

banapoy A1X

banapoy A1X Smart Digital Auto Ranging Multimeter User Manual

Model: A1X

1. INTRODUCTION

Thank you for choosing the banapoy A1X Smart Digital Auto Ranging Multimeter. This device is designed for accurate and reliable measurement of various electrical parameters, including AC/DC voltage, resistance, capacitance, diode, and continuity. Its smart auto-ranging function simplifies operation, making it suitable for both professionals and DIY enthusiasts. Please read this manual thoroughly before use to ensure safe and proper operation.

2. SAFETY INFORMATION

Always adhere to basic safety precautions when using this multimeter to prevent potential electric shock, fire, or personal injury. Improper use can be dangerous.

- Do not exceed the maximum input values specified for each measurement range.
- Do not use the meter if it or the test leads appear damaged.
- Exercise extreme caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC. These voltages pose a shock hazard.
- Always disconnect power to the circuit and discharge all high-voltage capacitors before testing resistance, continuity, diodes, or capacitance.
- Ensure the test leads are properly seated in the correct input jacks for the desired measurement.
- Do not operate the meter in explosive gas, vapor, or dust environments.
- Keep fingers behind the finger guards on the test probes during measurements.
- Replace the battery immediately when the low battery indicator appears to ensure accurate readings.

3. PRODUCT OVERVIEW

The banapoy A1X Multimeter features a compact design with an intuitive interface. Familiarize yourself with the components shown below.



Figure 3.1: Multimeter Components. This image labels the key parts of the banapoy A1X multimeter, including the Non-Contact Voltage Sensing Area, Flashlight, Display Screen, Function Mode Switching Button, Capacitive Mode Button, Diode Mode Button, Flashlight and Backlight Button, Switch Button, Black Probe Socket, and Red Probe Socket.

Key Components:

- **Non-Contact Voltage (NCV) Sensing Area:** Detects AC voltage without direct contact.
- **Flashlight:** Provides illumination in dark environments.
- **Display Screen:** Shows measurement readings, units, and function indicators.
- **Function Mode Switching Button:** Cycles through different measurement modes.
- **Capacitive Mode Button:** Activates capacitance measurement.
- **Diode Mode Button:** Activates diode test mode.
- **Flashlight and Backlight Button:** Toggles the flashlight and display backlight.
- **Switch Button (Power Button):** Turns the device on or off.

- **Input Jacks:** Sockets for connecting test probes (INPUT, COM).

4. SETUP

4.1 Package Contents

Verify that all items are present in your package:

- 1 x banapoy A1X Digital Multimeter
- 2 x Test Probes (Red and Black)
- 1 x USB Cable (for charging)
- 1 x User Manual (this document)





Figure 4.1: Included Accessories. This image shows the red and black test probes and the USB charging cable that come with the multimeter.

4.2 Charging the Battery

The multimeter is powered by a built-in 3.7V lithium battery. Before first use, or when the low battery indicator appears, charge the device using the provided USB cable.

1. Connect the small end of the USB cable to the charging port on the multimeter.
2. Connect the other end of the USB cable to a standard USB power adapter (not included) or a computer USB port.
3. The charging indicator (if present) will show the charging status. Disconnect once fully charged.

4.3 Connecting Test Probes

For most measurements, the test probes must be connected correctly.

- Insert the **black** test lead into the **COM** (Common) input jack.
- Insert the **red** test lead into the **INPUT** jack for voltage, resistance, capacitance, diode, and continuity measurements.

5. OPERATING INSTRUCTIONS

5.1 Power On/Off and Auto Ranging

- Press the **Switch Button** (red power symbol) to turn the multimeter ON. The display will light up, and it will typically enter auto-ranging mode.
- To turn OFF, press and hold the **Switch Button** until the display turns off.
- In auto-ranging mode, the meter automatically selects the appropriate measurement range, simplifying operation.

5.2 Display Backlight and Flashlight

- Press the **Flashlight and Backlight Button** (light bulb symbol) to toggle the display backlight.

- Press and hold the **Flashlight and Backlight Button** to turn the flashlight ON or OFF.

5.3 Measurement Functions

The multimeter can perform various measurements. Use the **Function Mode Switching Button** (blue button with arrows) and other dedicated buttons to select the desired mode.

