## LIBODD ZL12B

# LIBODD Smart Digital Multimeter ZL12B User Manual

Model: ZL12B | Brand: LIBODD

### Introduction

This manual provides detailed instructions for the safe and effective operation of your LIBODD Smart Digital Multimeter ZL12B. This device is a high-precision, reliable, and stable performance instrument designed for various electrical measurements. Please read this manual thoroughly before use and retain it for future reference.

### Safety Information

Always observe basic safety precautions when using this multimeter to avoid personal injury or damage to the instrument. Failure to follow safety warnings can result in electric shock, fire, or serious injury.

- Do not exceed the maximum input values specified for each measurement range.
- Ensure the test leads are properly connected and in good condition before making any measurements.
- Do not use the multimeter if it appears damaged or if the test leads are compromised.
- 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 and discharge all high-voltage capacitors before measuring resistance, continuity, or diodes.
- Do not operate the multimeter in explosive gas, vapor, or dusty environments.
- Replace batteries immediately when the low battery indicator appears to ensure accurate readings.

### Package Contents

Verify that all items are present upon unpacking:

- 1 x LIBODD Smart Digital Multimeter ZL12B
- 1 x Test Lead Set
- 1 x User Manual (this document)
- 2 x 1.5V AAA Batteries (may be pre-installed or included separately)
- Additional accessories as per the specific ZL12B Accessory 1 package.


Image: The LIBODD Smart Digital Multimeter ZL12B shown with its included test leads, probe tips, and a small wrench accessory.

## Product Overview

The LIBODD ZL12B is a pen-type smart digital multimeter featuring a 6000-count display. It offers automatic range selection and a variety of measurement functions, including voltage, resistance, capacitance, diode, NCV, live wire detection, and phase sequence recognition.

