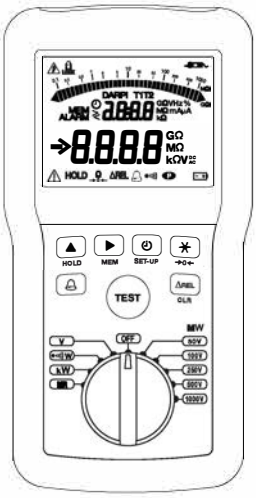
INSTRUCTION MANUAL

GREENLEE®



5882A
Megohmmeter
Megóhmetro
Megohmmetre

Read and **understand** all of the instructions and safety information in this manual before operating or servicing this tool.

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GREENLEE.

Table of Contents

Description

The Greenlee 5882A Megohmmeter is intended to test insulation, detect voltage and verify continuity. The megohmmeter automatically discharges the tested object when the test is complete. In addition, the 5882A can measure resistance.

Safety

Safety is essential in the use and maintenance of Greenlee tools and equipment. This instruction manual and any markings on the tool provide information for avoiding hazards and unsafe practices related to the use of this tool. Observe all of the safety information provided.

Purpose of This Manual

This instruction manual is intended to familiarize all personnel with the safe operation and maintenance procedures for the Greenlee 5882A Megohmmeter.

Keep this manual available to all personnel.

Replacement manuals are available upon request at no charge at www.greenlee.com.

Do not discard this product or throw away!
For recycling information, go to www.greenlee.com.

KEEP THIS MANUAL

Important Safety Information

SAFETY ALERT SYMBOL

This symbol is used to call your attention to hazards or unsafe practices which could result in an injury or property damage. The signal word, defined below, indicates the severity of the hazard. The message after the signal word provides information for preventing or avoiding the hazard.

⚠DANGER

Immediate hazards which, if not avoided, WILL result in severe injury or death.

⚠WARNING

Hazards which, if not avoided, COULD result in severe injury or death.

⚠CAUTION

Hazards or unsafe practices which, if not avoided, MAY result in injury or property damage.

⚠WARNING

Read and **understand** this material before operating or servicing this equipment. Failure to understand how to safely operate this tool could result in an accident causing serious injury or death.

⚠WARNING

Electric shock hazard:

Contact with live circuits could result in severe injury or death.

Important Safety Information (cont'd)

⚠WARNING

Electric shock hazard:

- Do not expose this unit to rain or moisture.
- Do not use the unit if it is wet or damaged.
- Use test leads or accessories that are appropriate for the application. Refer to the category and voltage rating of the test lead or accessory.
- Inspect the test leads or accessory before use. They must be clean and dry, and the insulation must be in good condition.
- Use this unit for the manufacturer's intended purpose only, as described in this manual. Any other use can impair the protection provided by the unit.

Failure to observe these warnings could result in severe injury or death.

⚠WARNING

Electric shock hazard:

- Do not apply more than the rated voltage between any two input terminals, or between any input terminal and earth ground.
- Do not contact the test lead tips or any uninsulated portion of the accessory.
- Do not contact the test lead tips while performing the insulation resistance test.
- Do not contact the test lead tips while the continuity function (20 Ω) is selected.

Failure to observe these warnings could result in severe injury or death.

⚠WARNING

Electric shock hazard:

- Do not operate with the case open.
- Before opening the case, remove the test leads from the circuit and shut off the unit.

Failure to observe these warnings could result in severe injury or death.

Important Safety Information (cont'd)

⚠WARNING

Electric shock hazard:

- Shut off and lock out power. Make sure that all capacitors are discharged. Voltage must not be present.
- Set the selector and connect the test leads so that they correspond to the intended measurement. Incorrect settings or connections can result in a blown fuse.
- Using this unit near equipment that generates electromagnetic interference can result in unstable or inaccurate readings.

Failure to observe these warnings could result in severe injury or death.

⚠CAUTION

Electric shock hazard:

Do not change the measurement function while the test leads are connected to a component or circuit.

Failure to observe this precaution may result in injury and can damage the unit.

⚠CAUTION

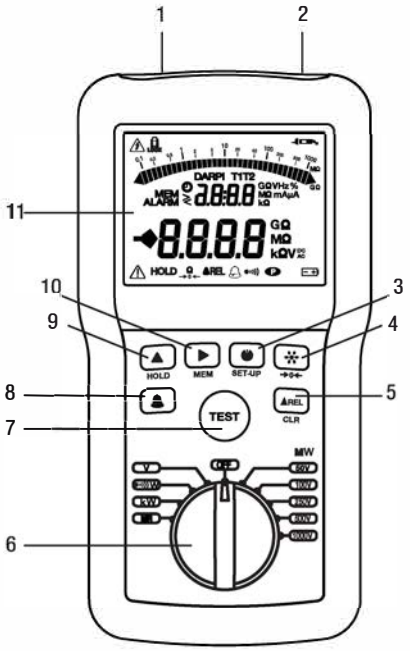
Electric shock hazard:

- Do not attempt to repair this unit. It contains no user-serviceable parts.
- Do not expose the unit to extremes in temperature or high humidity. Refer to "Specifications."

