

PEAKMETER PM18C

PEAKMETER PM18C Digital Multimeter User Manual

Model: PM18C

1. INTRODUCTION

This manual provides detailed instructions for the safe and effective operation of the PEAKMETER PM18C Digital Multimeter. The PM18C is a versatile, high-precision instrument designed for measuring AC/DC voltage, AC/DC current, resistance, capacitance, frequency, and duty cycle. It also includes functions for Non-Contact Voltage (NCV) detection, live line testing, diode testing, transistor (hFE) testing, continuity checking, and temperature measurement. Please read this manual thoroughly before using the device to ensure proper operation and to prevent potential hazards.

2. SAFETY INFORMATION

Warning: To avoid possible electric shock or personal injury, and to avoid possible damage to the meter or to the equipment under test, adhere to the following safety rules:

- Always ensure the meter is in good working condition before use. Inspect the test leads for damage.
- Do not apply more than the rated voltage, as marked on the meter, between the terminals or between any terminal and earth ground. The PM18C is rated for 600V CAT IV and 1000V CAT II.
- Use caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC. Such voltages pose a shock hazard.
- Always disconnect the test leads from the circuit before changing functions.
- Do not use the meter if the battery cover is not properly closed.
- Replace the batteries as soon as the low battery indicator appears to ensure accurate readings.
- Do not operate the meter in explosive gas, vapor, or dust environments.
- When making current measurements, ensure the meter is connected in series with the load and that the circuit is de-energized before connecting.
- Always use the correct terminals, function, and range for your measurements.
- Fuses protect the current input terminals. Do not attempt to measure currents exceeding the specified maximums (20A for the 20A terminal, 600mA for the mA/uA terminal).

3. PRODUCT FEATURES

- Measures AC/DC Voltage, AC/DC Current, Resistance, Capacitance, Frequency, Duty Cycle.
- Non-Contact Voltage (NCV) detection.
- Live Line testing.
- Diode and Continuity testing.
- Transistor (hFE) testing.
- Temperature measurement function (PM18C specific).
- Large LCD display with backlight for clear readings in various lighting conditions.
- Data Hold function to freeze displayed values.
- Auto Power Off feature to conserve battery life.
- Integrated bracket for convenient tabletop use.
- 6000 counts display for high resolution.

4. SETUP

4.1. Battery Installation

1. Ensure the multimeter is powered off and disconnect all test leads.
2. Locate the battery compartment on the back of the meter.
3. Unscrew the retaining screw(s) and remove the battery cover.
4. Insert four (4) 1.5V AA batteries, observing the correct polarity markings inside the compartment.
5. Replace the battery cover and secure it with the screw(s).

4.2. Connecting Test Leads

Always connect the black test lead to the "COM" (common) jack. Connect the red test lead to the appropriate input jack based on the measurement type:

- **VΩHz%Live:** For voltage, resistance, frequency, duty cycle, diode, continuity, and live line tests.
- **mAμA:** For current measurements up to 600mA.
- **20A:** For current measurements up to 20A.



Figure 1: Front view of the PEAKMETER PM18C Digital Multimeter, showing the display, rotary function switch, and input jacks.

5. OPERATING INSTRUCTIONS

5.1. Power On/Off and Basic Functions

- **Power On:** Rotate the function switch from "OFF" to any desired measurement function.
- **Power Off:** Rotate the function switch to the "OFF" position. The meter also features an Auto Power Off function after approximately 15 minutes of inactivity.
- **Backlight/Work Light:** Press the **H/★** button briefly to turn on/off the backlight. Press and hold the **H/★** button to turn on/off the work light.
- **Data Hold:** Press the **H/★** button briefly during a measurement to freeze the current reading on the display. Press again to release.
- **Function Selection (SEL):** In some positions of the rotary switch (e.g., Voltage, Diode/Continuity), the **SEL** button allows you to cycle through different sub-functions.

5.2. Measuring DC Voltage (V—)

1. Set the rotary switch to the V— position.
2. Connect the black test lead to the "COM" jack and the red test lead to the "VΩHz%Live" jack.
3. Connect the test probes in parallel across the component or circuit to be measured.
4. Read the voltage value on the display.

