

AN303

Aneng AN303 Digital Multimeter User Manual

Model: AN303

1. INTRODUCTION

Thank you for choosing the Aneng AN303 Digital Multimeter. This compact and versatile instrument is designed for safe and accurate measurement of AC/DC voltage, resistance, continuity, frequency, and temperature. It features automatic range recognition, non-contact voltage (NCV) detection, and a built-in flashlight, making it an essential tool for electricians, hobbyists, and general household use. Please read this manual thoroughly before operation to ensure proper use and to prevent potential hazards.

2. SAFETY INFORMATION

Always adhere to basic safety precautions when using electrical test equipment to reduce the risk of fire, electric shock, or personal injury. This meter is designed to meet safety standards for electronic measuring instruments.

- Do not exceed the maximum input value specified for each measurement range.
- Exercise extreme caution when working with voltages above 36V DC or 25V AC RMS, as these are considered shock hazards.
- Before changing functions, disconnect the test leads from the circuit under test.
- Do not use the meter if it appears damaged or if the insulation on the test leads is compromised.
- Ensure the battery cover is securely closed before operation.
- Do not operate the meter in explosive gas, vapor, or dust environments.
- Always use the correct terminals, function, and range for your measurements.
- Keep fingers behind the finger guards on the test probes during measurement.

3. PRODUCT OVERVIEW

3.1. Components



Figure 3.1: Front view of the AN303 Multimeter with key components labeled, including the display, function buttons, and input jacks. Dimensions are also shown.

The Aneng AN303 multimeter features a compact design with a clear LCD display and intuitive button layout. Key components include:

- **LCD Display:** Shows measurement readings, units, and various indicators.
- **Function Buttons:** NCV, Hz, °C/°F, HOLD, Flashlight, Power ON/OFF.
- **Input Jacks:** For connecting test leads (red for positive, black for common).
- **NCV Sensor:** Located at the top for non-contact voltage detection.
- **Flashlight:** Integrated light for illuminating dark work areas.
- **Lanyard Hole:** For attaching an anti-drop lanyard.

3.2. Display Icons

				
AC voltage measurement	Line continuity Detection	Resistance measurement	Frequency measurement	Zero line of fire recognition
				
Automatic shut-down	Flashlight lighting	Measurement data retention	Temperature measurement	NCV induction detection



Figure 3.2: Overview of the display icons and their corresponding functions on the AN303 Multimeter.

The LCD display provides various indicators to assist with measurements:

- **AC/DC:** Indicates Alternating Current or Direct Current measurement.
- **V:** Voltage measurement.
- **Ω :** Resistance measurement.
- **Hz:** Frequency measurement.
- **°C/°F:** Temperature measurement in Celsius or Fahrenheit.
- **HOLD:** Data hold function is active.
- **NCV:** Non-Contact Voltage detection mode.
- **Battery Symbol:** Indicates low battery level.
- **AUTO:** Automatic range recognition is active.

4. SETUP

4.1. Battery Installation

The AN303 multimeter is powered by a CR2032 button cell battery. To install or replace the battery:

1. Ensure the multimeter is turned off and disconnect any test leads.
2. Locate the battery compartment on the back of the device.
3. Use a small screwdriver to open the battery cover.
4. Insert the CR2032 battery with the positive (+) side facing up.
5. Securely close the battery cover.

4.2. Connecting Test Leads

To prepare for measurements, connect the test leads:

1. Insert the black test lead into the "COM" (Common) input jack.
2. Insert the red test lead into the "VΩHz" input jack for voltage, resistance, or frequency measurements.
3. Ensure the connections are firm before proceeding with any measurements.

5. OPERATING INSTRUCTIONS

5.1. Power ON/OFF

Press the red power button (**Power icon**) to turn the multimeter ON. Press and hold the same button for a few seconds to turn it OFF. The device also features an automatic shutdown function to conserve battery life after a period of inactivity.

5.2. Automatic Recognition (AUTO)

AUTO recognition



Intelligent identification measurement, no need to change the range



AUTO RECOGNITION



Figure 5.1: The 'AUTO' indicator on the display, signifying automatic measurement mode.

The AN303 features intelligent identification measurement, automatically detecting the type of measurement (voltage, resistance, continuity) without requiring manual range selection. Simply connect the test leads to the circuit, and the meter will display the appropriate reading.

5.3. Voltage Measurement (AC/DC)

To measure voltage:

1. Ensure the red lead is in the "VΩHz" jack and the black lead in "COM".
2. Connect the test probes in parallel to the circuit or component you wish to measure.
3. The display will automatically show the AC or DC voltage reading.