Failure to observe these precautions may result in injury and can damage the unit.

Identification

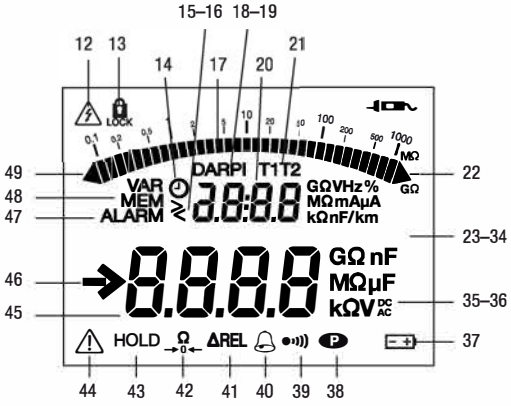
1. Positive (+) Input Terminal
2. Negative (–) Input Terminal
3. Timer
4. Backlight
5. ΔRel Button
6. Selector
7. Test Button
8. Alarm Button
9. ▲ Change the Value
10. ▶ Select a Parameter or Value
11. Display



Identification (cont'd)

Display Icons

12. ⚠ Insulation resistance test in progress
13. LOCK Lock Mode
14. ⏲ Timer is active
15. < Alarm will trigger if measured value is less than the setpoint
16. > Alarm will trigger if measured value is greater than the setpoint
17. ▮ Bar graph element
18. DAR Dielectric absorption ratio
19. PI Polarization index
20. 00:00 0000 Timekeeper display or Setpoints
21. T1T2 Test points
22. ▶ Insulation resistance is greater than 2 GΩ
23. G 10^9
24. M 10^6
25. k 10^3
26. m 10^{-3}
27. µ 10^{-6}
28. n 10^{-9}
29. Ω Ohms
30. A Amps
31. V Volts
32. F Farad
33. Hz Hertz (frequency)
34. % Percent
35. AC Alternating Current
36. DC Direct Current
37. ⊟ Battery status
38. Ⓟ Auto power off is inactive
39. •)) Speaker is active
40 🔔 Alarm is on, or programming is in progress
41. ΔREL Displayed when comparing two values using the ΔREL button
42. Ω→0← Lead resistance is compensated
43. HOLD Hold Current Display
44. ⚠ Read the instruction manual
45. Main Display
46. – Polarity indicator
47. ALARM Alarm is on, or programming is in progress
48. MEM Measurement stored in memory
49. ◀ Insulation resistance is less than 50 kΩ



Identification (cont'd)

Symbols on the Unit

	**WARNING**–Risk of **DANGER!** The operator must refer to these instructions whenever this danger symbol appears
	**WARNING**–Risk of electric shock. The voltage applied to parts marked with this symbol may be hazardous
	Double insulation
	The voltage on the terminals must not exceed 700V
	Ground/Earth
	Battery
	Information or useful tip
	Remote test probe
	The product is recyclable in accordance with standard ISO14040
	This instrument exceeds regulatory requirements with respect to recycling and reuse
	Indicates conformity with European directive, in particular LVD and EMC
	Recycle product in accordance with manufacturer's directions

Using the Features

Insulation Resistance Measurement Test Button (Yellow Button)

Press to apply the test voltage to the item to be tested. Release to terminate the test.

- While the yellow insulation resistance test button is pressed, the ⚠ symbol will appear on the display.
- See the Indicator Table for results of the insulation test.

Alarm

Press **ALARM** to turn the alarm on. Press again to turn the alarm off.

Note: Pressing the Test button activates the alarm if the meter is in continuity test mode. Press the HOLD button to turn off the alarm while grounding.

Alarm Setpoints

1. Press and hold **ALARM** to review the setpoints.
2. Press ▲ and ▶ to change the setpoints. Press and hold **ALARM** to save the settings.
   - Continuity: < 2Ω, < 1Ω, and < 0.5Ω
   - Resistance: > 50kΩ, > 100kΩ, and > 200kΩ
   - Insulation:
     50V → < 50 kΩ, < 100 kΩ, and < 200 kΩ
     100V → < 100 kΩ, < 200 kΩ, and < 400 kΩ
     250V → < 250 kΩ, < 500 kΩ, and < 1 MΩ
     500V → < 500 kΩ, < 1 MΩ, and < 2 MΩ
     1000V → < 1 MΩ, < 2 MΩ, and < 4 MΩ

     Note: The megohmmeter will correct any setting that is entered improperly.

