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› Fyearfly ANENG AOS02 2-in-1 Portable Oscilloscope Multimeter User Manual

Fyearfly AOS02

Fyearfly ANENG AOS02 2-in-1 Portable Oscilloscope Multimeter User Manual

Model: AOS02

1. INTRODUCTION

This manual provides detailed instructions for the safe and effective operation of your Fyearfly ANENG AOS02 2-in-1 Portable Oscilloscope Multimeter. This device combines the functionalities of a digital multimeter and a portable oscilloscope, offering versatility for various electrical testing and waveform analysis tasks. Please read this manual thoroughly before using the device and keep it for future reference.

2. PRODUCT OVERVIEW

The ANENG AOS02 is a compact and robust electrical testing tool designed for accuracy and user convenience. It features a high-performance chip for precise data readings and integrated double fuse protection against overloads.

Key Features:

- **2-in-1 Functionality:** Combines digital multimeter and oscilloscope capabilities.
- **Automatic/Manual Waveform Testing:** Automatically recognizes and adjusts waveform amplitude and time base.
- **Probe Compensation:** Supports manual probe compensation with verification via the AUTO key.
- **Data Storage:** Waveform measurements can be saved and transferred to a computer via USB.
- **Double Fuse Protection:** Integrated 200mA 250V and 10A 250V fuses for intelligent anti-burn protection.
- **Auto-Off Function:** Adjustable auto-off time (15, 30, 60, 120 minutes, or unlimited) to conserve battery life.
- **High Count Display:** 9999 counts for detailed measurements.
- **Backlight Brightness Adjustment:** 30%, 50%, 80%, 100% settings.

Package Contents:

- 1 x Oscilloscope Multimeter
- 2 x Test Pens (Multimeter Probes)
- 1 x Temperature Cable

- 1 x Oscilloscope Test Probe
- 1 x USB Data Cable
- 2 x Positioning Sleeves
- 8 x Marking Rings
- 1 x Probe Compensation Screwdriver
- 2 x User Manuals (Printed)
- 1 x Storage Bag



Figure 2.1: The ANENG AOS02 Oscilloscope Multimeter with its complete set of accessories, including test leads, temperature probe, oscilloscope probe, USB cable, and storage bag.

3. SETUP

3.1 Powering On/Off and Charging

The device is equipped with a built-in 3.7V 2000mAh lithium battery. To power on, press and hold the power button (usually marked 'REL' or a power symbol). To power off, press and hold the same button. Charge the device using

the provided USB data cable connected to a standard USB power source.



Figure 3.1: Front view of the ANENG AOS02, showing the display, function buttons, and input jacks.



Figure 3.2: The ANENG AOS02 connected to a laptop via its USB port for data transfer or charging.

3.2 Connecting Test Leads and Probes

Always ensure the device is powered off before connecting or disconnecting test leads and probes. Connect the red test lead to the positive (+) input jack and the black test lead to the common (COM) input jack for multimeter functions. For oscilloscope functions, connect the oscilloscope probe to the dedicated input port, typically located on the top or side of the device.



Figure 3.3: Bottom view of the ANENG AOS02, highlighting the CAT II input port for oscilloscope probe connection.

4. OPERATING INSTRUCTIONS

4.1 Multimeter Functions

Use the 'MODE' button to switch between different multimeter measurement modes. The display will indicate the active mode.

- **Resistance Measurement (Ω):** Connect test leads across the component.
- **Diode Measurement:** Connect test leads across the diode to check forward voltage drop.
- **Continuity Test (On/Off Beep):** Connect test leads across a circuit to check for continuity (a beep indicates continuity).
- **Temperature Measurement:** Connect the temperature cable to the device and place the sensor at the measurement point.
- **AC Current (A~):** Select AC current mode and connect the device in series with the circuit.
- **Milliampere DC Current (mA):** Select DC current mode and connect the device in series with the circuit.

- **Capacitance Measurement:** Connect test leads across the capacitor. Ensure the capacitor is discharged before measurement.



