or both to be saved automatically during the creation of the new entry or modification of an existing item entry. See “Tare Operation” and “Piece Counting Operation” for more information.
2. While in normal operating mode, press the **ITEM I.D.** key.

The scale prompts for a password.

3. Using the numeric keys, enter **1234**, then press the **ENTER** key:

The scale prompts for an ITEM ID number.

4. Using the numeric keys, enter an item ID number (up to 7 digits), then press the **ENTER** key.

If the ITEM ID number already exists in memory, the scale asks if you wish to overwrite all information associated with the item (except the ID number itself). Otherwise, the scale prompts for an ID label.

5. If the ITEM ID number does not exist, skip to Step # 6. Otherwise press the **ENTER** key if you wish to overwrite the information in memory or press the **CLEAR** key if you wish only to modify the Tare or Unit weight. If you press the **CLEAR** key, skip ahead to Step # 7.

Item ID Storage / Continued

6. Using the numeric keys, enter an item label (up to 16 characters), then press the **ENTER** key. Two key strokes are required to enter each character. Remember, you can use the **CLEAR** key as a backspace key to remove any mistakes

To enter a letter (A-Z), first press the numeric key that contains the desired letter, then press the numeric key (1-4) that corresponds with the position of that letter printed on the key. For example, to enter the letter "A", first press the **2** key followed by the **1** key. (The **2** key contains the letter "A" which is the 1st letter appearing on the key).

To enter a number, first press the **0** key, then press the desired numeric key (0-9).

To enter a blank space, press the **1** key two times.

To summarize:

"0" = 0 + 0	"1" = 0 + 1	"2" = 0 + 2	"3" = 0 + 3	"4" = 0 + 4	"5" = 0 + 5	"6" = 0 + 6
"7" = 0 + 7	"8" = 0 + 8	"9" = 0 + 9	"A" = 2 + 1	"B" = 2 + 2	"C" = 2 + 3	"D" = 3 + 1
"E" = 3 + 2	"F" = 3 + 3	"G" = 4 + 1	"H" = 4 + 2	"I" = 4 + 3	"J" = 5 + 1	"K" = 5 + 2
"L" = 5 + 3	"M" = 6 + 1	"N" = 6 + 2	"O" = 6 + 3	"P" = 7 + 1	"Q" = 7 + 2	"R" = 7 + 3
"S" = 7 + 4	"T" = 8 + 1	"U" = 8 + 2	"V" = 8 + 3	"W" = 9 + 1	"X" = 9 + 2	"Y" = 9 + 3
"Z" = 9 + 4	"_" = 1 + 1					

The scale now displays the Item ID number and Item Label on the top row of the display and the Unit Weight on the bottom row.

7. If you wish to change the Unit Weight, key-in the new value using the numeric keys, followed by the **ENTER** key: Otherwise, press the **TARE** key.

The scale now displays the Item ID number and Item Label on the top row of the display and the Tare Weight on the bottom row.

8. If you wish to change the Tare Weight, key-in the new value using the numeric keys, followed by the **ENTER** key: Otherwise, press the **TARE** key again.

The scale now asks you if you wish to exit (Yes or No).

9. If you wish to exit to Normal Operating Mode, press the **ENTER** key: Otherwise, press the **CLEAR** key to return to Step # 7.

The scale now prompts you for the Hot Key Number (0-9). This allows the item information to be recalled simply by pressing the **F** key followed by the number assigned.

10. If you are creating a new entry and wish to assign a hot key number to recall this entry, or if you are modifying an existing entry and wish to change the assigned hot key number, key-in the number (0-9) using the numeric keys: Otherwise, press the **ENTER** key.

The scale confirms the hot key selection, then reverts back to Normal Operating Mode.

Item ID Storage / Continued

To clear an existing item entry:

NOTE: There is a hidden key located just to the left of the **1** key, referred to as the **CTRL** key.

