ANENG 681

ANENG 681 Digital Multimeter User Manual

Model: 681

1. Introduction

This manual provides detailed instructions for the safe and effective use of your ANENG 681 Digital Multimeter. Please read this manual thoroughly before operation and retain it for future reference. The ANENG 681 is an auto-ranging True RMS multimeter designed for measuring various electrical parameters with high accuracy.

Image 1.1: The ANENG 681 Digital Multimeter and its comprehensive set of accessories, including test leads, temperature probe, and charging cable.

2. Safety Information

WARNING: Failure to follow these safety instructions may result in electric shock, fire, or personal injury.

- Always ensure the multimeter is in the correct measurement mode before connecting test leads to a circuit.
- Do not attempt to measure voltages or currents exceeding the specified maximum ratings.
- Exercise extreme caution when working with live circuits. Always assume circuits are live until proven otherwise.
- Inspect test leads for damage before each use. Do not use if insulation is cracked or wires are exposed.
- Keep hands and fingers behind the probe barriers during measurements.
- Do not operate the multimeter if it appears damaged or is not functioning properly.
- Ensure the battery compartment is securely closed before operation.

3. Package Contents

Verify that all items listed below are present in your package:

- 1x ANENG 681 Digital Multimeter
- 1x Combination Test Lead Set (includes 4 connection sockets, 2 PVC cables, 2 copper needles, 2 U-shaped inserts, 2 meter pens, 2 alligator clips, 2 puncture needles)
- 1x Multimeter Test Lead Set
- 1x Temperature Line (K-type thermocouple)
- 1x USB Type-C Charging Cable
- 1x Instruction Manual
- 1x Storage Bag

Image 3.1: Unboxing the ANENG 681 Multimeter, showing all included accessories neatly organized in the storage bag.

4. Product Overview

The ANENG 681 Digital Multimeter features a large 5.0-inch backlit LCD screen for clear readings and an intuitive interface. It is designed for ease of use with smart auto-ranging capabilities.

Image 4.1: The multimeter's large 5.0-inch backlit display, providing clear visibility in various lighting conditions.

4.1. Key Features

- **5.0-inch Large LCD Screen:** Provides clear and easy-to-read measurements.
- **Auto-Ranging:** Automatically selects the correct measurement range.
- **True RMS:** Accurate measurements for non-sinusoidal AC waveforms.
- **Rechargeable Battery:** Built-in lithium battery with Type-C charging.
- **Non-Contact Voltage (NCV) Detection:** Enhances safety by detecting AC voltage without direct contact.
- **Flashlight Function:** Integrated light for working in dimly lit areas.
- **Shockproof Silicone Sleeve:** Durable casing for protection against drops.

Image 4.2: Overview of the ANENG 681's smart features, emphasizing its auto-recognition and safety aspects.

5. Setup

5.1. Charging the Battery

The ANENG 681 Multimeter is equipped with a rechargeable lithium battery. Before first use, or when the low battery indicator appears, charge the device using the provided USB Type-C cable.

1. Locate the Type-C charging port on the side of the multimeter.
2. Connect the Type-C cable to the multimeter and the USB-A end to a compatible USB power adapter (not included) or a computer USB port.
3. The charging indicator on the display will show the charging status.

Image 5.1: The multimeter being charged via its intelligent rechargeable lithium battery system.

5.2. Powering On/Off

Press and hold the power button located on the side of the multimeter to turn the device on or off.

5.3. Connecting Test Leads

Insert the red test lead into the 'VΩHz' input jack and the black test lead into the 'COM' input jack for most voltage, resistance, and continuity measurements. For current measurements, refer to the specific operating mode section.

6. Operating Modes

The ANENG 681 features a smart mode that automatically identifies the measurement type. You can also manually select specific functions.

Image 6.1: Visual representation of the multimeter's diverse measurement capabilities.

6.1. Smart Mode (Auto)

Upon powering on, the multimeter defaults to smart mode, indicated by 'Auto' on the display. In this mode, the device automatically recognizes and measures AC/DC voltage, resistance, and continuity.

Your browser does not support the video tag.

Video 6.1: A demonstration of the ANENG 681 Digital Multimeter's various functions and features, including its smart auto-ranging capability.

6.2. Resistance Measurement

In smart mode, connect the test leads across the component to measure resistance. The device will automatically display the resistance value.

6.3. Continuity Test (Buzzer)

For continuity, connect the test leads across the circuit or component. A beep indicates a good connection (low resistance), while no sound indicates an open circuit (high resistance).

6.4. DC Voltage Measurement

Connect the red test lead to the positive terminal and the black test lead to the negative terminal of the DC source. The multimeter will display the DC voltage.

6.5. AC Voltage Measurement

Connect the test leads across the AC source. The multimeter will display the AC voltage and frequency.

6.6. Diode Measurement

For diode measurements, distinguish between positive and negative poles. Connect the red test lead to the anode and the black test lead to the cathode. The display will show the forward voltage drop.