Figure 4.1: Visual guide for performing various multimeter measurements such as resistance, diode testing, continuity, and temperature.



Figure 4.2: Illustrations of AC current, DC current, capacitive discharge, and capacitance measurements using the multimeter function.

4.2 Oscilloscope Functions

The oscilloscope mode allows for visual analysis of electrical waveforms. Use the dedicated oscilloscope probe for these measurements.

- **Automatic Waveform Testing:** The device can automatically recognize and adjust the amplitude and time base of the waveform. Press the 'AUTO' button to initiate this function.
- **Manual Waveform Adjustment:** Use the navigation buttons (up, down, left, right) and function keys (F1-F4) to manually adjust parameters like voltage per division (Vol/Time), trigger level (Trigger), and AC/DC coupling (AC).
- **Probe Compensation:** If the probe magnification is greater than 40V and the attenuation is 10X, the oscilloscope needs to set the probe attenuation to 10 accordingly. The device supports manual probe compensation. You can verify for over-compensation or under-compensation via the 'AUTO' key.

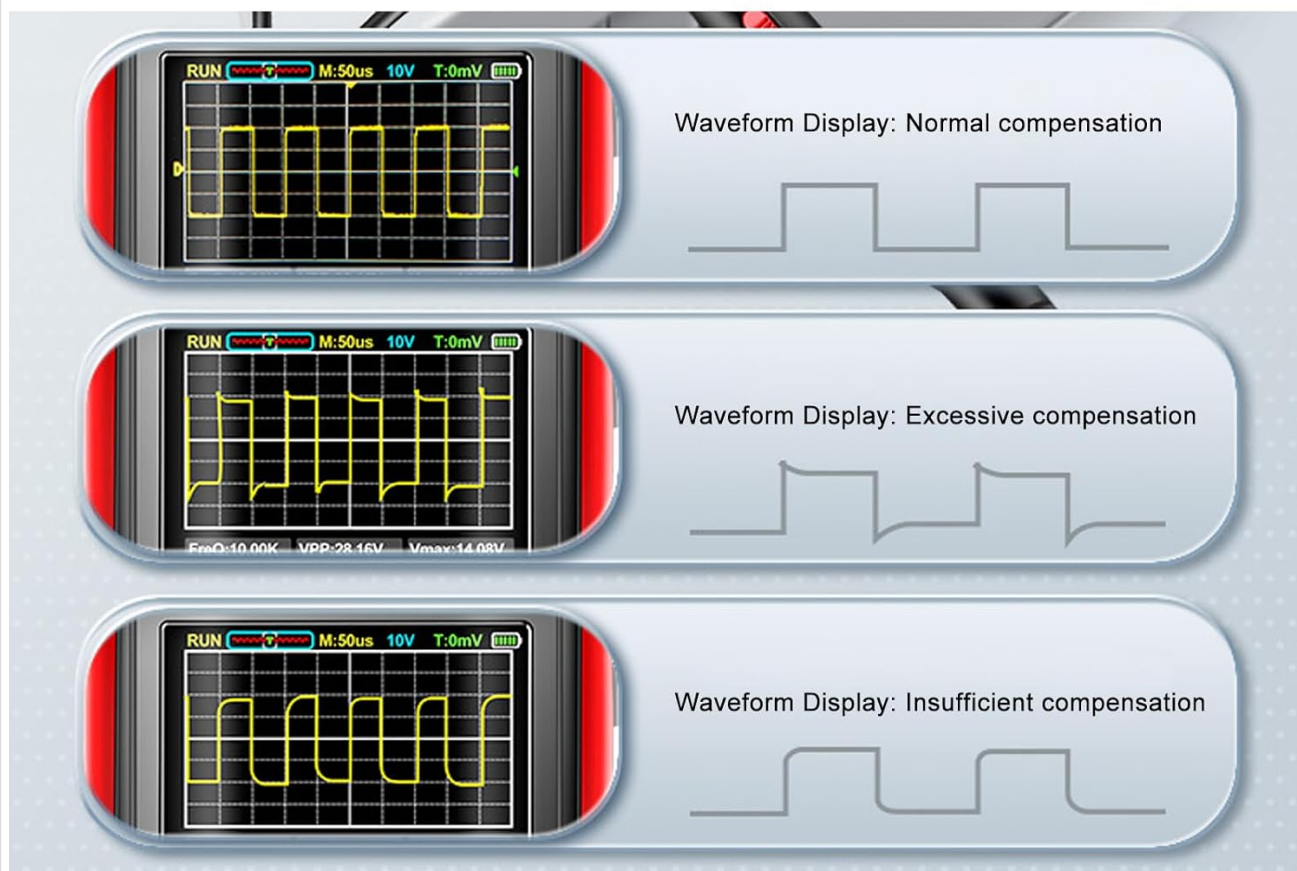


Figure 4.3: Examples illustrating the visual differences between normal, excessive, and insufficient probe compensation on the oscilloscope display.



Oscilloscope Measurement Waveform

If the probe magnification is greater than 40V and the attenuation is 10X, the oscilloscope also needs to set the probe attenuation to 10 accordingly, press the AUTO button to automatically recognize and adjust the waveform amplitude and time base, and display the matched waveform

Figure 4.4: Explanation of how the oscilloscope measures waveforms and the function of the AUTO button for automatic recognition and adjustment of waveform parameters.

4.3 Data Storage and Transfer

The device allows for saving measurement waveforms. To transfer saved data, connect the ANENG AOS02 to a computer using the provided USB data cable. The device will appear as a storage drive, allowing you to access and copy the recorded waveform data.

5. MAINTENANCE

