



**TRANSFORMING TECHNOLOGIES**  
*OUTSTANDING ALTERNATIVES IN STATIC CONTROL*

***Ohm Metrics™***

**Surface Resistance Testing Kit  
Model SRM500K**



**Instruction Manual**

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# Description

## *Ohm Metrics* Surface Resistance Meter: SRM 500K

The SRM500K is a digital surface resistance test kit designed to test all conductive, anti-static and static dissipative surfaces for electrical resistivity/resistance according to EOS/ESD, CECC, ANSI, ASTM test procedures. It accurately and quickly measures resistance between two points (RTT) and surface to ground resistance (RTG). Suitable for factory audits and test lab evaluations, the Ohm Metrics SRM500K also measures ambient temperature and humidity.

Features include:

- 10v and 100v range voltage selection
- Automatic zeroing and power shut off
- Two 5 lb disk probes
- Built in resistivity probes
- Carrying case

The SRM500k meets periodic test requirements per Compliance Verification ESD TR53 and conforms to ANSI/EOS/ESD (S4.1, S7.1, S12.1, S2.1).

## **About Ohm Metrics**

*Ohm Metrics* test and measurement products, from Transforming Technologies, are useful, reliable tools for characterizing and identifying the electrical resistance of materials and the performance of personal grounding products.

- All Ohm Metrics products are designed to support ESDA Compliance Verification TR53.
- All Ohm Metrics products can be calibrated.
- All Ohm Metrics test and measurement products are warranted for 1 full year.

## **Power Options**

The SRM500K can be powered by a 9 volt battery or by the included 120 volt AC adapter.

## **Set Up**

The SRM500K has two methods to measure resistivity: Parallel Probe Resistivity (PPR) method and Probe Resistivity (CRP) method. The PPR method uses built in probes on the back of the SRM500 and the CRP method uses two 5 lb probes attached to the meter by lead wires.

## **Parallel Probe Resistivity Method**

The PRP method is used to give fast electrical resistivity measurements on flat homogeneous materials. Parallel probes are mounted on the back of the SRM500.

Note: It may be used on multilayered materials, but this should be noted along with the temperature and humidity value on the data report.

Make sure that surfaces to be tested are clean and free of contaminants.

1. Place the meter on the surface to be tested.
2. Move the switch to desired test voltage position, either 10 or 100 volts.
3. Press and hold the test button. After approximately 15 seconds, the meter will display the resistivity, humidity and temperature on the LCD screen.

The resistivity reading will be in ohms per square, temperature in centigrade, and relative humidity in percent.

The meter will keep updating the display while the button is held down and will continue to display the last test reading for approximately 45 seconds after the button is released.

## Specific Measurements

The SRM500K can take specific measurements: Resistance between Two Points (RTT) and Surface to Ground Resistance (RTG). Procedures vary regarding sample preparation, probe preparation and spacing of the 5 pound probes. Select and read the correct test procedure for the desired measurement.

### RTT test procedure

This procedure measures resistance between two points independent of a ground point.

1. Connect the plug ends of the test leads into the 3.5mm jacks of the meter.
2. Connect the banana plugs of the test coil cords into the ends of the 5 pound probes.
3. Place both probes on the material according to test procedures.
4. Move switch to desired test voltage position, either 10 or 100 V.
5. Press and hold the test button until power is applied to the meter and a value is displayed. Keep the button depressed with sufficient force until the electrical resistance. Relative humidity and temperature readings are displayed on the meter screen.

## **RTG test method**

This procedure measures the surface resistance between a ground point on the material surface and specific positions on the material being tested. This procedure complies with the EOS/ESD S4.1 standard.

1. Meter set-up: with both test leads connected to the meter, attach the alligator clip to one lead and the other to the one of the 5lb probe.
2. Attach the alligator clip to a known ground point.
3. Position the probe on the surface to be tested in accordance with the desired test procedure.
4. Press the test button until the resistivity, humidity and temperature test values are displayed on the LCD screen.
5. These readings will conform to: EIA, EOS/ESD ANSI, IEC-93 CECC and ASTM test procedures.

Note: When performing test, especially with high resistance materials be sure the test lead wires do not touch or overlap and that your hands are not in contact with the probes or wires during the actual testing of the materials. This will ensure accurate readings.

# Product Specifications

## Product Number

SRM500K Resistance Meter with 5lb disk probes and carrying case

## Specifications:

Dimensions/Weight 5.15" H x 2.50" W x 1.8" D / 8.46 oz  
Test range:  $10^3$ - $10^{12}$   
Test voltage: 10V/100V(automatic ranging)  
Power Supply 9V-Battery (PP3)  
120 volt AC Adapter  
Unit automatically powers off when not in use  
Probes: Two 5 pound disk probes  
Two 3"parallel surface resistivity probes  
Read Out LCD alpha-numeric scale-no LED'S  
Warranty One Year

## Test Range

Resistivity:  $10^3$ - $10^{12}$  ohms/sq.  
Resistance:  $10^3$ - $10^{12}$  ohms  
Relative humidity: 10% to 90%RH  
Temperature: 0°C-37.7°C(32°Fto 100°F)



**Specifications Continued**

**Accuracy for 10 volt scale:**

10e3-10e8+/-10%      @RH<90%  
10e8-10e12+/-20%      @RH<90%

**Accuracy for 100 volt scale:**

10e3-10e8+/-10%      @RH<90%  
10e9-10e12+/-20%      @RH<60%

## **Service and Warranty**

Transforming Technologies, LLC provides a limited warranty for the Model SRM500K. All new products are guaranteed to be free from defects in material and workmanship for a period of one (1) year from the date of shipment. Liability is limited to servicing (after evaluating, repairing or replacing) any product returned to Transforming Technologies. The company does not warrant damage due to misuse, neglect, alteration or accident. In no event shall Transforming Technologies be liable for collateral or consequential damages.

To receive service under warranty, please contact Transforming Technologies Technical Support.

# **About Transforming Technologies**

Since 1998, Transforming Technologies has helped electronic manufacturing facilities to protect their products and processes from the many serious problems associated with static electricity.

Transforming Technologies offers a wide range of unique and outstanding products to detect, protect, eliminate and monitor electrostatic charges. Our products are integral components of an effective static control program.



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