R5340

REED

INSTRUMENTS

Cable Length Tester

Instruction Manual

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Introduction

Thank you for purchasing your REED R5340 Cable Length 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.

Safety

- Do not connect this unit to live voltage.
- Ensure the test leads are removed from the circuit and the unit is powered off before opening the case.
- Do not expose this meter to rain, moisture, or high humidity.
- Do not operate the meter in extreme temperatures.
- Do not use the meter if it is wet or damaged.
- Always ensure test leads or accessories are clean and dry, and their insulation is in good condition before use.
- Do not operate the meter with the case open.
- Using the meter near equipment that generates electromagnetic interference may cause unstable or inaccurate readings.
- Failure to observe these safety instructions can result in serious injury or death.
- 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.

Features

- Measures cable lengths up to 100,000 feet (30km)
- Resistance measurement ranges of up to 1999.9mΩ
- 20 preset cable sizes and 8 user-defined sizes
- 1999 count backlit LCD display
- User selectable unit of measure (ft/m)
- Built-in kickstand
- Compatible with magnetic hanging strap (sold separately)
- Overrange indicators
- Low battery indicator and auto shut-off

Included

- Cable Length Tester
- Test Leads and Clips
- Copper Rod
- Carrying Case
- Batteries

Specifications

Length Measurement

Range:	1999.9m
	19.999, 30.00km
	1999.9, 19.999ft
	100.00kft
Accuracy:	1999.9m: ±(1.0% rdg. +1m)
	19.999: ±(1.0% rdg. +0.05km)
	30.00km: ±(1.2% rdg. +0.10km)
	1999.9: ±(1.0% rdg. +3ft)
	19.999ft: ±(1.0% rdg. +0.16kft)

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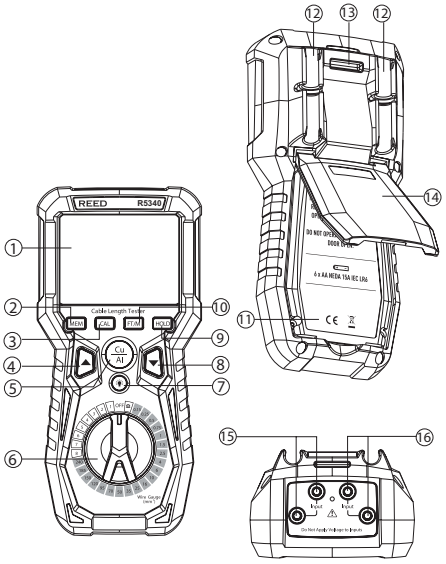
	100.00kft: ±(1.2% rdg. +0.33kft)
Resolution:	0.1, 1m
	0.01km
	0.1, 1, 0.01ft
Resistance Measurement	
Range:	1999.9, 199.99, 19.999Ω
	1999.9mΩ
Accuracy:	1999.9: ±(1% rdg. +6 dgt.)
	199.99: ±(1% rdg. +50mΩ)
	19.999Ω: ±(1% rdg. +5mΩ)
	1999.9mΩ: ±(1% rdg. +3 dgt.)
Resolution:	0.001, 0.01, 0.1, 1Ω
	0.1mΩ
Temperature	
Range:	23 to 122°F (-5 to 50°C)
Accuracy:	±(2.0% rdg. + 3.5°F)
	±(2.0% rdg. +1.8°C)
Resolution:	0.1°F, 0.1°C
General Specifications	
Preset Cable Gauge Sizes:	20
Customizable Cable Gauge Sizes:	8
Unit of Measure:	Imperial and Metric
Display:	1,9999 count LCD display
Display Hold:	Yes
Backlit Display:	Yes
Over-range Indicator:	Yes ("0L")
Test Lead Length:	4' (1.21m)
Magnetic Hanging Strap Compatible:	Yes (R5900 sold separately)

