ANENG SZ11

ANENG SZ11 6000 Counts Digital Multimeter Instruction Manual

Model: SZ11 | Brand: ANENG

1. Introduction

The ANENG SZ11 Digital Multimeter is a True RMS 6000 counts magnetic digital tester designed for accurate measurements in various electrical and electronic applications. It features high resolution auto-ranging capabilities for measuring AC/DC voltage, current, resistance, capacitance, frequency, duty-cycle, diodes, continuity, and NCV (Non-Contact Voltage). This manual provides essential information for the safe and effective use of your multimeter.

2. Safety Information

WARNING: Always observe safety precautions when using electrical testing equipment. Failure to do so may result in injury or damage to the device.

- Ensure the multimeter is set to the correct function and range before connecting test leads.
- Do not exceed the maximum input values for any range.
- Inspect test leads for damage before each use. Replace if insulation is compromised.
- Avoid touching exposed conductors or circuit components during measurements.
- Always disconnect power to the circuit before measuring resistance, capacitance, or continuity.
- Use caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC, as they pose a shock hazard.
- The device is equipped with double fuses for anti-burn protection. Do not bypass or use incorrect fuse types.

3. Package Contents

The ANENG SZ11 Multimeter package includes the following items:

- 1x ANENG SZ11 Digital Multimeter Tester
- 1x Combination Lead Set (4x connection sockets, 2x PVC cables, 2x copper needles, 2x U-shaped inserts, 2x meter pens, 2x alligator clips, 2x puncture needles)
- 1x Standard Test Lead Set
- 1x Temperature Probe
- 1x Instruction Manual
- 2x AA Batteries
- 1x Storage Bag

4. Product Overview

The ANENG SZ11 Multimeter is designed for user convenience and durability. Key features include:

- **6000 Counts Display:** Provides high resolution for accurate measurements.
- **Magnetic Adsorption:** Allows the multimeter to securely attach to metal surfaces for hands-free operation.
- **Built-in Flashlight:** Aids visibility in dimly lit work areas.
- **Min/Max Function:** Captures minimum and maximum readings for signal fluctuation analysis.
- **Kickstand:** Integrated kickstand for convenient tabletop viewing.
- **Pen Slot:** Secure storage for test leads on the back of the device.
- **Data Hold:** Freezes the displayed reading for easy recording.
- **Auto Power-Off:** Conserves battery life when not in use.
- **Intelligent LED Jack Indicator:** Guides probe insertion to the correct jacks, preventing incorrect operation and potential damage.

Figure 1: ANENG SZ11 Digital Multimeter with key features.

Figure 2: Multimeter demonstrating magnetic adsorption for hands-free use.

Figure 3: High-definition LCD display for clear readings.

Figure 4: Built-in flashlight for working in low-light conditions.

5. Setup

5.1 Battery Installation

The ANENG SZ11 Multimeter requires two AA batteries for operation. To install or replace batteries:

1. Unscrew the back cover of the multimeter.
2. Insert two AA batteries, ensuring correct polarity (+/-).
3. Replace the back cover and secure it with the screw.

5.2 Test Lead Connection

Proper connection of test leads is crucial for accurate and safe measurements. The multimeter features an intelligent LED Jack Indicator to guide you:

1. Turn the rotary dial to the desired measurement function.

2. The corresponding input jacks will light up (green light reminder).
3. Insert the black test lead into the 'COM' (common) jack.
4. Insert the red test lead into the illuminated input jack appropriate for your measurement (e.g., 'INPUT' for voltage/resistance, 'mA' or '20A' for current).

Your browser does not support the video tag.

Video 1: Official ANENG SZ11 Multimeter overview and basic setup. This video demonstrates battery installation, test lead connection, and various measurement functions.

6. Operating Instructions

To operate the ANENG SZ11 Multimeter, select the desired function using the rotary dial and connect the test leads as indicated by the LED jack lights.

6.1 DC Voltage Measurement

Turn the dial to the 'V=' position. Connect the red test lead to the positive terminal and the black test lead to the negative terminal of the DC source. The display will show the DC voltage. Measurable up to 1000V.

6.2 AC Voltage Measurement

Turn the dial to the 'V~' position. Connect the test leads across the AC source. The display will show the AC voltage. Press the 'FUNC' button to switch between AC and DC if needed. Measurable up to 750V. The MAX/MIN button can be used to display the maximum or minimum detected voltage.

6.3 Millivolt DC/AC Voltage Measurement

For small voltage measurements, turn the dial to the 'mV' position. Press the 'FUNC' button to toggle between DC and AC millivolts. This mode offers high precision for sensitive measurements.

6.4 Frequency (Hz) and Duty Cycle Measurement

Turn the dial to the 'Hz%' position. Connect the test leads to the circuit where frequency or duty cycle needs to be measured. Press 'FUNC' to switch between Frequency (Hz) and Duty Cycle (%).

