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SATMW PM8211

SATMW PM8211 Digital Voltage Tester Multimeter User Manual

Model: PM8211

1. Introduction

The SATMW PM8211 is a compact, handheld digital multimeter designed for accurate and safe electrical measurements. It features automatic and manual range selection, data hold, auto-off, and non-contact voltage detection capabilities. This manual provides essential information for the safe and effective use of your multimeter.



Image 1: The SATMW PM8211 Digital Voltage Tester Multimeter with its included test leads.

2. Safety Information

Always observe safety precautions when using electrical testing equipment. Failure to do so may result in injury or damage to the instrument.

- Do not exceed the maximum input values specified for each measurement range.
- Ensure the test leads are properly connected and in good condition before use.
- Do not use the multimeter if it appears damaged or is not operating correctly.

- Exercise extreme caution when working with voltages above 60V DC or 30V AC RMS, as these pose a shock hazard.
- Always disconnect power to the circuit before making resistance, diode, or continuity measurements.
- Replace batteries promptly when the low battery indicator appears to ensure accurate readings.

3. Product Overview and Components

Familiarize yourself with the different parts of your PM8211 multimeter:



Image 2: Labeled diagram showing the key components of the PM8211 Multimeter.

1. **Test Probe:** Used for making contact with the circuit under test.
2. **Flashlight:** Provides illumination in dimly lit areas.
3. **Non-Contact Voltage Sensing Area:** Detects AC voltage without direct contact.
4. **Non-Contact Voltage Indicator:** Lights up and/or beeps when AC voltage is detected.
5. **Rotary Switch:** Selects the primary measurement function (OFF, V~, V-, Ω, mA~, mA-, NCV).

6. **Display:** Shows measurement readings, units, and indicators.
7. **Data Hold Button (HOLD):** Freezes the current reading on the display.
8. **Range Selection Button (RANGE):** Toggles between automatic and manual ranging.
9. **Backlight and Lighting Key (FUNC):** Activates the display backlight and flashlight.
10. **Function Selection Button (FUNC):** Selects sub-functions within a rotary switch position (e.g., Diode/Continuity).

4. Setup

4.1 Battery Installation

The PM8211 multimeter requires two 1.5V AAA batteries (not included) for operation.

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

5. Operating Instructions

5.1 Power On/Off

- To turn on the multimeter, rotate the rotary switch from the 'OFF' position to any desired measurement function.
- To turn off the multimeter, rotate the rotary switch to the 'OFF' position.
- The multimeter features an auto-off function to conserve battery power. It will automatically power off after a period of inactivity.

5.2 Function Selection

Use the rotary switch to select the main measurement function. For functions with multiple modes (e.g., Diode/Continuity), press the 'FUNC' button to cycle through them.

5.3 Measurement Modes

- **DC Voltage (V-):** Rotate the switch to 'V-'. Connect the red test lead to the positive point and the black test lead to the negative point of the DC circuit.
- **AC Voltage (V~):** Rotate the switch to 'V~'. Connect the test leads across the AC voltage source.
- **DC Current (mA-):** Rotate the switch to 'mA-'. Break the circuit and connect the multimeter in series with the load. Ensure the current does not exceed the maximum rating.
- **AC Current (mA~):** Rotate the switch to 'mA~'. Break the circuit and connect the multimeter in series with the load. Ensure the current does not exceed the maximum rating.
- **Resistance (Ω):** Rotate the switch to 'Ω'. Ensure the circuit is de-energized. Connect the test leads across the component to measure its resistance.
- **Diode Test:** Rotate the switch to 'Ω' and press 'FUNC' until the diode symbol appears. Connect the red lead to the anode and the black lead to the cathode of the diode.
- **Continuity Test:** Rotate the switch to 'Ω' and press 'FUNC' until the continuity symbol appears. Connect the test leads across the circuit. A beep indicates continuity.
- **Non-Contact Voltage (NCV):** Rotate the switch to 'NCV'. Hold the NCV sensing area near the conductor. The NCV indicator will light up and/or beep if AC voltage is detected. Sensitivity can be adjusted.

5.4 Special Functions

- **Data Hold (HOLD):** Press the 'HOLD' button to freeze the current reading on the display. Press again to release.

- **Range Selection (RANGE):** In manual ranging modes, press 'RANGE' to cycle through available ranges. In auto-ranging modes, this button may switch to manual ranging.
- **Backlight and Flashlight:** Press the 'FUNC' button briefly to activate the display backlight. Press and hold 'FUNC' to turn on the flashlight. Repeat to turn off.

6. Maintenance

6.1 Battery Replacement

When the low battery indicator appears on the display, replace the batteries as described in Section 4.1. Remove batteries if the multimeter will not be used for an extended period.

6.2 Cleaning

Wipe the multimeter casing with a damp cloth and mild detergent. Do not use abrasive cleaners or solvents. Ensure the device is completely dry before use.

7. Troubleshooting

Problem	Possible Cause	Solution
No display or faint display	Dead or low batteries; Incorrect battery installation	Replace batteries; Check battery polarity
Incorrect readings	Wrong function selected; Poor test lead connection; Exceeded measurement range	Select correct function; Ensure secure connections; Check range limits
Multimeter turns off unexpectedly	Auto-off function activated; Low batteries	Rotate switch to reactivate; Replace batteries
NCV not detecting voltage	Voltage too low; Incorrect sensing position	Ensure voltage is within detectable range; Reposition sensing area closer to conductor

8. Specifications

The following are the technical specifications for the SATMW PM8211 Digital Voltage Tester Multimeter:

- **Maximum Display:** 2000 counts
- **DC Voltage Measurement:** 200m/2/20/200/600V ±(0.7%+2)
- **AC Voltage Measurement:** 200m/2/20/200/600V ±(0.8%+3)
- **DC Current Measurement:** 20mA/200mA ±(1.5%+3)
- **AC Current Measurement:** 20mA/200mA ±(2.0%+3)
- **Resistance Measurement:** 200Ω/2kΩ/20kΩ/200kΩ/2MΩ/20MΩ ±(1.0%+3)
- **Diode Test:** Yes
- **Continuity Test:** Yes
- **Non-Contact Voltage Detection (NCV):** Yes, with adjustable sensitivity and sound/light alarm
- **Data Hold:** Yes
- **Auto-Off:** Yes
- **Power:** 2 x 1.5V AAA Battery (Not Included)
- **Weight:** Approx. 251g / 8.9oz

- **Dimensions:** Approx. 250 x 40 x 33mm / 9.8 x 1.6 x 1.3in



Image 3: Physical dimensions of the PM8211 Multimeter.

9. Warranty and Support

For warranty information or technical support, please refer to the documentation provided with your purchase or contact SATMW customer service through their official channels. Keep your purchase receipt as proof of purchase.

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