allsun EM306B

All-Sun Digital Clamp Meter & Multimeter User Manual

Brand: allsun | Model: EM306B

1. Product Overview

The All-Sun Digital Clamp Meter & Multimeter (Model EM306B) is a versatile handheld instrument designed for electrical testing. It combines the functions of a clamp meter and a multimeter, allowing for various measurements including AC current, AC/DC voltage, resistance, diode, and continuity tests.

Key features include:

- AC current, AC/DC voltage, resistance, diode, and continuity test capabilities.
- 3 1/2-digit LCD with a maximum reading of 1999.
- Compact and portable design.
- Powered by three 3V CR2032 batteries.





Figure 1: Front view of the All-Sun Digital Clamp Meter EM306B, showing the clamp jaws, rotary dial, LCD display, and input jacks.

2. Safety Information

Always observe safety precautions when using electrical testing equipment. Failure to do so may result in injury or damage to the meter or equipment under test.

- Do not exceed the maximum input values for any function.
- Ensure the meter is set to the correct function and range before making measurements.
- Use caution when working with live circuits.
- Inspect test leads for damage before use.
- The conductor should be in the center of the jaws and perpendicular to the current probe when measuring current.

3. Setup and Battery Installation

The EM306B is powered by three 3V CR2032 batteries.

3.1 Battery Installation

1. Locate the battery compartment on the back of the meter.
2. Use a screwdriver to open the battery cover.
3. Insert three CR2032 batteries, observing the correct polarity (+/-).
4. Replace the battery cover and secure it with the screw.





Figure 2: Rear view of the clamp meter, illustrating the battery compartment location.

4. Operating Instructions

This section details how to perform various measurements with your EM306B clamp meter.

4.1 AC Current Measurement (Clamp Function)

The clamp function allows for non-contact measurement of AC current.

1. Turn the rotary dial to the desired AC current range (20A, 200A, or 400A).
2. Open the clamp jaws by pressing the trigger.
3. Enclose only **one** conductor within the jaws. Ensure the conductor is centered and perpendicular to the jaws.
4. Close the jaws. The AC current reading will appear on the LCD display.

Important Note: Only clamp a single conductor for accurate current measurement. Clamping multiple conductors carrying current in opposite directions will result in an inaccurate or zero reading.



Figure 3: Proper technique for clamping a single conductor to measure AC current.

4.2 AC/DC Voltage Measurement

To measure AC or DC voltage, use the provided test leads.

1. Insert the black test lead into the "COM" (common) input jack.
2. Insert the red test lead into the "V/Ω/+" input jack.
3. Turn the rotary dial to the desired AC Voltage (600V~) or DC Voltage (600V=) range.
4. Connect the test probes in parallel to the circuit or component you wish to measure.
5. The voltage reading will appear on the LCD display.



Figure 4: Connecting test leads for voltage, resistance, or diode measurements.

4.3 Resistance Measurement

To measure resistance, ensure the circuit is de-energized before connecting the test leads.

1. Ensure the circuit or component is powered off and discharged.
2. Insert the black test lead into the "COM" input jack and the red test lead into the "V/Ω/+" input jack.
3. Turn the rotary dial to the desired resistance range (200Ω or 20kΩ).
4. Connect the test probes across the component whose resistance you want to measure.
5. The resistance reading will appear on the LCD display.

4.4 Diode Test

The diode test function allows you to check the forward voltage drop of a diode.

1. Ensure the diode is disconnected from any circuit.
2. Insert the black test lead into the "COM" input jack and the red test lead into the "V/Ω/+" input jack.
3. Turn the rotary dial to the diode symbol (→|—).
4. Connect the red test probe to the anode and the black test probe to the cathode of the diode.
5. The forward voltage drop (in millivolts) will be displayed. Reverse the probes; an open circuit (OL) reading indicates a good diode.



Figure 5: Performing a diode test using the test leads.

4.5 Continuity Test

The continuity test checks for an open or closed circuit and typically provides an audible beep for continuity.

1. Ensure the circuit or component is powered off and discharged.
2. Insert the black test lead into the "COM" input jack and the red test lead into the "V/Ω/+" input jack.
3. Turn the rotary dial to the continuity symbol (♫).
4. Connect the test probes across the circuit or component.
5. A continuous beep indicates continuity (a closed circuit). No beep indicates an open circuit.

5. Maintenance

5.1 Cleaning

Wipe the meter's casing with a damp cloth and mild detergent. Do not use abrasives or solvents. Keep the display clean and free from dust.

5.2 Battery Replacement

When the battery indicator appears on the LCD, replace the batteries as described in Section 3.1. Remove batteries if the meter is not used for extended periods to prevent leakage.

6. Troubleshooting

- **No display or dim display:** Check battery installation and replace batteries if necessary.
- **Inaccurate readings:**
  - Ensure the correct function and range are selected.
  - For current measurements, ensure only one conductor is clamped.
  - Check test lead connections and for any damage to leads.
  - Ensure batteries are not low.
- **"OL" (Overload) displayed:** The measured value exceeds the selected range. Switch to a higher range or ensure the input is within the meter's capabilities.

7. Specifications

Specification	Value
Model	EM306B
Display	3 1/2-digit LCD, max. reading 1999
AC Current Ranges	20A, 200A, 400A
AC/DC Voltage Ranges	Up to 600V
Resistance Ranges	200Ω, 20kΩ
Diode Test	Yes
Continuity Test	Yes
Power Source	3 x 3V CR2032 batteries
Dimensions	17 x 9.6 x 3.8 cm
Item Weight	127 g
Certification	IEC 61010-1
Manufacturer	Zhangzhou Eastern Intelligent Meter Co.

8. Warranty and Support

8.1 Warranty Information

Specific warranty terms for the All-Sun Digital Clamp Meter EM306B are provided by the manufacturer, Zhangzhou

Eastern Intelligent Meter Co. Please refer to the product packaging or the manufacturer's official website for detailed warranty coverage and registration information.

8.2 Customer Support

For technical assistance, troubleshooting, or inquiries regarding your All-Sun Digital Clamp Meter, please contact the manufacturer's customer support. Contact details can typically be found on the product packaging, the manufacturer's website, or through your point of purchase.

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