

RM2611

ELECTRODE RESISTANCE METER

Instruction Manual

EN

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RM2611A961-01 20-02H



HIOKI

<http://www.hioki.com>



All regional contact information

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Warranty Certificate

HIOKI

| Model | Serial number | Warranty period |
|---|---------------|---|
| | | Three (3) years from date of purchase (___ / ___) |
| Customer name: _____ | | |
| Customer address: _____ | | |
| Important | | |
| <ul style="list-style-type: none"> • Please retain this warranty certificate. Duplicates cannot be reissued. • Complete the certificate with the model number, serial number, and date of purchase, along with your name and address. The personal information you provide on this form will only be used to provide repair service and information about Hioki products and services. | | |
| This document certifies that the product has been inspected and verified to conform to Hioki's standards. Please contact the place of purchase in the event of a malfunction and provide this document, in which case Hioki will repair or replace the product subject to the warranty terms described below. | | |
| Warranty terms | | |
| 1. The product is guaranteed to operate properly during the warranty period (three [3] years from the date of purchase). If the date of purchase is unknown, the warranty period is defined as three (3) years from the date (month and year) of manufacture (as indicated by the first four digits of the serial number in YYMM format). | | |
| 2. If the product came with an AC adapter, the adapter is warranted for one (1) year from the date of purchase. | | |
| 3. The accuracy of measured values and other data generated by the product is guaranteed as described in the product specifications. | | |
| 4. In the event that the product or AC adapter malfunctions during its respective warranty period due to a defect of workmanship or materials, Hioki will repair or replace the product or AC adapter free of charge. | | |
| 5. The following malfunctions and issues are not covered by the warranty and as such are not subject to free repair or replacement: | | |
| <ul style="list-style-type: none"> -1. Malfunctions or damage of consumables, parts with a defined service life, etc. -2. Malfunctions or damage of connectors, cables, etc. -3. Malfunctions or damage caused by shipment, dropping, relocation, etc., after purchase of the product -4. Malfunctions or damage caused by inappropriate handling that violates information found in the instruction manual or on precautionary labeling on the product itself -5. Malfunctions or damage caused by a failure to perform maintenance or inspections as required by law or recommended in the instruction manual -6. Malfunctions or damage caused by fire, storms or flooding, earthquakes, lightning, power anomalies (involving voltage, frequency, etc.), war or unrest, contamination with radiation, or other acts of God -7. Damage that is limited to the product's appearance (cosmetic blemishes, deformation of enclosure shape, fading of color, etc.) -8. Other malfunctions or damage for which Hioki is not responsible | | |
| 6. The warranty will be considered invalidated in the following circumstances, in which case Hioki will be unable to perform service such as repair or calibration: | | |
| <ul style="list-style-type: none"> -1. If the product has been repaired or modified by a company, entity, or individual other than Hioki -2. If the product has been embedded in another piece of equipment for use in a special application (aerospace, nuclear power, medical use, vehicle control, etc.) without Hioki's having received prior notice | | |
| 7. If you experience a loss caused by use of the product and Hioki determines that it is responsible for the underlying issue, Hioki will provide compensation in an amount not to exceed the purchase price, with the following exceptions: | | |
| <ul style="list-style-type: none"> -1. Secondary damage arising from damage to a measured device or component that was caused by use of the product -2. Damage arising from measurement results provided by the product -3. Damage to a device other than the product that was sustained when connecting the device to the product (including via network connections) | | |
| 8. Hioki reserves the right to decline to perform repair, calibration, or other service for products for which a certain amount of time has passed since their manufacture, products whose parts have been discontinued, and products that cannot be repaired due to unforeseen circumstances. | | |
| <p>HIOKI E.E. CORPORATION http://www.hioki.com 18-07 EN-3</p> | | |

Introduction

Thank you for choosing the Hioki RM2611 Electrode Resistance Meter. Preserve this manual carefully and keep it handy to make full use of this instrument for a long time. Familiarize yourself with the RM2610 Electrode Resistance Measurement System Instruction Manual and the separate document entitled "Operating Precautions" before using the product.

Target audience

This instruction manual has been written for use by individuals who use the product or provide information about how to use the product. In explaining how to use the product, it assumes electrical knowledge (equivalent of the knowledge possessed by a graduate of an electrical program at a technical high school).

Safety notations

This manual classifies seriousness of risks and hazard levels as described below.

| | |
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| | Indicates action that must be performed. |
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Inspection

Conduct an inspection and check instrument operation to ensure that no damage has occurred during storage or transport.

Troubleshooting

If damage is suspected, review the suggestions described under "Before having your product repaired" section of the RM2610 Electrode Resistance Measurement System's instruction manual before contacting your authorized Hioki distributor or reseller.

