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Fafeicy BM500A

Fafeicy BM500A Digital Insulation Resistance Tester User Manual

Model: BM500A

1. Introduction

This manual provides essential information for the safe and effective operation of the Fafeicy BM500A Digital Insulation Resistance Tester. The BM500A is a versatile electronic megohmmeter designed for measuring insulation resistance with selectable test voltages of 250V, 500V, and 1000V. It is suitable for testing electrical equipment and insulation materials such as motors, cables, switches, and appliances.



Figure 1: Fafeicy BM500A Digital Insulation Resistance Tester with test leads and an electrical panel in the background.

2. Safety Information

To ensure safe operation and prevent damage to the device or injury, please read and adhere to the following safety precautions:

- Always inspect the tester and test leads for any damage before use. Do not use if damaged.
- Ensure the circuit under test is de-energized and locked out before connecting the tester.
- Do not touch the test leads or the circuit under test during measurement, especially when high voltage is being applied.
- Use the correct test voltage range for the application.
- Replace batteries promptly when the low battery indicator appears.
- Do not operate the tester in wet environments or in the presence of explosive gases or dust.
- Servicing should only be performed by qualified personnel.

3. Product Overview

The BM500A Digital Insulation Resistance Tester features a clear LCD display, a rotary switch for function and voltage selection, and dedicated terminals for test leads. It is designed with a protective case for durability and includes an integrated kickstand for convenient viewing.

