

Walfront MF47

Walfront MF47 Analog Multimeter Instruction Manual

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

1. INTRODUCTION

The Walfront MF47 Analog Multimeter is a versatile and reliable instrument designed for various electrical measurements. It is suitable for testing AC/DC voltage, DC current, and resistance. Featuring a clear dial with a carbon pointer tube to minimize bending errors, and a multi-range measurement capability, this multimeter is an essential tool for home appliance repair, scientific research, educational purposes, property maintenance, and general factory electrical work.

2. SAFETY INFORMATION

Always prioritize safety when using electrical testing equipment. Failure to follow these instructions may result in electric shock, fire, or damage to the meter or the equipment under test.

- Before making any measurement, ensure the multimeter's gear knob is set to the correct range for the expected value. Selecting an incorrect range can damage the device or cause injury.
- Do not exceed the maximum input ratings specified for each measurement function.
- Always disconnect power to the circuit before measuring resistance or continuity.
- Use extreme caution when working with live circuits. Avoid touching exposed conductors.
- Inspect test leads for damage before each use. Do not use if insulation is cracked or if the probes are exposed.
- Replace batteries promptly when the low battery indicator appears to ensure accurate readings.
- Do not operate the multimeter in wet environments or explosive atmospheres.

3. PRODUCT OVERVIEW

The Walfront MF47 Analog Multimeter features a robust design with clearly labeled components for ease of use. Familiarize yourself with the layout before operation.



This image displays the key components of the MF47 Analog Multimeter, including the support frame, the measurement dial, the zero adjustment knob, the triode test jack, the resistance and voltage input terminals, the common jack, the ohm zeroing control, the gear knob for range selection, the 2500V voltage jack, and the DC 10A jack.

Key Components:

- **Support Frame:** Provides stability and allows for angled viewing.
- **Dial:** Displays measurement readings with multiple scales for different functions.
- **Zero Adjustment Knob:** Used to set the pointer to zero before taking measurements, especially for resistance.
- **Triode Test Jack:** For testing transistors (NPN/PNP).
- **Resistance/Voltage Input Terminal:** Positive input for resistance and voltage measurements.
- **Common Jack (COM):** Negative input terminal for all measurements.
- **Ohm Zeroing:** Fine adjustment for resistance zeroing.
- **Gear Knob:** Rotary switch to select the desired measurement function and range.
- **2500V Voltage Jack:** Dedicated input for high voltage measurements.
- **DC 10A Jack:** Dedicated input for high DC current measurements.

4. SPECIFICATIONS

The following table outlines the technical specifications and measurement ranges of the Walfront MF47 Analog Multimeter:

Limit Range	Sensitivity And Voltage Drop	Accuracy	
DC current	0-0.5mA-0.5mA 5mA-50MA-500mA	0.25V	2.5
	10A (no fuse protection)		5
DC Voltage	0-0.25V-1V-2.5V-10V-50V	20kΩ	2.5
	250V-500V-1000V-2500V	9kΩ	
AC Voltage	0-10V-50V-250V500V-1000V-2500V		
DC Resistance	Rx1/Rx10/Rx100R	Center value 16.5	10
	Rx1k/Rx10k/Rx100k		
On Off Beep	The buzzer works when it is lower than 50Q		

This table details the technical specifications of the MF47 Analog Multimeter, outlining the measurement ranges, sensitivity, voltage drop, and accuracy for various functions such as DC current, DC voltage, AC voltage, DC resistance, and the on/off beep threshold.

Measurement Type	Limit Range	Sensitivity / Voltage Drop	Accuracy
DC Current	0-0.5mA, 0-5mA, 0-50mA, 0-500mA, 10A (no fuse protection)	0.25V	2.5% (for mA ranges), 5% (for 10A)
DC Voltage	0-0.25V, 0-1V, 0-2.5V, 0-10V, 0-50V, 0-250V, 0-500V, 0-1000V, 0-2500V	20k Ω /V (for 0.25V-50V), 9k Ω /V (for 250V-2500V)	2.5%
AC Voltage	0-10V, 0-50V, 0-250V, 0-500V, 0-1000V, 0-2500V	9k Ω /V	5%

Measurement Type	Limit Range	Sensitivity / Voltage Drop	Accuracy
DC Resistance	Rx1, Rx10, Rx100, Rx1k, Rx10k, Rx100k	Center value 16.5	10%
On Off Beep	Continuity	Buzzer works when resistance is less than 50Ω	N/A

Power Source: 1 x 9V 6F22 square battery or 1 x 1.5V LR20 battery (batteries not included).

5. SETUP

5.1. Battery Installation

1. Ensure the multimeter is turned OFF.
2. Locate the battery compartment cover on the back of the unit.
3. Carefully remove the cover.
4. Insert one 9V 6F22 square battery and one 1.5V LR20 battery, observing the correct polarity (+/-) as indicated inside the compartment.
5. Replace the battery compartment cover securely.

