

ETCR ETCR3800B

ETCR3800B Lightning Protection Component Tester User Manual

Model: ETCR3800B

1. OVERVIEW

The ETCR3800B is an advanced intelligent lightning protection component tester designed for precise measurement of various lightning protection elements. This instrument is capable of testing metal oxide varistors (MOV), discharge tubes (GDT), and insulation resistance (MΩ), including polarization index (PI) and dielectric absorption ratio (DAR). Featuring a touch color screen and a user-friendly interface with an integrated 'HELP' function, it guides users through operations effectively. It offers a stable output voltage up to 3000V, supports both single and continuous test modes for batch testing, and includes automatic storage for up to 3000 test records with USB data upload capabilities. The device is powered by a large-capacity rechargeable lithium battery.

2. SAFETY INSTRUCTIONS

WARNING: Before operating this instrument, please read and understand all safety information.

- Always ensure the instrument is turned off before connecting or disconnecting test leads.
- Do not operate the tester in wet conditions or in the presence of flammable gases or vapors.
- Verify that the test voltage and current ranges are appropriate for the component being tested.
- Avoid touching the test probes or the component under test when high voltage is applied.
- Refer to the warning label on the back of the device: Before removing the battery cover, remove all test wires and shut down the meter. Power supply: DC 7.4V, 3500mAh. If the battery needs replacement, please return the meter to the manufacturer. Charge the battery every 1-2 months if not in use to prevent damage.
- Use only the provided charger and USB cable.

For detailed safety guidelines, consult the full user manual provided with the product.

3. PACKAGE CONTENTS

Carefully unpack the box and ensure all items listed below are present and undamaged. If any items are missing or damaged, contact your supplier immediately.

- ETCR3800B Lightning Protection Component Tester
- Test Wires (Red, Black)
- Alligator Clips
- Probes
- Special Charger
- USB Communication Cable
- Instrument Bag
- User Manual & Warranty Card



Image 3.1: All components included in the ETCR3800B package.



Image 3.2: Labeled diagram of the ETCR3800B package contents, including the tester, probes, test wires, alligator clips, charger, USB cable, instrument bag, and user manual.

4. PRODUCT FEATURES AND COMPONENTS

The ETCR3800B is designed for ease of use and accuracy. Familiarize yourself with its key components:



Image 4.1: Front view of the ETCR3800B tester, showing the display, function knob, and test buttons.



Image 4.2: Angled view of the ETCR3800B tester, highlighting its robust casing and ergonomic design.



Image 4.3: Back view of the ETCR3800B tester, showing the battery compartment and warning label. The serial number '38280001' is visible on the label.



Image 4.4: Detailed labeled diagram of the ETCR3800B, indicating the Test interface (positive), Common interface (cathode), Charge interface, USB interface, Touch screen, Test indicator, Function selection rotary knob, and Charge indicator.

Key Features:

- **Multi-functional Testing:** Measures parameters for Metal Oxide Varistors (MOV), Gas Discharge Tubes (GDT), and Insulation Resistance (MΩ), including PI and DAR.
- **Intuitive Touch Screen:** Color touch screen with a 'HELP' function for guided operation.
- **High Voltage Output:** Stable output voltage up to 3000V for diverse component testing.
- **Customizable Settings:** Professional parameter settings for booster speed, high voltage limits, and qualified range/judgment conditions.
- **Flexible Test Modes:** Supports single test mode and continuous test mode, ideal for batch testing.
- **Data Storage & Transfer:** Automatic storage of 3000 test records with date and time, and USB interface for data upload.
- **Rechargeable Battery:** Equipped with a large-capacity rechargeable lithium battery for portability.

5. SETUP

5.1 Charging the Battery

1. Connect the provided special charger to the Charge interface on the top of the ETCR3800B.
2. Plug the charger into a suitable power outlet.
3. The Charge indicator will illuminate during charging. Once fully charged, the indicator may change color or turn off, depending on the model.
4. Allow sufficient time for a full charge before first use.

5.2 Connecting Test Leads

1. Ensure the ETCR3800B is turned OFF.
2. Connect the red test lead to the Test interface (positive) and the black test lead to the Common interface (cathode) on the top of the instrument.
3. Attach the alligator clips or probes to the ends of the test leads as required for your measurement.

6. OPERATING INSTRUCTIONS

6.1 Powering On/Off

- To power on, rotate the Function selection rotary knob from 'OFF' to any desired measurement function (e.g., 'MOV', 'GDT', 'MΩ').
- To power off, rotate the Function selection rotary knob to 'OFF'.

