

R5600

REED INSTRUMENTS

Insulation Tester



Instruction Manual

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Introduction

Thank you for purchasing your REED R5600 Insulation Tester. Please read the following instructions carefully before using your instrument. By following the steps outlined in this manual your meter will provide years of reliable service.

Product Quality




This product has been manufactured in an ISO9001 facility and has been calibrated during the manufacturing process to meet stated product specifications. If a certificate of calibration is required please contact the nearest authorized REED distributor or authorized Service Center. Please note an additional fee for this service will apply.

Safety

- Never attempt to repair or modify your instrument. Dismantling your product, other than for the purpose of replacing batteries, may cause damage that will not be covered under the manufacturer's warranty. Servicing should only be provided by an authorized service center.
- Do not use the meter or test leads if they look damaged. Use extreme caution when working around bare conductors or bus bars as accidental contact with conductors could result in electric shock.
- Use the meter only as specified in this manual; otherwise, the protection provided by the meter may be impaired.
- Use caution when working near voltages above 60V DC or 30V AC RMS. as such voltages pose a shock hazard.
- Circuits being tested must be de-energized and isolated before connections are made (This does not apply for voltage measurements).

continued...

Safety Symbols:

	Caution Refer to this manual before using the meter.
	Dangerous voltages.
	Meter is protected throughout by double insulation or reinforced insulation.

Features

- Backlit dual displays insulation resistance and test voltage simultaneously
- 250V, 500V or 1000V test voltages and insulation resistance up to 2000M Ω
- Lock function and hanging strap for handfree operation
- Lo Ω function for testing connections
- Datahold function
- Double molded plastic housing for added protection
- Low battery indicator and auto shut off
- Cat. III, 1000V safety rating

Included

- Test Leads
- Alligator Clip
- Hanging Strap
- Hard Carrying Case
- Batteries

Specifications

Voltage

Ranges:	250V, 500V, 1000V
Accuracy:	DC: $\pm(0.8\% \text{ rdg.} + 3 \text{ dgt.})$ AC: $\pm(1.2\% \text{ rdg.} + 10 \text{ dgt.})$
Resolution:	1V

OHMS

Ranges:	200 Ω , 200k Ω
Accuracy:	$\pm(1.0\% \text{ rdg.} + 2 \text{ dgt.})$
Resolution:	0.1 Ω , 0.1k Ω

Meg OHMS

Ranges:	200M Ω /250V, 2000M Ω /500V, 0 to 1000M Ω /1000V, 1000 to 2000M Ω /1000V
Accuracy:	$\pm(3.0\% \text{ rdg.} + 5 \text{ dgt.})$ Test Current: 250K Ω , 500K Ω , 1M Ω
Resolution:	0.1M Ω , 1M Ω , 1mA

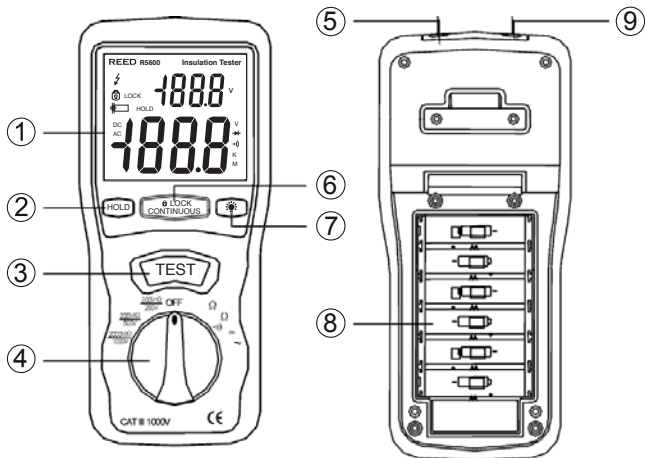
General Specifications

Range Selection:	Autoranging/Manual
Display:	LCD with dual display
Display Hold:	Yes
Sampling Rate:	2.5 times/seconds
Backlit Display:	Yes
Continuity Check:	Audible signal if resistance $\leq 40\Omega$
Kick Stand:	Yes
Auto Power Off:	Yes (after 15 minutes)
Power Supply:	6 AA Batteries
Low Battery Indicator:	Yes
Fuse Protection:	Yes
Replaceable Test Leads:	Yes
Overrange Indicator:	Yes

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Overvoltage Category:	CAT. III 1000V
Product Certifications:	CE
Operating Temperature:	32 to 104°F (0 to 40°C)
Storage Temperature:	-4 to 140°F (-20 to 60°C)
Dimensions:	7.9 x 3.6 x 2.0" (200 x 92 x 50mm)
Weight:	25oz (700g)

Instrument Description



- | | |
|------------------|------------------------|
| 1. LCD Display | 6. LOCK Button |
| 2. HOLD Button | 7. Backlight Button |
| 3. TEST Button | 8. Battery Compartment |
| 4. Rotary Switch | 9. COM Input Jack |
| 5. VΩ Input Jack | |

Operating Instructions

Connecting the Test Leads

Connect the red test lead to the $V\Omega$ Input Jack and the black test lead to the COM Input Jack.

