

SP Series

Digital Bench Scale

Operation Manual

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Transcell Technology inc.

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Contents subject to change without notice.

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Table of Contents

Introduction	1
Installation and Wiring.....	1
Keyboard Functions	1
Configuration.....	2
User Menu Descriptions	2
Calibration	3
Specifications	4
Warranty and Service Information.....	5

Introduction

The SP Series Digital Bench Scale is a compact, legal for trade scale with remote digital indicator. Housed in a standard black polymer case, the indicator displays its numerals on a bright VFD screen. The base unit features a removable stainless steel platform, an RS-232 serial communication port, and adjustable feet for leveling.

The SP Series uses full duplex RS-232 serial format for communication with many types of attached support equipment. The unit can transmit data on demand, or continuously in several

popular data protocols to match a wide variety of printers, remote displays, or personal computers. If you plan to use your scale with equipment other than a PC, you may have to alter the serial communication parameters which are embedded in the User Menu.

The User Menu is accessed through the front panel keys. Complete directions, including a graphical road map, are found in the Configuration section of the manual.

Installation and Wiring

Unless you wish to interface to a device other than a PC, no wiring is necessary. Simply connect the indicator to the scale platform, plug in the AC adapter, and turn the unit on. If the swivel indicator option was ordered, the stainless steel post may be mounted to the bottom of the base with the hardware provided. Alternately, it may be mounted to a table or bench. In general, please allow a 20 minute warm up period before

using the scale.

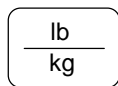
If interfacing to a PC, simply connect the optional null modem cable to a serial port (e.g. COM 1) on your PC. If your computer has a 25-pin serial port, a standard 9-pin to 25-pin adapter, such as the type used for a mouse, may be used and is readily available at your local computer supply retailer.

If interfacing to a serial device other than a PC, you may have to wire your own cable to communicate with that device. If so, refer to the 9-pin connector pinout shown at right.

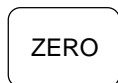
Pin No.	Pin Name
2	Receive Data
3	Transmit Data
5	Signal Ground

9-Pin Connector Pinout

Keyboard Functions



Toggles between lb and kg units if this key is enabled in the User Menu.



Sets indicator to display "0" when in Gross mode, and within zero band range.



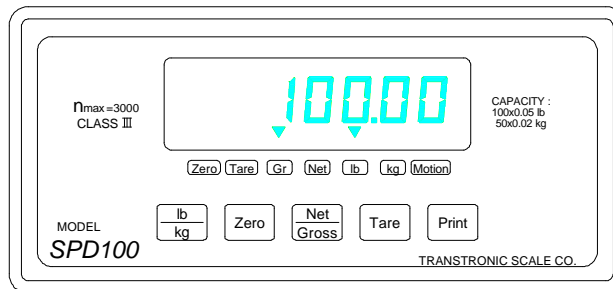
Toggles between Gross and Net weight display.



Used to zero a weight indication in Net mode.



Sends "Print" data to printer if scale is stable and not in overload. Not active when "Continuous" option is selected in User Menu.



SP SERIES FRONT PANEL

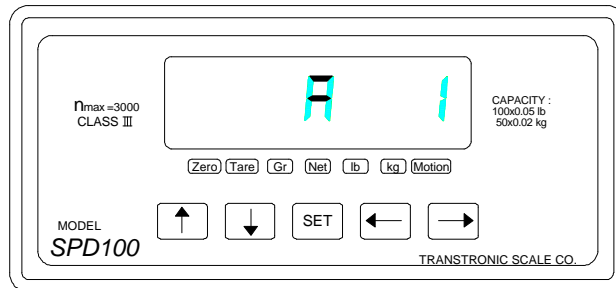
Configuration

All Serial Communication parameters are embedded in a user menu consisting of 5 separate menu selections, each with its own sub-menu of choices. If your scale is connected by RS-232 serial communication lines to other equipment, or you wish to disable the **lb/kg** key, you may have to modify some or all of these parameters.

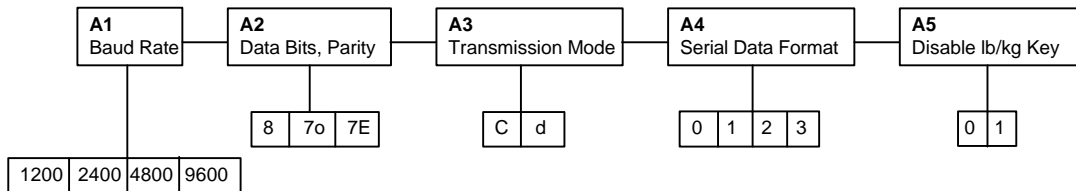
To modify these parameters, you must first enter the USER MENU mode. Once there, four of the front panel keys become directional navigators to move around in the menus, and one key is used to save or SET the selections. Complete directions are found below.

To place the unit in USER MENU mode:

- ☑ Turn the scale off.
- ☑ While holding down the **lb/kg** key, turn the scale back on.
- ☑ When the display shows "A1", the unit is in USER MENU mode, and you can release the **lb/kg** key. Shown at right are the directional and SET key assignments.



USER MENU CHART



To place the unit back into the **NORMAL OPERATING** mode, turn off the power to the unit. With no keys held down, turn the power back on. 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 4800	2400 √ 9600
A2 Data Bits and Parity	Selects the number of data bits and parity of serial transmission. "8" = 8 data bits with no parity bit "7O" = 7 data bits with odd parity bit "7E" = 7 data bits with even parity bit	8 √ 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	

User Menu Descriptions / continued

NAME/CODE	DESCRIPTION	CODE/VALUE
A4 Serial Data Format	Selects the data format to be transmitted via the serial port to a printer or computer. "0" = Consolidated Controls Format "1" = Toledo Format "2" = NCI Format "3" = Transcell Technology Format	0 1 2 3√
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√

Calibration

All SP Series scales may be calibrated with any precision test weight from 10 lb to 100 lb. The recommended test weight is about 2/3 of the full scale capacity, but in general, the larger the test weight, the more accurate the scale will be. The only restriction is that the test weight *must* be in pounds.