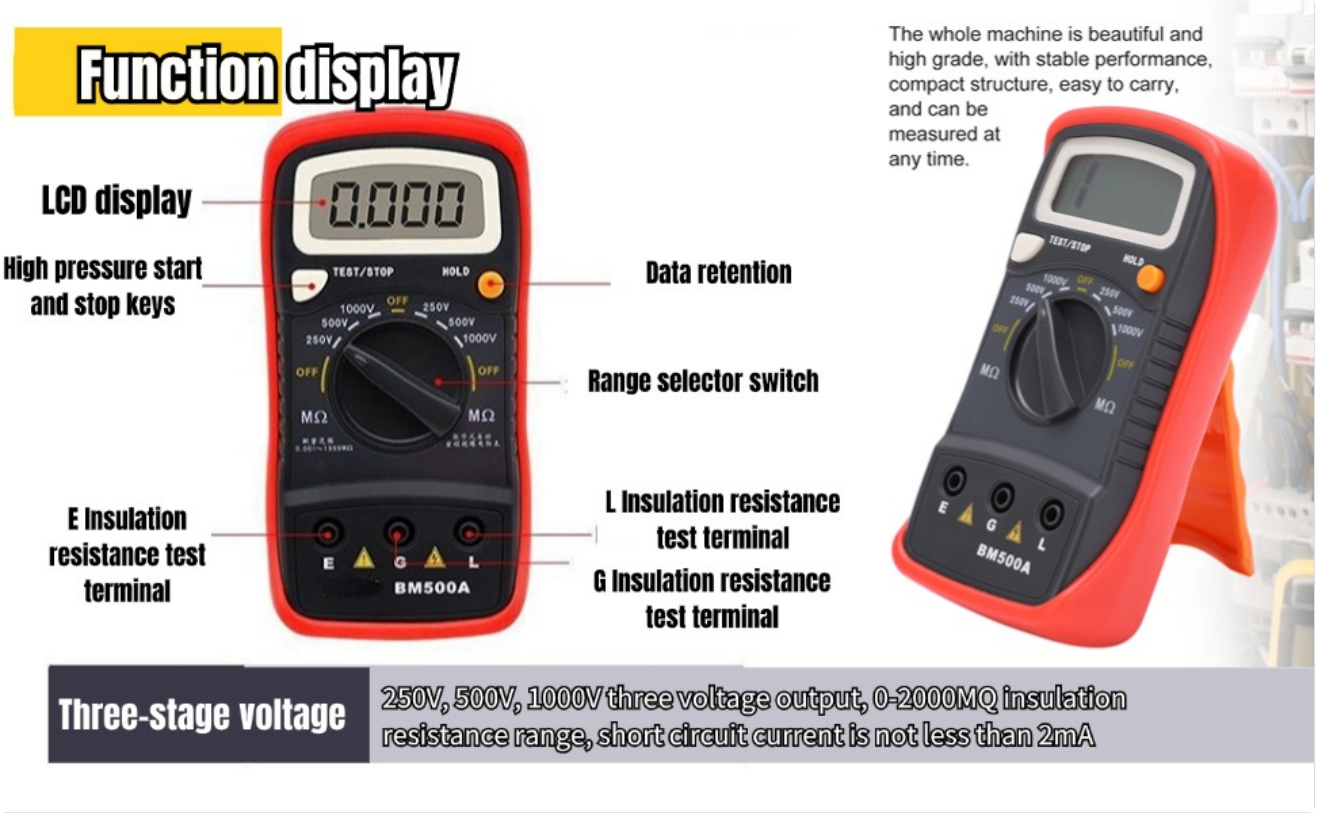


Figure 2: Detailed view of the BM500A's function display, showing LCD, control dial, and test terminals, with an extended kickstand.

3.1 Components

- **LCD Display:** Shows measurement readings and indicators.
- **Range Selector Switch:** Used to select OFF, test voltage (250V, 500V, 1000V), and resistance measurement

ranges (MΩ).

- **TEST/STOP Button:** Initiates and stops the insulation resistance test.
- **HOLD Button:** Freezes the current reading on the display.
- **E, G, L Terminals:** Connection points for the test leads (E for Earth, G for Guard, L for Line).
- **Protective Case:** Provides anti-slip and anti-drop protection.
- **Back Support Bracket:** Allows the meter to stand upright for easy viewing.



Figure 3: Red and black test leads with alligator clips.

4. Setup

4.1 Battery Installation

The BM500A requires batteries for operation. To install or replace batteries:

1. Ensure the device is turned OFF.
2. Locate the battery compartment cover on the back of the tester.
3. Use a screwdriver to remove the screw securing the cover.
4. Carefully remove the cover.
5. Insert the required batteries, observing correct polarity (+/-).
6. Replace the battery compartment cover and secure it with the screw.



Figure 4: Battery compartment on the rear of the BM500A tester.

4.2 Connecting Test Leads

Connect the red and black test leads to the appropriate terminals on the tester. For insulation resistance measurements, typically the red lead connects to the 'L' (Line) terminal and the black lead to the 'E' (Earth) terminal. The 'G' (Guard) terminal is used for specific three-terminal measurements to eliminate surface leakage currents.

5. Operating Instructions

5.1 Performing an Insulation Resistance Test

1. **Prepare the Circuit:** Ensure the circuit or equipment to be tested is completely de-energized and isolated from all power sources. Follow proper lockout/tagout procedures.
2. **Connect Test Leads:** Connect the test leads to the BM500A tester and then to the circuit under test. For a standard two-terminal insulation test, connect the red lead to the conductor and the black lead to the ground or casing.
3. **Select Test Voltage:** Turn the Range Selector Switch to the desired test voltage (250V, 500V, or 1000V) in the MΩ section.
4. **Initiate Test:** Press and hold the **TEST/STOP** button. The tester will apply the selected voltage, and the insulation resistance value will be displayed on the LCD.
5. **Read Measurement:** Observe the reading on the LCD display. The sampling rate is approximately 2.3 times per second.
6. **End Test:** Release the **TEST/STOP** button to stop the test and discharge the circuit.
7. **Data Hold:** Press the **HOLD** button to freeze the current reading on the display. Press it again to release.

5.2 Applications

The BM500A is suitable for a wide range of applications requiring insulation resistance measurement:

- Motors and Generators
- Electrical Cables
- Switches and Circuit Breakers
- Household Appliances
- Industrial Electrical Equipment
- Telecommunication Systems