1. Press and hold the **CTRL** key.
2. While still holding down the **CTRL** key, press the **1** key once.
The scale asks you to enter the ITEM ID number of the entry you wish to delete.
3. Using the numeric keys, enter the ITEM ID number you wish to delete, then press the **ENTER** key.
The scale asks if you are sure of this action.
4. Press the **ENTER** key to delete the entry or the **CLEAR** key if you do not wish to delete this entry.
The scale confirms the deletion and returns to normal operating mode.

To view the ITEM ID and Item Label of every item entry:

NOTE: There is a hidden key located just to the left of the **1** key, referred to as the **CTRL** key.

1. Press and hold the **CTRL** key.
2. While still holding down the **CTRL** key, press the **ITEM I.D.** key once.
The scale now displays the first Item ID number on the top row of the display and its Item Label on the bottom row.
3. To see the next item entry in memory, use the up and down arrows (**ZERO** and **G/N** keys) to scroll up and down through the memory. To exit and return to normal operating mode, press the **CLEAR** key.

To clear all item entries in memory:

NOTE: THIS PROCEDURE ERASES ALL ITEM ENTRIES IN MEMORY. ONCE COMPLETED, THIS PROCEDURE CANNOT BE UNDONE. USE WITH CAUTION.

1. Turn off the scale.
2. Press and hold the **CLEAR** key.
3. While still holding down the **CLEAR** key, turn the scale back on.
The scale asks if you are sure of this action.
2. Press the **ENTER** key to erase all memory locations. Otherwise press the **CLEAR** key .
The scale confirms the deletion and returns to normal operating mode.

Print Format

When connected to a serial printer, the DCS will print out the following information as follows when the **PRINT** key is pressed:

```
DATE      : 7/25/95
TIME      : 11:55
ID NO     : 1234
ITEM      : 7MM BOLTS
TARE WT   : 2.00 LB
GSS WT    : 7.00 LB
NET WT    : 5.00 LB
UNIT WT   : 0.1000 LB
QTY       : 50 PCS
```

Specifications

CAPACITY:

DCS-3: 3 lb x 0.0002 lb
DCS-6: 6 lb x 0.0005 lb
DCS-12: 12 lb x 0.001 lb
DCS-30: 30 lb x 0.002 lb
DCS-50/60: 60 lb x 0.005 lb

CONSTRUCTION:

Housing: Ivory ABS
Base & Sub-Platform: Metal
Platform: Stainless Steel
Feet: Non-skid Hard Rubber

DISPLAY:

2X16 Character, Alphanumeric LCD
with Backlighting

KEYPAD:

28-key Membrane Type

OVER CAPACITY ANNUNCIATION:

103% of Full Scale Capacity

OPERATING TEMPERATURE RANGE:

32°F to 104°F
(0°C to 40°C)

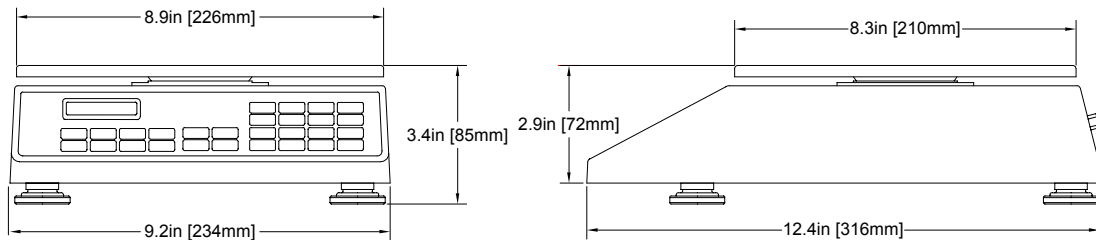
POWER SOURCE:

AC Adapter, 12 VDC, 500 mA

WEIGHT:

Net Weight: 8.8 lb (4 kg)
Shipping Weight: 14.2 lb (6.4 kg)

PHYSICAL DIMENSIONS:



Warranty and Service Information

Seller warrants that the DCS Series 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.

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