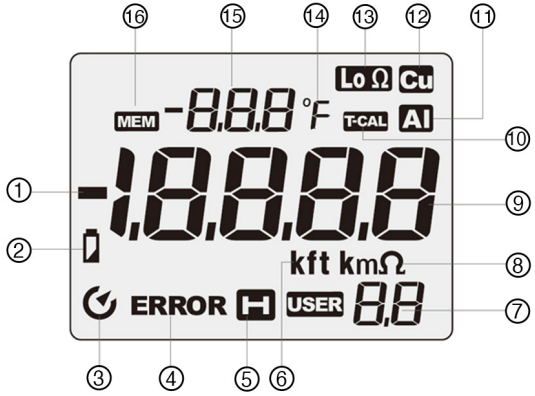
Kick Stand:	Yes
Autoshut off:	Yes (after 15 mins)
Power Supply:	6 x AA Batteries
Low Battery Indicator:	Yes
Product Certifications:	CE
Operating Altitude:	7000' (2000m)
Operating Temperature:	32 to 104°F (0 to 40°C)
Operating Humidity:	10 to 80%
Storage Temperature:	-4 to 140°F (-20 to 60°C)
Storage Humidity:	10 to 80%
Dimensions:	8.3 x 3.9 x 2.6" (212 x 100 x 67 mm)
Weight:	1.32lbs (600g)

Instrument Description



1. LCD Display
2. MEM Button
3. CAL Button
4. UP Button
5. Cu/Al Button
6. Function Dial
7. Backlight Button
8. DOWN Button
9. HOLD Button
10. FT/M Button
11. Battery cover
12. Test Lead Holders
13. Hanging strap bracket
14. Kickstand
15. Black Test Leads Input Terminal
16. Red Test Leads Input Terminal

Display Description



1. Negative Value Indicator
2. Low battery Indicator
3. Auto Power Off Indicator
4. ERROR Status Indicator
5. Data Hold Indicator
6. Unit of length measurement
7. User-selected programming mode
8. Resistance unit of measure
9. Measurement Value
10. Calibration Status Indicator
11. Aluminum Indicator
12. Copper Indicator
13. Low Resistance Indicator
14. Temperature Unit of measure
15. Temperature Measurement Value
16. Memory location

Operating Instructions

Warning: Electric shock hazard: Do not connect the unit to live voltage. Contact with live circuits could result in severe injury or death.

Power ON/OFF

Rotate the function dial to any position to power on the meter. If the meter does not turn on, check the batteries. For details on battery replacement, refer to section ''Battery replacement'' for details.

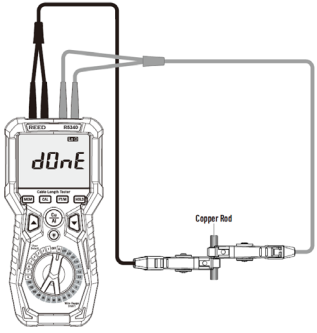
Calibration Procedure

Every time the meter is turned ON, it must be calibrated before use.

1. Turn the function dial from the OFF position to the Ω position.
2. Connect the red Kelvin clip to the meter's red terminals.
3. Connect the black Kelvin clip to the meter's black terminals.

Important: Ensure that both the calibration bar and the jaws of the Kelvin clips are clean before proceeding.

4. Connect the two alligator clips to the supplied copper rod.
5. Adjust the clips so they are as close together as possible along the rod.



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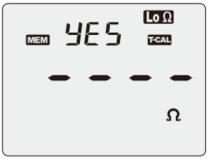
6. Press the **CAL** button when ready.

7. The display will alternate between "MEM YES" and "no T-CAL", flashing twice each time as shown below.



8. Press the **MEM** button. If the display briefly indicates "dOnE" and then returns to resistance measurement mode, the calibration has succeeded.

Note: If the display indicates "FAIL" after pressing the **MEM** Button, the calibration has failed. Check whether the connections and contacts are correct and secure.

9. If you press the **CAL** button again, the meter will exit calibration mode and return to resistance measurement mode.

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Measuring the Length of a Cable

Warning: Electric shock hazard: Do not connect the unit to live voltage. Contact with live circuits could result in severe injury or death.

1. Turn the function dial from the OFF position to the Ω position.
2. Follow the steps outlined in the "Calibration Procedure" to ensure accurate measurements.

Note: Temperature affects the accuracy of the readings. For best results, allow the meter and the cable to reach the same ambient temperature. Typically, this takes about 30 minutes.

3. Strip the insulation from both ends of the cable. Ensure the exposed conductor is clean and fully visible. If necessary, use abrasive paper to remove any oxide layer from the exposed ends.

Note: Both ends must be clean for accurate measurement.

