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› [allsun](#) /

› allsun EM3085A Auto Ranging Pocket Digital Multimeter Instruction Manual

allsun EM3085A

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Model: EM3085A

1. INTRODUCTION

This allsun EM3085A digital multimeter is a compact, 3 3/4 digits autorange instrument designed for precise electrical measurements. It measures DC and AC voltage, DC and AC current, resistance, continuity, diode, capacitance, and frequency. Key features include non-contact AC voltage detection (NCV), data hold, and automatic power-off for convenience and safety. This tool is designed for ease of operation, making it a useful instrument for various electrical testing tasks.

2. PRODUCT OVERVIEW

The allsun EM3085A is a pocket-sized digital multimeter, designed for portability and ease of use. Its compact form factor allows it to be easily carried and stored.



Figure 1: Front Panel of the allsun EM3085A Multimeter

Front Panel Components:

1. **Test Leads:** Used for connecting the multimeter to the circuit under test.
2. **NCV Sensor:** Located beside the LCD display, used for non-contact AC voltage detection.
3. **Display:** A 3 3/4 digits LCD for showing measurement readings.
4. **"HOLD" Key:** Used to enter or exit Data Hold mode, which freezes the current reading on the display.
5. **"FUNC" Key:** Used to switch between DC current and AC current measurement functions, DC voltage and AC voltage measurement functions, and Resistance, Diode, Continuity, and Capacitance test functions.
6. **LED Indicator:** Lights up when the built-in buzzer sounds, typically during continuity checks or NCV detection.
7. **Rotary Switch:** Used to select the desired measurement function and to turn the meter on or off. Set to "OFF" position when not in use to save battery charge.

The size is for meter in folded state
Size: 113mm x 60mm x 25mm



Figure 2: Multimeter in folded state with dimensions (113mm x 60mm x 25mm)



Figure 3: Various views of the multimeter, highlighting its integrated test leads and compact design.

3. SETUP

3.1 Battery Installation

The allsun EM3085A is powered by one (1) AAA 1.5V battery (not included). To install or replace the battery:

1. Ensure the multimeter is turned off and test leads are disconnected.
2. Locate the battery compartment on the back of the unit.
3. Use a screwdriver to open the battery compartment cover.
4. Insert the AAA 1.5V battery, observing correct polarity (+/-).

5. Replace the battery compartment cover and secure it with the screw.

POWER UPGRADE



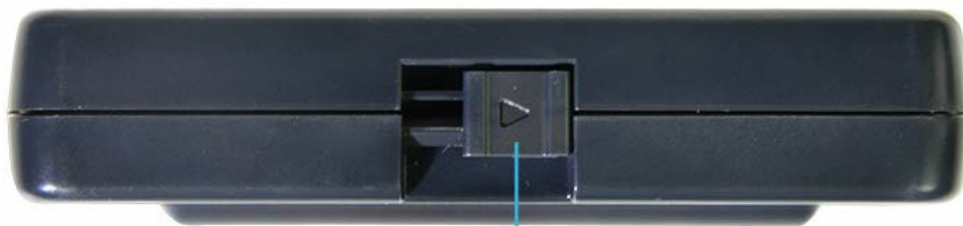
Figure 4: Battery installation for EM3085A (1x AAA 1.5V Battery)

3.2 Connecting Test Leads

The multimeter features integrated test leads. Ensure they are properly seated in their respective ports before use.



Tight Hinge in Both Side



Slider Lock

Figure 5: The multimeter features a slider lock to secure the device when closed, protecting the integrated test leads.

4. OPERATING INSTRUCTIONS

The allsun EM3085A is an auto-ranging multimeter, simplifying operation by automatically selecting the correct measurement range.

INTRODUCTION

This instrument is a compact 3 3/4 digits autorange digital multimeter designed to measure DC and AC voltage, DC and AC current, resistance, continuity, diode, capacitance, and frequency. It features non-contact AC voltage detection, data hold, and automatic power-off. It is easy to operate and is a useful test tool.

FRONT PANEL



1. Test Leads

2. NCV Sensor

An sensor used in non-contact ac voltage detection. It is located at the mark " NCV " which is just beside the LCD display.

