

Extech CT70

Extech CT70 GFCI and AC Circuit Analyzer Instruction Manual

Model: CT70

1. INTRODUCTION

The Extech CT70 is a professional GFCI and AC Circuit Analyzer designed to identify and troubleshoot electrical circuit and wiring issues. This device helps prevent shock hazards by detecting grounding problems and ensures optimal performance of machinery and equipment by assessing ground impedance, voltage under load, and ground-to-neutral voltage. It combines outlet load handling and comprehensive outlet testing functions.

2. SAFETY INFORMATION

WARNING: Electrical testing can be hazardous. Always exercise extreme caution when working with electrical circuits. Read and understand all instructions before use.

- Ensure the device is in good working condition before each use.
- Do not use the device if it appears damaged or if the test cord is frayed.
- Always follow local electrical codes and safety regulations.
- Do not attempt to open or repair the device. Refer to qualified service personnel.
- Keep hands and fingers away from live electrical contacts.

3. SETUP

The Extech CT70 comes ready for use with its integrated AC test cord. No assembly is required. Simply ensure the test cord is securely attached to the main unit before plugging it into an AC outlet.



Figure 3.1: The Extech CT70 with its AC test cord, ready for connection.

4. OPERATING INSTRUCTIONS

The Extech CT70 provides comprehensive analysis of AC circuits. Follow these steps for operation:

4.1 Basic Circuit Analysis

1. **Connect the Tester:** Plug the AC test cord of the CT70 into the standard North American 3-prong outlet you wish to test.
2. **Observe Initial Readings:** The backlit LCD will display initial readings for voltage and frequency. The indicator lights (Correct, No Ground, H-N Reversed, Open Hot or Open Neutral, H-G Reversed) will illuminate to show the wiring status. A red failure alert on the display indicates a problem.
3. **Interpreting Wiring Indicators:**
 - **Correct (Blue LED):** Indicates proper wiring.
 - **No Ground (Red LED):** Indicates missing ground connection.
 - **H-N Reversed (Red LED, Blinking):** Indicates hot and neutral wires are reversed.
 - **Open Hot or Open Neutral (Red LED):** Indicates an open hot or neutral wire.
 - **H-G Reversed (Red LED):** Indicates hot and ground wires are reversed.





Figure 4.1: The Extech CT70 in use, displaying voltage and wiring status.

4.2 AC Load Testing

The CT70 can simulate loads to test voltage drop and line impedance under various conditions.

1. **Select Load:** Use the arrow buttons to select the desired load: 12A, 15A, or 20A. The selected load will be displayed on the screen.
2. **Initiate Load Test:** Press the appropriate button to apply the selected load. The device will measure and display the loaded and unloaded AC line voltage, voltage drop percentage, and hot, neutral, and ground impedance.
3. **Interpret Results:** A significant voltage drop or high impedance values indicate potential issues with the circuit's capacity or wiring integrity. The display will change to red if a problem is detected.



4.3 GFCI Testing

To test Ground Fault Circuit Interrupter (GFCI) outlets:

1. **Plug into GFCI Outlet:** Connect the CT70 to a GFCI protected outlet.
2. **Press GFCI Button:** Press the dedicated GFCI button on the device. The CT70 will measure the GFCI trip time and trip current.
3. **Observe Trip:** A functional GFCI outlet should trip (cut power) within a specified time and current range. If the GFCI does not trip, it indicates a fault and the outlet should be serviced by a qualified electrician.



Figure 4.3: Testing a GFCI outlet with the Extech CT70.

4.4 Additional Measurements

The CT70 also measures:

- Peak Line Voltage

- Neutral-to-Ground Voltage

These values are displayed on the LCD during normal operation and can provide further insight into circuit health.

4.5 Official Product Video

Your browser does not support the video tag.

Video 4.4: An official product video demonstrating the features and use of the Extech CT70 AC Circuit Load Tester.

5. MAINTENANCE

To ensure the longevity and accuracy of your Extech CT70:

- **Cleaning:** Wipe the device with a dry, soft cloth. Do not use abrasive cleaners or solvents.
- **Storage:** Store the device in a cool, dry place away from direct sunlight and extreme temperatures.
- **Inspection:** Periodically inspect the AC test cord for any signs of damage, cuts, or fraying. Replace the unit if damage is found.

6. TROUBLESHOOTING

If you encounter issues with your Extech CT70, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No display or power	No power from outlet; faulty outlet.	Test a known working outlet. Check circuit breaker.
Incorrect wiring indication (Red LED)	Actual wiring fault in the outlet.	Consult a qualified electrician to inspect and correct the wiring. Do not use the outlet until repaired.
GFCI does not trip	Faulty GFCI outlet; no GFCI protection.	Ensure the outlet is indeed GFCI protected. If it is, the GFCI unit may be faulty and require replacement by a qualified electrician.
Inconsistent readings	Loose connection; unstable power supply.	Ensure the test cord is firmly plugged into the outlet. Test multiple outlets to confirm power stability.

7. SPECIFICATIONS

Feature	Detail
Brand	Extech
Model	CT70
Power Source	Corded Electric
Minimum Operating Voltage	90 Volts (AC)
Item Weight	16 ounces

Feature	Detail
Item Dimensions	8 x 2.8 x 2 inches
Load Test Settings	12A, 15A, 20A
Included Components	AC test cord
Certifications	CE, ETL

8. WARRANTY AND SUPPORT

The Extech CT70 is covered by a **2-year warranty** from the date of purchase. For warranty claims, technical support, or service inquiries, please contact Extech customer service or visit the official Extech website. Keep your proof of purchase for warranty validation.

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Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

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Question

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

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question