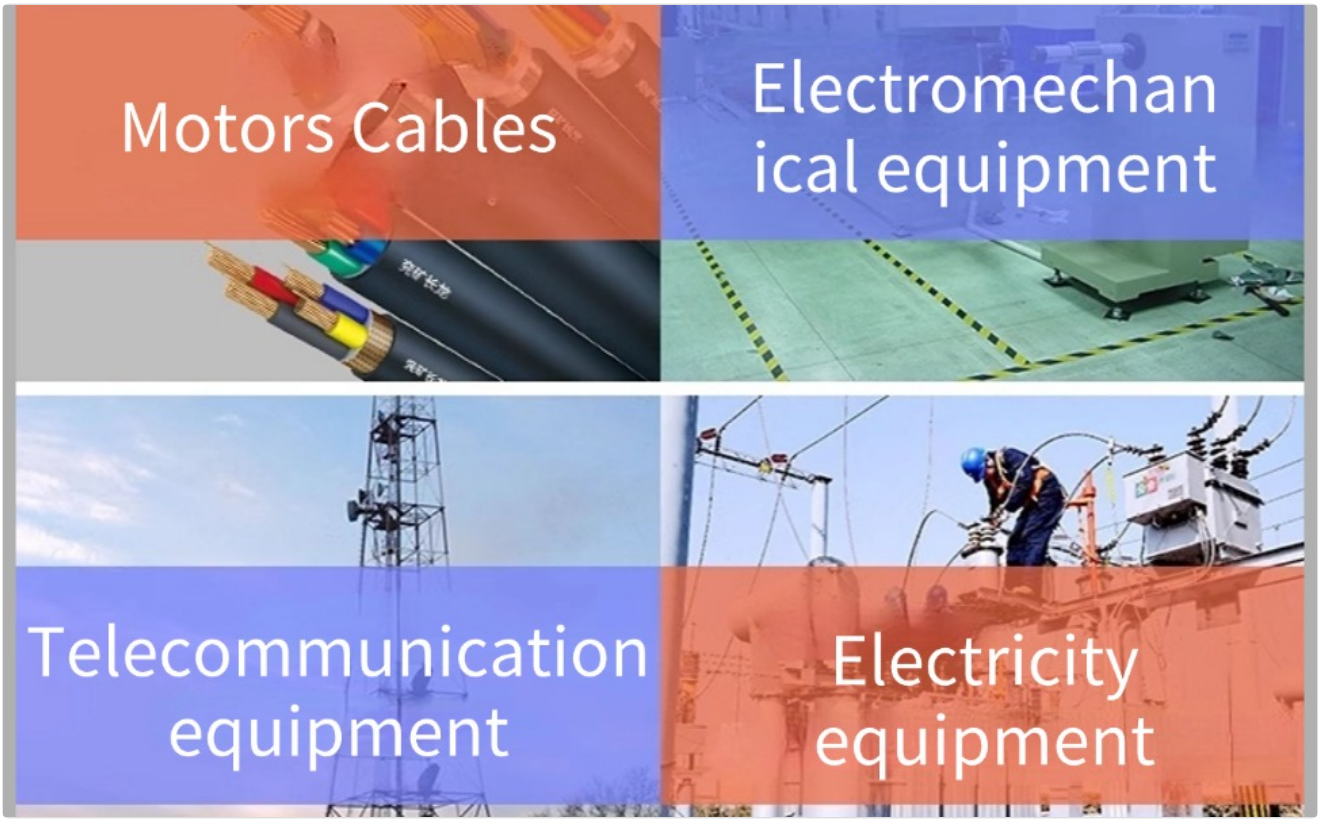


Figure 5: Various applications for the BM500A insulation tester.

6. Maintenance

6.1 Cleaning

Wipe the tester's casing with a damp cloth. Do not use abrasive cleaners or solvents. Ensure the device is dry before storage or next use.

6.2 Battery Replacement

Refer to Section 4.1 for battery replacement instructions. Always use fresh batteries of the specified type.

6.3 Storage

Store the BM500A in a cool, dry place away from direct sunlight and extreme temperatures. If storing for extended periods, remove the batteries to prevent leakage.

7. Troubleshooting

- **Device does not turn on:**
  - Check if batteries are correctly installed and have sufficient charge. Replace if necessary.
  - Ensure the Range Selector Switch is not in the 'OFF' position.
- **Inaccurate readings:**
  - Verify test lead connections are secure and clean.
  - Ensure the correct test voltage is selected for the application.
  - Check for external interference or environmental factors affecting the measurement.
- **Display shows 'OL' (Overload):**
  - The measured resistance is higher than the maximum range of the tester.
- **Display shows 'LO' (Low Battery):**
  - Replace the batteries immediately.

8. Specifications

Feature	Specification
Model Number	BM500A (Fafeicymwp7dg8bef)
Test Voltages	250V, 500V, 1000V
Measuring Range	0.001 ~ 1999 MΩ

Feature	Specification
Maximum Display	1999
Sampling Rate	2.3 times/sec
Power Source	Battery Powered
Material	ABS
Package Dimensions	5.98 x 3.98 x 1.85 inches
Item Weight	10.23 ounces

9. Warranty and Support

For warranty information or technical support, please refer to the documentation provided with your purchase or contact Fafeicy customer service. Keep your purchase receipt as proof of purchase.

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