5.3. Measuring AC Voltage (V~)

1. Set the rotary switch to the V~ position.
2. Connect the black test lead to the "COM" jack and the red test lead to the "VΩHz%Live" jack.
3. Connect the test probes in parallel across the AC voltage source or component.
4. Read the voltage value on the display.

5.4. Measuring Resistance (Ω)

1. Set the rotary switch to the Ω position.
2. Connect the black test lead to the "COM" jack and the red test lead to the "VΩHz%Live" jack.
3. Ensure the circuit or component is de-energized before measuring resistance.
4. Connect the test probes across the component.
5. Read the resistance value on the display.

5.5. Diode Test (→|—) and Continuity Test (♩)

1. Set the rotary switch to the →|— / ♩ position.
2. Use the [SEL](#) button to switch between Diode Test and Continuity Test.
3. Connect the black test lead to "COM" and the red test lead to "VΩHz%Live".
4. **Diode Test:** Connect the red probe to the anode and the black probe to the cathode of the diode. A forward voltage drop will be displayed. Reverse the probes; an "OL" (Open Loop) reading indicates a good diode.
5. **Continuity Test:** Connect the probes across the circuit or component. If resistance is below approximately 50Ω, the buzzer will sound, indicating continuity.

5.6. Measuring Capacitance (F)

1. Set the rotary switch to the F position.
2. Connect the black test lead to "COM" and the red test lead to "VΩHz%Live".
3. Ensure the capacitor is fully discharged before measurement to prevent damage to the meter.
4. Connect the test probes across the capacitor terminals.
5. Read the capacitance value on the display.

5.7. Measuring Frequency (Hz) and Duty Cycle (%)

1. Set the rotary switch to the Hz position.
2. Use the [SEL](#) button to switch between Frequency and Duty Cycle measurement.
3. Connect the black test lead to "COM" and the red test lead to "VΩHz%Live".
4. Connect the test probes in parallel across the signal source.
5. Read the frequency or duty cycle value on the display.

5.8. Measuring Temperature (°C/°F) (PM18C Specific)

1. Set the rotary switch to the °C/°F position.
2. Connect the K-type thermocouple (if included) to the "VΩHz%Live" and "COM" jacks, observing polarity.
3. Place the thermocouple tip on or near the object whose temperature is to be measured.

4. Read the temperature value on the display.

5.9. Non-Contact Voltage (NCV) Detection

1. Set the rotary switch to the NCV position.
2. Move the top front part of the meter close to the conductor being tested.
3. If AC voltage is detected, the NCV indicator light will flash, and the buzzer will sound. The intensity of the beeps and flashes increases with stronger voltage.

5.10. Live Line Test

1. Set the rotary switch to the Live position.
2. Connect the red test lead to the "VΩHz%Live" jack. The black lead can be left unconnected or connected to "COM".
3. Touch the red probe to the conductor suspected of being live.
4. If a live voltage is detected, the display will show "LIVE", and the buzzer will sound.

5.11. Measuring DC Current (A—)

1. **Important:** De-energize the circuit before connecting the meter.
2. Set the rotary switch to the appropriate A— range (e.g., 60mA, 600mA, 20A).
3. For mA/μA range: Connect the black test lead to "COM" and the red test lead to the "mAμA" jack.
4. For 20A range: Connect the black test lead to "COM" and the red test lead to the "20A" jack.
5. Break the circuit and connect the meter in series with the load.
6. Re-energize the circuit and read the current value.

5.12. Measuring AC Current (A~)

1. **Important:** De-energize the circuit before connecting the meter.
2. Set the rotary switch to the appropriate A~ range (e.g., 60mA, 600mA, 20A).
3. For mA/μA range: Connect the black test lead to "COM" and the red test lead to the "mAμA" jack.
4. For 20A range: Connect the black test lead to "COM" and the red test lead to the "20A" jack.
5. Break the circuit and connect the meter in series with the load.
6. Re-energize the circuit and read the current value.

5.13. Transistor (hFE) Test

1. Set the rotary switch to the hFE position.
2. Identify if the transistor is NPN or PNP.
3. Insert the transistor's emitter, base, and collector leads into the corresponding holes in the hFE socket on the meter.
4. Read the hFE value (DC current gain) on the display.



Figure 2: Angled view of the PEAKMETER PM18C Digital Multimeter, highlighting its ergonomic design and display visibility.