4. Adjust the function dial to the appropriate cable gauge position based on the cable being measured.

Example: For a cable gauge of 1 mm², set the rotary switch to the “1” position.

5. If the cable is copper, press the **Cu/Al** button until "Cu" appears on the display. If the cable is aluminum, press the **Cu/Al** button until "Al" appears on the display.
6. Press the **FT/M** button to choose the unit of measurement (feet or meters).
7. Attach one alligator clip to one end of the cable and the other alligator clip to the opposite end of the cable.
8. The display will indicate the measured length of the cable in the selected unit (feet or meters) and the ambient temperature.

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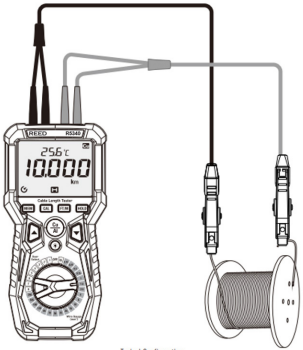
Note: If the temperature falls below 23°F (-5°C), the display will show "-OL" to indicate it is out of range. If the temperature exceeds 122°F (50°C), the display will show “OL” to indicate it is out of range. Press and hold the Cu/Al button to toggle between Celsius (°C) and Fahrenheit (°F) display modes.

9. Once the measurement is complete, disconnect the alligator clips from the cable.



Typical Configuration

User-selected Programming Mode:

The User Selected Mode offers the following functionalities:

Resistance Parameter Storage: Users can save the resistance parameters of a specific cable for length measurements of cables with the same characteristics (i.e., same gauge and conductor material).
Accurate Length Measurement: It allows precise measurement of standard gauge cables.
Versatility: In this mode, users can measure the length of various metal cables, including copper and aluminum cables.

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Note: The sample length of test cables must be:

- Between 4 m and 100 m in METER mode
- Between 13.1 ft and 320 ft in FEET mode
- How to Save the Resistance of a Test Cable

How to Save the Resistance of a Test Cable

Note: Before starting, prepare a sample cable with a length between 4 m and 100 m (or 13.1 ft to 320 ft in FEET mode). This sample will be programmed into the meter so that it can correctly measure and store the resistance of this specific cable type. Ensure the cable being measured is not energized or live.

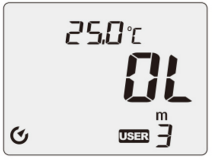
1. Turn the function dial from the OFF position to the Ω position.
2. Follow the steps outlined in the “Calibration Procedure” to calibrate the meter.

Note: Temperature affects the accuracy of the readings. For best results, allow the meter and the cable to reach the same ambient temperature. Typically, this takes about 30 minutes.

3. Remove the insulation from both ends of the sample cable.

Note: Ensure the two conductors are clean and fully exposed. Use a grinding pad if needed to clean the exposed cable ends for better conductivity and easier clamping with the test rods.

4. Use the function dial to select a User-Defined Mode from 1 to 8.
5. The selected User-Defined mode will be displayed in the bottom right corner of the screen. If the selected User-Defined mode already contains a stored cable parameter, the screen will display "OL" as shown below.



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6. Press the **FT/M** button to toggle between feet (FT) and meters (M) as the unit of measurement.
7. Press the **CAL** button. to enter the sample cable length setting mode. In this mode, the display alternates between "MEM YES" and "no TCAL" with “MEM” and “TCAL” flashing twice each cycle.
8. Use the Up/Down buttons to adjust the displayed value.
9. Adjust the display until it matches the actual length of the sample cable to be measured.
10. Attach one alligator clip to each end of the sample cable, ensuring secure connections at both ends.
11. Press the **MEM** button. If the display briefly indicates “dOnE” and then returns to measurement mode, the setting has succeeded.

Note: If the display indicates "FAIL" and "ERROR", the setting has failed. In this case, verify that all connections and contacts are secure and correct.

12. Press the **CAL** button to resume normal operation.
13. Remove the two alligator clips from the sample cable.

Measuring Cable Length in User-Defined Mode

1. Turn the function dial from the OFF position to the Ω position.
2. Follow the steps outlined in the “Calibration Procedure” to calibrate the meter.

Note: Temperature affects the accuracy of the readings. For best results, allow the meter and the cable to reach the same ambient temperature. Typically, this takes about 30 minutes.

