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BTMETER BT-6688B

BTMETER BT-6688B Digital Insulation Resistance Tester User Manual

Model: BT-6688B

1. INTRODUCTION

This manual provides detailed instructions for the safe and effective operation of the BTMETER BT-6688B Digital Insulation Resistance Tester. The BT-6688B is a high-performance digital megohmmeter designed for measuring insulation resistance, AC voltage, and frequency. It features a wide testing voltage range and a protective casing for durability.

2. SAFETY INFORMATION

Always adhere to safety precautions when using this device. Failure to do so may result in electric shock, injury, or damage to the meter. This device complies with IEC-1010 double insulation and overvoltage category II safety standards.

- Ensure the meter is in good working condition before use.
- Do not operate the meter if the casing is damaged or if any part is exposed.
- Always use the correct test leads and accessories provided with the meter.
- Avoid touching the test leads or circuits during measurement, especially when high voltage is present.
- During any rated voltage measurement, if the measured resistance is less than 5 M Ω , the measurement time should not exceed 10 seconds.
- The meter generates high voltage during insulation resistance tests. Exercise extreme caution.
- Do not use the meter in wet environments or in the presence of explosive gases or dust.
- Refer to local electrical safety codes and regulations.

3. PACKAGE CONTENTS

Verify that all items are present and undamaged upon opening the package.

- BTMETER BT-6688B Digital Insulation Resistance Tester
- Test Leads (Red and Black)

- Large Test Clip (Black)
- User Manual
- Carrying Bag



Image: Contents of the BTMETER BT-6688B package, showing the main unit, test leads, and carrying case.

4. PRODUCT OVERVIEW

Familiarize yourself with the components and controls of the BT-6688B tester.



Image: Detailed diagram of the BT-6688B tester, highlighting the LCD, high voltage indicator, test/stop switch, data hold key, backlight switch, rating voltage rotating switch, input terminals (E, COM, V~, L), and protective casing.

Key Components:

- **LCD:** Displays measurement readings and status indicators.
- **High Voltage Startup Switch (TEST/STOP):** Initiates and terminates insulation resistance tests.
- **Data Holding Key (HOLD):** Freezes the current display reading.
- **Backlight Switch (LIGHT):** Activates or deactivates the LCD backlight.
- **High Voltage Indicator Light (HV):** Illuminates when high voltage is present during testing.
- **Rating Voltage Rotating Switch:** Selects the desired test voltage (100V, 250V, 500V, 1000V, 2500V, 5000V) or AC voltage measurement (750V~).
- **Input Terminals (E, COM, V~, L):** Connection points for test leads based on the measurement type.
- **Protective Casing:** Provides insulation and protection against drops.

5. SETUP

5.1 Battery Installation

The BT-6688B requires batteries for operation. Ensure the meter is OFF before installing or replacing batteries.

1. Carefully remove the protective casing from the meter.
2. Locate the battery compartment on the back of the meter.
3. Open the battery compartment cover.
4. Insert the required batteries, observing correct polarity.
5. Close the battery compartment cover and reattach the protective casing.



Image: The BT-6688B meter with its protective casing removed, revealing the battery compartment. This image also shows the meter's dimensions.

5.2 Connecting Test Leads

Proper connection of test leads is essential for accurate and safe measurements. Refer to the product overview for terminal locations.

