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> WnewTools Z1 Mini Digital Multimeter User Manual

WnewTools PANN1955386

WnewTools Z1 Mini Digital Multimeter User Manual

Model: PANN1955386

1. INTRODUCTION

This manual provides detailed instructions for the safe and effective operation of your WnewTools Z1 Mini Digital Multimeter. Please read this manual thoroughly before use and retain it for future reference. This device is designed for measuring AC/DC voltage, resistance, frequency, continuity, and includes features like live-wire checking, V-alert, and a flashlight.

2. PACKAGE CONTENTS

Verify that all items listed below are present and in good condition upon opening the package:

- 1 x WnewTools Z1 Pen Type Multimeter
- 1 x Test Lead
- 2 x Back Probe Pins
- 2 x AAA Batteries
- 1 x Screwdriver
- 1 x User Manual (this document)

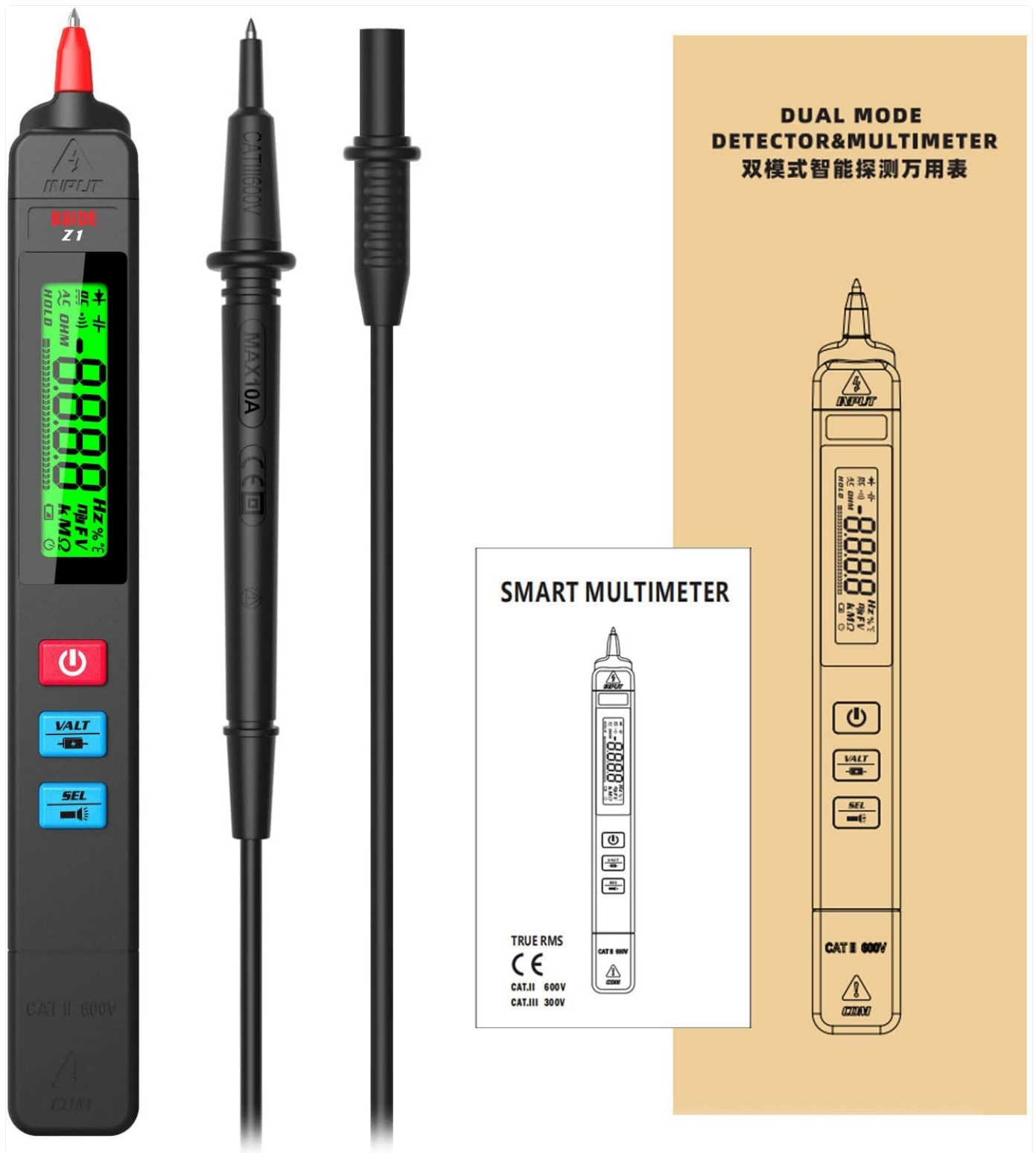


Figure 2.1: The WnewTools Z1 Mini Digital Multimeter, its test lead, and the included user manual cover.

