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allsun EM3081

Product Instruction Manual

ALLOSUN Digital Multimeter (Model: EM3081)

1. Product Overview

The ALLOSUN Digital Multimeter EM3081 is a compact, pocket-sized multi-tester designed for measuring DC/AC voltage, DC current, resistance, diode, and continuity. Its portable design makes it convenient for various electrical testing needs.

Key Features:

- Power supplied by 2 pieces 1.5V button cell batteries.
- Features a 3 1/2-digit LCD with a maximum reading of 1999.
- Easy to carry due to its box-type design.
- Pocket size with powerful multi-function capabilities.
- Capable of measuring DC/AC voltage, DC current, resistance, diode, and continuity.



Figure 1: ALLOSUN Digital Multimeter EM3081 with its integrated test leads and protective case.

2. Safety Information

Always read and understand the user manual before operating the multimeter. Observe all safety precautions to prevent electric shock, injury, or damage to the meter.

- Ensure the multimeter is set to the correct function and range before making any measurements.
- Do not attempt to measure voltages or currents exceeding the specified maximum ratings.
- Always disconnect power to the circuit before connecting or disconnecting test leads, especially when measuring current.
- Inspect test leads for any damage before use. Do not use if insulation is compromised.
- Avoid touching exposed wires or circuit components while measuring.
- Replace batteries and fuses only with the specified type and rating.

3. Setup

Battery Installation / Insulation Removal:

Before first use, it is necessary to remove the battery's insulating sheet to activate the multimeter. The device is powered by two 1.5V button cell batteries (LR44).

1. Locate the two small screws on the back panel of the multimeter.
2. Using a small Phillips head screwdriver, carefully unscrew and remove these two screws.
3. Gently open the back cover to reveal the internal circuit board and battery compartment.
4. Locate the battery (or batteries) and carefully remove the clear plastic insulating sheet that is placed between the battery and its contact.
5. Ensure the batteries are properly seated.
6. Close the back cover and secure it by re-inserting and tightening the two screws.



Figure 2: Visual guide for removing the battery insulation sheet.

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Video 1: Instructions on how to remove the battery insulation before using the multimeter.

4. Operating Instructions

The ALLOSUN EM3081 offers various measurement functions. Always ensure the function switch is set to the appropriate position for the desired measurement.



Figure 3: Icons representing the various functions of the multimeter.

4.1. Continuity Test

To check for continuity, set the function switch to the "Ω" position, then set the range switch to the "•)))" position. Connect the test leads across the circuit to be tested. If the resistance is less than approximately 30Ω, the built-in buzzer will sound, indicating continuity.

4.2. Diode Test

For diode testing, set the function switch to the "Ω" position, then set the range switch to the "►|+" position. Connect the red test lead to the anode of the diode and the black test lead to the cathode of the diode. Read the forward voltage drop on the display.

4.3. Measuring Resistance

To measure resistance, set the function switch to the "Ω" position, then set the range switch to the desired resistance measuring range (e.g., 200Ω, 2KΩ, 20KΩ, 200KΩ, 2000KΩ). Connect the test leads across the object to be measured. Read the resistance value on the display.

4.4. Measuring DC Voltage

To measure DC voltage, set the function switch to the "V=" position, then set the range switch to the desired range (e.g., 200mV, 2V, 20V, 200V, 600V). Connect the test leads across the source or circuit to be tested, ensuring correct polarity. Read the voltage on the display.

4.5. Measuring AC Voltage

To measure AC voltage, set the function switch to the "V~" position, then set the range switch to the "600V~" or "200V~" range position. Turn off power to the circuit to be tested, and discharge all capacitors. Break the circuit path to be tested, then connect the test leads in series with the circuit. Finally, turn on power to the circuit and read the voltage on the display.

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Video 2: Demonstration of various tests including continuity, diode, resistance, DC voltage, and AC voltage measurements using the ALLOSUN Digital Multimeter EM3081. (Continuity: 1:14, Diode: 1:27, Resistance: 1:35, DC Voltage: 1:48, AC Voltage: 2:11)



Figure 4: The compact design of the multimeter allows for easy portability in a pocket.

5. Maintenance

Cleaning:

Wipe the meter with a damp cloth and mild detergent. Do not use abrasives or solvents. Keep the meter dry.

Battery Replacement:

If the display shows a low battery indicator, replace the two 1.5V LR44 button cell batteries. Follow the steps outlined in the "Setup" section for opening the back cover and accessing the batteries.

Fuse Replacement:

The multimeter is equipped with a fuse for overload protection. If the current measurement function stops working, the fuse may need replacement. Refer to the internal layout for fuse location. Ensure to use a fuse with the specified rating (FUSED 200mA MAX).



Figure 5: The internal fuse provides overload protection for enhanced safety.

6. Troubleshooting

- **No Display / Faint Display:** Check battery insulation removal (refer to Setup section). Replace batteries if they are low or depleted.
- **Incorrect Readings:** Ensure the function switch is set to the correct measurement type and range. Verify test leads are properly connected.
- **No Current Measurement:** Check if the fuse is blown (refer to Maintenance section for fuse replacement).
- **Continuity Buzzer Not Sounding:** Ensure the resistance is below 30Ω. Check for proper connection of test leads.

7. Specifications

Attribute	Value
Item Model Number	EM3081
Product Dimensions	5.67 x 2.2 x 0.91 inches
Item Weight	3.53 ounces (0.1 Kilograms)
Batteries	2 LR44 batteries required (included)
Brand	allsun
Power Source	Battery Powered
Style	Digital
Color	Black
Manufacturer	Zhangzhou Eastern Intelligent Meter Co., Ltd
Country of Origin	China



Figure 6: Dimensions of the ALLOSUN Digital Multimeter EM3081.

8. Warranty and Support

For warranty information and customer support, please refer to the documentation provided with your purchase or contact the manufacturer directly. A detailed User Manual (PDF) may also be available for download from the manufacturer's official website or the product's listing page.

For additional support, you may refer to the official User Manual (PDF) available at:ALLOSUN EM3081 User Manual

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