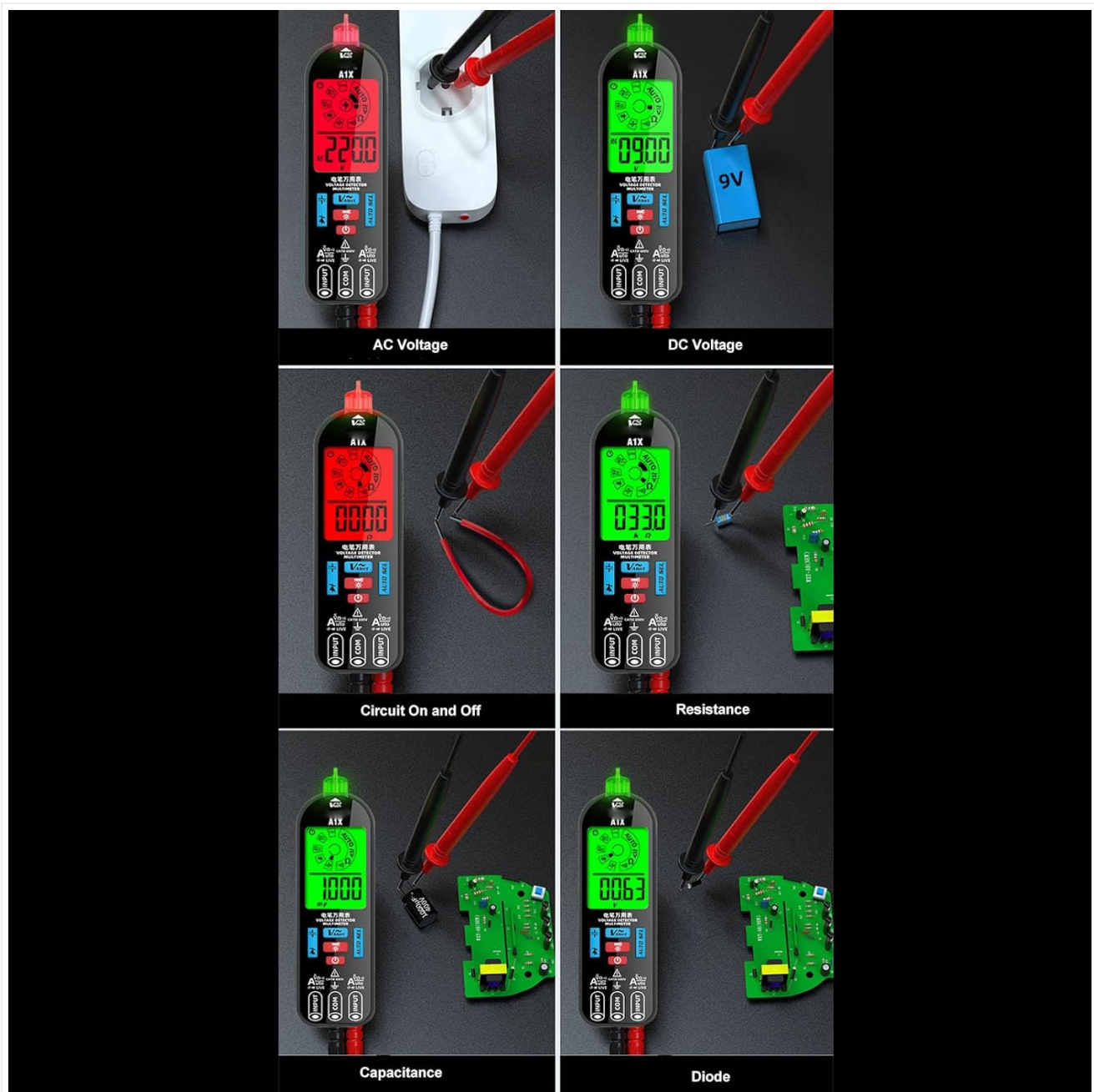


Figure 5.1: Measurement Examples. This image illustrates the multimeter performing various measurements, including AC Voltage, DC Voltage, Circuit On and Off (Continuity), Resistance, Capacitance, and Diode testing.

5.3.1 AC Voltage Measurement

1. Ensure test leads are connected to COM and INPUT jacks.
2. Select AC Voltage mode (often indicated by 'V~' or 'ACV' on the display, or automatically selected in AUTO mode).
3. Carefully touch the red and black probes to the two points of the AC circuit you wish to measure.
4. Read the voltage value on the display.