3. PRODUCT OVERVIEW

Familiarize yourself with the components and display elements of your Z1 Mini Digital Multimeter.



Figure 3.1: Detailed view of the Z1 Multimeter with labeled parts and LCD symbols.

Probe Sheath: Protects the input lead tip.

Input Lead (Positive): The primary measurement probe.

Protective Case: Provides durability and grip.

Flashlight: Integrated LED for illuminating work areas.

LCD Screen: Displays measurement results and indicators.

Power Button: Turns the device on/off.

Non-contact Voltage Sensing (V-Alert): Detects AC voltage without direct contact.

Function & Flashlight Button (SEL): Cycles through measurement functions and activates the flashlight.

Battery Cover: Access for battery replacement.

COM Jack: Common input for the test lead.

The LCD screen displays various symbols indicating measurement modes, units, and device status. Refer to the table on the image for a full explanation of each symbol.

4. SETUP

4.1. Battery Installation

1. Locate the battery cover on the back of the multimeter.
2. Use the included screwdriver to open the battery compartment.
3. Insert two 1.5V AAA batteries, observing the correct polarity (+/-).
4. Securely close the battery compartment with the screwdriver.

Note: If the low battery indicator appears on the LCD, replace the batteries promptly to ensure accurate measurements.

4.2. Connecting Test Leads

The Z1 Multimeter features a single test lead design for simplified operation.

- Insert the banana plug end of the black test lead into the COM jack at the bottom of the multimeter.
- The red input lead is integrated into the pen-type design.
- For specific applications, attach the back probe pins to the test lead tips as needed.

5. OPERATING INSTRUCTIONS

5.1. Power On/Off

- Press the **Power** button to turn the multimeter on.
- Press and hold the **Power** button for approximately 2 seconds to turn it off.
- The device features an auto power-off function to conserve battery life after a period of inactivity.

5.2. Smart Mode (Automatic Identification)

Upon powering on, the multimeter defaults to Smart Mode. In this mode, the device automatically identifies the tested parameter (AC/DC voltage, resistance, or continuity) and selects the appropriate range, simplifying operation.

5.3. Function Selection (Manual Mode)

Press the **SEL** button to cycle through different measurement functions if manual selection is desired or if Smart Mode does not automatically detect the intended measurement.

- **Voltage Measurement (AC/DC):** Connect the test lead to the circuit. The multimeter will display the voltage.
- **Resistance Measurement:** Ensure the circuit is de-energized. Connect the test lead across the component to measure resistance.
- **Frequency Measurement:** Connect the test lead to the signal source.
- **Continuity Test:** Connect the test lead across the circuit or component. If resistance is less than 50Ω, the beeper will sound, and the display will show "0.0Ω".

Continuity test



Figure 5.1: Performing a continuity test. The multimeter beeps and displays "0.0" for a continuous circuit.

5.4. V-Alert (Non-Contact Voltage Detection)

The V-Alert function allows for non-contact detection of AC voltage. Hold the tip of the multimeter near a live wire or outlet. The device will indicate the presence and strength of the voltage.

3 Results Display

3 results display make it very easy to judge the detected voltage strength



Null



Low



High



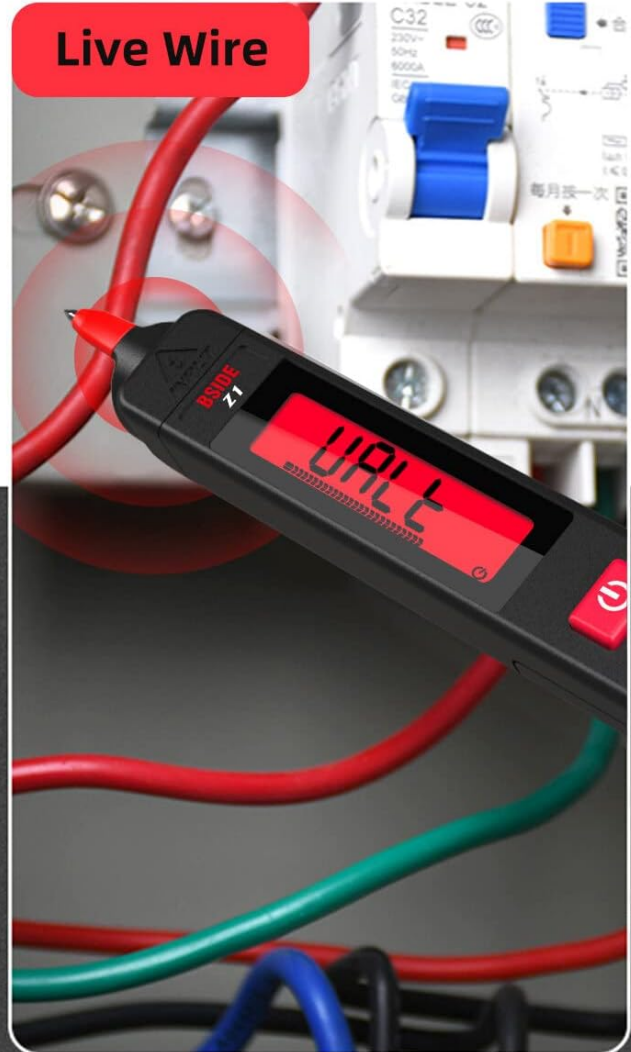
Figure 5.2: The 3-results display indicates voltage strength as Null, Low, or High, providing clear visual feedback.