5.4. Resistance Measurement (Ω)

To measure resistance:

1. Ensure the red lead is in the "VΩHz" jack and the black lead in "COM".
2. Ensure the circuit or component is de-energized before measuring resistance.

3. Connect the test probes across the component.
4. The display will show the resistance value in Ohms (Ω), Kilo-Ohms ($k\Omega$), or Mega-Ohms ($M\Omega$).

5.5. Continuity Test

To test for continuity:

1. Ensure the red lead is in the "V Ω Hz" jack and the black lead in "COM".
2. Ensure the circuit is de-energized.
3. Connect the test probes across the circuit or component.
4. If continuity exists (low resistance), the buzzer will sound, and the display will show a low resistance value. If no continuity, the display will show "OL" (Open Line).

5.6. Frequency Measurement (Hz)

To measure frequency:

1. Press the **Hz** button to enter frequency measurement mode.
2. Connect the test probes in parallel to the circuit where you want to measure frequency.
3. The display will show the frequency in Hertz (Hz).

5.7. Temperature Measurement ($^{\circ}\text{C}/^{\circ}\text{F}$)

Temperature measurement



Can measure the temperature value of the current environment



Figure 5.2: The AN303 Multimeter displaying a temperature reading.

To measure temperature:

1. Press the **°C/°F** button to switch to temperature measurement mode.
2. The meter will display the ambient temperature.
3. Press the **°C/°F** button again to toggle between Celsius and Fahrenheit.

5.8. Non-Contact Voltage (NCV) Detection

NCV non-contact induction



When AC voltage is detected, the screen EF will display —, and the bright red screen alarm buzzer will sound to indicate



Figure 5.3: Using the NCV function to detect AC voltage without direct contact.

The NCV function allows for quick detection of AC voltage without physical contact with wires. This is useful for identifying live wires or checking for breaks in cables.

1. Press the **NCV** button to activate NCV mode.
2. Move the top part of the multimeter (where the NCV sensor is located) close to the wire or outlet.
3. If AC voltage is detected, the screen will display "EF", the buzzer will sound, and the indicator light will flash, with the intensity of the alarm increasing with stronger signals.

5.9. Data Hold (HOLD)

Press the **HOLD** button to freeze the current reading on the display. Press it again to release the hold and resume live measurements.

5.10. Flashlight

Flashlight lighting



The detection location can also be seen in a dark environment to prevent the risk of electric shock



Figure 5.4: The AN303 Multimeter's flashlight in operation, useful for dark work areas.

Press the **Flashlight icon** button to turn the built-in flashlight ON or OFF. This feature is useful for illuminating dark work areas.

6. MAINTENANCE

6.1. Cleaning

Wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents. Keep the input terminals free of dirt and moisture.

6.2. Battery Replacement

When the low battery symbol appears on the display, replace the CR2032 battery as described in Section 4.1. Prompt battery replacement ensures accurate readings.

6.3. Storage

If the meter is not to be used for a long period, remove the battery to prevent leakage and damage to the device. Store the multimeter in a cool, dry place, away from direct sunlight and extreme temperatures.

7. TROUBLESHOOTING

If you encounter issues with your AN303 multimeter, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Meter does not turn on.	Dead or incorrectly installed battery.	Check battery polarity or replace the CR2032 battery.
"OL" displayed (Overload).	Measurement exceeds the meter's range.	Ensure the measured value is within the meter's specifications.
Inaccurate readings.	Low battery; poor test lead connection; external interference.	Replace battery; ensure leads are firmly connected; move away from strong electromagnetic fields.
No NCV detection.	No AC voltage present; NCV sensor not close enough.	Verify AC voltage presence with direct contact if safe; ensure sensor is very close to the source.

If the problem persists after trying these solutions, please contact customer support.

8. SPECIFICATIONS

The following are the general specifications for the Aneng AN303 Digital Multimeter:

- **Display:** 4000 Counts LCD
- **Power:** CR2032 Button Cell Battery
- **Dimensions:** 14.4 x 8.6 x 1.8 cm (approximately 5.67 x 3.39 x 0.71 inches)
- **Weight:** (Not specified, but compact)
- **Safety Rating:** CAT III 300V (as indicated on the device image)
- **Features:** Auto Ranging, NCV, Data Hold, Flashlight, Auto Power Off, Temperature Measurement, Frequency Measurement, Continuity Test, Resistance Measurement, AC/DC Voltage Measurement.

9. WARRANTY AND SUPPORT

This product is manufactured by mufern. For any questions regarding product operation, troubleshooting, or warranty claims, please refer to the seller's return policy and contact information provided at the point of purchase. Keep your purchase receipt as proof of purchase.