To calibrate the scale:

- ☑ Turn the scale off. Locate the hidden switch on the base panel and set it at the rightmost position. Turn the unit back on. The message "**C 0**" appears on the display briefly, followed by a value which remains on the screen. Allow a 20 minute warm-up period for the load cell and indicator to become thermally stable.
- ☑ Press **ZERO** to zero the value, then press the **NET/GROSS** key to save the zero point value.
- ☑ The display will momentarily prompt "**C 1**" for the span calibration, followed by "**0.00**" with one digit flashing. Place the test weight on the platform.
- ☑ Use the four directional keys to adjust the displayed value to the actual test weight value in pounds. Increase the flashing digit by pressing the **lb/kg** key. Decrease the flashing digit by pressing the **ZERO** key. The position of the flashing digit may be changed by pressing the **PRINT** key or the **TARE** key.
- ☑ After setting the exact value, press the **NET/GROSS** key to save the value.
- ☑ If the calibration was successful, the display will show "**ECAL**" momentarily, then freeze. Exit the Calibration mode and enter the Normal Operating Mode by turning off the scale, positioning the calibration switch back to the leftmost position, and turning the scale back on.
- ☑ If the calibration was *not* successful, one of the error messages below will appear. Take the indicated action to correct the problem, then perform a new calibration.
 - "**Err0**" - The calibration test weight or the adjusted keyed-in weight is larger than full scale. Change the calibration test weight or check the keyed-in weight.
 - "**Err1**" - The calibration test weight or the adjusted keyed-in weight is smaller than 10% of full scale. Change the calibration test weight or check the keyed-in weight.
 - "**Err2**" - Check keyed-in weight with the actual weight placed on platform.

Specifications

CONSTRUCTION:

Indicator: Black ABS with steel back plate.

Base: Steel and ABS with stainless steel platform.

DISPLAY:

7 Digit, 0.5", 7-Segment
Vacuum Fluorescent

NIST CLASSIFICATION:

Meets H-44 Class III at 3,000 divisions

OVER CAPACITY ANNUNCIATION:

103% of Full Scale Capacity

OPERATING TEMPERATURE RANGE:

32°F to 104°F
(0°C to 40°C)

OPTIONAL SWIVEL POST:

12" (30mm) Tall
Stainless Steel Construction

POWER SOURCE:

AC Adapter, 12VDC, 650mA,
included

WEIGHT:

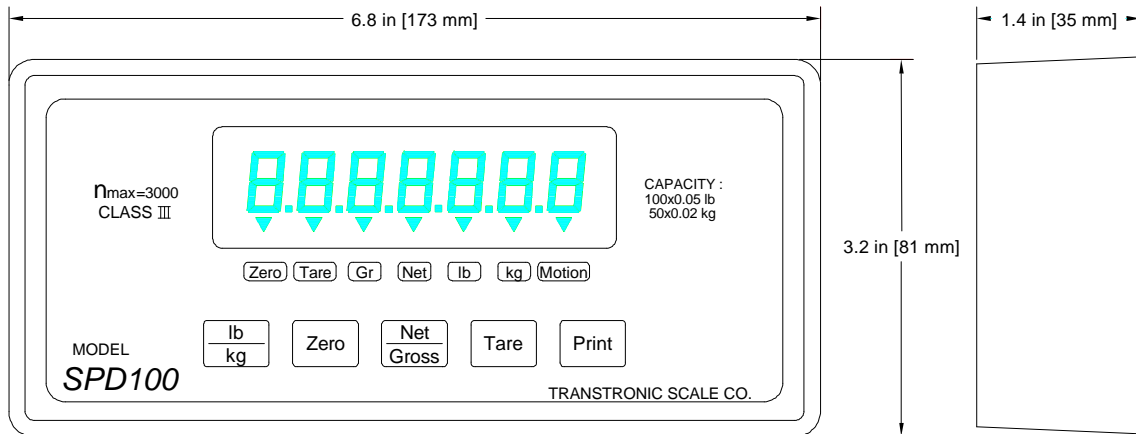
Net Weight: 19.4 lb (8.8 kg)

Shipping Weight: 21.6 lb (9.8 kg)

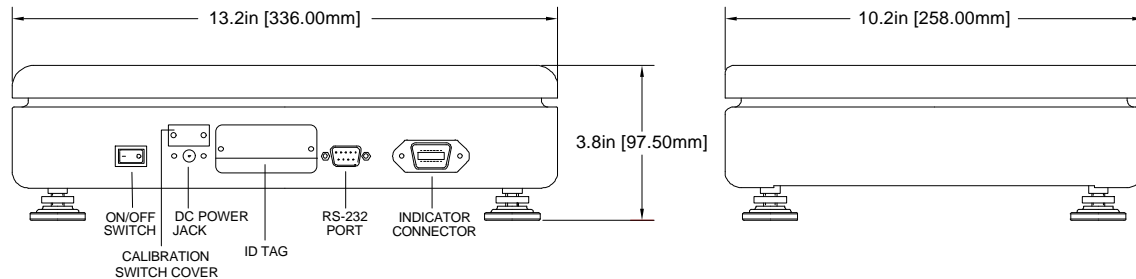


Certificate of conformance
#93-059

PHYSICAL DIMENSIONS:



REMOTE INDICATOR



BASE

Warranty and Service Information

Seller warrants that the SP Series Digital Electronic Bench 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.