3. Display

3 3/4 digits LCD

4. " HOLD " key

Used to enter or exit Data Hold mode.

5. " FUNC " key

Used to switch between:

- DC current and AC current measurement functions.
- DC voltage and AC voltage measurement functions.
- Resistance, diode, continuity and capacitance test functions.

6. LED Indicator

This LED indicator lights when the built-in buzzer sounds.

7. Rotary Switch

Used to select desired function as well as to turn on or off the meter.

To save battery charge, set this switch in the " OFF " position when the meter is not in use.

Figure 6: Multimeter functions including AC/DC Voltage, AC/DC Current, NCV, Resistance, Capacitance, Frequency, Diode Test, Continuity Test, Data Hold, and Auto Range.

4.1 Understanding the Display



Figure 7: Multimeter LCD Display

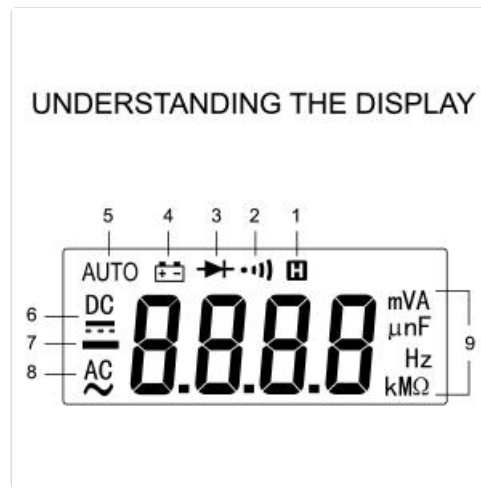


Figure 8: Measurement Units

4.2 Basic Measurements

- **DC and AC Voltage:** Select the DCV or ACV range using the rotary switch. Connect the test leads to the circuit in parallel.
- **DC and AC Current:** Select the DCA or ACA range. Connect the test leads in series with the circuit.
- **Resistance:** Select the Ω range. Connect the test leads across the component.
- **Continuity:** Select the continuity range (often indicated by a buzzer icon). The built-in buzzer will sound if resistance is less than approximately 50Ω .
- **Diode Test:** Select the diode test range. The approximate forward voltage drop of the diode will be displayed.
- **Capacitance:** Select the capacitance range.
- **Frequency:** Select the Hz range.
- **Non-Contact AC Voltage (NCV) Detection:** The NCV sensor is used for detecting AC voltage without direct contact. Position the sensor near the AC voltage source.