Cleaning

If the instrument becomes dirty, slightly moisten a soft cloth with water or a neutral detergent and wipe it clean.

Operating Precautions

Observe the following precautionary information to ensure that the product can be used safely and in a manner that allows it to perform as described in its specifications.

⚠ CAUTION

Do not place the product on an unstable or uneven surface. Doing so could cause the product to fall or turn over, causing bodily injury or damage to the product.

Overview

The RM2611 Electrode Resistance Meter is the instrument component of the RM2610 Electrode Resistance Measurement System. It is designed to be used with the RM9003 Press Unit, RM9004 Test Fixture, RM9005 Connection Cable, and RM2612 Resistance Calculation Software in order to measure potential distribution on electrode sheets. The RM2611 Electrode Resistance Meter cannot be used by itself. The instrument's settings and operation are controlled by the RM2612 Resistance Calculation Software. (For more information about wiring and connections, see the RM2610 Electrode Resistance Measurement System's instruction manual.)

Specifications

General specifications

| | |
|------------------------------------|---|
| Operating environment | Indoors, Pollution Degree 2, altitude of up to 2000 m (6562 ft.) |
| Operating temperature and humidity | 0°C to 40°C (32°F to 104°F), 80% RH or less (no condensation) |
| Storage temperature and humidity | 0°C to 50°C (32°F to 122°F), 80% RH or less (no condensation) |
| Standards | Safety EN61010 EMC EN61326 Class A |
| Power supply | Commercial power Rated supply voltage: 100 V to 240 V AC (designed to accommodate voltage fluctuations of ±10% relative to the rated supply voltage) Rated supply frequency: 50 Hz, 60 Hz Anticipated transient overvoltage: 2500 V Maximum rated power: 40 VA (not including PC power) |
| Interfaces | <ul style="list-style-type: none">• USB port (for connecting the instrument to a PC)• Test fixture connector• TEMP.SENSOR terminal (for connecting the instrument to the Z2001 Temperature Sensor) |
| Dimensions | Approx. 215W × 80H × 306.5D mm (8.46"W × 3.15"H × 12.07"D) |
| Mass | Approx. 3.4 kg (119.9 oz.) |
| Product warranty period | 3 years |
| Fuse | F1.6AH 250 V ×1 |
| Accessories | <ul style="list-style-type: none">• Power cord• USB cable• Z2001 Temperature Sensor• Instruction manual• Operating Precautions (0990A905) |
| Options | <ul style="list-style-type: none">• RM2612 Resistance Calculation Software• RM9003 Press Unit• RM9004 Test Fixture• RM9005 Connection Cable |

Input, output, and measurement specifications

| | |
|-----------------------------------|--|
| Measured parameters | DC resistance and temperature Automatic measurement is performed via the RM2612 Resistance Calculation Software. Measurement cannot be performed using the RM2611 Electrode Resistance Meter alone. |
| Resistance measurement signal | Constant current |
| Resistance measurement method | DC 4-terminal method |
| Resistance measurement terminal | Test fixture connector |
| Resistance measurement range | Ranges: 1000 mΩ, 10 Ω, 100 Ω, 1000 Ω, 10 kΩ, 100 kΩ, 1000 kΩ, 10 MΩ* *Potential measurement results obtained using the 10 MΩ range are merely values for reference purposes. (For more information about range parameters, see the RM2610 Electrode Resistance Measurement System's instruction manual.) |
| Constant current generation range | 1 μA (min.) to 10 mA (max.) (For more information about range parameters, see the RM2610 Electrode Resistance Measurement System's instruction manual.) |
| Test fixture connector | D-sub 50-pin receptacle |
| Temperature measurement terminal | TEMP.SENSOR terminal (for connecting the instrument to the Z2001 Temperature Sensor) |
| Accuracy guarantee conditions | <ul style="list-style-type: none">• Resistance measurement accuracy is defined when using the test fixture connector.• Guaranteed accuracy period: 1 year• Guaranteed accuracy period after adjustment made by Hioki: 1 year• Temperature and humidity for guaranteed accuracy: 23°C ±5°C (73°F ±9°F), 80% RH or less• Warm-up time: 60 min. or greater• Power supply frequency: 50 Hz ±2 Hz, 60 Hz ±2 Hz (For more information about accuracy specifications, see the RM2610 Electrode Resistance Measurement System's instruction manual.) |

Interface specifications

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|-----|--|
| USB | USB 2.0 (Full Speed) Connector: Series B receptacle Exclusively for connecting the RM2611 Electrode Resistance Meter to a PC |
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For dimensional drawings, see the RM2610 Electrode Resistance Measurement System's instruction manual.