

SR-2001 TEN LED RESISTIVITY METER

I. Description

The SR-2001 surface resistivity meter is a convenient and simple to use instrument for testing static control materials. This lightweight portable unit covers ten ranges of resistivity. A lit LED at the top of the meter indicates the range of the material tested. The SR-2001 can be used for both Surface Resistivity and Resistance to Groundable Point (R_{TG}) measurements.

II. Contents

- 1 Ten LED meter with 9 volt battery
- 1 Technical Bulletin/Use Instruction sheet
- 1 R_{TG} lead, 3' length

III. Specifications

Functional Test Range: 10^4 to 10^{12} ohms

Power: 9V battery

Size: 5.5" x 4.25" x 1.8"

Test Accuracy: $\pm 10\%$

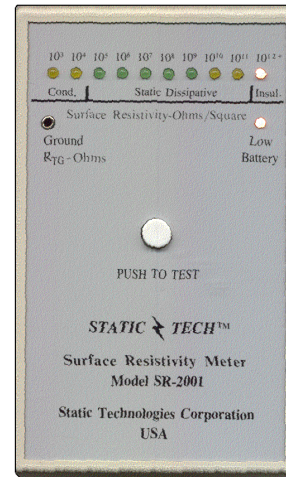
Test Electrode: Parallel 2-1/2" conductive elastomer strips

Test Voltage: 6.2V DC

Weight: 0.58 lbs.

IV. Specific Ranges

Range	LED Color	Minimum	Maximum
$<10^3$	Yellow	0	8×10^3
10^4	Yellow	8.1×10^3	8×10^4
10^5	Green	8.1×10^4	8×10^5
10^6	Green	8.1×10^5	8×10^6
10^7	Green	8.1×10^6	8×10^7
10^8	Green	8.1×10^7	8×10^8
10^9	Green	8.1×10^8	8×10^9
10^{10}	Yellow	8.1×10^9	8×10^{10}
10^{11}	Yellow	8.1×10^{10}	8×10^{11}
10^{12+}	Red	8.1×10^{11}	Infinity



V. Battery Replacement

Low battery will be indicated by the "Low Battery" LED when in use. A standard nine-volt battery will provide approximately 1000 tests.

VI. Verification Of Results

This unit uses fixed resistors and it is unlikely that the unit will fall out of specification unless it is damaged. Verification of performance to factory specifications is available from Static Technologies' Randolph, Massachusetts headquarters. See page 3 for procedures on verification.

All statements, technical information and recommendations related to the seller's products are based on information believed to be reliable, but the accuracy or completeness thereof is not guaranteed. Before using the product, the user should determine the suitability of the product for its intended use. The user assumes all risks and liability whatsoever in connection with such use.

Static Technologies Corporation ♦ 61 Pleasant Street ♦ Randolph, MA 02368 U.S.A.

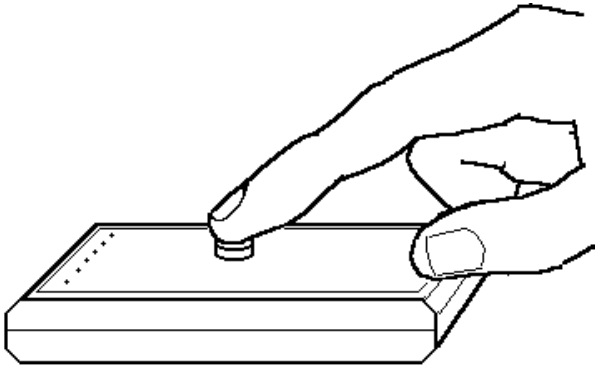
Telephone: 781-961-7220

Email: statictech@xensei.com

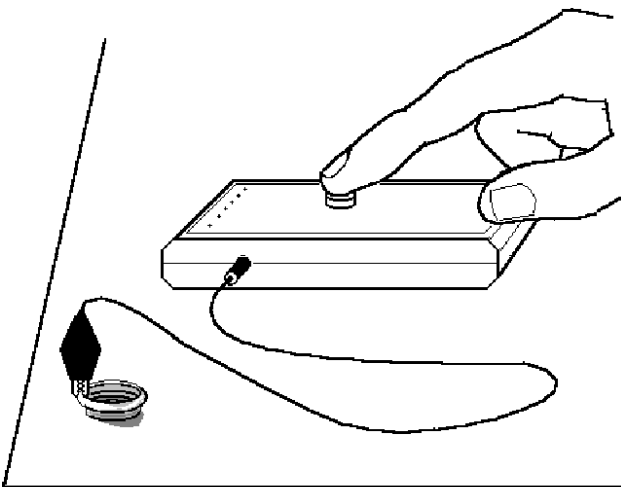
Fax: 781-961-1858

Website: www.static-tech.com

VII. Surface Resistivity Tests: Place the meter on the material to be tested and push the white button in the middle of the unit. The unit measures the resistance between the two 2-1/2" electrodes on the back of the meter to determine surface resistivity. The LED that is lit, will indicate the surface resistivity in ohms per square.



VIII. R_{TG} Measurements: Plug the stereo plug of the ground lead into the jack marked "GND" on the side of the meter. Connect the alligator clip to a suitable ground point for the material to be tested. For table mats this will generally be the snap for the mat's ground cord. Place the meter in the desired location and push the white test button. The unit will measure the resistance from the electrode on the right to the ground point. R_{TG} values are measured in ohms.