Checking Test Leads

1. Set the rotary switch to the 200Ω range.
2. Touch both test lead tips together.
3. Resistance should read less than 00.5Ω and audible tone should sound.
4. The display should read infinity as indicated by "1" when the tips are not in contact or are not connected to the meter.

Note: Readings other than those described indicate faulty test leads. The test leads will need to be replaced prior to using the meter. Failure to follow these instructions could result in damage to the equipment and electrical shock.

Insulation Resistance Measurements

Warning: Do not perform any Insulation Resistance measurements if there is AC Voltage present on the device being tested.

1. Connect the test leads to the meter (see *Connecting the Test Leads* section for details).
2. Set the rotary switch to the required $M\Omega$ test voltage.
3. Connect the tips of the test leads to the equipment being tested.

Note: If voltage is present, the meter will emit a constant beeping sound while displaying the voltage.

4. The LCD display will show "1" until a test is performed.
5. Press and hold the **TEST** button to begin.

Note: Do not release the **TEST** button until testing is complete and make sure not to turn the rotary switch while the test button is pressed, or the meter will be damaged.

continued...

6. During testing, the upper right of the LCD display will show the test voltage applied while a high voltage symbol ⚡ will flash every 2 to 3 seconds. The main display will indicate the resistance.
7. When the reading is stable, note the measured value.
8. When testing is complete, release the **TEST** button and make sure to keep the test leads connected to the equipment under test during discharge.


Note: The charge stored in the insulation meter will be automatically discharged when the **TEST** button is released.

Insulation Resistance Measurement Notes:

1. The maximum measurement range is 2000MΩ. When insulation resistance exceeds this value, the LCD display will indicate "1", meaning that the resistance is very high and the insulation being tested is good.
2. Make sure that the circuit being tested does not include components which will be damaged by the 1000V applied. Many normal components of an installation are likely to be damaged if tested at 1000V. Examples are power factor correction capacitors, low voltage mineral insulated cables, electronic light dimmers, electronic ballasts and starters for fluorescent lamps etc.

Lock Power Function

The R5600 features a lock power function to allow hands free operation during insulation resistance testing. To enable, follow the steps below:

1. Once the meter is ready for testing, simultaneously press the **TEST** and **LOCK** buttons to enable hands free operation.
2. While in this mode, the  LOCK icon will appear on the LCD display and the meter will emit a beeping sound every 2 seconds confirming it is in lock mode.
3. To exit the lock power function and end testing, press the **LOCK** button.

Note: The charge stored in the insulation meter will be automatically discharged.

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Low Resistance (Continuity) Measurements

1. Set the rotary switch to the 200 Ω (•))) Position.
2. Connect the test leads to the meter (see *Connecting the Test Leads* section for details).
3. Connect the tips of the test leads to both ends of the circuit under test.
4. Read the resistance in Ω on the LCD.
5. When the resistance on a circuit is below approximately 40 Ω , the meter will emit a continuous beep.

AC/DC Voltage Measurement

1. Connect the test leads the meter (see *Connecting the Test Leads* section for details).
2. Set the Rotary switch to the ACV or DCV position.
3. Connect the test leads IN PARALLEL to the circuit being measured.
4. Note the measured value.


Auto Power Off

To preserve battery life, the meter is programmed to turn off after 15 minutes of inactivity. To turn the meter back on, turn the rotary switch to OFF, then back to the desired function.

Data Hold

1. While taking a measurement, press the **HOLD** button to freeze the current readings on the display.
2. While in this mode a "HOLD" symbol will appear on the LCD.
3. Press the button again to resume normal operation.

Backlight

Press the  button to turn the LCD display backlight on. The backlight will automatically turn off after approx. 15 seconds.

Battery Replacement

When the low battery symbol  appears on the LCD, the batteries must be replaced.

1. Turn the meter off and remove the test leads.
2. Carefully remove the tilt stand located in the rear of the meter.
3. Remove the 4x Phillips head screws holding the battery cover.
4. Remove the battery cover.
5. Replace the 6x AA batteries.
6. Properly secure the cover and tighten the screws.
7. Reattach the tilt stand.

Applications

- Power Tools
- Appliances
- Motors
- Cables

Application Notes

Power Tools & Small Appliances

This test applies to any device being tested that uses a line cord. For double insulated power tools, connect one lead to the device's housing (i.e. chuck, blade, etc.) and the other lead to the end of the power cord.