- **Cleaning:** Use a soft, damp cloth to clean the device. Do not use abrasive cleaners or solvents. Ensure the device is powered off and disconnected from any power source before cleaning.
- **Battery Care:** Recharge the built-in lithium battery regularly, especially if the device will not be used for an extended period, to maintain battery health. Avoid fully discharging the battery frequently.
- **Storage:** Store the device in a cool, dry place, away from direct sunlight and extreme temperatures. Use the provided storage bag to protect it from dust and physical damage.
- **Fuse Protection:** The device has double anti-burn fuses (200mA 250V, 10A 250V). These are designed for

protection and are generally not user-replaceable. If the device experiences a fuse-related issue, contact support.

6. TROUBLESHOOTING

Problem	Possible Cause	Solution
Device does not power on.	Low or depleted battery.	Charge the device using the USB cable.
Incorrect multimeter readings.	Incorrect mode selected; faulty test leads; improper connection.	Verify the correct measurement mode. Check test lead connections and integrity.
Oscilloscope waveform distorted or unclear.	Improper probe compensation; incorrect time base/amplitude settings.	Perform probe compensation (refer to Section 4.2). Adjust time base and amplitude settings.
Cannot transfer data to computer.	Faulty USB cable; incorrect connection; driver issue.	Ensure USB cable is securely connected. Try a different USB port or cable. Check computer's device manager for driver issues.

7. SPECIFICATIONS

Feature	Specification
Model	ANENG AOS02
Maximum Display Count	9999 counts
Fuses	200mA 250V, 10A 250V (Double Anti-Burn)
Backlight Brightness Settings	30%, 50%, 80%, 100%
Data Storage	USB connection to computer
Test Pen Line Length	Approx. 107 cm (42.1 inches)
Battery Type	3.7V Lithium Battery (Built-in)
Battery Capacity	2000 mAh
Auto-Off Time Settings	15, 30, 60, 120 minutes, Unlimited
Manufacturer	Fyearfly
Country of Origin	China
Power Source	Battery Powered
Style	Digital
Minimum Operating Voltage	1.5 Volts

8. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided at the time of purchase or contact your retailer. Keep your purchase receipt as proof of purchase.

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