

ETCR ETCR2000A

ETCR2000A Digital Clamp Ground Resistance Tester

User Manual

Brand: ETCR | Model: ETCR2000A

1. INTRODUCTION

The ETCR2000A Digital Clamp Ground Resistance Tester is a specialized instrument designed for measuring grounding resistance in various electrical systems. This device offers a non-intrusive method for testing loop resistance without the need to disconnect grounding leads or use auxiliary electrodes, making it suitable for applications in power systems, meteorology, oilfields, construction, and industrial electrical equipment.

It accurately measures the combined resistance of the grounding body and lead, and is capable of detecting ground faults that traditional methods may miss. This manual provides detailed instructions for the safe and effective use of your ETCR2000A tester.

2. SAFETY INFORMATION

WARNING: Read all safety warnings and instructions before using this product. Failure to follow the warnings and instructions may result in electric shock, fire, or serious injury.

- Always observe local and national safety regulations.
- Do not use the instrument if it appears damaged or operates abnormally.
- Ensure the instrument is clean and dry before use.
- Do not exceed the maximum input ratings for any function.
- Always disconnect the instrument from the circuit before opening the battery compartment.
- This device is designed to measure loop resistance only, not single-point grounding. For single-point grounding, an artificial loop must be created.

3. PACKAGE CONTENTS

Verify that all items listed below are present and in good condition:

- ETCR2000A Digital Clamp Ground Resistance Meter
- Test Ring
- User Manual
- LR6 Battery (AA, 1.5V) x 4
- Carrying Case



Image: The ETCR2000A kit, showing the clamp meter, test ring, user manual, batteries, and protective carrying case.

4. PRODUCT OVERVIEW

The ETCR2000A features an intuitive design for ease of use. Familiarize yourself with the main components:



Image: Front view of the ETCR2000A, showing the display, clamp jaws, and control buttons.



Image: Side view of the ETCR2000A, illustrating the clamp opening mechanism and the jaw size.



Image: Close-up of the clamp jaws, highlighting the internal voltage and current coils for measurement.

ETCR

2000/2000A/2000C

Clamp Jaw Size: 55mm×32mm

- Resistance Range (ETCR2000):
0.010Ω-1000Ω
- Resistance Range (ETCR2000A):
0.010Ω-500Ω
- Resistance Range (ETCR2000C):
0.010Ω-1000Ω
- Current Range (ETCR2000C Only):
0.00mA-30.0A

Ground Tester

Image: Key features of the ETCR2000A, including its resistance range, resolution, clamp jaw size, and data memory capacity.

5. SETUP

5.1 Battery Installation

1. Ensure the device is powered off.
2. Locate the battery compartment on the back of the unit.
3. Use a screwdriver to open the battery compartment cover.
4. Insert four LR6 (AA, 1.5V) batteries, observing the correct polarity (+/-).
5. Replace the battery compartment cover and secure it with the screw.



Image: Rear view of the ETCR2000A, indicating the location of the battery compartment.

6. OPERATING INSTRUCTIONS

6.1 Powering On/Off

Press the **POWER** button to turn the device on or off.

6.2 Taking a Measurement (Loop Resistance)

The ETCR2000A is designed for loop resistance measurement. It measures induced potential and current to calculate resistance using the formula $R=E/I$.

1. Ensure the circuit to be tested forms a closed loop. The tester cannot measure single-point grounding directly. If testing a single grounding electrode, an artificial loop must be created (e.g., by connecting a temporary conductor to another known ground point or using the provided test ring).
2. Open the clamp jaws by pressing the lever.
3. Place the clamp around the grounding conductor or loop to be measured. Ensure the jaws are fully closed and there are no gaps.
4. The resistance value will be displayed on the LCD screen.
5. For stable readings, hold the clamp steady during measurement.

6.3 Data Hold Function

Press the **HOLD** button to freeze the current reading on the display. Press it again to release the hold function.

6.4 Mode Selection

The **MODE** button may be used to cycle through different measurement modes or display options if available. Refer to the on-screen indicators.



- Deliver consistent accuracy without the need to disconnect grounding conductors
- Non-intrusive clamp design: Saves time and reduces risk
- Intuitive interface: Easy to use with a simple user-friendly design

Resistance Range
0.01Ω-500Ω

Memory Data
99 Groups

Resistance Resolution
0.001Ω

Clamp Jaw Size
55mm×32mm

Image: The ETCR2000A display showing 'OL' (Open Loop), which indicates the circuit is not closed or the resistance is out of range.

7. MAINTENANCE

7.1 Cleaning

Wipe the instrument with a dry, soft cloth. Do not use abrasive cleaners or solvents. Ensure no moisture enters the device.

7.2 Battery Replacement

When the low battery indicator appears on the display, replace the batteries as described in the 'Battery Installation' section (5.1).

7.3 Storage

Store the instrument in its carrying case in a cool, dry place, away from direct sunlight and extreme

temperatures. Remove batteries if the device will not be used for an extended period.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
No display or weak display	Dead or low batteries	Replace batteries.
"OL" (Open Loop) displayed	Circuit is not a closed loop; clamp jaws not fully closed; resistance is out of range.	Ensure the circuit forms a complete loop. Check that the clamp jaws are fully closed around the conductor. Verify the resistance is within the 0.010Ω-500Ω range.
Inaccurate readings	Interference; dirty clamp jaws; improper contact.	Move away from strong electromagnetic fields. Clean the clamp jaws. Ensure good contact with the conductor.

9. SPECIFICATIONS

Parameter	Value
Model	ETCR2000A
Resistance Range	0.010Ω - 500Ω
Resistance Resolution	0.001Ω
Clamp Jaw Size	55mm x 32mm
Opening Size	32mm
Power Source	4 x LR6 (AA) 1.5V Batteries
Minimum Operating Voltage	6 Volts (DC)
Upper Temperature Rating	55°C
Item Weight	2.1 Pounds (approx. 0.95 kg)
Item Dimensions	10.83 x 3.94 x 2.2 inches (approx. 27.5 x 10 x 5.6 cm)
Measurement Type	Ohmmeter (Loop Resistance)
Specification Met	CE
Memory Data	99 Groups

9.1 Accuracy

The ETCR2000A provides precise measurements. For the 50.0-99.5 Ohm range, the accuracy is typically $\pm 1.5\% + 0.5$ Ohms. Accuracy may vary slightly across different ranges. Always ensure proper calibration and environmental conditions for optimal performance.

10. APPLICATIONS

The ETCR2000A is suitable for a wide range of professional applications:



Image: Testing in power substations.



Image: Use on construction sites.



Image: Testing telecommunication towers.

11. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided with your

purchase or contact ETCR customer service. Keep your purchase receipt as proof of purchase.

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