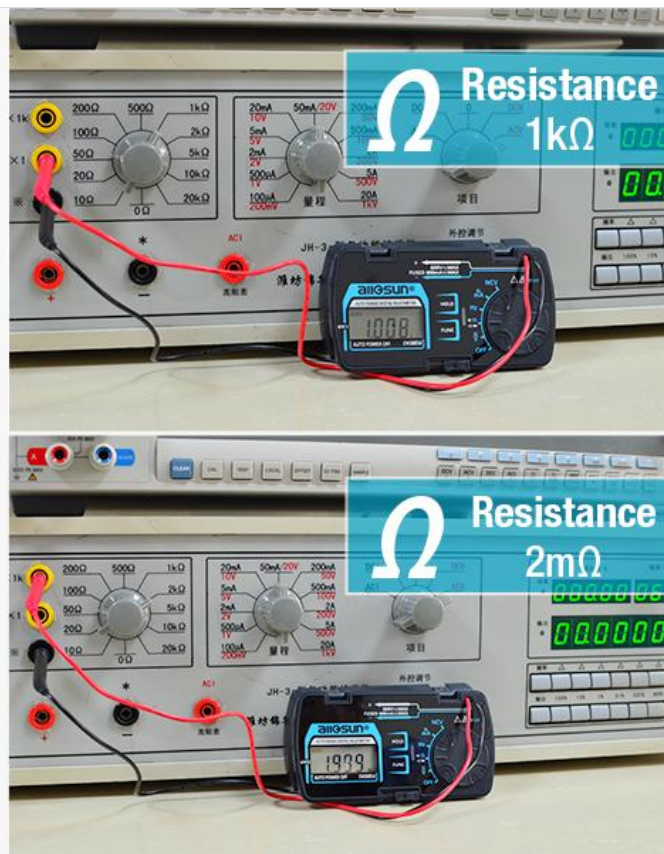


Figure 9: Resistance Measurement Example

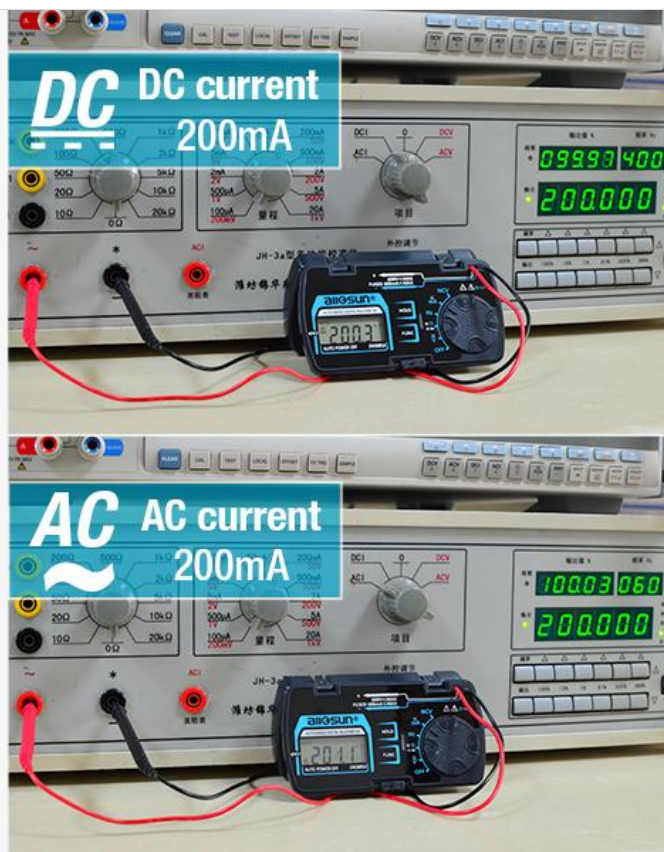


Figure 10: DC and AC Current Measurement Examples

4.3 Video Demonstrations

Mini Digital Multimeter Pocket Sized Voltmeter

This video demonstrates the basic functions and compact size of a mini digital multimeter, including battery installation, voltage, resistance, and continuity testing. It highlights the device's portability and ease of use for everyday electrical troubleshooting.

Neotek 3-in-1 pen type multimeter with phase sequence

This video showcases a pen-type multimeter, demonstrating its capabilities for resistance measurement, DC voltage measurement, AC voltage measurement, and phase sequence detection. While a different form factor, it illustrates common multimeter functionalities.

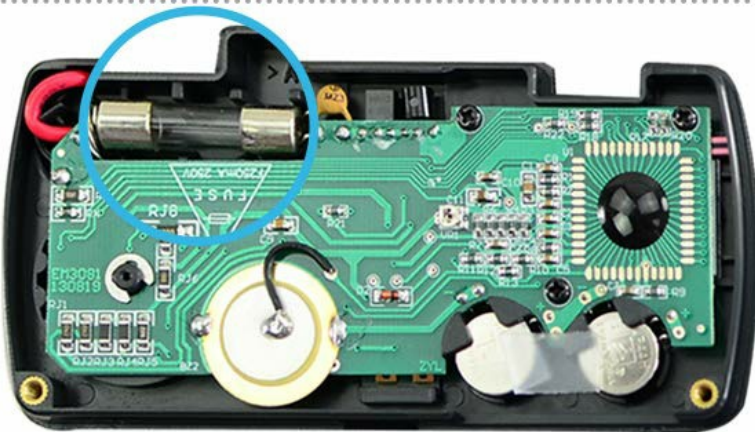
5. MAINTENANCE

5.1 Fuse Replacement

The multimeter has a built-in 500mA/250V fuse for overload protection on all ranges. If the multimeter stops functioning correctly, especially when measuring current, the fuse may need replacement.

