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› PEAKMETER PM8231 Series Smart Digital Multimeter User Manual

## PEAKMETER EC-PM8231

# PEAKMETER PM8231 Series Smart Digital Multimeter User Manual

*Model: EC-PM8231*

## 1. INTRODUCTION

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This manual provides detailed instructions for the safe and effective operation of the PEAKMETER PM8231 Series Smart Digital Multimeter. This device is a compact, automatic portable digital multi-tester designed for various electrical measurements, including AC/DC Voltage, Resistance, Continuity, and Non-Contact Voltage (NCV) detection. It features a 2000-count display, data hold function, work light, and backlight for enhanced usability.

Please read this manual thoroughly before using the multimeter to ensure proper operation and to prevent potential hazards.

## 2. SAFETY INFORMATION

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**WARNING: To avoid electrical shock or damage to the meter, please observe the following safety rules:**

- Always ensure the test leads are properly connected and the function switch is set to the correct range before making any measurements.
- Do not apply more than the rated voltage, which is CAT III 600V for this device.
- Before opening the case to replace batteries, always remove the test leads from the circuit and the meter.
- Do not operate the meter if it appears damaged or if the test leads are damaged.
- Use extreme caution when working with voltages above 60V DC or 30V AC RMS, as these pose a shock hazard.
- Conforms to safety standards EN61010-1, EN61010-2-033, EN61326.



**Figure 2.1:** Rear view of the PM8231 multimeter, highlighting the battery compartment and critical safety warnings regarding electrical shock and compliance with IEC61010-1, 600V CAT III standards.

### 3. PRODUCT OVERVIEW AND FEATURES

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The PEAKMETER PM8231 is a versatile digital multimeter designed for ease of use and reliability. Key features include:

- **Smart Automotive Digital Multimeter:** Automatic portable design.
- **Data Hold:** Freezes the displayed measurement for easy reading.
- **NCV Detection:** Non-Contact Voltage detection for identifying live wires without direct contact.
- **Work Light & Backlight:** Enhances visibility in dimly lit environments.
- **2000 Counts Display:** Provides clear and precise readings.
- **Continuity Test:** Checks for open or closed circuits.
- **Auto Range:** Automatically selects the appropriate measurement range.



Figure 3.1: Front view of the PM8231 multimeter, showing the display, function buttons, and connected test leads.



**Figure 3.2:** Breakdown of PM8231 features, illustrating the LCD display with backlight, function selection keys, anti-skidding texture design for grip, and the integrated lamp/Non-Contact AC Voltage detector.



Figure 3.3: Physical dimensions of the PM8231 multimeter, indicating its compact size for portability.

## 4. SETUP

### 4.1. Battery Installation

The PM8231 multimeter requires 2 x 1.5V AAA batteries (included). To install or replace batteries:

1. Ensure the multimeter is turned off and disconnect all test leads from the input terminals and any circuits.
2. Locate the battery compartment cover on the back of the unit (refer to Figure 2.1).
3. Use a screwdriver to loosen the screw(s) securing the cover.
4. Remove the cover and insert the batteries, observing the correct polarity (+ and -).
5. Replace the cover and tighten the screw(s).

### 4.2. Connecting Test Leads

Connect the red test lead to the "V $\Omega$ mA" input jack and the black test lead to the "COM" input jack. Ensure a secure connection before use.

## 5. OPERATING INSTRUCTIONS

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The PM8231 features an auto-ranging function, simplifying operation. The device will automatically select the appropriate range for most measurements.

### 5.1. Power On/Off

Press the orange power button (🔌) to turn the multimeter on. The device features an "Auto Power Off" function to conserve battery life. Press the power button again to turn it off.

### 5.2. AC/DC Voltage Measurement

1. Connect the test leads to the circuit in parallel with the load.
2. The multimeter will automatically detect AC or DC voltage and display the reading.
3. The maximum input voltage is 600V.

### 5.3. Resistance Measurement

1. Ensure the circuit is de-energized before measuring resistance.
2. Connect the test leads across the component or circuit segment.
3. The multimeter will display the resistance value in Ohms ( $\Omega$ ).

### 5.4. Continuity Test

1. Ensure the circuit is de-energized.
2. Connect the test leads across the circuit or component.
3. If continuity exists (resistance less than 50 $\Omega$ ), the multimeter will emit an audible beep.

### 5.5. Non-Contact Voltage (NCV) Detection

The NCV function allows for detection of AC voltage without direct contact, useful for identifying live wires.

1. Press and hold the "NCV" button.
2. Move the top end of the multimeter near the suspected live wire or outlet.
3. The device will indicate the presence of AC voltage through visual and/or audible alerts.



Figure 5.1: The PM8231 multimeter demonstrating its NCV function, detecting voltage near an electrical outlet without physical contact.

### 5.6. Data Hold Function

Press the "H/T" button to hold the current reading on the display. Press it again to release the hold function.

### 5.7. Work Light and Backlight

The multimeter includes a work light for illuminating the measurement area and a backlight for the display, enhancing visibility in dark conditions.



**Figure 5.2:** The PM8231 multimeter's flashlight feature in use, providing illumination for working in low-light environments, alongside its clear LCD and backlight.

## 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 battery indicator appears on the display, replace the batteries as described in Section 4.1. Prompt battery replacement ensures accurate readings and proper device function.

### 6.3. Test Lead Inspection

Regularly inspect the test leads for any signs of damage, such as cracked insulation or exposed metal. Replace damaged leads immediately to prevent electrical shock.

## 7. TROUBLESHOOTING

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- **No Display/Power On:** Check battery installation and ensure batteries are not depleted. Replace if necessary.
- **Inaccurate Readings:** Ensure test leads are properly connected and the measurement function is correctly selected. Check for damaged test leads.
- **"OL" or "OVER" on Display:** Indicates an overload or out-of-range measurement. The multimeter is auto-ranging, but extremely high values may exceed its capacity.
- **No Continuity Beep:** Check if the circuit is de-energized. Ensure the resistance is below 50Ω for the beep to activate.

## 8. SPECIFICATIONS

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The following tables detail the technical specifications for the PM8231 and related models.

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**Table 8.1:** Specifications for PM8231 and PM8232 models, including measurement ranges, accuracy, and general features.

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**Table 8.2:** Specifications for the PM8232A model, including measurement ranges, accuracy, and general features.

- **Display:** 2000 Counts
- **Power Supply:** 2 x 1.5V AAA Batteries
- **Weight:** Approx. 150g
- **Dimensions (PM8231):** 132mm x 61mm x 26mm (5.2 x 2.4 x 1.0 inches)
- **Safety Standard/Rating:** EN61010-1, EN61010-2-033, EN61326, CAT III 600V

## 9. WARRANTY AND SUPPORT

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This PEAKMETER product is covered by a manufacturer's warranty against defects in materials and workmanship. Please refer to the warranty card included with your product for specific terms and conditions. For technical support or service inquiries, please contact your retailer or visit the official PEAKMETER website.

