WnewTools ATOOL1816354-Black

A3003 Digital Pen Multimeter User Manual

Model: ATOOL1816354-Black | Brand: WnewTools

Introduction

This user manual provides detailed instructions for the safe and effective operation of the WnewTools A3003 Digital Pen Multimeter. This professional smart meter is designed for measuring AC/DC voltage, resistance, capacitance, and features non-contact voltage (NCV) detection, frequency measurement, continuity, and zero fire detection. Please read this manual thoroughly before use and retain it for future reference.

Safety Information

Always adhere to basic safety precautions when using electrical testing equipment to reduce the risk of fire, electric shock, or personal injury. Improper use can lead to electric shock or damage to the meter.

- Do not exceed the maximum voltage ratings specified for each function.
- Ensure the test leads are in good condition and properly connected before making measurements.
- Do not use the meter if it appears damaged or if the casing is open.
- 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 under test before measuring resistance or capacitance.
- Replace batteries promptly when the low battery indicator appears.
- Do not operate the meter in explosive gas, vapor, or dusty environments.

Product Overview

The A3003 Digital Pen Multimeter is a compact and versatile tool. Below is an illustration of its main components and display.

Figure 1: A3003 Digital Pen Multimeter showing the main unit, detachable test lead, and a small diagram of the user manual.

Figure 2: Dimensions of the A3003 Digital Pen Multimeter. The main unit is approximately 204mm (8.03in) long, 24.4mm (0.96in) wide, and 39mm (1.53in) thick. The test lead is 119mm (4.68in) long.

Components:

- **Measurement Tip:** For direct contact measurements.
- **NCV Sensor:** For non-contact voltage detection.
- **LCD Display:** Shows measurement readings, units, and indicators.
- **Function Buttons:**
  - **HOLD/R Button:** Data hold function; long press for range selection (if applicable).
  - **SELECT Button:** Toggles between measurement modes (e.g., AC/DC voltage, resistance/capacitance).
  - **Hz Button:** Activates frequency measurement.
  - **Power Button:** Turns the meter on/off.
- **COM Input Jack:** For connecting the common (black) test lead.
- **Test Lead:** Detachable lead for common connection.

Setup

Battery Installation:

1. Ensure the meter is turned off.
2. Locate the battery compartment cover on the back of the meter.
3. Use a screwdriver to open the battery compartment.
4. Insert the required batteries (not included in package, typically AAA) observing the correct polarity (+/-).
5. Replace the battery compartment cover and secure it with the screw.

Note: Always use fresh batteries of the specified type. Remove batteries if the meter is not used for an extended period to prevent leakage.

Operating Instructions

Before any measurement, press the Power button to turn on the meter. The meter will typically default to auto-ranging mode.

1. Measuring AC/DC Voltage:

1. Turn on the meter. It will automatically detect AC or DC voltage.
2. Connect the black test lead to the COM input jack.
3. Touch the red measurement tip to the positive point of the circuit and the black test lead to the negative point (or neutral/ground for AC).
4. Read the voltage value on the LCD display. The display will indicate "ACV" or "DCV".

2. Measuring Resistance (Ω):

1. Ensure the circuit under test is de-energized.
2. Press the SELECT button until the Ω symbol appears on the display.
3. Connect the black test lead to the COM input jack.
4. Touch the red measurement tip and the black test lead across the component or circuit segment to be measured.
5. Read the resistance value on the LCD display.

3. Measuring Capacitance (F):

1. Ensure the capacitor is fully discharged before measurement to prevent damage to the meter.
2. Press the SELECT button until the F symbol (or nF/uF/mF) appears on the display.
3. Connect the black test lead to the COM input jack.
4. Touch the red measurement tip and the black test lead across the capacitor terminals.
5. Read the capacitance value on the LCD display.

4. Non-Contact Voltage (NCV) Detection:

1. The NCV function is typically active by default or can be selected.
2. Hold the NCV sensor (usually at the top of the meter) near the wire or outlet you wish to test for AC voltage.
3. The meter will emit an audible beep and/or flash an indicator light when AC voltage is detected. The frequency of beeps/flashes may increase with stronger signals.

5. Frequency (Hz) Measurement:

1. Press the Hz button to activate frequency measurement mode.
2. Connect the black test lead to the COM input jack.
3. Touch the red measurement tip and the black test lead across the circuit where frequency needs to be measured.
4. Read the frequency value on the LCD display.

6. Continuity Test:

1. Press the SELECT button until the continuity symbol (a speaker icon) appears.
2. Connect the black test lead to the COM input jack.
3. Touch the red measurement tip and the black test lead across the circuit or component.
4. If continuity exists (low resistance), the meter will emit an audible beep.

7. Zero Fire Detection:

1. This function is often integrated with NCV or a dedicated mode.
2. Touch the measurement tip to the live wire. The meter will indicate "Fire" or "Live" and may beep.
3. Touch the measurement tip to the neutral wire. The meter should indicate "Zero" or "Neutral" and typically not beep.

Data Hold:

Press the HOLD/R button briefly to freeze the current reading on the display. Press it again to release the hold function.

Automatic Shut-down:

The meter is equipped with an automatic shut-down feature to conserve battery life. It will power off after a period of inactivity. Press any button to wake it up.

Maintenance

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.

Battery Replacement:

Refer to the "Battery Installation" section under Setup. Replace batteries when the low battery indicator appears on the display to ensure accurate readings.

Storage:

When not in use, store the meter in a dry, cool place, away from direct sunlight and extreme temperatures. If storing for extended periods, remove the batteries.

Troubleshooting

Problem	Possible Cause	Solution
Meter does not turn on.	Dead or incorrectly installed batteries.	Check battery polarity; replace batteries.

Problem	Possible Cause	Solution
No reading or "OL" (Overload) displayed.	Incorrect range selected (if not auto-ranging); open circuit; measurement exceeds range.	Ensure correct function is selected; check circuit continuity; switch to a higher range if available.
Inaccurate readings.	Low battery; dirty test leads/contacts; external interference.	Replace batteries; clean test leads and input jacks; move away from strong electromagnetic fields.
NCV not detecting voltage.	Voltage too low; sensor not close enough; shielded wires.	Ensure sufficient voltage is present; move sensor closer; note that shielded wires may block detection.

Specifications

Parameter	Range	Accuracy
DC Voltage	4V/40V/400V 600V	±(0.8%+3) ±(1%+3)
AC Voltage	4V/40V/400V 600V	±(1%+3) ±(1.2%+5)
Capacitance	4nF/40nF/400nF/4uF/40uF/400uF 4mF	±(3%+5) ±(5%+10)
Resistance	4kΩ/40kΩ/400kΩ/4MΩ 40MΩ	±(1%+5) ±(1.2%+8)
Frequency	40Hz/400Hz/4kHz/40kHz/400kHz 4MHz	±(0.8%+8) ±(1.2%+8)

General Specifications:

- **Display:** 4000 Counts
- **Power Source:** Battery Powered (Batteries not included)
- **Automatic Shut-down:** Yes
- **Backlit Screen:** Yes
- **Dimensions:** Approximately 204mm x 24.4mm x 39mm (8.03in x 0.96in x 1.53in)
- **Weight:** Approximately 7.05 ounces (without batteries)
- **Model Number:** ATOOL1816354-Black
- **ASIN:** B0B7RVXGY6
- **Manufacturer:** Wnew
- **Country of Origin:** China

Package Contents

- 1 x A3003 Pen Multimeter (battery not included)
- 1 x Tester line (test lead)

- 1 x User Manual

Official Product Videos

No official product videos from the seller are available for this product at this time.

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