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## EVTSCAN 77acf61c-e6a4-4c5a-8adc-ab49dd8d54d5

# EVTSCAN Portable Handheld Surface Resistivity Meter User Manual

Model: MODEL-100

## 1. Introduction

This user manual provides detailed instructions for the operation, maintenance, and troubleshooting of the EVTSCAN Portable Handheld Surface Resistivity Meter, Model MODEL-100. This device is designed for precise measurement of surface resistivity and grounding resistance of various materials, including conductive, antistatic, and static dissipative surfaces, coatings, films, and fabrics.
Please read this manual thoroughly before using the meter to ensure safe and effective operation.

## 2. Safety Information

Always observe the following safety precautions to prevent injury or damage to the device:

- Do not attempt to open or modify the meter. There are no user-serviceable parts inside.
- Keep the device dry. Do not expose it to water or excessive humidity.
- Use only the specified 9V battery (6F22 type).
- Store the meter in a cool, dry place away from direct sunlight and extreme temperatures.
- Ensure the test leads are properly connected before taking measurements.
- This device is intended for measuring surface resistivity and grounding resistance only. Do not use it for other purposes.

## 3. Package Contents

Verify that all items listed below are included in your package:

- 1 x EVTSCAN Surface Resistance Tester (Model MODEL-100)
- 1 x Test Lead
- 1 x 6F22 9V Battery
- 1 x User Manual




Figure 3.1: Package contents including the meter, test lead, and battery.

## 4. Product Overview

The EVTSCAN Surface Resistivity Meter is a compact, handheld device designed for ease of use and accurate measurements. It features an intuitive LED indicator display and a single test button.




Figure 4.1: Front view of the EVTSCAN Surface Resistivity Meter.

**Key Components:**

- **LED Indicator Array:** Displays the measured resistance range from $10^3$ to $10^{12}$ ohms, categorized as Conductive, Static Dissipative, or Insulative.
- **TEST Button:** Initiates the measurement process.
- **EARTH LEAKAGE Port:** For connecting the external test lead for grounding resistance measurements.
- **Integrated Electrodes:** Two parallel copper strips on the bottom of the device for direct surface resistivity measurements.

