

# Resistivity Meter Verification Test Unit Model RMV-2

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## Introduction

It is well known that devices that are used in the laboratory or in the field for measurement purposes need to be calibrated from time to time. Most of these devices have calibrations that are provided through the use of adjustment resistors or some electro-mechanical device that is “set” in place using glues, waxes, or some other means of semi-rigid fixing. Through general usage, these settings can become altered by these adjustors becoming “unset” by failure of the fixing method. This in turn causes the device to alter its calibration and no longer provides correct measurements. The majority of these measurement tools, including 4-pin resistance measurement devices, do not have the ability to self-check their calibration before use.

Since calibration can be lost on these devices typically without notice, this device was designed to provide calibration confirmation of a 4-pin resistance measurement meter (RM) daily before usage.

## Usage

This device is intended to be very simple to use while providing measurement limit and mid-range verification. Since most RM’s use ranged settings that utilize much of the same measurement circuitry a variety of resistance values have been provided to test various limits without going through all of the resistance measurement settings of the meter.

1. Before using the box for RM verification it must be connected to the device utilizing four double ended banana jacks by following these connection protocols.
  - Connect C1 of the RM to C1 of the 4-pin Resistance Meter Verification Test Unit
  - Connect C2 of the RM to C2 of the 4-pin Resistance Meter Verification Test Unit
  - Connect P1 of the RM to P1 of the 4-pin Resistance Meter Verification Test Unit
  - Connect P2 of the RM to P2 of the 4-pin Resistance Meter Verification Test Unit
2. With the label facing up and the wording oriented from left to right, connect the provided banana jumper wire between the far left banana jack and the jack labeled 10Ω. See Below Photo.



- Measure  $10\Omega$  on the lowest possible scale (usually 1x). The measured value should be within 1% to be in calibration. If it is within calibration, measure again on the next highest scale (usually 10x). The measured value should be within 1% to be in calibration. If the devices calibration is verified for these two measurements proceed to step 3.
3. With the label facing up and the wording oriented from left to right, connect the provided banana jumper wire between the far left banana jack and the banana jack labeled  $2.2k\Omega$ . See Below Photo



- Measure  $2.2k\Omega$  on the lowest possible scale. The measured value should be within 1% to be within calibration. This setting confirms the left scale movement of the meter.. If the devices calibration is verified for this measurement proceed to step 4.
4. With the label facing up and the wording oriented from left to right, connect the provided banana jumper wire between the far left banana jack and the banana jack labeled  $68k\Omega$ . See Below Photo.



- Measure  $68k\Omega$  on the lowest possible scale. The measured value should be within 1% to be within calibration. This setting confirms the right scale movement of the meter. If the devices calibration is verified for this measurement proceed to step 5.

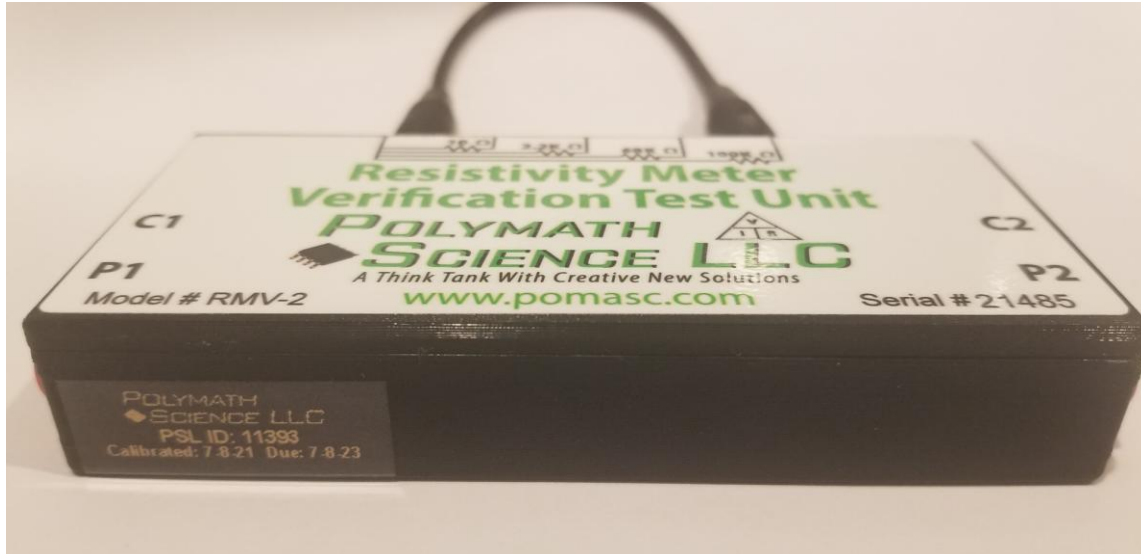
5. With the label facing up and the wording oriented from left to right, connect the provided banana jumper wire between the far left banana jack and the jack labeled 100kΩ. See Below Photo.



6. Measure 100kΩ on the lowest possible scale. The measured value should be within 1% to be in calibration. If it is within calibration, measure again on the next highest scale. The measured value should be within 1% to be in calibration. If the devices calibration is verified for these two measurements device calibration is verified.
7. This completes the 4-wire soil resistance meter verification test.
8. Disconnect the wires from the 4-wire resistance verification test unit, store the wires for future use, and use the 4-wire soil resistance meter when ready.

## Calibration

Each unit is calibrated when it is manufactured. The calibration sticker is located on the bottom left corner. Pictured below is where the calibration label is located.



The "PSL ID:" is the serial number for this unit. This unit was calibrated on 7-08-2021 and will need to be calibrated on 7-08-2022. The Calibration certificate is included with the unit. If you would like an additional copy please contact us with your serial number.

To have your unit calibrated please contact Polymath Science LLC for calibration.

## Contact Information

For the most up to date contact information please visit our website at [www.pomasc.com](http://www.pomasc.com).

Email us at: [sales@pomasc.com](mailto:sales@pomasc.com)

## Specifications

These units are created with precision metal film 1/2 watt 1% tolerance resistors. These resistors are pin (0.022 inches, 0.55mm), #24 lead SWG (Stand Wire Gauge). Each unit is filled with polyurethane foam to protect the internal components. The foam protects the unit from vibration, impacts and inclement weather.