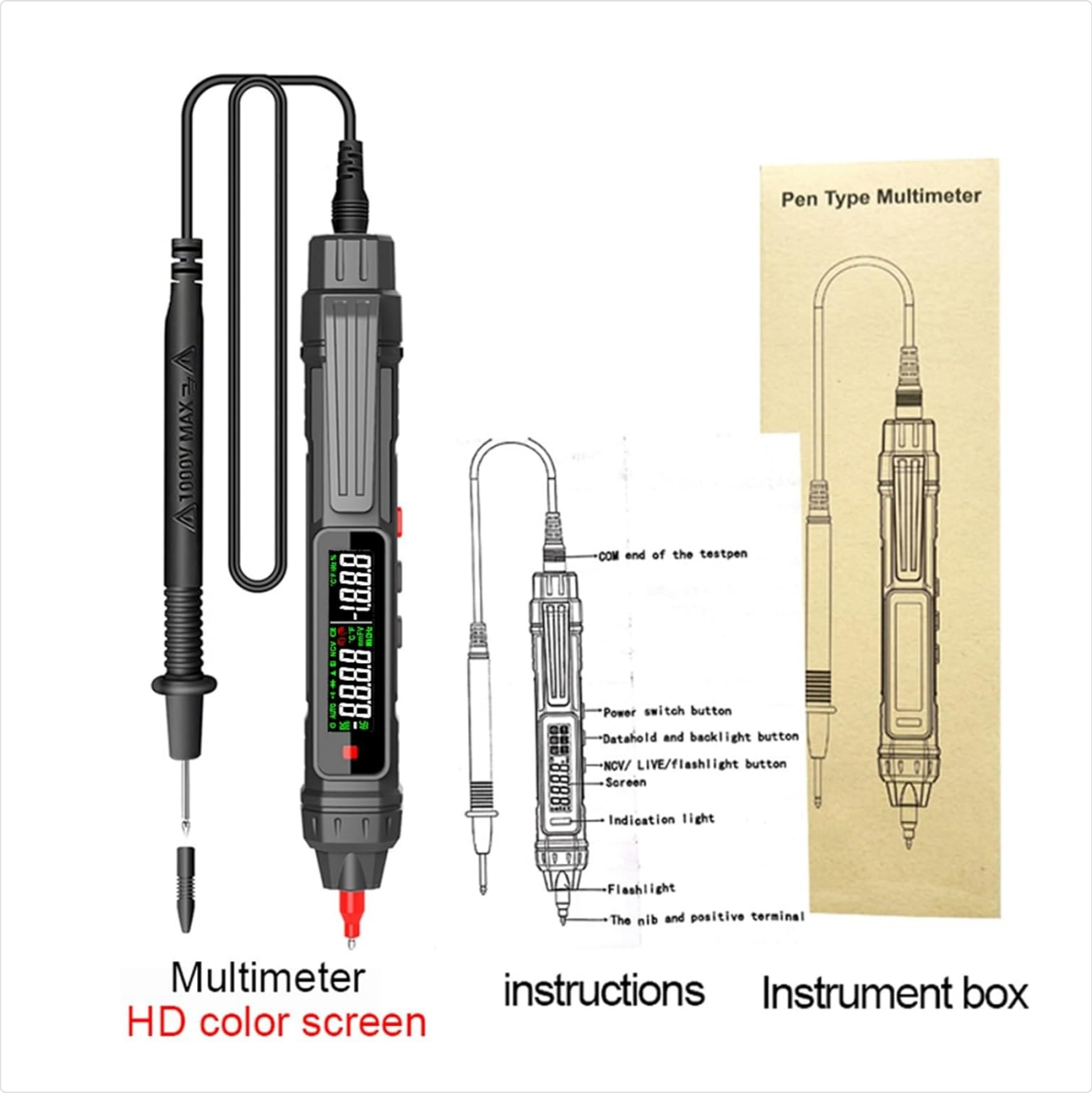


Image: A diagram illustrating the components of the pen-type multimeter, including the power switch, data hold button, NCV/LIVE/flashlight button, screen, indication light, flashlight, and the nib/positive terminal.

### Key Features:

- **6000 Counts Display:** Provides high-resolution measurements.
- **Automatic Range:** Simplifies operation by automatically selecting the correct measurement range.
- **Non-Contact Voltage (NCV) Detection:** For safe voltage detection without direct contact.
- **Live Wire Detection:** Identifies live electrical wires.
- **Phase Sequence Recognition:** Useful for three-phase systems.
- **HD Color Screen:** Clear and easy-to-read display, even in low light conditions.
- **Flashlight:** Integrated for illumination in dark work areas.
- **Automatic Shutdown:** Conserves battery life.
- **Replaceable Probe Tip:** Allows for easy replacement of worn or damaged tips.


Image: Icons representing the various functions of the multimeter, including DC Voltage, AC Voltage, Diode, Capacitance, Resistance, Frequency, Phase Sequence Detect, NCV, On-off Beep, Zero Live Wire Identify, Data Retention, and Automatic Shutdown.