6.2 Selecting Measurement Function

Use the Function selection rotary knob to choose the desired test mode:

- **MOV:** For Metal Oxide Varistor testing.
- **GDT:** For Gas Discharge Tube testing.
- **MΩ/GΩ:** For Insulation Resistance measurement.

6.3 Performing a Test

1. Select the appropriate measurement function using the rotary knob.
2. Connect the test leads to the component you wish to test. Ensure proper polarity.
3. Press the 'TESTING' button to initiate the measurement. The Test indicator will illuminate.
4. Observe the results on the touch screen display.
5. The instrument will automatically store the test results.

6.4 Using the 'HELP' Function

Tap the 'HELP' key on the touch screen at any time to access on-screen guidance for the current operation or function.

6.5 Data Upload

Connect the ETCR3800B to a computer using the provided USB Communication Cable. Follow the instructions in the full user manual for installing necessary software and uploading stored test data.

7. MAINTENANCE

7.1 Cleaning

- Wipe the instrument's exterior with a soft, damp cloth. Do not use abrasive cleaners or solvents.
- Ensure no moisture enters the device through ports or openings.

7.2 Battery Care

- Recharge the lithium battery regularly, especially if the instrument is not used for extended periods (recommended every 1-2 months).
- If battery replacement is necessary, contact the manufacturer or an authorized service center. Do not attempt to replace it yourself.

7.3 Storage

- Store the ETCR3800B in its instrument bag in a cool, dry place, away from direct sunlight and extreme temperatures.
- Remove test leads before storing.

8. TROUBLESHOOTING

- **Instrument does not power on:** Check battery charge level. Ensure the function knob is not set to 'OFF'.
- **No reading on display:** Verify test leads are securely connected to both the instrument and the component. Ensure the correct measurement function is selected.
- **Inaccurate readings:** Check for damaged test leads or probes. Ensure the component is clean and properly connected. Refer to the specifications for measurement accuracy.
- **Data transfer issues:** Ensure the USB cable is properly connected to both the instrument and the computer. Verify that the necessary software drivers are installed on the computer.

For persistent issues, consult the detailed troubleshooting section in the full user manual or contact customer support.

9. SPECIFICATIONS

The following table outlines the key technical specifications of the ETCR3800B Lightning Protection Component Tester:

Measurement Function	Output	Measurement Range	Measurement Accuracy	Solution
Varistor	Voltage 0-3000V	50-3000V	$\pm 2\% \text{rdg} \pm 3 \text{dgt}$	1V
	Current 0-1.5mA	0-1000 μ A	$\pm 2\% \text{rdg} \pm 10 \text{dgt}$	0.1 μ A
Discharge Tube	Voltage 0-3000V/1.5mA	50-3000V	$\pm 2\% \text{rdg} \pm 3 \text{dgt}$	1V
Insulation Resistance (3800B Only)	500V	0.5M Ω ~2G Ω	$\pm 5\% \text{rdg} \pm 10 \text{dgt}$	0.1M
	2500V	2.5M Ω ~10G Ω	$\pm 5\% \text{rdg} \pm 10 \text{dgt}$	0.1M

Image 9.1: Detailed measurement functions, ranges, accuracy, and resolution for the ETCR3800B.

Parameter	Value
Model Number	ETCR3800B
Brand	ETCR
Power Source	Battery Powered (DC 7.4V, 3500mAh Lithium Battery)
Style	Digital
Color	Grey
Item Weight	5.3 Pounds (approx. 2.4 kg)
Package Dimensions	10.24 x 8.27 x 7.09 inches
Varistor Test Voltage Range	50V-3000V
Varistor Test Current Range	0-1000 μ A
Discharge Tube Test Voltage Range	50V-3000V
Insulation Resistance Range (500V)	0.5M Ω -2G Ω
Insulation Resistance Range (2500V)	2.5M Ω -10G Ω
Data Storage	3000 groups
Interface	USB

10. WARRANTY AND SUPPORT

The ETCR3800B Lightning Protection Component Tester comes with a standard manufacturer's warranty.

Please refer to the Warranty Card included in your package for specific terms and conditions, including warranty duration and coverage details.

For technical support, service, or inquiries regarding your product, please contact the manufacturer or your authorized dealer. Keep your purchase receipt and warranty card handy when seeking support.