Timed Insulation Resistance Test

Pressing the **TIMER** ⏲ button activates timed test mode. This is only active for insulation measurements.

1st Press: This locks the **TEST** button. When you press the **TEST** button, the unit will run without requiring you to hold the **TEST** button down. The test will run for 15 minutes, or until you press the **TEST** button again.

2nd Press: This activates timed test mode. You can set the test time with ▶ and ▲ to between 1:00 and 39:00 minutes. Use the ▶ button to begin and move to the next digit. Use the ▲ button to change the digit.

3rd Press: This enables the **PI** function. This is used to calculate the polarization index (ratio of the measurement at 10 minutes to the measurement at 1 minute.)

4th Press: Enables the **DAR** function. This is used to calculate dielectric absorption ratio (ratio of the measurement at 1 minute to the measurement at 30 seconds.)

5th Press: Exit timed test mode.

Using the Features (cont'd)

When ⏲ , **DAR,** or **PI** is activated, pressing the **TEST** button will start the test. The LCD displays the measurement along with a timer showing the remaining time in the test. The test automatically ends when the timer reaches 0.

The following parameters indicate acceptable insulation:

DAR > 1.25
PI > 2

Backlight

Press ✻ to turn on the backlight. Press again to turn off the backlight.

Note: The backlight will automatically shut off after 1 minute.

Standy Mode

To extend battery life, the megohmmeter will automatically switch to standby mode after approximately 5 minutes of inactivity. To restore normal operation, press any button or rotate the selector.

Indicators

The Indicator Table provides information for interpreting the battery status indicator, results of the insulation test, and the tones produced by the speaker.

Indicator Table

Feature	Indication	Explanation
Battery Status	No display	Good battery.
	Flashing	Battery life is limited. Lo Bat will also appear on the screen. Unit will soon shut down automatically.
	BAT	The battery symbol, the word BAT, and the approximate percent of battery left will appear on start up.
Insulation Resistance Test	OL	The insulation resistance is greater than 2.0 GΩ.
	▶	The insulation resistance is greater than 1.1 GΩ.
	– – – –	The insulation resistance is less than: • 10 kΩ at 50 V • 20 kΩ at 100 V • 50 kΩ at 250 V • 100 kΩ at 500 V • 200 kΩ at 1000 V
	◀	The insulation resistance is less than 70 kΩ.

Operation

⚠WARNING

Electric shock hazard:

Contact with live circuits could result in severe injury or death.

⚠WARNING

Electric shock hazard:

Do not contact the test lead tips while the continuity function (20 Ω) is selected.

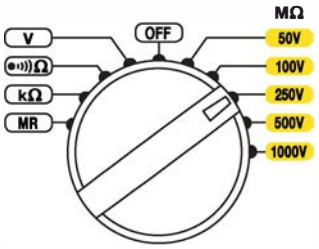
Failure to observe this warning could result in severe injury or death.

1. Set the selector to the proper setting and connect the test leads to the meter.
2. Test the unit on a known functioning circuit or component.
   - If the unit does not function as expected on a known functioning circuit, replace the batteries.
   - If the unit still does not function as expected, send the unit to Greenlee for repair.
3. Take the reading from the circuit or component to be tested.

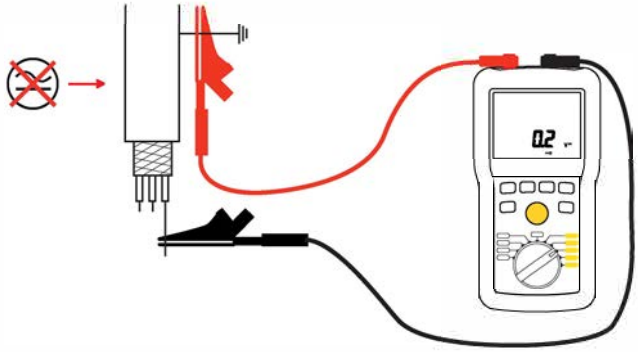
Insulation Measurements

Insulation measurement results can be affected by the impedances of additional circuits connected in parallel or by transient currents. Do not start any measurement while the symbol ⚠ is displayed.

1. Set the rotary switch to one of the **MΩ** positions. The test voltage depends on the voltage of the installation to be tested.



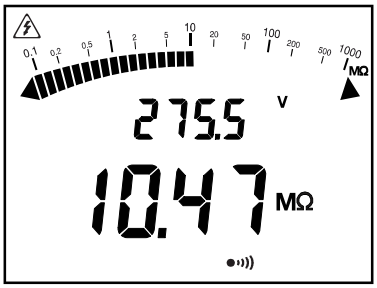
2. Use the leads to connect the system to be tested to the instrument's terminals. The system under test must be powered down and discharged. When testing insulation, the typical connection is negative (black) lead to conductor and positive (red) lead to ground or the outer insulation of the device under test.