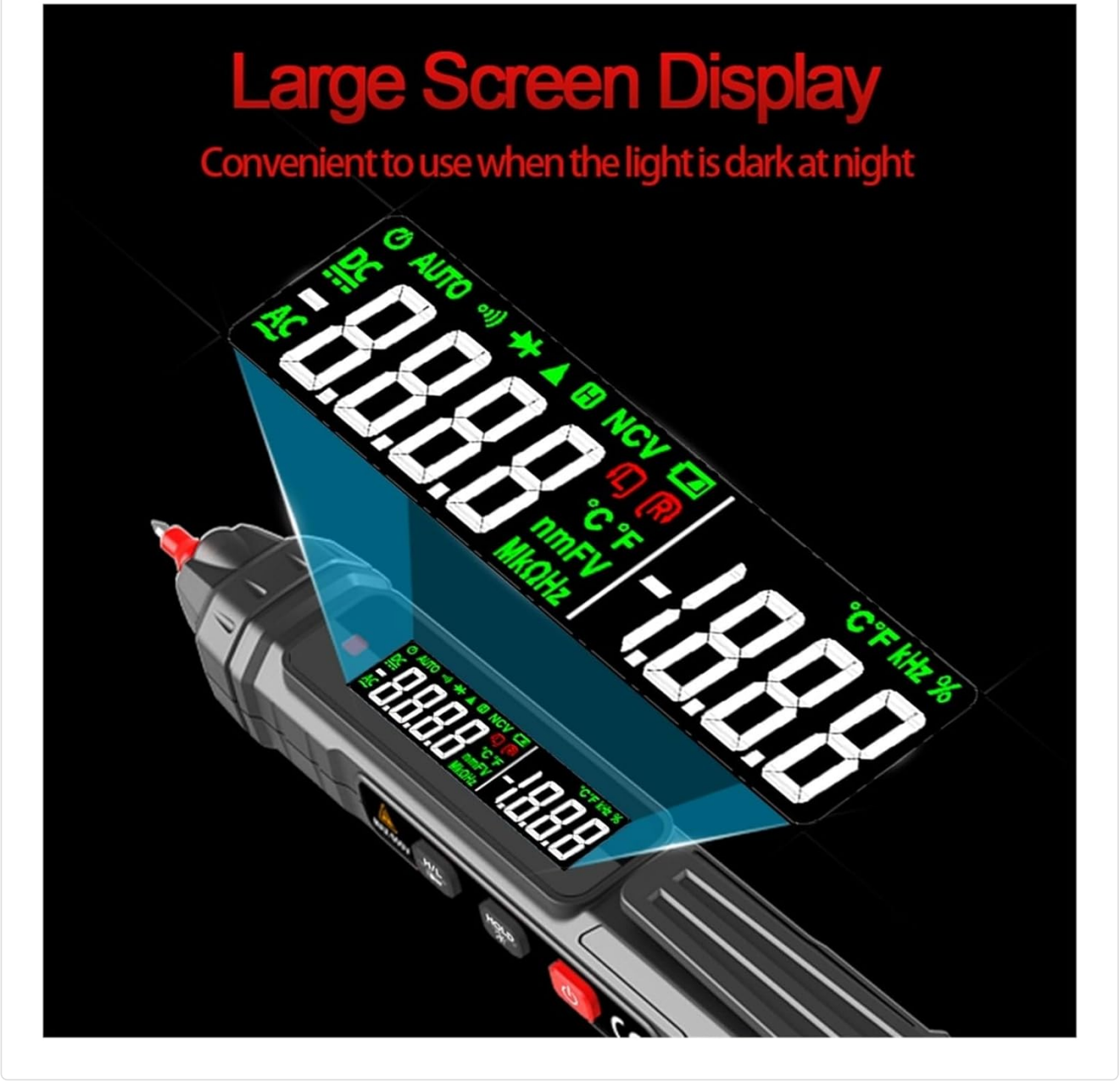


Image: A close-up view of the multimeter's large HD color screen, showing various measurement readings and icons, highlighting its readability in different lighting conditions.

## Setup

### 1. Battery Installation:

1. Locate the battery compartment cover on the back of the multimeter.
2. Use a screwdriver (if necessary) to open the cover.
3. Insert two 1.5V AAA batteries, observing the correct polarity (+/-).
4. Replace the battery compartment cover and secure it.

### 2. Connecting Test Leads:

- Insert the black test lead into the "COM" (common) input jack.
- Insert the red test lead into the "VΩHz" input jack for voltage, resistance, capacitance, and frequency measurements.

- Ensure connections are firm before use.

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## Operating Instructions

To power on the multimeter, press the power button. The device will typically enter auto-ranging mode. Press the "MODE" button to cycle through different measurement functions if manual selection is required.

### 1. DC/AC Voltage Measurement (V~ / V-):

1. Connect the black test lead to the "COM" terminal and the red test lead to the "VΩHz" terminal.
2. Select the appropriate voltage mode (AC or DC) if not in auto-ranging.
3. Connect the test probes in parallel to the circuit or component you wish to measure.
4. Read the voltage value displayed on the screen.


Image: A hand holding the multimeter probe to measure AC/DC voltage in an electrical panel, displaying a reading of 220.0V and 0.30.

