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› Walfront ETCR3200C Earth Ground and Soil Resistivity Tester Instruction Manual

Walfront ETCR3200C

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1. SAFETY INFORMATION

Please read and understand all safety warnings and operating instructions before using the Walfront ETCR3200C Earth Ground and Soil Resistivity Tester. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- **Battery Safety:** The device uses a DC7.4V 2600mAh rechargeable lithium battery. Use only the provided charger. Do not expose the battery to high temperatures or disassemble it.
- **Overload Protection:** The tester features overload protection. Do not exceed the specified measurement ranges.
- **Grounding:** Always ensure proper grounding connections as per the test method being used to prevent electrical hazards.
- **Environmental Conditions:** Operate the device within specified environmental conditions. Avoid use in wet or explosive atmospheres.
- **Maintenance:** Only qualified personnel should perform maintenance or repairs.

2. PRODUCT OVERVIEW

The Walfront ETCR3200C is a versatile instrument designed for precise measurement of earth ground resistance, soil resistivity, ground voltage, and AC current. It supports various testing methods including two-wire, three-wire, four-wire, and double clamp methods, offering flexibility for different applications.

Key Features:

- Automatic shutdown after 10 minutes of inactivity to conserve battery.
- Battery voltage prompt and overload indication for enhanced safety.
- Durable construction for long-lasting reliability.
- Supports multiple testing methods for comprehensive analysis.

Package Contents:

The standard package includes the following items:

- 1 x ETCR3200C Tester

- 1 x Instruction Manual
- 1 x Software CD
- 1 x Instrument Bag
- 4 x Ground Pins
- 2 x Current Clamps
- 2 x Single Lines
- 1 x Charger (US AC100~240V Adapter)
- 1 x Test Line Data Cable



Image: The Walfront ETCR3200C Earth Ground Tester shown with its complete set of accessories, including ground pins, current clamps, test leads, charger, and carrying bag.

3. SETUP

3.1 Battery Charging

1. Connect the provided charger to the tester's charging port.

2. Plug the charger into a standard AC100~240V power outlet.
3. Allow the battery to charge fully. The battery is fully charged around 8.4V.

3.2 Connecting Test Leads and Probes

Proper connection of test leads and ground pins is crucial for accurate measurements. Refer to the diagrams on the tester's lid for specific wiring configurations for each test method.



Image: A collection of color-coded test leads and ground pins, essential components for various testing configurations with the ETCR3200C.

4. OPERATING INSTRUCTIONS

The ETCR3200C supports various measurement methods. Always select the appropriate method for your application.

4.1 Earth Resistance Measurement

Uses the rated current change method with a maximum current measurement of 20 mA.

1. Connect the test leads and ground pins according to the chosen method (two-wire, three-wire, or four-wire) as illustrated on the device.
2. Select the 'Earth Resistance' function on the tester.
3. Press the 'TEST' button to initiate the measurement.
4. Read the resistance value displayed on the screen.

4.2 Soil Resistivity Measurement

Utilizes the quadrupole method (winning method).

1. Arrange the four ground pins in a straight line with equal spacing (approx. 1m~100m) as required for the Wenner method.
2. Connect the test leads to the corresponding terminals on the tester.
3. Select the 'Soil Resistivity' function.
4. Input the electrode separation distance if prompted.
5. Press 'TEST' and record the resistivity value.

The resistance tester supports accurate test, simple test, selective test and other test methods.



Image: The Walfront ETCR3200C tester positioned in a natural outdoor environment, demonstrating its application for soil resistivity measurements.

4.3 Ground Voltage Measurement

Measures AC 0V~100V using average value rectification (between P(S)-ES interface).

1. Connect the appropriate leads for ground voltage measurement.
2. Select the 'Ground Voltage' function.
3. The tester will display the AC ground voltage. Measurement time is approximately 3 times/sec.

4.4 AC Current Measurement

Measures AC 0mA~600.0A using current clamps.

1. Connect the current clamps to the designated ports on the tester.
2. Clamp the current clamp around the conductor carrying the AC current to be measured.
3. Select the 'AC Current' function.
4. Read the AC current value on the display.

5. MAINTENANCE

5.1 Cleaning

- Wipe the exterior of the tester with a soft, dry cloth.
- Do not use abrasive cleaners or solvents.

5.2 Battery Care

- Recharge the battery when the low battery indicator appears.
- For long-term storage, charge the battery to approximately 50% and store in a cool, dry place.

5.3 Storage

- Store the tester and its accessories in the provided instrument bag to protect them from dust and physical damage.
- Keep the device in a dry environment, away from direct sunlight and extreme temperatures.

6. TROUBLESHOOTING

If you encounter issues with your ETCR3200C tester, refer to the following common problems and solutions:

- **Device not powering on:** Check if the battery is charged. Ensure the power button is pressed correctly.
- **Inaccurate readings:** Verify that all test leads are securely connected and not damaged. Ensure the correct measurement method is selected and the ground pins are properly inserted. Check for external interference.
- **Overload indication:** This indicates the measured value exceeds the selected range. Switch to a higher range if available, or re-evaluate the test setup to ensure it's within the device's capabilities.
- **Display issues:** If the display is blank or shows erratic characters, try restarting the device. If the problem persists, contact customer support.

7. SPECIFICATIONS

Detailed technical specifications for the Walfront ETCR3200C Earth Ground and Soil Resistivity Tester:

Parameter	Value
Model	ETCR3200C
Operating Voltage	DC7.4V 2600mAh x 1 Rechargeable Lithium Battery (built-in)
Adapter	US AC100~240V
Earth Resistance Measurement Method	Rated current change method, max 20 mA
Soil Resistivity Measurement Method	Quadrupole method (Wenner method)
Ground Voltage Measurement Method	Average value rectification (between P(S)-ES interface)
Test Frequency	128 Hz/111 Hz/105 Hz/9 Hz (AFC)
Short Circuit Test Current	AC 250 mA maximum
Open Circuit Test Voltage	AC 40 V maximum
Test Voltage Waves	Sine waves
Electrode Separation Range	Approx. 1m~100m / 3.3~328.1ft
Earth Resistance / DC Resistance Range	0.00~30.00kΩ
Soil Resistivity Range	0.00Ωm~9000kΩm
Ground Voltage Range	AC 0V~100V
Alternating Current Range	AC 0mA~600.0A
Measurement Time (Ground Voltage)	About 3 times/sec
Automatic Shutdown	After 10 minutes of inactivity
Package Dimensions	13.66 x 13.07 x 11.61 inches
Item Weight	14.73 Pounds

8. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries regarding your Walfront ETCR3200C tester, please refer to the documentation provided with your purchase or contact the seller directly. The included software CD contains additional resources that may be helpful for data management and analysis.

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Example: How do I reset this device or fix this error?

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