5.3.2 DC Voltage Measurement

1. Ensure test leads are connected to COM and INPUT jacks.

2. Select DC Voltage mode (often indicated by 'V=' or 'DCV' on the display, or automatically selected in AUTO mode).
3. Touch the red probe to the positive (+) side and the black probe to the negative (-) side of the DC circuit.
4. Read the voltage value on the display. A negative sign indicates reversed polarity.

5.3.3 Resistance Measurement

1. **Important:** Ensure the circuit is de-energized and all capacitors are discharged before measuring resistance.
2. Ensure test leads are connected to COM and INPUT jacks.
3. Select Resistance mode (indicated by ' Ω ' on the display, or automatically selected in AUTO mode).
4. Touch the probes across the component or circuit segment to measure its resistance.
5. Read the resistance value in Ohms (Ω), Kilo-ohms ($k\Omega$), or Mega-ohms ($M\Omega$).

5.3.4 Continuity Test (Circuit On and Off)

1. **Important:** Ensure the circuit is de-energized.
2. Ensure test leads are connected to COM and INPUT jacks.
3. Select Continuity mode (indicated by a speaker symbol or ' Ω ' with a sound wave).
4. Touch the probes across the component or circuit segment.
5. If a continuous beep sounds and the display shows a low resistance value, the circuit is continuous (closed). If no beep sounds and the display shows 'OL' (Open Loop), the circuit is open.

5.3.5 Capacitance Measurement

1. **Important:** Ensure the capacitor is fully discharged before measurement to prevent damage to the meter.
2. Ensure test leads are connected to COM and INPUT jacks.
3. Press the **Capacitive Mode Button** (blue button with capacitor symbol).
4. Touch the probes across the capacitor terminals.
5. Read the capacitance value in Farads (F), microfarads (μF), or nanofarads (nF).

5.3.6 Diode Test

1. **Important:** Ensure the diode is disconnected from the circuit.
2. Ensure test leads are connected to COM and INPUT jacks.
3. Press the **Diode Mode Button** (blue button with diode symbol).
4. Touch the red probe to the anode and the black probe to the cathode of the diode. A forward voltage drop (e.g., 0.5V to 0.8V for silicon diodes) should be displayed.
5. Reverse the probes. The display should show 'OL' (Open Loop) for a good diode.

5.3.7 Non-Contact Voltage (NCV) Detection

This feature allows detection of AC voltage without direct contact with conductors.

1. Select NCV mode (often indicated by 'NVC' or a lightning bolt symbol).
2. Bring the NCV sensing area (top tip of the meter) close to the conductor or outlet.
3. The meter will beep and/or flash its LED indicator with increasing frequency as it approaches a live AC voltage source.

5.3.8 Live Wire Detection

The multimeter may feature a 'LIVE' mode for identifying live wires.

1. Select LIVE mode (indicated by 'LIVE' on the display).
2. Insert the red probe into the suspected live terminal or wire. The black probe may or may not be used depending on

the specific implementation.

3. The display will indicate 'LIVE' and may show a voltage reading or an alarm if a live wire is detected.

6. MAINTENANCE

6.1 Cleaning

- Wipe the meter's casing with a damp cloth and mild detergent. Do not use abrasives or solvents.
- Ensure the meter is completely dry before use.

6.2 Battery Care

- Recharge the built-in lithium battery when the low battery indicator appears.
- If storing the meter for an extended period, charge it periodically to maintain battery health.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
Meter does not power on.	Low or depleted battery.	Charge the multimeter using the USB cable.
Display shows 'OL' (Open Loop).	Open circuit; measurement range exceeded; incorrect mode.	Check circuit continuity; ensure correct measurement mode is selected; verify connections.
Inaccurate readings.	Low battery; incorrect mode; poor probe contact; external interference.	Charge battery; select correct mode; ensure firm probe contact; move away from strong electromagnetic fields.
No NCV detection.	No AC voltage present; NCV mode not selected.	Verify power is present; ensure NCV mode is active.

8. SPECIFICATIONS

Feature	Detail
Display	LCD Screen, 1,000 counts (Maximum Display Value)
Power Supply	Built-in 3.7V Lithium Battery, 400mAh
Material	ABS (Electrical Insulated Casing)
Safety Rating	CAT III 600V (as indicated on device)
Functions	AC/DC Voltage, Capacitance, Resistance, Diode, Continuity, NCV, Live Wire Detection
Special Features	Auto Ranging, Backlight, Flashlight

9. WARRANTY AND SUPPORT

For warranty information or technical support, please refer to the retailer's policy or contact the banapoy customer service directly. Keep your purchase receipt as proof of purchase.