

BTMETER BT-770S

BTMETER BT-770S Manual Ranging Multimeter

USER MANUAL

1. Introduction

This manual provides instructions for the safe and effective operation of the BTMETER BT-770S Manual Ranging Multimeter. The BT-770S is a versatile digital multimeter designed for measuring AC/DC voltage, AC/DC current, resistance, frequency, capacitance, continuity, diode, hFE, and temperature. It is suitable for automotive, hobbyist, and general electrical home use.

2. Safety Information

WARNING: To avoid electric shock or personal injury, read and understand all safety information before using this multimeter.

- Always ensure the multimeter is in the correct function and range before making measurements.
- Do not measure voltage exceeding the maximum rated input.
- Use caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC. These voltages pose a shock hazard.
- Inspect test leads for damaged insulation or exposed metal before use. Replace if damaged.
- Do not operate the multimeter if it appears damaged or if the case is open.
- Replace the battery when the low battery indicator appears to ensure accurate readings.
- The device complies with UL 61010-1, IEC 61010-2-030, and is CE Marked.

3. Product Overview

The BTMETER BT-770S features a clear LCD display, a rotary function switch, and various input jacks for test leads. It includes a protective rubber sleeve for durability and a built-in stand for convenience.



Figure 3.1: Front view of the BTMETER BT-770S Multimeter, showing the display, function buttons, and rotary switch.



Figure 3.2: Rear features of the multimeter, including the table stand, hanging magnet, and hook mounting options for versatile placement.

4. Setup

4.1 Battery Installation

The BT-770S requires a 9V battery for operation. To install or replace the battery:

1. Ensure the multimeter is powered off and test leads are disconnected.
2. Locate the battery compartment on the back of the unit.
3. Use a screwdriver to open the back panel.
4. Insert a new 9V battery, observing polarity.
5. Securely close the back panel with the screws.

Easy Replaceable Fuses

Open the back panel to install the battery properly before using



Figure 4.1: Illustration of the battery and fuse compartment, demonstrating how to access them for replacement.

4.2 Test Lead Connection

Connect the red test lead to the 'VΩHz' or 'mA/A' input jack and the black test lead to the 'COM' input jack for most measurements. For high current measurements (20A), connect the red lead to the '20A' input jack.

5. Operating Instructions

Turn the rotary switch to the desired function. The multimeter is manual ranging, so select the appropriate range for your measurement. If the value is unknown, start with the highest range and decrease as needed.

5.1 Measuring AC/DC Voltage

1. Turn the rotary switch to the 'V~' (AC Voltage) or 'V=' (DC Voltage) section.
2. Select the appropriate voltage range.
3. Connect the test leads in parallel to the circuit or component being measured.
4. Read the voltage value on the display.

5.2 Measuring AC/DC Current

1. Turn the rotary switch to the 'A~' (AC Current) or 'A=' (DC Current) section.
2. Select the appropriate current range (e.g., 20A for high current).
3. Connect the test leads in series with the circuit.
4. Read the current value on the display.

Your browser does not support the video tag.

Video 5.1: Demonstration of measuring 20A current using the BTMETER BT-770S multimeter.

5.3 Measuring Resistance

1. Turn the rotary switch to the ' Ω ' (Ohm) section.
2. Select the appropriate resistance range.
3. Ensure the circuit is de-energized.
4. Connect the test leads across the component.
5. Read the resistance value on the display.

5.4 Continuity Test

1. Turn the rotary switch to the continuity symbol (speaker icon).
2. Ensure the circuit is de-energized.
3. Connect the test leads across the component or wire.
4. An audible beep indicates continuity (low resistance).

5.5 NCV (Non-Contact Voltage) Detection

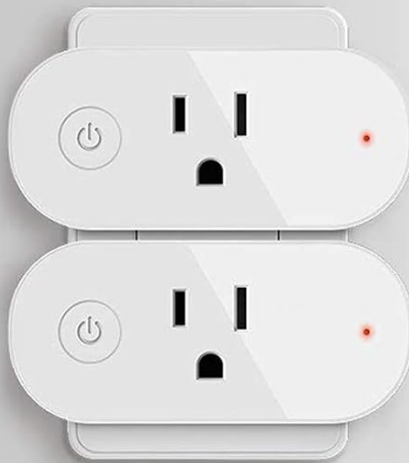
The NCV function allows for detection of AC voltage without direct contact.