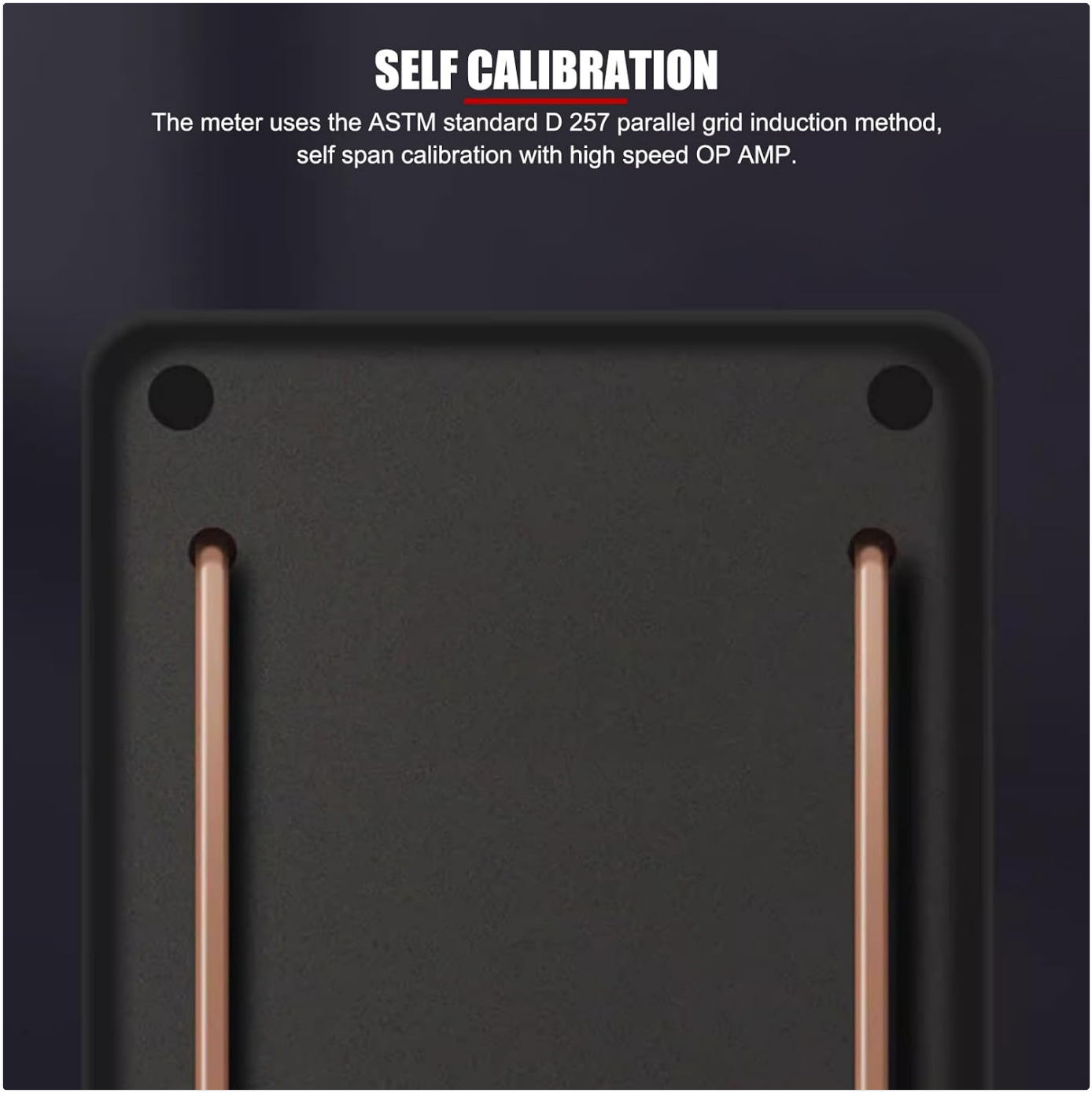


Figure 4.2: Bottom view showing the integrated electrodes.

## 5. Setup

### 5.1 Battery Installation

1. Locate the battery compartment cover on the back of the meter.
2. Slide or unclip the cover to open the compartment.
3. Connect the included 9V (6F22) battery to the battery clip, ensuring correct polarity.
4. Place the battery inside the compartment and close the cover securely.

The meter is now ready for use. The battery provides over 40 hours of continuous operation.

## 6. Operating Instructions

### 6.1 Surface Resistivity Measurement

To measure the surface resistivity of a material:

1. Place the meter directly onto the surface of the material you wish to test. Ensure both integrated electrodes on the bottom of the meter are in full contact with the surface.
2. Press and hold the red **TEST** button.
3. Observe the LED indicators. The illuminated LED will indicate the surface resistivity range (Ohms per Square).
4. Release the **TEST** button to turn off the display.




Figure 6.1: Performing a surface resistivity measurement.

**LED Indicator Interpretation:**

- **$10^3$ to $10^5$ ohms:** Conductive
- **$10^6$ to $10^{10}$ ohms:** ESD Anti-Static Standard (Static Dissipative)
- **$10^{11}$ to $10^{12}$ ohms:** Fully Insulated




Figure 6.2: The meter features self-calibration, easy operation, and auto-ranging.

## 6.2 Grounding Resistance Measurement (Earth Leakage)

To measure grounding resistance, an external test lead is required:

1. Insert the plug of the test lead into the **EARTH LEAKAGE** port on the meter.
2. Connect the alligator clip of the test lead to a known ground point (e.g., an electrical ground, a grounded metal object).
3. Place the meter onto the surface you wish to test, ensuring both integrated electrodes are in full contact.
4. Press and hold the red **TEST** button.
5. Read the resistance value from the illuminated LED indicator.
6. Release the **TEST** button.

This measurement determines the resistance from the tested surface to the ground point.




Figure 6.3: The meter's main purpose is to measure resistivity and grounding resistance.

## 7. Maintenance

- **Cleaning:** Wipe the meter's exterior with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure the integrated electrodes are clean and free of debris for accurate readings.
- **Storage:** When not in use for extended periods, remove the battery to prevent leakage and store the meter in its original packaging or a protective case.
- **Self-Calibration:** The meter features an automatic self-calibration function, adhering to ASTM D257 parallel grid induction method, ensuring consistent accuracy without manual adjustment.

## 8. Troubleshooting

| Problem | Possible Cause | Solution |
|---|---|---|

| Problem | Possible Cause | Solution |
|---|---|---|
| Meter does not turn on or LEDs do not light up. | Battery is dead or incorrectly installed. | Check battery polarity. Replace with a new 9V battery. |
| Inconsistent or inaccurate readings. | Electrodes are dirty or not making full contact.<br>Environmental conditions (temperature/humidity) outside operating range. | Clean the electrodes. Ensure firm, flat contact with the surface.<br>Operate within specified temperature (5°C to 49°C) and humidity (5% to 90% RH) ranges. |
| No reading when using test lead. | Test lead not properly connected or damaged.<br>Ground point is not effective. | Ensure test lead is fully inserted into the port and alligator clip is securely attached.<br>Verify the ground point is functional. |

## 9. Specifications

| Parameter | Value |
|---|---|
| Measurement Range | $10^3$ to $10^{12}$ ohms |
| Measurement Accuracy | ± 10% |
| Auto Range | Yes |
| Test Voltage | 9V |
| Display | LED indicator ($10^3$-$10^5$ ohms=conductor, $10^6$-$10^{10}$ ohms=ESD anti-static standard, $10^{11}$-$10^{12}$ ohms=fully insulated) |
| Power Source | 1 x 6F22 800mAh 9V battery |
| Working Time | More than 40 hours |
| Self-Calibration | Yes (ASTM D257 compliant) |
| Operating Temperature | 5°C to 49°C (41°F to 120°F) |
| Storage Temperature | -15°C to 60°C (5°F to 140°F) |
| Humidity | 5% to 90% RH, non-condensing |
| Dimensions | *(Not provided in input)* |
| Weight | 0.19 Kilograms (excluding packaging) |

## 10. Warranty and Support

For warranty information and technical support, please refer to the contact details provided with your purchase or visit the official EVTSCAN website. Keep your purchase receipt as proof of purchase for warranty claims.
**EVTSCAN Official Store:** Visit the EVTSCAN Store on Amazon

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