3. (Optional) Press the ▶ button to display the current or the elapsed time. (You can also do this during the measurement.)
4. Press the **TEST** button and hold it down until the displayed measurement is stable. Note that if the instrument detects a voltage greater than 25V in the system under test, pressing the **TEST** button has no effect because the test will be prohibited. (An error screen will appear.)

Insulation Measurements (cont'd)

5. The resistance measurement is displayed on the LCD's main display area and on the bar graph. The secondary display area indicates the test voltage generated by the instrument.



The symbol ⚠ indicates that the instrument is generating a hazardous voltage (> 70V).

6. At the end of the measurement, release the **TEST** button. The instrument stops generating the test voltage and discharges the device being tested. The symbol ⚠ is displayed until the voltage on the system under test has fallen below 70V.

Note: Do not disconnect the leads and do not start any measurement while the symbol ⚠ is displayed.

When you release the **TEST** button, the measurement results remain displayed until the next measurement, or the **HOLD** button is pressed, or the instrument is turned **OFF**.

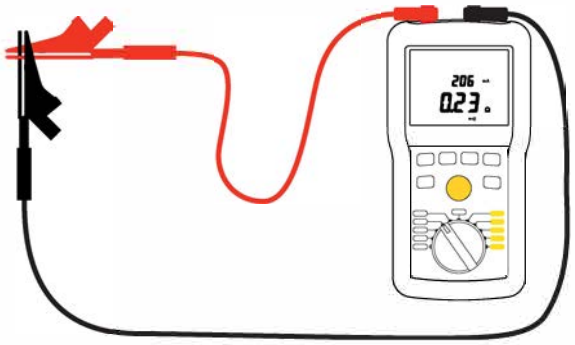
Continuity Measurement

Continuity measurement measures a low resistance (< 10 or 100 Ω depending on the current) at a high current (200 or 20 mA)

Note: A current of 20 mA reduces the power consumption of the instrument, increasing its battery life. However, standard IEC 61558 requires 200 mA current for continuity testing. If an external voltage >15V is detected in the system under test during the continuity measurement, the instrument is protected without a fuse. The continuity measurement is stopped and the instrument reports an error until the voltage disappears.

Lead Compensation

Before checking continuity, you should compensate for the resistance of the measurement leads. This ensures that the resistance measurement excludes the resistance in the leads. To do this, set the rotary switch to •ıı)) Ω. Then short-circuit the measurement leads and press the →0← button for >2 seconds.



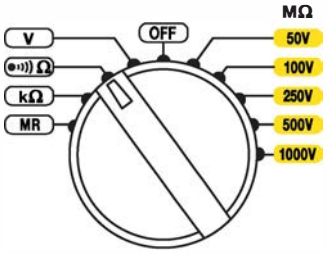
The display changes to zero and the Ω →0← symbol is displayed. The resistance of the leads will be systematically subtracted from all continuity measurements. If the resistance of the leads is >10Ω, there is no compensation. The compensation remains in memory until the instrument is turned OFF. If the leads are changed with no change of compensation, the display may become negative. The instrument reports that the compensation must be redone by displaying a blinking Ω →0← symbol.

To remove the compensation of the leads, leave the leads open and press the →0← button for >2 seconds. The LCD displays the resistance of the leads and the Ω →0← symbol goes off.

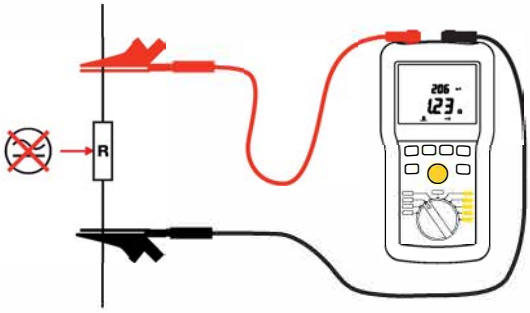
Continuity Measurement (cont'd)

Continuity Measuring

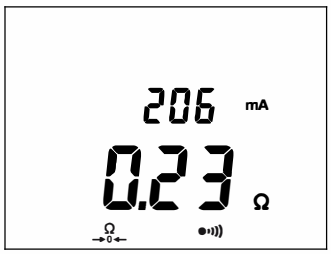
1. Set the rotary switch to •ıl)) Ω.



2. Press the ▶ button to display the measurement current. The measuremnt current appears blinking on the LCD. You can change the current by pressing the ▶ button
3. Use the leads to connect the instrument to the system to be tested. The system to be tested must be powered down.



