

Treedix TRX5-0903-D

Treedix Mini Electronic Load Tester (TRX5-0903-D) User Manual

Model: TRX5-0903-D

[Introduction](#)[Safety Information](#)[Product Overview](#)[Specifications](#)[Setup](#)[Operation](#)[Maintenance](#)[Troubleshooting](#)[Support](#)

1. INTRODUCTION

The Treedix Mini Electronic Load Tester (Model TRX5-0903-D) is a versatile and compact device designed for testing various power sources, including chargers, power banks, and batteries. It supports operation at up to 50V voltage, 15A current, and 120W power, providing comprehensive data monitoring for voltage, current, power, energy, capacity, discharge time, and temperature. This manual provides detailed instructions for the safe and effective use of your electronic load tester.

2. SAFETY INFORMATION

WARNING: ELECTRIC SHOCK HAZARD. Always exercise caution when working with electrical circuits.

- Ensure proper ventilation during operation, especially when discharging at high power, as the device generates heat.
- Do not exceed the maximum input voltage of 50V or current of 15A.
- Always connect the load tester to the power source correctly, observing polarity.
- Keep the device away from water, moisture, and flammable materials.

- Do not attempt to disassemble or modify the device. Refer all servicing to qualified personnel.
- The device features intelligent safety protection functions including over-voltage, under-voltage, over-current, and over-power protection. However, these are secondary safeguards and should not replace careful operation.

3. PRODUCT OVERVIEW

Familiarize yourself with the components of your Treedix Mini Electronic Load Tester.



Figure 3.1: Product Construction and Description

1. **Load Input Positive:** Terminal for positive connection of the device under test.
2. **Load Input Negative:** Terminal for negative connection of the device under test.
3. **DC Jack:** 12V DC power input for the load tester itself.
4. **Screen:** 1.54-inch high-definition color screen displaying test parameters and settings.
5. **Type-C Input:** USB Type-C port for 12V PD protocol power supply to the load tester.
6. **Confirm Button (OK):** Used to confirm selections and start/stop tests.
7. **Rotary Encoder (SET):** Used to navigate menus and adjust parameter values.
8. **Fan Socket:** Connection for the cooling fan.
9. **Heat Sink Aluminum Block:** Dissipates heat generated during discharge.
10. **Cooling Fan:** Activates automatically to cool the heat sink when needed.

4. SPECIFICATIONS

The following table outlines the technical specifications of the Treedix Mini Electronic Load Tester.

Feature	Specification
Brand	Treedix
Model	TRX5-0903-D
Power Source (for tester)	DC 12V or Type-C PD 12V
Max. Input Voltage (Device Under Test)	50 Volts
Max. Operating Current	15 Amps
Max. Power Dissipation	120 Watts
Display	1.54-inch High-Definition Color Screen
Protection Features	Over-voltage, Under-voltage, Over-current, Over-power, Over-temperature
Included Components	Load Tester, Adapter Board
Dimensions (approx.)	100mm x 80mm x 53mm (3.94in x 3.15in x 2.09in)
Upper Temperature Rating	90 Degrees Celsius

Figure 4.1: Product Dimensions

5. SETUP

5.1. Powering the Load Tester

The Treedix Mini Electronic Load Tester requires a 12V power supply for its own operation. It supports two methods:

- **DC 12V Power Supply:** Connect a standard 12V DC power adapter to the DC jack on the left side of the main circuit board.
- **Type-C PD 12V Power Supply:** Connect a USB Type-C to Type-C cable from a PD protocol compatible 12V power supply to the Type-C input on the back side of the main board, below the display.

Important: This load instrument cannot be powered via Type-C to Type-A cables. The input power supply must provide 12V. If the voltage is incorrect, a "Power Error!" message will be displayed.

Figure 5.1: Power Supply Methods

5.2. Connecting the Device Under Test (DUT)

Use the provided adapter board and cables to connect the device you wish to test (e.g., battery, power bank, charger) to the load input terminals marked "Load +" and "Load -". Ensure correct polarity.

Figure 5.2: Wiring Method Example

6. OPERATION

6.1. Display Parameters Overview

The 1.54-inch color screen displays various real-time and accumulated test parameters. Understanding these parameters is key to effective testing.