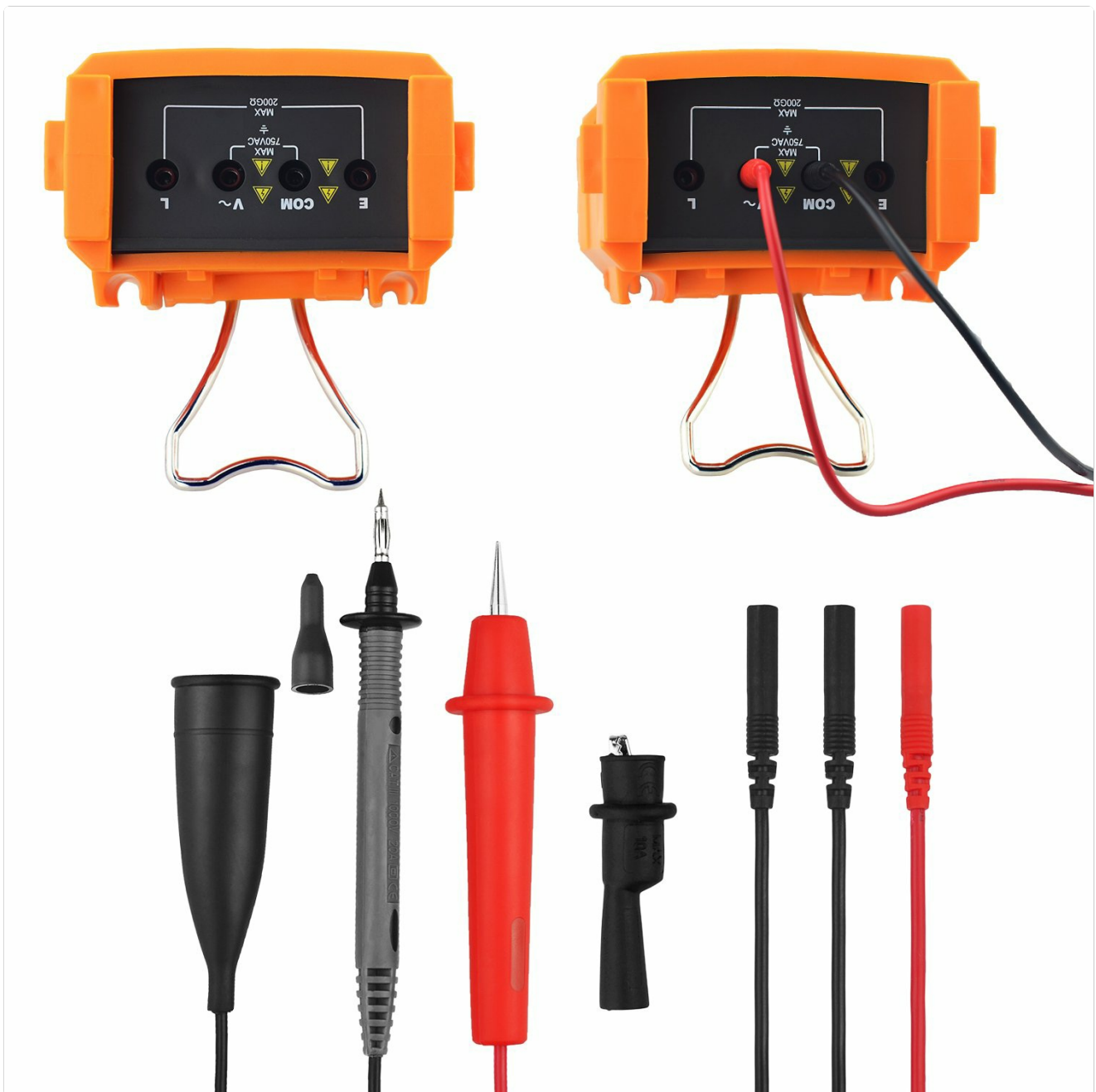


Image: A set of test leads and accessories, including standard probes and a large alligator clip, used with the BT-6688B tester.

6. OPERATING INSTRUCTIONS

6.1 AC Voltage Measurement

The BT-6688B can measure AC voltage from 1V to 750V with a frequency range of 40Hz to 400Hz.

1. Ensure the meter is OFF.
2. Insert the red test lead into the "V~" terminal and the black test lead into the "COM" terminal.
3. Turn the rotating switch to the "750V~" position.
4. Carefully connect the test probes to the circuit or device where AC voltage needs to be measured.
5. Read the AC voltage value displayed on the LCD.

Your browser does not support the video tag.

Video: This video demonstrates the unboxing, setup, and operation of the BTMETER BT-6688B, including a demonstration of AC voltage measurement using the test leads connected to a power strip.

6.2 Insulation Resistance Measurement

The BT-6688B measures insulation resistance from 0.1 M Ω to 200 G Ω with selectable test voltages.

1. Ensure the meter is OFF and the circuit under test is de-energized.
2. Insert the red test lead into the "L" terminal and the black test lead (with the large clip) into the "E" terminal.
3. Clamp the large test clip to one end of the object to be tested (e.g., ground or neutral).
4. Select the desired insulation test voltage (100V, 250V, 500V, 1000V, 2500V, or 5000V) using the rotating switch.
5. Connect the red test probe to the other end of the object to be tested (e.g., live conductor).
6. Press the "TEST/STOP" button to initiate the test. The "HV" indicator will light up, indicating high voltage output.
7. Read the insulation resistance value displayed on the LCD.
8. Press "TEST/STOP" again to stop the test and discharge the circuit.



Image: The BT-6688B tester actively measuring insulation resistance on an electrical panel, demonstrating a typical application.

7. MAINTENANCE

- **Cleaning:** Use a soft, dry cloth to clean the meter. Do not use abrasives or solvents.
- **Storage:** Store the meter in a cool, dry place away from direct sunlight and extreme temperatures. Remove batteries if storing for extended periods.
- **Battery Replacement:** Replace batteries when the low battery indicator appears on the LCD.
- **Calibration:** For optimal accuracy, periodic calibration by qualified personnel is recommended.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Meter does not power on.	Dead or incorrectly installed batteries.	Check battery installation and replace if necessary.
Inaccurate readings.	Poor test lead connection, incorrect range selection, or meter requires calibration.	Ensure secure connections, select appropriate range, or consider professional calibration.
"HV" indicator does not light up during insulation test.	"TEST/STOP" button not pressed, or internal fault.	Press "TEST/STOP" firmly. If issue persists, contact support.
Display shows "OL" (Overload).	Measurement exceeds the selected range.	Select a higher range or verify the circuit under test.

9. SPECIFICATIONS

Feature	Detail
Model	BT-6688B
Insulation Resistance Range	0.1 MΩ to 200 GΩ
Insulation Resistance Accuracy	3% to 10% + 5 digits
Test Voltages	100V, 250V, 500V, 1000V, 2500V, 5000V
AC Voltage Measurement	1V to 750V
Frequency Range (AC Voltage)	40Hz to 400Hz
Safety Standard	IEC-1010 Double Insulation, Overvoltage Category II
Display	LCD with Backlight
Data Hold	Yes
Power Source	Batteries (not included)
Dimensions	26.42 x 23.37 x 8.89 cm
Weight	900 g

10. WARRANTY AND SUPPORT

The BTMETER BT-6688B Digital Insulation Resistance Tester comes with a 1-year warranty from the date of purchase, covering manufacturing defects. This warranty does not cover damage caused by misuse, accidents, unauthorized modifications, or normal wear and tear.

For technical support, warranty claims, or service inquiries, please contact BTMETER customer service through the retailer where the product was purchased or visit the official BTMETER website for contact information.