The instrument displays the resistance and the current used in the test. To obtain a continuity value per standard IEC 61557:



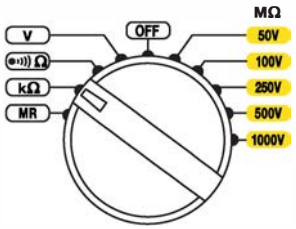
1. Take the measurement at 200 mA and note its value, R1.
2. Reverse the leads and note the value, R2.
3. Calculate the mean:

$$R=\frac{R_1+R_2}{2}$$

Resistance Measurement

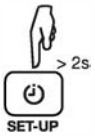
Resistance measurements up to 1000 kΩ are made with a low current

1. Set the rotary switch to **kΩ**.



2. Connect the system to be tested to the instrument. The device to be tested must be powered down.
3. The instrument displays the results.

Configuration Settings



Pressing and holding the **SET-UP** button for longer than 2 seconds lets you change configuration settings on the instrument. You can then use the ▲ and ▶ buttons to scroll through and modify parameters.

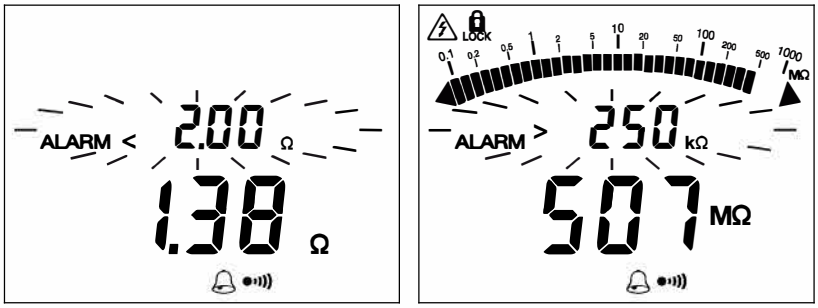
In Set-Up mode, the ▲ button performs the following functions:

Indicator Table

1st press on ▲		The alarm buzzer is active. To deactivate it: 1. Press ▶. **On** will blink to indicate it is selected. 2. Press ▲ to change the setting to **OFF**. 3. Press ▶ to validate the change. The •ıı)) symbol disappears from the display when you exit **SET-UP**. Note that this setting reverts to **On** when you turn **OFF** the instrument.
2nd press on ▲		Automatic switching to standby mode is activated. To deactivate it: 1. Press ▶ to select **OFF** (the setting blinks). 2. Press ▲ to change the setting to **On**. 3. Press ▶ to validate the change. The Ⓟ symbol appears on the display when you exit **SET-UP**. Note that this setting reverts to **OFF** when you turn **OFF** the instrument.
3rd press on ▲		Displays the instrument model number.
4th press on ▲		Displays the instrument firmware version.
5th press on ▲		Displays the instrument hardware version.
6th press on ▲		Return to the first press.

Viewing Alarms

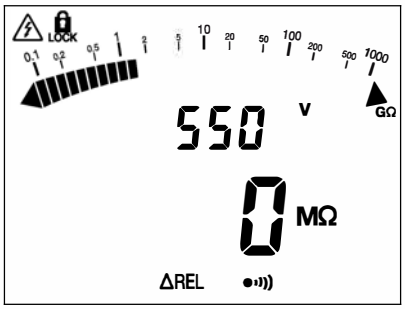
When the measurement is below a low alarm threshold or above a high alarm threshold, the instrument emits a continuous audible signal and the LCD indicates the threshold crossed:



When checking continuity, this enables you to determine whether or not the continuity measurement is less than 2Ω simply by listening, without looking at the display. You can similarly check insulation quality.

ΔREL Function

For an insulation, resistance, or capacitance measurement, you can configure the instrument to subtract a reference value from the measured value and display the difference.
To activate this function, take a measurement, and then press the **ΔREL** button. This measurement becomes the reference (Rref) and will be stored and subtracted from subsequent measurement values (Rmeas).



The **ΔREL** symbol appears on the LCD while this function is activated. If the measured value is less than the stored value, the display becomes negative.

You can display the difference as a percentage of the reference ($\frac{Rmeas - Rref}{Rref}$) by pressing the ▶ button until the % sign appears:

Note: For insulation measurements, only the digital display is modified by ΔREL. The bar graph continues to display the true measured value.
To deactivate the **ΔREL** function, press the **ΔREL** button or turn the rotary switch to another setting.

HOLD Function

Pressing the **HOLD** button freezes the display of the measurement. This can be done in all functions except the MΩ settings, or during a timed measurement (⏲ , **DAR**, **PI**).

To unfreeze the display, press the **HOLD** button again.

Recording Data

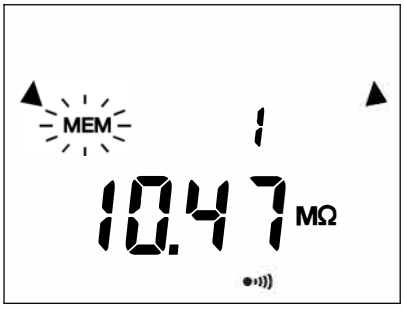
Recording a Measurement

A measurement can be stored in the instrument's memory if the measurement is:

- "Frozen" on the LCD via the **HOLD** button (see **HOLD** Function)
- The result of a timed test (see Timed Insulation Resistance Test)

To save the measurement, press the **MEM** button for >2 seconds. The measurement is stored in the first available record in the instrument's memory.