6. MAINTENANCE

6.1. Cleaning

Wipe the meter with a damp cloth and a mild detergent. Do not use abrasives or solvents. Ensure the meter is completely dry before use.

6.2. Battery Replacement

When the **battery symbol** appears on the display, the batteries are low and should be replaced immediately to ensure accurate readings. Refer to section 4.1 for battery installation instructions.

6.3. Fuse Replacement

If the meter fails to measure current, the fuse may be blown. To replace the fuse:

1. Ensure the meter is powered off and disconnect all test leads.
2. Unscrew the battery cover and remove the batteries.
3. Unscrew the additional screws securing the back casing and carefully open the meter.
4. Locate the blown fuse(s). The PM18C uses two fuses:
 - **F1**: 600mA / 250V Fast-acting fuse (for mA/μA range)
 - **F2**: 20A / 250V Fast-acting fuse (for 20A range)
5. Replace the blown fuse with a fuse of the exact same type and rating.
6. Carefully reassemble the meter, ensuring all screws are tightened.

6.4. Storage

If the meter is not to be used for an extended period, remove the batteries to prevent leakage. Store the meter in a cool, dry place, away from direct sunlight and extreme temperatures.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
No display or dim display	Low or dead batteries; Incorrect battery installation; Meter is off.	Replace batteries; Check battery polarity; Turn the rotary switch to a function.
"OL" (Overload) displayed	Input value exceeds the selected range; Open circuit (for resistance/continuity).	Select a higher range; Check for proper circuit connection.
Incorrect readings	Low batteries; Incorrect function/range selected; Damaged test leads; External interference.	Replace batteries; Verify function/range; Inspect test leads; Move away from strong electromagnetic fields.
Cannot measure current	Blown fuse; Incorrect input jack used; Meter not in series with load.	Replace fuse (refer to 6.3); Ensure red lead is in mA/ μ A or 20A jack; Connect meter in series.

8. SPECIFICATIONS



Figure 3: Physical dimensions of the PEAKMETER PM18C Digital Multimeter (190mm x 85mm x 55mm).

Parameter	Details
Display	LCD Display with Backlight, 6000 counts
Operating Environment	600V CAT IV and 1000V CAT II
DC Voltage Range	600mV / 6V / 60V / 600V / 1000V
DC Voltage Resolution	0.1mV / 1mV / 10mV / 100mV / 1V
AC Voltage Range	6V / 60V / 600V / 750V
AC Voltage Resolution	1mV / 10mV / 100mV / 1V
DC Current Range	60 μ A / 60mA / 600mA / 20A

Parameter	Details
DC Current Resolution	0.01μA / 0.01mA / 0.1mA / 10mA
AC Current Range	60mA / 600mA / 20A
AC Current Resolution	0.01mA / 0.1mA / 10mA
Frequency Range	9.999Hz / 99.99Hz / 999.9Hz / 9.999KHz / 99.99KHz / 999.9KHz / 9.999MHz
Frequency Resolution	0.001Hz / 0.01Hz / 0.1Hz / 0.001KHz / 0.01KHz / 0.1KHz / 0.001MHz
Resistance Range	600Ω / 6kΩ / 60kΩ / 600kΩ / 6MΩ / 60MΩ
Resistance Resolution	0.1Ω / 1Ω / 10Ω / 100Ω / 1kΩ / 10kΩ
Capacitance Range	6nF / 60nF / 600nF / 6μF / 60μF / 600μF / 6mF / 100mF
Capacitance Resolution	0.001nF / 0.01nF / 0.1nF / 1nF / 10nF / 100nF / 0.1μF / 0.001mF
Temperature Range (PM18C)	-20°C to 1000°C / -4°F to 1832°F
K-Type Thermocouple Range (PM18C)	Max. 250°C
Working Temperature/Humidity	0°C to 40°C; <80%RH
Storage Temperature/Humidity	-10°C to 60°C; <70%RH
Power Supply	4 * 1.5V AA Batteries
Item Size	19 * 8.5 * 5.5 cm (7.48 * 3.35 * 2.17 in)
Item Weight	328g (11.59oz)

9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided with your purchase or contact the retailer/manufacturer directly. Keep your purchase receipt as proof of purchase.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question