6.5 Continuity Test

Turn the dial to the 'Ω' position and press 'FUNC' until the continuity symbol (a speaker icon) appears. Touch the test leads to the two points of the circuit. A beep indicates continuity (a complete circuit). This function is useful for locating broken lines or checking fuses.

6.6 Resistance Measurement

Turn the dial to the 'Ω' position. Connect the test leads across the component to measure its resistance. The multimeter will auto-range to provide the reading. Ensure the circuit is de-energized before measuring resistance.

6.7 Diode Test

Turn the dial to the 'Ω' position and press 'FUNC' until the diode symbol appears. Connect the red lead to the anode and the black lead to the cathode of the diode. The display will show the forward voltage drop. Reversing the leads should show an open circuit (OL) for a healthy diode. This can also light up small lamp beads.

6.8 Capacitance Measurement

Turn the dial to the 'F' position. **WARNING: Always discharge capacitors before testing to prevent damage to the multimeter.** Connect the test leads across the capacitor. The display will show the capacitance value.

6.9 Temperature Measurement

Turn the dial to the '°C/°F' position. Connect the temperature probe to the input jacks. Place the probe on the object whose temperature you wish to measure. Press 'FUNC' to switch between Celsius and Fahrenheit.

6.10 Current Measurement (µA, mA, A)

WARNING: Current measurements require connecting the multimeter in series with the circuit. Incorrect connection can damage the multimeter or the circuit.

- **Microampere (µA) / Milliampere (mA) DC/AC Current:** Turn the dial to the 'µA' or 'mA' position. Press 'FUNC' to select AC or DC. Connect the multimeter in series with the circuit. The maximum measurable current is 600mA.
- **Ampere (A) DC/AC Current:** Turn the dial to the '20A' position. Press 'FUNC' to select AC or DC. Connect the multimeter in series with the circuit. The maximum measurable current is 20A.

6.11 NCV (Non-Contact Voltage) Sensing

Turn the dial to the 'NCV' position. Bring the top of the multimeter close to an AC voltage source (e.g., a live wire). The display will show dashes, and the device will beep, indicating the presence of AC voltage. The closer the multimeter is to the voltage, the more urgent the beeping and screen flickering will be. This function can also be used to locate breakpoints in a line.

6.12 Live Wire Detection

Turn the dial to the 'LIVE' position. Insert the red test lead into the 'INPUT' jack. Touch the red test lead to a wire. If it's a live wire, the screen will show 'LVE' and beep. If it's a neutral line, there will be no response.

6.13 Flashlight and Backlight

To activate the flashlight, press the flashlight button. To turn on the backlight for the display, long-press the backlight button. These features are useful for working in dark environments.

7. Maintenance

7.1 Cleaning

Wipe the multimeter casing with a damp cloth. Do not use abrasive cleaners or solvents. Ensure the device is off and disconnected from any power source before cleaning.

7.2 Fuse Replacement

The ANENG SZ11 Multimeter has built-in fuses for protection. If the multimeter stops functioning correctly, especially during current measurements, the fuses may need replacement. The µA/mA fuse is F600mA/250V, and the 20A fuse is F20A/250V. To replace a fuse:

1. Ensure the multimeter is OFF and disconnect all test leads.
2. Unscrew the back case of the multimeter.

3. Carefully remove the old fuse using tweezers.
4. Insert a new fuse of the correct type and rating.
5. Reassemble the back case and secure it with screws.

8. Troubleshooting

If you encounter issues with your ANENG SZ11 Multimeter, consider the following common troubleshooting steps:

- **No Display/Low Battery:** Check battery installation and replace batteries if low.
- **Incorrect Readings:** Ensure the correct function and range are selected. Verify test lead connections. Clean test lead tips if corroded.
- **'OL' Display:** This typically indicates an overload (measurement exceeds the selected range) or an open circuit (no continuity). Adjust the range or check the circuit.
- **No Current Measurement:** Check if the appropriate fuse (µA/mA or 20A) has blown and replace if necessary. Ensure the multimeter is connected in series.
- **Inaccurate Resistance Readings:** While the multimeter offers good accuracy, some budget multimeters may show slight variations on certain resistance ranges. For critical measurements, consider professional-grade equipment.

If problems persist, refer to the warranty and support section for further assistance.

9. Specifications

Feature	Specification
Brand	ANENG
Model	ANENG SZ11
Display Counts	6000 Counts
Measurement Type	Digital Multimeter (True RMS)
Power Source	Battery Powered (2x AA Batteries)
DC Voltage Accuracy	± (0.08% + 5)
Safety Rating	CAT III 1000V, CAT IV 600V
Color	Black

10. Warranty and Support

ANENG provides service and technical support for your electrical testing needs. For warranty claims, technical assistance, or product inquiries, please refer to the contact information provided with your purchase or visit the official ANENG website. Keep your purchase receipt as proof of purchase for warranty purposes.