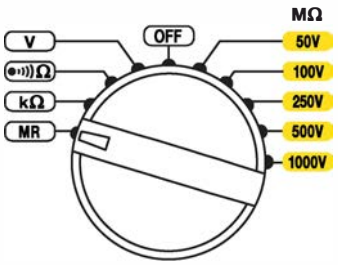
The saved recording includes all information associated with the measurement, including voltage, current, duration of tests, T1 and T2 (for **PI** and **DAR**), and other data. The recording also includes a bar graph indicating how much available memory remains in the instrument.



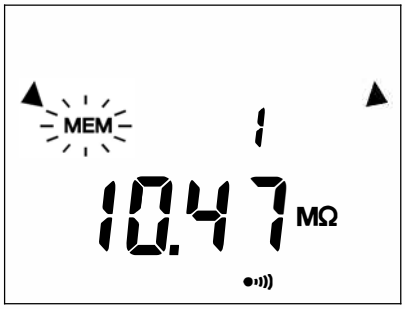
Recording Data (cont'd)

Viewing Stored Recordings

1. Set the rotary switch to **MR**.



2. The instrument displays the last recording stored in the instrument. The secondary (top) display indicates the memory location; while the main display indicates the measured value.



To see the other measurements, press the ▲ button. The record number is decremented and the corresponding measurement is displayed.

3. To scroll rapidly through the recorded measurements, keep the ▲ button pressed.
4. To select a specific recording, use the ▶ button to change the recording number.
5. Once you select the recording number, you can see all information associated with the measurement. Press the **MEM** button for >2 seconds, then use the ▲ button to scroll the information.
6. When finished viewing recordings, press **MEM** for >2 seconds.

Deleting Recordings

Deleting a Single Recording

1. Set the rotary switch to **MR**.
2. Use the ▲ and ▶ buttons to select the number of recordings to be deleted.
3. Press the **CLR** button for >2 seconds. The record number blinks and the LCD displays the letters **CLR**.
4. Press the **MEM** button for >2 seconds to confirm the deletion. To cancel, press the **CLR** button for >2 seconds.

Deleting All Recordings

1. Set the rotary switch to **MR**.
2. Press the **CLR** button for >2 seconds.
3. Press the ▲ button; the record number is replaced by **ALL**.
4. To cancel, press the **CLR** button for >2 seconds. Otherwise, press the **MEM** button for >2 seconds to confirm the deletion.
5. The instrument displays a message indicating the memory is empty.

Maintenance & Troubleshooting

Maintenance – Cleaning

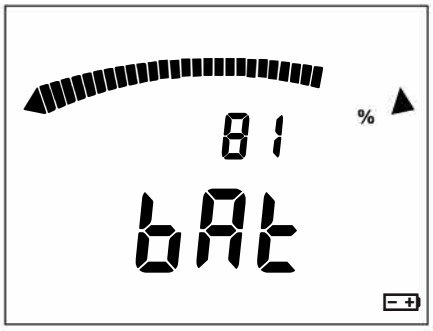
Disconnect the unit completely and turn the rotary switch to **OFF**.

Use a soft cloth, dampened with soapy water. Rinse with a damp cloth and dry rapidly with a dry cloth or forced air. Do not use alcohol, solvents, or hydrocarbons.

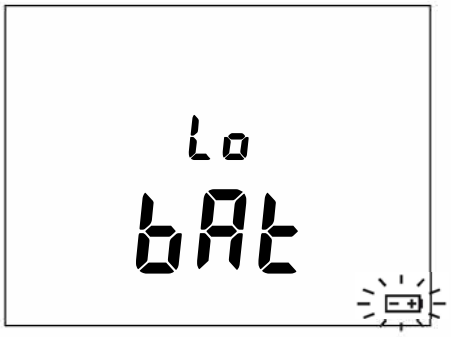
Do not use the instrument again until it is completely dry.