5.5. Live Wire Check

To identify live and neutral wires:

1. Touch the multimeter's input lead to the wire.
2. Compare the detected voltage strength. The wire with the stronger voltage signal is the live wire.

Live/Neutral Wire Check



Safe and easy to distinguish the live/neutral wire by comparing the strength of the detected voltage, the wire that detect the stronger voltage signal is live wire

Figure 5.3: The multimeter indicates a neutral wire (green display) and a live wire (red display) based on voltage detection.

5.6. Breakpoint Locate

This feature helps locate breaks in a wire by detecting changes in voltage strength along its length. Move the multimeter along the wire; a significant change or loss of signal indicates a breakpoint.

Breakpoint Locate

easy and fast to locate the breakpoint according to the change of detected voltage strength



Figure 5.4: The multimeter detects a breakpoint in a wire by sensing the absence of voltage beyond the break.

5.7. Flashlight

Press and hold the **SEL** button to activate or deactivate the integrated LED flashlight, useful for working in dimly lit areas.

Bright LED Flashlight

upgraded flashlight lets you test efficiently and comfortably anywhere, indoors and outdoors, day and night



Figure 5.5: The bright LED flashlight provides illumination for testing in dark environments.

6. SPECIFICATIONS

Parameter	Specification
Display	2000 counts
Screen Size	1.9 inch
DC Voltage Range	0V-500V (DC Mode) / 0.5-500V (Auto Mode)
AC Voltage Range	0V-500V (AC Mode) / 0.8-500V (Auto Mode)
Resistance Range	0Ω-2MΩ
Frequency Range	40-1000Hz (0-30V AC) / 40Hz-400Hz (0-500V AC)

Parameter	Specification
Continuity Test	Beeper sounds if resistance < 50Ω
V-Alert (NCV)	Yes
Live Wire Check	Yes
Power Supply	2 x 1.5V AAA Batteries
Dimensions	185 x 22 x 22 mm
Weight	52g (without batteries)

7. MAINTENANCE

- **Cleaning:** Wipe the multimeter with a dry, soft cloth. Do not use abrasive cleaners or solvents.
- **Battery Replacement:** Replace batteries when the low battery indicator appears. Remove batteries if the device will not be used for an extended period.
- **Storage:** Store the multimeter in a cool, dry place, away from direct sunlight and extreme temperatures.
- **Inspection:** Regularly inspect the test lead and the multimeter casing for any signs of damage. Do not use the device if it appears damaged.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Multimeter does not power on.	Dead or incorrectly installed batteries.	Check battery polarity; replace batteries.
Inaccurate readings.	Low battery; incorrect function selected; poor contact.	Replace batteries; ensure correct function is selected (or use Smart Mode); ensure good contact with test points.
No continuity beep.	Open circuit; resistance too high.	Verify the circuit is closed; ensure resistance is below 50Ω.
V-Alert not detecting voltage.	No AC voltage present; device too far from source.	Ensure AC voltage is present; bring the multimeter closer to the source.

9. SAFETY INFORMATION

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

- Always ensure the multimeter is in good working condition before use.
- Do not exceed the maximum input values specified in the specifications.
- Do not use the device if the casing is damaged or if the test leads are frayed.
- Exercise extreme caution when working with live circuits. Always assume circuits are live until proven otherwise.
- Wear appropriate personal protective equipment (PPE), such as safety glasses.
- Do not operate the multimeter in wet environments or explosive atmospheres.

- Keep the device out of reach of children.
- Refer to local electrical codes and safety standards for proper procedures.

10. WARRANTY AND SUPPORT

WnewTools products are designed for reliability and performance. For warranty information or technical support, please refer to the contact details provided with your purchase or visit the official WnewTools website. Please have your model number (PANN1955386) and purchase date available when contacting support.

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