1. Turn the rotary switch to the 'NCV' position.
2. Move the top of the multimeter close to the conductor or outlet.
3. The buzzer will alarm and the indicator light will flash if AC voltage is detected.



AUTO BACK LIGHT

Automatically turn on bright backlight and indicator light on the dial when darkness.



LIVE WIRE

NULL WIRE

NCV FUNCTION

There is no need to connect the test leads when measuring voltage



Figure 5.1: The NCV function in use, detecting live wires without physical contact, and the auto backlight feature.

5.6 Other Functions

- **Data Hold (HOLD button):** Press to freeze the current reading on the display. Press again to release.
- **Relative Value (REL button):** Used for relative measurements, displaying the difference between a stored value and the current reading.
- **Max/Min Value (SELECT button):** Press to cycle through maximum and minimum recorded values during a measurement.
- **Auto Backlight:** The display backlight automatically turns on in low light conditions for improved visibility.
- **Auto Shut-off:** The multimeter will automatically power off after approximately 15 minutes of inactivity to conserve battery life.

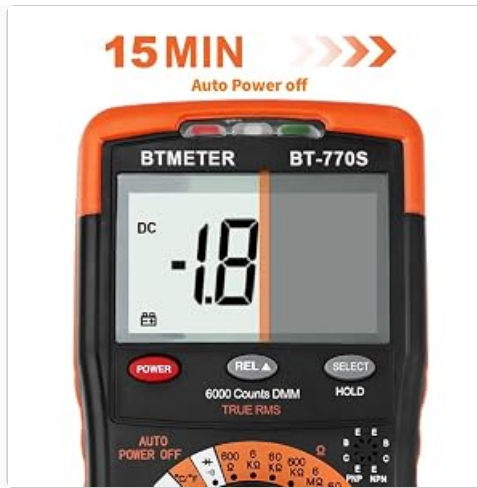


Figure 5.2: The multimeter's display indicating the auto power-off feature, which activates after 15 minutes of no operation to save power.

6. Maintenance

6.1 Battery Replacement

Refer to Section 4.1 for detailed instructions on battery replacement. Always use a fresh 9V battery when the low battery indicator appears on the display.

6.2 Fuse Replacement

The BT-770S is equipped with two internal fuses for protection. If the current measurement function fails, one or both fuses may need replacement. Refer to Figure 4.1 for the location of the fuses.

1. Ensure the multimeter is powered off and test leads are disconnected.
2. Open the back panel as described in Section 4.1.
3. Carefully remove the old fuse(s).
4. Replace with new fuses of the correct rating: F1: 20A/250V, F2: 800mA/250V.
5. Securely close the back panel.

6.3 Cleaning

Wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents. Keep the input terminals free of dirt and moisture.

7. Troubleshooting

- **No Display/Flickering Display:** Check battery level and replace if necessary. Ensure the battery is installed correctly.
- **Incorrect Readings:** Verify the rotary switch is set to the correct function and range. Check test lead connections. Ensure the component or circuit is properly isolated for resistance/continuity measurements.
- **Current Measurement Not Working:** Check and replace the internal fuses if blown (refer to Section 6.2).
- **"OL" or "OVER" on Display:** Indicates an overload or out-of-range measurement. Select a higher range or verify the circuit conditions.

8. Specifications



Figure 8.1: Dimensions of the BTMETER BT-770S Multimeter.

Feature	Specification
Brand	BTMETER
Model	BT-770S
Measurement Type	Multimeter, Ohmmeter
Display Counts	6000 Counts
Power Source	Battery Powered (9V)
Item Weight	200 g
Item Dimensions	5.8 x 2.6 x 1.2 inches
Safety Compliance	UL 61010-1, IEC 61010-2-030, CE Marked
Max AC/DC Current	20A
Max AC/DC Voltage	1000V
Max Resistance	60 MΩ
Max Capacitance	100 mF
Max Frequency	10 MHz
Temperature Range	-58°F to 1832°F (-50°C to 1000°C)

9. Warranty and Support

The BTMETER BT-770S Multimeter comes with a **1-year warranty** from the date of purchase.

For technical support or warranty inquiries, please contact BTMETER customer service. BTMETER provides 7*24 hours technical support to assist you with any questions or issues.

For more information, visit the official BTMETER store:[BTMETER Store](#)

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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