Maintenance – Replacing the Batteries

At start-up, the instrument displays the remaining battery life:



If the battery voltage is too low to ensure correct operation of the instrument, a “low battery” message appears on the LCD and the symbol blinks:

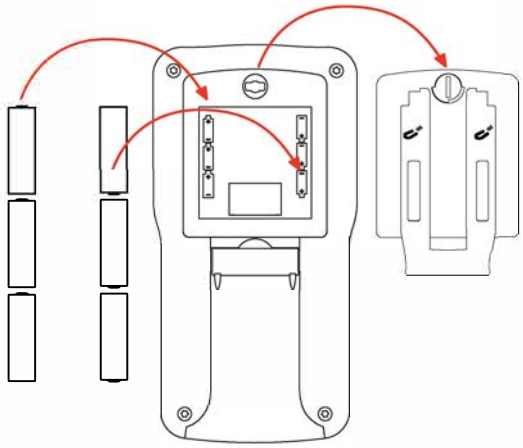


Maintenance & Troubleshooting (cont'd)

Maintenance – Replacing the Batteries (cont'd)

This indicates the batteries must be replaced. All batteries must be replaced at the same time.
To do this:

1. Disconnect any attached leads or accessories from the instrument and turn the rotary switch to **OFF**.
2. Use a tool or a coin to turn the quarter-turn screw of the battery compartment cover.
3. Remove the battery compartment cover.
4. Remove the batteries from the compartment.



Note: Do not treat spent batteries as ordinary household waste. Take them to the appropriate collection facility for recycling.

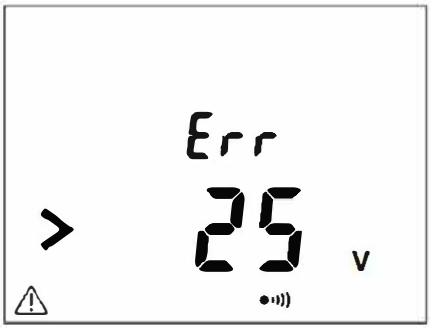
5. Place the new batteries in the compartment, ensuring that each battery's polarity is correct.
6. Put the battery compartment cover in place and screw the quarter-turn screw back in.

Troubleshooting – Errors

During instrument operation, errors may be displayed on the LCD. The causes of any errors must be corrected before the instrument can resume normal operation.

Voltage Present Before an Insulation Measurement

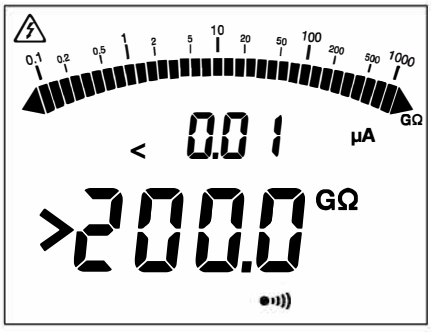
Before taking an insulation measurement, the instrument measures voltage on the system under test. If it detects voltage in excess of 25V and you attempt to take a measurement, the instrument displays the message shown below, and no measurement is taken.



You must eliminate the voltage to resume taking the measurement.

Range Exceeded During an Insulation Measurement

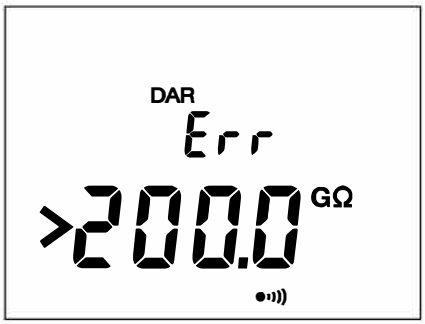
If during an insulation measurement the value to be measured exceeds the measurement range, the instrument reports this condition. For example, the screen below is displayed when the range is exceeded while measuring in 100V range.



Troubleshooting – Errors (cont'd)

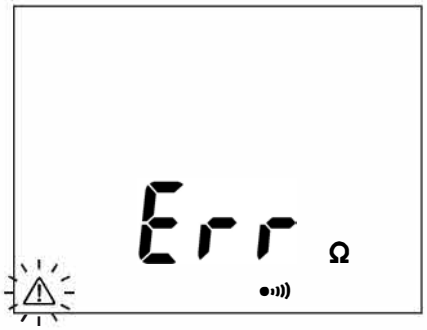
Range Exceeded During an Insulation Measurement (cont'd)

If this condition occurs during a **DAR** or **PI** measurement, the instrument interrupts the measurement and displays the screen shown below.



Voltage Present During a Continuity, Resistance, or Capacitance Measurement

If during a continuity, resistance, or capacitance measurement the instrument detects an external voltage in excess of 15V (AC or DC), it interrupts the measurement and displays the screen shown below.

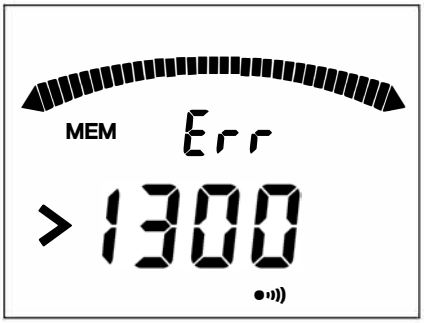


You must eliminate the voltage to resume the measurement.

Troubleshooting – Errors (cont'd)

Memory Full

When the memory is full (300 recordings), the instrument displays the screen shown below. You must remove one or more recordings before new recordings can be saved (see Deleting Recordings).