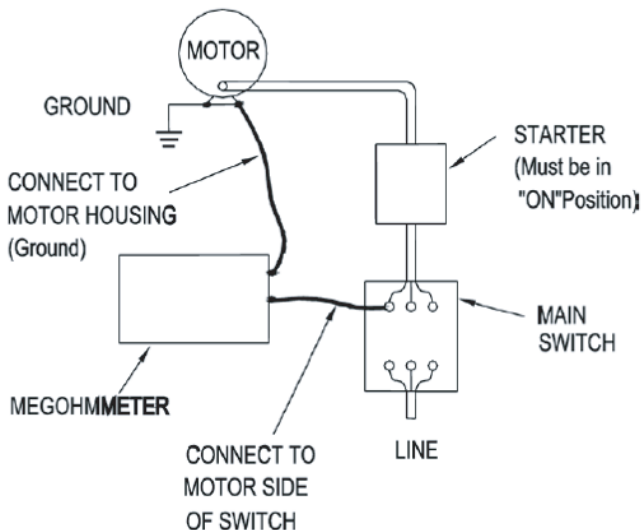
AC Motors Testing

Disconnect the motor from the line by disconnecting the wires from the motor terminals or opening the mains switch. If the main switch is used and the motor also has a starter then the starter must be held, by some means, in the "ON" position. In the latter case, the measured resistance will include the resistance of the motor, wire and all other components between the motor and the main switch. If a weakness is indicated, the motor and other components should be checked individually. If the motor is disconnected at the motor terminals, connect one lead to the grounded motor housing and the other lead to one of the motor leads.

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DC Motors Testing

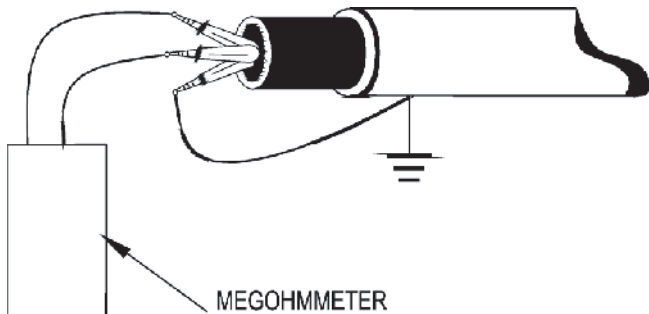
Disconnect the motor from the line. To test the brush rigging, field coils and armature connect one lead to the grounded motor housing and the other lead to the brush on the commutator. If the resistance measurement indicates a weakness, raise the brushes off the commutator and separately test the armature, field coils and brush rigging by connecting one lead to each of them individually, leaving the other connected to the grounded motor housing. The above also applies to DC Generators.



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Cable Testing

1. Disconnect the cable under test from the line while also disconnecting the opposite end of the cable to avoid errors as a result of leakage from other equipment.
2. Check each conductor to ground and/or lead sheath by connecting one of the meter's leads to ground and/or lead sheath and the other meter lead to each of the conductors in turn.
3. Check insulation resistance between conductors by connecting meter leads to conductors in pairs.



Accessories and Replacement Parts

- **R5600-STAND** Replacement Kickstand
- **CA-05A** Medium Soft Carrying Case
- **R8888** Medium Hard Carrying Case
- **R1020** Fused Test Lead Set
- **R5900** Magnetic Hanging Strap
- **R5600-CLIP** Replacement Alligator Clip

Don't see your part listed here? For a complete list of all accessories and replacement parts visit your product page on www.reedinstruments.com.

Product Care

To keep your instrument in good working order we recommend the following:

- Store your product in a clean, dry place.
- Change the battery as needed.
- If your instrument isn't being used for a period of one month or longer please remove the battery.
- Clean your product and accessories with biodegradable cleaner. Do not spray the cleaner directly on the instrument. Use on external parts only.

Product Warranty

REED Instruments guarantees this instrument to be free of defects in material or workmanship for a period of one (1) year from date of shipment. During the warranty period, REED Instruments will repair or replace, at no charge, products or parts of a product that proves to be defective because of improper material or workmanship, under normal use and maintenance. REED Instruments total liability is limited to repair or replacement of the product. REED Instruments shall not be liable for damages to goods, property, or persons due to improper use or through attempts to utilize the instrument under conditions which exceed the designed capabilities. In order to begin the warranty service process, please contact us by phone at 1-877-849-2127 or by email at info@reedinstruments.com to discuss the claim and determine the appropriate steps to process the warranty.

Product Disposal and Recycling



Please follow local laws and regulations when disposing or recycling your instrument. Your product contains electronic components and must be disposed of separately from standard waste products.

Product Support

If you have any questions on your product, please contact your authorized REED distributor or REED Instruments Customer Service by phone at 1-877-849-2127 or by email at info@reedinstruments.com.

Please visit www.REEDINSTRUMENTS.com for the most up-to-date manuals, datasheets, product guides and software.

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