3. Remove the insulation from both ends of the sample cable.

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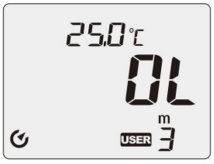
Note: Ensure the two conductors are clean and fully exposed. Use a grinding pad if needed to clean the exposed cable ends for better conductivity and easier clamping with the test rods.

4. Use the function dial to select a User-Defined Mode from 1 to 8.
5. The selected User-Defined mode will be displayed in the bottom right corner of the screen. If the selected User-Defined mode already contains a stored cable parameter, the screen will display "OL" as shown below.



6. Press the **FT/M** button to toggle between feet (FT) and meters (M) as the unit of measurement.
7. Attach one alligator clip to each end of the cable under test, ensuring secure connections at both ends.
8. The display will indicate the measured length of the cable in the selected unit (feet or meters) and ambient temperature.

Note: If the temperature falls below 23°F (-5°C), the display will show "-OL" to indicate it is out of range. If the temperature exceeds 122°F (50°C), the display will show “OL” to indicate it is out of range. Press and hold the **Cu/Al** button to toggle between Celsius (°C) and Fahrenheit (°F) display modes.

9. Once the measurement is complete, disconnect the alligator clips from the cable.

Programmable Switch Positions User's Table

Use this table to log the cable sizes assigned to each programmable switch position. For flexibility, make entries using an erasable medium (e.g., pencil or erasable marker), as switch positions may be reprogrammed in the future.

Switch Position	Gauge		Material Type
	Size	Type	
1		mm² AWG kcmil aught	Cu or Al
2		mm² AWG kcmil aught	Cu or Al
3		mm² AWG kcmil aught	Cu or Al
4		mm² AWG kcmil aught	Cu or Al
5		mm² AWG kcmil aught	Cu or Al
6		mm² AWG kcmil aught	Cu or Al
7		mm² AWG kcmil aught	Cu or Al
8		mm² AWG kcmil aught	Cu or Al

Clearing Memory Locations in User-Selected Mode

1. Ensure the test rod is disconnected from the meter before proceeding.
2. Turn the function dial to select the user-defined mode whose memory you want to clear.
3. Press the **CAL** button. The display will indicate "MEM YES".
4. To clear the memory, press the **MEM** button. The display will indicate "MEM CLr" confirming that the stored data in the selected memory location will be erased.
5. After clearing, the display will indicate "out T-CAL" will automatically resume normal operation.

Measuring Resistance

1. Turn the function dial from the OFF position to the "Ω'' position.
2. Follow the steps outlined in the "Calibration Procedure" to calibrate the meter.

Note: Temperature affects the accuracy of the readings. For best results, allow the meter and the cable to reach the same ambient temperature. Typically, this takes about 30 minutes.

3. Remove the insulation from both ends of the cable.

Note: Ensure the two conductors are clean and fully exposed. Use a grinding pad if needed to clean the exposed cable ends for better conductivity and easier clamping with the test rods.

4. Attach one alligator clip to each end of the cable under test, ensuring secure connections at both ends.
5. The display will indicate the impedance value and ambient temperature.

Note: If the temperature falls below 23°F (-5°C), the display will show "-OL" to indicate it is out of range. If the temperature exceeds 122°F (50°C), the display will show "OL" to indicate it is out of range. Press and hold the **Cu/Al** button to toggle between Celsius (°C) and Fahrenheit (°F) display modes.

6. Once the measurement is complete, disconnect the alligator clips from the cable.

Data Hold

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

Backlight

Press the Backlight button to manually turn on the backlight. To turn off the backlight, press the backlight button again.

Battery Replacement

1. When the low battery icon appears on the display, the batteries must be replaced.
2. Use a Phillips head screwdriver to remove the battery cover located on the back of the meter.
3. Replace the 6 x "AA" batteries.
4. Secure the battery cover back and tighten the screw

Applications

- Cable length verification during installation and maintenance projects.
- Resistance testing to ensure cable integrity and reliability.
- Troubleshooting and diagnosing electrical faults in cables.
- Industrial and commercial wiring assessments.
- Quality control checks in manufacturing and production environments.
- Use in telecommunications and data cabling installations

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.