Troubleshooting – Resetting the Instrument

You can reset your instrument at any time. To do this:

1. Press the ▲ and ☼ buttons simultaneously.
2. Turn the rotary switch to any setting other than **OFF**.
3. The instrument reboots.

Accuracy

Accuracy is specified as follows: ± (a percentage of the reading + a fixed amount) at 20 °C to 26 °C (68 °F to 78.8 °F), 45% to 55% relative humidity.

Accuracy Table

Test Voltage (V_T)	50 V – 100 V – 250 V – 500 V – 1000 V					
Measurement Range	10 to 999 kΩ and 1.000 to 3.999 MΩ	4.00 to 39.99 MΩ	40.0 to 399.9 MΩ	400 to 3999 MΩ	4.00 to 39.99 GΩ	40.0 to 200.0 GΩ
Resolution	1 kΩ	10 kΩ	100 kΩ	1 MΩ	10 MΩ	100 MΩ
Accuracy	V_T = 50 V: ± (3% R + 2 ct + 2% / GΩ) V_T = 100 V: ± (3% R + 2 ct + 1% / GΩ) V_T = 250 V: ± (3% R + 2 ct + 0.4% / GΩ) V_T = 500 V: ± (3% R + 2 ct + 0.2% / GΩ) V_T = 1000 V: ± (3% R + 2 ct + 0.1% / GΩ)					

* For all test voltages, when the insulation resistance is ≤2 GΩ, the intrinsic uncertainty is ± (3% R + 2ct.)

Insulation Resistance Test

Test Voltage	Resistance
50 V	10 kΩ to 10 GΩ
100 V	20 kΩ to 20 GΩ
250 V	50 kΩ to 50 GΩ
500 V	100 kΩ to 100 GΩ
1000 V	200 kΩ to 200 GΩ

Specifications

Dimensions (LxWxH): 211 mm x 108 mm x 60 mm (8.31" x 4.25" x 2.36")

Weight: 850 g (1.07 lb)

Standby Mode: After 5 minutes of inactivity

Temperature Coefficient: ± (2% + 2 d*) per 10 °C over 26° C or under 20 °C

Operating Conditions:
-20 °C to 55 °C (-4 °F to 131 °F), 20% to 80% relative humidity
Altitude: 2000 m (6500') maximum
Indoor use only

Storage Conditions: –30 °C to 80 °C (–22 °F to 176 °F), 10% to 90% relative humidity
Remove batteries.

Pollution Degree: 2

Overvoltage Category: Category IV, 600 Volts

Battery: Six 1.5 V AA

Voltage Range: 6.6 V to 9V

Typical life between changes:

- 1500, 5 second insulation measurements at 1000V for R =1MΩ at a rate of 1 measurement per minute
- 3000, 5 second continuity measurements at a rate of 1 measurement per minute

These megohmmeters comply with standard IEC 61557, which requires that operating uncertainty (called B) must be less than 30%.

Measurement Categories

These definitions were derived from the international safety standard for insulation coordination as it applies to measurement, control, and laboratory equipment. These measurement categories are explained in more detail by the International Electrotechnical Commission; refer to either of their publications: IEC 61010-1 or IEC 60664.

Measurement Category I

Signal level. Electronic and telecommunication equipment, or parts thereof. Some examples include transient-protected electronic circuits inside photocopiers and modems.

Measurement Category II

Local level. Appliances, portable equipment, and the circuits they are plugged into. Some examples include light fixtures, televisions, and long branch circuits.

Measurement Category III

Distribution level. Permanently installed machines and the circuits they are hard-wired to. Some examples include conveyor systems and the main circuit breaker panels of a building's electrical system.

Measurement Category IV

Primary supply level. Overhead lines and other cable systems. Some examples include cables, meters, transformers, and other exterior equipment owned by the power utility.

Statement of Conformity

Greenlee Tools, Inc. is certified in accordance with ISO 9001 (2000) for our Quality Management Systems.

The instrument enclosed has been checked and/or calibrated using equipment that is traceable to the National Institute for Standards and Technology (NIST).

Maintenance

Battery Replacement

⚠WARNING
Electric shock hazard: Before opening the case, remove the test leads from the circuit and shut off the unit. Failure to observe this warning could result in severe injury or death.

1. Disconnect the unit from the circuit. Turn the unit OFF.
2. Turn the latch 1/4 turn counterclockwise.
3. Remove the back cover.
4. Replace the batteries (observe polarity).
5. Replace the cover and turn the latch 1/4 turn clockwise to secure.

Cleaning

Periodically wipe the case with a damp cloth and mild detergent; do not use abrasives or solvents.

Replacement Parts

Cat. No./UPC	Description	QTY
08567	Test Lead Kit	1