IX. Replacement Electrodes:

P/N SR-2002 (One pair)

A. Use proper ESD control procedures when replacing electrodes. This requires a wrist strap or other personal grounding device.

B. Use a small Phillips head screw driver to remove the four screws at corners on back of meter.

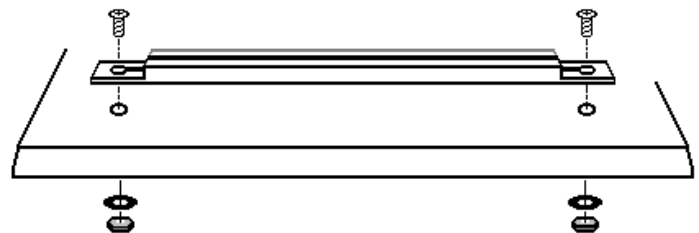
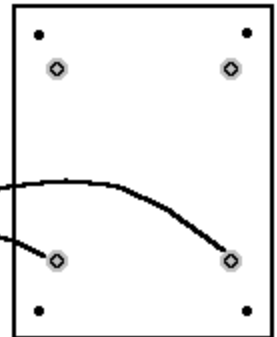
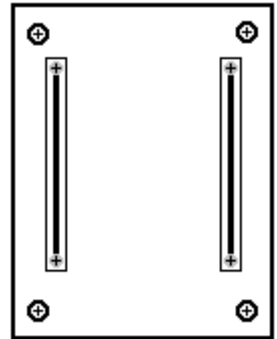
C. Separate halves of meter, taking care not to damage any wire connections.

D. Use a small pliers or tweezers to remove four nuts holding electrode assemblies in place.

E. Fasten new electrodes in place.

F. Reassemble meter.

G. Use calibration box, resistors or materials of known value to check accuracy of meter.



X. Performance to factory specifications

Verification of performance to factory specifications is available from the factory. Verification can also be performed using a decade box or a series of resistors of known values.

The SR-2001 has ten LEDs signifying different resistance ranges. The SR-2001 step values are from $8.1 \times 10^{x-1}$ to 8.0×10^x where "x" is the range under consideration. Thus the LED marked 10^6 will indicate a range from 8.1×10^5 to 8.0×10^6 . Resistance values used in verification should consider the SR-2001 tolerances of $\pm 10\%$.

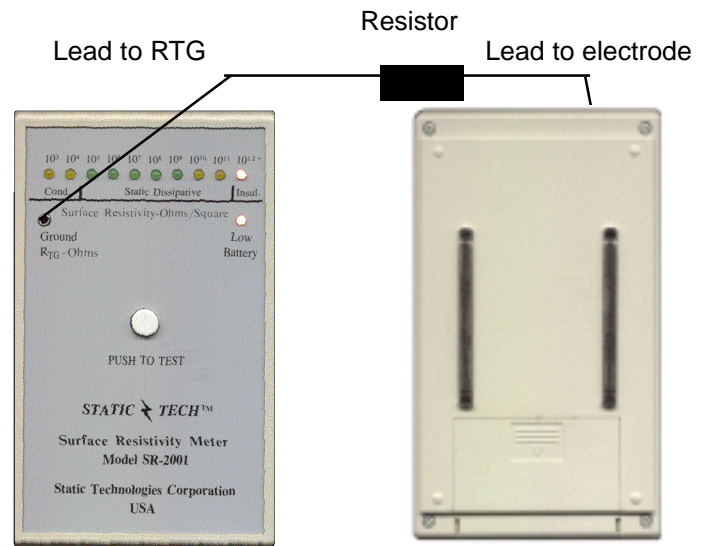
Note that the SR-2001 uses fixed resistors for its operation. It is unlikely that the unit will fall out of factory specifications unless it is damaged. Annual verification is a means of ensuring that the unit and your ESD control program is working to proper and expected standards.

XI. Verifying Resistivity Function

Verification for resistivity can be performed by attaching wire leads to an appropriate resistor or equivalent level on a decade box and applying one lead to each of the electrodes on the back of the meter. The "TEST" button should then be depressed. Depending on the resistor selected, the appropriate LED should light, signifying that the meter is functioning within factory specification at that step. All resistor values should be tested to ensure total calibration. Resistors or decade box used for verification should have tolerances of no more than $\pm 5\%$.

XII. Verifying Resistance To Groundable Point Function

Use the same resistor set-up as for resistivity procedure. Attach one lead to the electrode on the back of the tester closest to the 10^3 LED (electrode on the right hand side as you look at the back of the tester). Insert the plug of the R_{TG} lead that is supplied with the SR-2001 into the jack marked "Ground" below the 10^5 LED. Clip the other end of the R_{TG} lead onto the remaining lead on the resistor. Repeat the range tests as for II. Verifying Resistivity Function with the same expected results.



XIII. EXpected Results

Resistor Value	Expected lit LED
$\leq 7 \times 10^3$	10^3
9×10^3 to 7×10^4	10^4
9×10^4 to 7×10^5	10^5
9×10^5 to 7×10^6	10^6
9×10^6 to 7×10^7	10^7
9×10^7 to 7×10^8	10^8
9×10^8 to 7×10^9	10^9
9×10^9 to 7×10^{10}	10^{10}
9×10^{10} to 7×10^{11}	10^{11}
$\geq 9 \times 10^{11}$	10^{12+}

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