1. Ensure the multimeter is turned off and all test leads are disconnected.
2. Open the casing of the multimeter (typically requires a screwdriver).
3. Locate the fuse and carefully remove it.
4. Replace with a new fuse of the exact same rating: 500mA/250V.
5. Close the casing and secure it.

FUSE UPGRADE



EM3081/EM3082
old 250mA 250V

EM3085A
New 500mA 250V

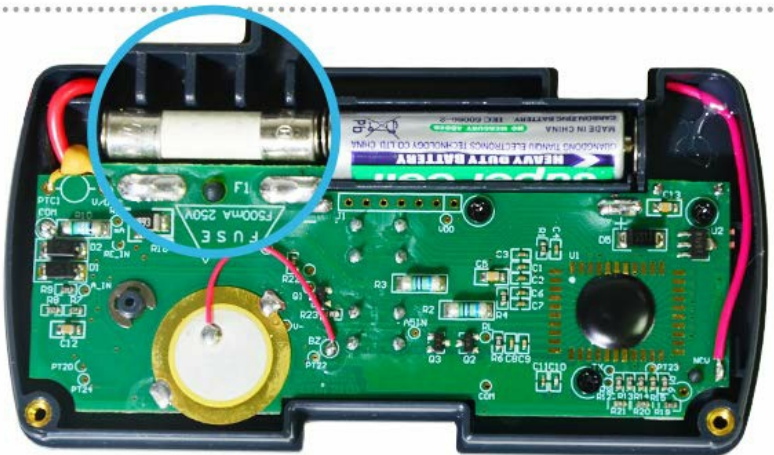


Figure 11: Fuse location for EM3085A (500mA 250V fuse).

5.2 General Care

- Keep the device clean and dry. Use a soft, damp cloth for cleaning; do not use abrasive cleaners or solvents.
- Store the multimeter in a cool, dry place away from direct sunlight and extreme temperatures.
- Always turn off the multimeter when not in use to conserve battery life.

6. TROUBLESHOOTING

If the multimeter is not functioning as expected, consider the following basic troubleshooting steps:

- **No Display or Faint Display:** Check the battery. Replace it if it is low or depleted.

- **Incorrect Readings:** Ensure the correct function is selected on the rotary switch. Verify that the test leads are properly connected and making good contact with the circuit.
- **No Current Measurement:** Check the fuse as described in the Maintenance section. A blown fuse is a common cause for current measurement failure.
- **"OL" (Overload) Display:** This indicates that the measured value exceeds the selected range. For auto-ranging meters, this typically means the value is beyond the meter's maximum capability for that function.

7. SPECIFICATIONS

Model Number	EM3085A
Range	Auto Range
Count	3999
DC Voltage	400m/4/40/400/600V
AC Voltage	4/40/400/600V
DC Current	40m/400mA
AC Current	40m/400mA
NCV	50-600V
Resistance	400/4k/40k/400k/4m/40mΩ
Capacitance	40n/400n/4μ/40μ/400μF/4mF
Frequency	4/40/400/4k/40k/400k/4mHZ
Diode Test	The approx. forward voltage drop of the diode will be displayed.
Continuity Test	The built-in buzzer will sound if the resistance is less than about 50Ω



AUTORANGE

Figure 12: Key Specifications for allsun EM3085A

General Specifications

Feature	Detail
Manufacturer	allsun
Model Number	EM3085A (788537553113)
Item Weight	120 g (0.12 Kilograms)
Parcel Dimensions	13.2 x 7.2 x 3.4 cm
Power Source	Battery Powered (1 AAA 1.5V battery required, not included)
Material	ABS
Colour	Red & Black
Max. Operating Voltage	250 Volts
Sampling Rate	About 3 times/sec
Frequency Range	40Hz to 400Hz
Overload Protection	Built-in 500mA/250V Fuse on all ranges

8. WARRANTY AND SUPPORT

allsun products are manufactured under the ISO9001 International Quality System, ensuring high standards. Most products are exported to Europe and USA with approvals of CE, UL, GS, and CMC. For specific warranty details or technical support, please refer to the product packaging or contact allsun customer service directly.

ASK A QUESTION ABOUT THIS MANUAL

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.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

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