5.2. Connecting Test Leads

The multimeter comes with two test leads (red and black). Connect them to the appropriate jacks for your measurement type.



This image shows the red and black test leads included with the multimeter, essential for making electrical connections during measurements.

- Always connect the black test lead to the **COM** (Common) jack.
- For most voltage and resistance measurements, connect the red test lead to the **Resistance/Voltage Input Terminal** (usually marked with a '+' or 'VΩmA').
- For high DC current measurements (up to 10A), connect the red test lead to the **DC 10A Jack**.
- For very high voltage measurements (up to 2500V), connect the red test lead to the **2500V Voltage Jack**.

6. OPERATING INSTRUCTIONS

Important: Always ensure the gear knob is set to the correct measurement function and range before connecting the test leads to a circuit. Incorrect settings can lead to damage or injury.



This image provides a detailed view of the multimeter's central gear knob and the surrounding measurement scales on the dial. It highlights the various settings for ACV, DCV, DCmA, and resistance, along with the 2500V voltage jack and 10A current jack.

6.1. Measuring DC Voltage (DCV)

1. Connect the black test lead to the COM jack and the red test lead to the Resistance/Voltage Input Terminal.
2. Turn the gear knob to the desired DCV range. Start with the highest range if the voltage is unknown to prevent overload.
3. Connect the test probes in parallel across the component or circuit where you want to measure voltage.
4. Read the voltage value from the appropriate DCV scale on the dial.

6.2. Measuring AC Voltage (ACV)

1. Connect the black test lead to the COM jack and the red test lead to the Resistance/Voltage Input Terminal.
2. Turn the gear knob to the desired ACV range. Start with the highest range if the voltage is unknown.
3. Connect the test probes in parallel across the AC voltage source or component.

4. Read the voltage value from the appropriate ACV scale on the dial.

6.3. Measuring DC Current (DCmA/DC 10A)

1. **For mA ranges:** Connect the black test lead to the COM jack and the red test lead to the Resistance/Voltage Input Terminal.
2. **For 10A range:** Connect the black test lead to the COM jack and the red test lead to the DC 10A Jack.
3. Turn the gear knob to the desired DCMa or DC 10A range. Start with the highest range if the current is unknown.
4. Connect the multimeter in series with the circuit. This means breaking the circuit and inserting the multimeter so that the current flows through it.
5. Read the current value from the appropriate DCMa scale on the dial.

6.4. Measuring Resistance (Ω)

1. Ensure the circuit is completely de-energized before measuring resistance.
2. Connect the black test lead to the COM jack and the red test lead to the Resistance/Voltage Input Terminal.
3. Turn the gear knob to the desired resistance (Ω) range (e.g., Rx1, Rx10, Rx1k).
4. Short the two test probes together. Use the Zero Adjustment Knob and Ohm Zeroing control to set the pointer exactly to zero on the resistance scale.
5. Connect the test probes across the component whose resistance you want to measure.
6. Read the resistance value from the appropriate Ω scale on the dial. Multiply the reading by the selected range multiplier (e.g., if on Rx100 range and pointer reads 50, the resistance is $50 \times 100 = 5000\Omega$).

6.5. Continuity Test (On Off Beep)

1. Ensure the circuit is de-energized.
2. Connect the black test lead to the COM jack and the red test lead to the Resistance/Voltage Input Terminal.
3. Turn the gear knob to an appropriate resistance range that includes the continuity function (often indicated by a speaker symbol or a low resistance range).
4. Touch the test probes across the component or wire. If the resistance is less than 50Ω , the built-in buzzer will sound, indicating continuity.

7. MAINTENANCE

7.1. Cleaning

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

7.2. Battery Replacement

When the multimeter's performance degrades or the pointer does not zero correctly, it may be time to replace the batteries. Follow the battery installation steps in Section 5.1.

7.3. Fuse Replacement

The MF47 Analog Multimeter is designed with internal double protection, likely referring to fuses. If the current

measurement function stops working, a fuse may need replacement. Refer to a qualified technician for fuse replacement to ensure proper type and rating are used.

8. TROUBLESHOOTING

- **No Reading / Incorrect Reading:**
 - Check if the gear knob is set to the correct function and range.
 - Ensure test leads are securely connected to the correct jacks.
 - Verify that the batteries are installed correctly and have sufficient charge.
 - For resistance measurements, ensure the meter is zeroed correctly.
- **Pointer Bending Error:** This can occur due to overload. Always select a higher range first if the value is unknown.
- **Meter Damage:** If the meter was connected to a circuit with an incorrect range selected, it might be damaged. Discontinue use and seek professional repair.

9. WARRANTY AND SUPPORT

For technical assistance, warranty claims, or product support, please contact Walfront customer service through the retailer where the product was purchased or visit the official Walfront website. Please have your product model (MF47) and purchase details available when contacting support.

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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.

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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.

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