Figure 6.1: Display Parameters

1. **U:** Load Real-time Voltage
2. **I:** Load Real-time Current
3. **P:** Load Real-time Power
4. **E:** Load Accumulated Energy (Wh)
5. **Q:** Load Accumulated Capacity (Ah)
6. **T:** Load Cumulative Operating Time
7. **OWH:** Discharge Energy Setting (automatic cutoff when reached; 0 means disabled)
8. **OAH:** Discharge Capacity Setting (automatic cutoff when reached; 0 means disabled)
9. **OVT:** Discharge Time Setting (automatic cutoff when reached; 0 means disabled)
10. **MODE:CC:** Constant Current Mode indicator

11. **IOP:** Load Operating Current Setting
12. **TEMP:** Temperature (automatic over-temperature protection)
13. **LVP:** Low Voltage Protection (Error Warning)
14. **OFF/ON:** Load Switch status

6.2. Setting Test Parameters

Use the rotary encoder (SET knob) to navigate and adjust settings:

- **Adjusting Current:** Short press the SET knob to highlight the current (IOP) value. Rotate the knob to adjust the desired discharge current.
- **Setting Cutoff Limits:** Press the SET knob again to move the cursor to other parameters like OWH (Watt-hour), OAH (Amp-hour), or OVT (time). Rotate the knob to set a specific cutoff value. A value of '0' disables the cutoff for that parameter.
- **Confirming Settings:** Once parameters are set, press the OK button to confirm.

6.3. Starting and Stopping a Test

- After setting the desired parameters, press the **OK** button (lower right corner) to start the discharge test. The 'OFF' indicator will change to 'ON'.
- To stop the test manually, press the **OK** button again. The 'ON' indicator will change to 'OFF'.
- The test will automatically stop if any of the set cutoff limits (OWH, OAH, OVT) are reached, or if a safety protection (e.g., over-voltage, under-voltage) is triggered.

6.4. Applications

The Treedix Mini Electronic Load Tester is suitable for a wide range of applications:

- Discharge aging tests for chargers and power banks.
- Capacity testing for lithium batteries and other battery types.
- Testing current adapters and DC power supplies.
- Educational experiments and electronic hobbyist projects.



Figure 6.2: Typical Applications



Figure 6.3: Intelligent Detection Examples

7. SAFETY FEATURES

The Treedix Mini Electronic Load Tester incorporates several intelligent protection mechanisms to ensure safe operation:

7.1. Over-voltage Protection (OVP) and Under-voltage Protection (LVP)

- **OVP:** If the input voltage exceeds the set maximum value (default 50V), the system will automatically shut down to protect the device under test and the load tester.
- **LVP:** If the input voltage falls below a user-defined minimum voltage, the system will automatically shut down

to prevent over-discharge of batteries or abnormal operation.

Figure 7.1: Overvoltage and Undervoltage Protection

7.2. Over-current Protection (OCP) and Over-power Protection (OPP)

- **OCP:** The system will automatically shut down if the discharge current exceeds a maximum threshold (default 15A).
- **OPP:** The system will automatically shut down if the discharge power exceeds a maximum threshold (default 120W).

Figure 7.2: Overcurrent and Overpower Protection

7.3. Over-temperature Protection

The device monitors its internal temperature. If the heat sink temperature rises above 40°C, the cooling fan will activate. If the temperature continues to rise to a critical level, the system will automatically shut down to prevent damage.

8. MAINTENANCE

- **Cleaning:** Use a soft, dry cloth to clean the device. Do not use liquid cleaners or solvents. Ensure no dust accumulates on the cooling fan or heat sink.
- **Storage:** Store the device in a cool, dry place away from direct sunlight and extreme temperatures.
- **Inspection:** Periodically inspect the cables and connections for any signs of wear or damage.

9. TROUBLESHOOTING

Problem	Possible Cause	Solution
Device does not power on.	Incorrect power supply voltage or connection.	Ensure a stable 12V DC or Type-C PD 12V power supply is connected correctly. Check for "Power Error!" message.
Test stops unexpectedly.	Safety protection triggered (OVP, LVP, OCP, OPP, Over-temperature) or cutoff limit reached.	Check the display for error messages. Verify input voltage, current, power, and temperature. Adjust cutoff limits if necessary.
Readings appear inaccurate.	Poor connection or faulty cables.	Ensure all connections are secure and cables are in good condition.
Cooling fan not running.	Fan only activates when heat sink temperature exceeds 40°C.	This is normal operation. If the device is hot and the fan is still not running, contact support.

10. CUSTOMER SUPPORT

For further assistance, technical support, or warranty inquiries, please contact Treedix customer service through the retailer where you purchased the product or visit the official Treedix website.

Treedix Store Link: [Treedix Official Store](#)

© 2024 Treedix. All rights reserved.

ASK A QUESTION ABOUT THIS MANUAL

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.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

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