### 2. Resistance Measurement (Ω):

1. Ensure the circuit is de-energized and all capacitors are discharged.
2. Connect the test leads as for voltage measurement.
3. Select the resistance mode.
4. Connect the test probes across the component to measure its resistance.

### 3. Capacitance Measurement:

1. Ensure the capacitor is fully discharged before measurement to prevent damage to the multimeter.
2. Connect the test leads as for voltage measurement.
3. Select the capacitance mode.
4. Connect the test probes across the capacitor terminals.

### 4. Diode Test:

1. Ensure the diode is disconnected from the circuit.
2. Connect the test leads as for voltage measurement.
3. Select the diode test mode.
4. Connect the red probe to the anode and the black probe to the cathode. A forward voltage drop will be displayed. Reverse the probes; an open circuit (OL) should be displayed.

### 5. Non-Contact Voltage (NCV) Detection:

1. Press the NCV button to activate NCV mode.
2. Move the tip of the multimeter close to the conductor or outlet.
3. The device will indicate the presence of AC voltage through audible beeps and visual indicators on the screen.

### 6. Live Wire Detection:

1. Select the LIVE mode.
2. Insert the red probe into the socket or touch the conductor.
3. The multimeter will indicate if the wire is live.

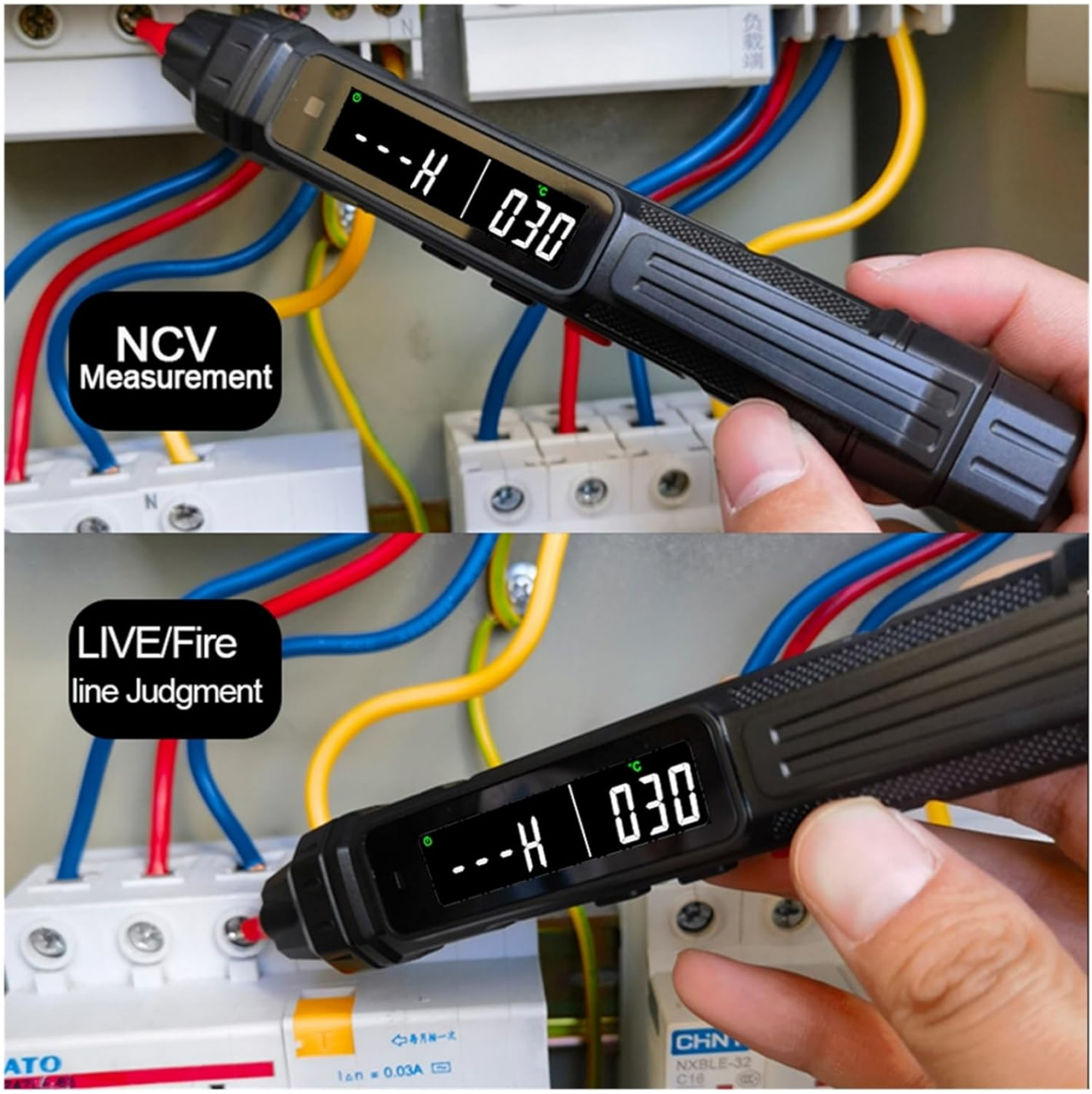


Image: Two separate views of the multimeter in use: one demonstrating NCV measurement near electrical wires, and another showing LIVE/Fire line judgment with the probe touching a wire, both displaying readings.

### 7. Phase Sequence Recognition:

Refer to the on-screen indicators and specific instructions for this function, typically used in three-phase electrical systems to determine the correct phase rotation.

### 8. Data Hold:

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

### 9. Flashlight:

Press the flashlight button to turn on the integrated flashlight for illuminating dark work areas. Press again to turn off.

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## Maintenance

### Cleaning:

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

### Battery Replacement:

Replace the batteries when the low battery indicator appears on the display to maintain measurement accuracy. Refer to the "Setup" section for battery installation instructions.