6.7. Temperature Measurement

Connect the temperature probe to the multimeter. Place the probe tip on the object whose temperature you wish to measure. The display can show readings in both Fahrenheit and Celsius.

6.8. Capacitance Measurement

Important: Before measuring capacitance, ensure the capacitor is fully discharged to avoid damage to the multimeter or personal injury due to high voltage. Connect the test leads across the discharged capacitor. The multimeter will display the capacitance value.

6.9. AC/DC Current Measurement

To measure current, the multimeter must be connected in series with the circuit. Disconnect the loop and connect the stylus in series with both ends of the dot line to measure the current. Ensure the correct input jacks (mA A or 10A/10SEC MAX) are used based on the expected current range.

6.10. NCV (Non-Contact Voltage) Induction

The NCV function allows for safe detection of AC voltage without direct contact. Hold the multimeter near the suspected live wire or outlet. The device will indicate the presence of AC voltage with visual and audible alarms. The frequency of the buzzer alarm is slow for the zero line and fast for the line of fire.

Image 6.2: The multimeter's NCV function actively detecting AC voltage, providing a safe method for initial electrical checks.

6.11. Flashlight Function

The integrated flashlight can be activated to illuminate work areas. This is particularly useful in low-light conditions.

Your browser does not support the video tag.

Video 6.2: A detailed video showcasing the ANENG 681 Multimeter's features and operational procedures, including various measurement modes and safety aspects.

7. Maintenance

7.1. Cleaning

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

7.2. Storage

Store the multimeter in its provided storage bag in a cool, dry place away from direct sunlight and extreme temperatures. Remove test leads before storing.

7.3. Battery Care

For optimal battery life, charge the multimeter regularly. If storing for an extended period, charge the battery to approximately 50% and recharge every few months.

Image 7.1: The shockproof silicone sleeve protecting the multimeter, highlighting its robust design for durability.

8. Troubleshooting

Problem	Possible Cause	Solution
Multimeter does not power on.	Low or depleted battery.	Charge the battery using the provided USB Type-C cable.

Problem	Possible Cause	Solution
Inaccurate readings.	Incorrect mode selection; damaged test leads; external interference.	Ensure correct mode is selected (or use Auto mode). Inspect test leads for damage. Move away from strong electromagnetic fields.
No continuity beep.	Open circuit; high resistance.	Verify the circuit path. Check for breaks or high resistance connections.
Capacitance measurement error.	Capacitor not discharged.	Always discharge capacitors before measurement.

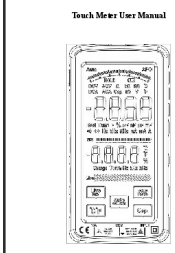
9. Specifications

Feature	Detail
Product Dimensions	3.94 x 3.94 x 0.79 inches; 1.19 Pounds
Item Model Number	681
Batteries	1 Lithium Metal battery required (included)
Manufacturer	ANENG
Power Source	Battery Powered
Style	681 Backlit Screen
Color	Red

10. Warranty and Support

ANENG electrical tester provides service and technical support. For any issues or inquiries regarding your ANENG 681 Digital Multimeter, please contact ANENG customer service through their official channels or the retailer where the product was purchased.
Please retain your proof of purchase for warranty claims.

Related Documents - 681

	ANENG 683 Touch Meter User Manual: Features, Specs & Operation Guide Comprehensive user manual for the ANENG 683 digital multimeter. Covers safety, specifications, measurement functions (voltage, current, resistance, etc.), and operational guidance for electrical testing.
	ANENG 616 Digital Intelligent Multimeter: Operating Instructions and Specifications Comprehensive operating instructions and detailed specifications for the ANENG 616 digital intelligent multimeter. Learn how to measure voltage, current, resistance, capacitance, frequency, and temperature safely and effectively.
	ANENG ST183 Digital Clamp Meter User Manual - Specifications and Instructions Comprehensive user manual for the ANENG ST183 Digital Clamp Meter, detailing its specifications, safety precautions, operating instructions for various measurements (voltage, current, resistance, capacitance, frequency, NCV), maintenance, and troubleshooting.
	ANENG AN870 Digital Multimeter User Manual User manual for the ANENG AN870 digital multimeter, detailing its features, specifications, safety information, operating instructions, maintenance, and troubleshooting.
	ANENG A3005 Digital Pen Multimeter User Manual and Specifications Comprehensive user manual for the ANENG A3005 digital pen multimeter, covering its features, operation, safety precautions, and technical specifications for measuring voltage, resistance, continuity, and more.
	ANENG ST181 Digital Clamp-On Multimeter Operation Manual and Specifications Detailed operation manual and technical specifications for the ANENG ST181 digital clamp-on multimeter. Covers safety, features, panel description, measurement procedures for AC/DC voltage, current, resistance, capacitance, frequency, temperature, and NCV detection.