### Probe Tip Replacement:

The probe tip of the multimeter is designed to be replaceable. If the tip becomes damaged or worn, it can be unscrewed and replaced with a new one.


Image: A close-up view of the multimeter's tip, showing how it can be unscrewed and replaced, with a pair of pliers demonstrating the removal process and replacement tips shown separately.

### Storage:

When not in use for extended periods, remove the batteries to prevent leakage. Store the multimeter in a cool, dry place, away from direct sunlight and extreme temperatures.

## Troubleshooting

| Problem | Possible Cause | Solution |
|---|---|---|
| Multimeter does not power on. | Dead or incorrectly installed batteries. | Check battery polarity or replace with new AAA batteries. |
| Inaccurate readings. | Low battery; incorrect measurement mode; damaged test leads. | Replace batteries; ensure correct mode is selected; inspect and replace test leads if damaged. |
| "OL" (Overload) displayed. | Measurement exceeds the selected range or maximum input. | Ensure the multimeter is in auto-ranging mode or select a higher range if available. Do not exceed maximum input ratings. |
| No NCV detection. | No AC voltage present; NCV function not activated. | Verify AC voltage presence with another method; ensure NCV mode is active. |

## Specifications

| Parameter | Value (ZL12B) |
|---|---|
| Display Count | 6000 Counts |
| DC Voltage Range | 0.1V ~ 600V |
| AC Voltage Range | 0.1V ~ 600V |
| Resistance Range | 0.1kΩ ~ 40MΩ |
| Capacitance Range | Automatic Range |
| Automatic Range | Yes |
| HD Color Screen | Yes |
| On-off Buzzer | Yes |
| Diode Test | Yes |
| Phase Sequence Recognition | Yes |
| NCV (Non-Contact Voltage) | Yes |
| Live Wire Detection | Yes |
| Data Retention | Yes |
| Flashlight | Yes |
| Automatic Shutdown | Yes |
| Power Supply | 2 x 1.5V AAA Battery |
| Weight | 120g |
| Item Model Number | 1005005429386117 |

## Warranty and Support

Specific warranty information for the LIBODD Smart Digital Multimeter ZL12B is not provided in this manual. For warranty details, technical support, or service inquiries, please contact your retailer or the manufacturer directly using the contact information provided at the point of purchase.