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Proster PST317-US

Proster Digital Multimeter Model PST317-US User Manual

True RMS 9999 Counts Auto Ranging Multimeter

1. Safety Information

Please read and understand all safety information and operating instructions before using this multimeter. Failure to follow these instructions may result in electric shock, fire, or damage to the meter.

- Always ensure the meter is in the correct function and range before making measurements.
- Do not apply voltage or current that exceeds the maximum specified limits for the meter.
- 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, diodes, or capacitance.
- Inspect test leads for damaged insulation or exposed metal before use. Replace if damaged.
- Do not operate the meter if it appears damaged or if the case is open.
- Ensure the battery cover is securely closed before operation.
- This meter has a safety rating of CAT III 600V. Adhere to this rating for all measurements.

Internal view of the Proster Digital Multimeter, highlighting the smart protection circuit with built-in double-tube fuses designed to prevent burnout from accidental operation. This feature enhances safety and reliability.

2. Product Overview

The Proster Digital Multimeter Model PST317-US is a True RMS auto-ranging multimeter designed for precise electrical measurements. It features a 9999-count display with an analog bar graph, making it suitable for various applications from home use to professional electrical work.

2.1 Key Features

- **Measurement Capabilities:** AC/DC Voltage, AC/DC Current, Resistance, Capacitance, Frequency, Duty Cycle, Temperature, Inductance, Diode, Continuity.
- **True RMS:** Provides accurate readings for non-linear signals.
- **9999 Counts Display:** High-resolution digital display with an analog bar.
- **Auto Ranging:** Automatically selects the appropriate measurement range.
- **Non-Contact Voltage (NCV) Detection:** For enhanced safety when detecting live wires.

- **Backlight & Flashlight:** Improves visibility in low-light conditions.
- **Data Hold:** Freezes the displayed reading for easy recording.
- **Auto Power-Off:** Conserves battery life after 15 minutes of inactivity.
- **Integrated Kickstand & Probe Storage:** For convenience and organization.
- **LED Lighting Jacks:** Guides correct test lead placement.

The Proster Digital Multimeter Model PST317-US, shown with its included accessories: test leads, alligator clips, spare fuses, AAA batteries, a screwdriver, and a protective carrying pouch.

An overview of the multimeter's multiple test functions, including DC/AC Voltage, DC/AC Current, Diode, Capacitance, Resistance, Frequency, Duty Cycle, NCV, Temperature, Peak Test, Inductance, and Flashing Jacks.

3. Setup

3.1 Battery Installation

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

3.2 Connecting Test Leads

- Insert the black test lead into the 'COM' (Common) jack.
- For most measurements (Voltage, Resistance, Capacitance, Frequency, Diode, Continuity, Temperature), insert the red test lead into the 'VΩHz' jack.
- For current measurements up to 999.9mA, insert the red test lead into the 'mA' jack.
- For current measurements up to 10A, insert the red test lead into the '10A' jack.

The multimeter features LED lighting jacks that illuminate to indicate the correct jack for the selected function, helping to prevent incorrect connections.

4. Operating Instructions

Turn the rotary dial to select the desired measurement function. The meter will automatically select the appropriate range (auto-ranging). Use the 'RANGE' button to switch to manual ranging if needed. The 'FUNC' button cycles through sub-functions within a dial position (e.g., AC/DC voltage, Diode/Continuity).

4.1 AC/DC Voltage Measurement

1. Turn the rotary dial to 'V~' (AC Voltage) or 'V=' (DC Voltage).
2. Connect the test leads to the circuit in parallel with the load.

3. Read the voltage value on the display.

Visual examples demonstrating various measurement capabilities of the multimeter, including AC Voltage, DC Voltage, Temperature, Resistance, Capacitance, and Peak Test.

4.2 AC/DC Current Measurement

1. Turn the rotary dial to 'A~' (AC Current) or 'A=' (DC Current).
2. Ensure the red test lead is in the appropriate current jack ('mA' or '10A').
3. Connect the test leads in series with the circuit.
4. Read the current value on the display.

4.3 Resistance Measurement

1. Turn the rotary dial to 'Ω'.
2. Ensure the circuit is de-energized before connecting the test leads.
3. Connect the test leads across the component to be measured.
4. Read the resistance value on the display.

4.4 Capacitance Measurement

1. Turn the rotary dial to 'F'.
2. Ensure the capacitor is fully discharged before connecting the test leads.
3. Connect the test leads across the capacitor terminals.
4. Read the capacitance value on the display.

4.5 Frequency and Duty Cycle Measurement

1. Turn the rotary dial to 'Hz%'.
2. Connect the test leads to the signal source.
3. Use the 'FUNC' button to switch between frequency (Hz) and duty cycle (%).

4.6 Temperature Measurement

1. Turn the rotary dial to '°C/°F'.
2. Connect the temperature probe to the 'VΩHz' and 'COM' jacks.
3. Place the probe tip on or near the object whose temperature is to be measured.
4. Use the 'FUNC' button to switch between Celsius and Fahrenheit.

4.7 Inductance Measurement

1. Turn the rotary dial to 'L'.
2. Connect the test leads across the inductor.
3. Read the inductance value on the display.

The multimeter conducting an inductance test on a coil, displaying the measured value. This function is useful for debugging circuit components.

4.8 Non-Contact Voltage (NCV) Detection

1. Turn the rotary dial to 'NCV'.
2. Move the top of the meter near an AC voltage source.
3. The meter will emit an audible alarm and the NCV indicator will light up when AC voltage is detected.

The multimeter's NCV function in action, detecting AC power supply near electrical outlets. The display and indicator lights show whether low or high voltage is present without direct contact.

4.9 Diode Test and Continuity

1. Turn the rotary dial to the Diode/Continuity symbol.
2. Use the 'FUNC' button to switch between Diode Test and Continuity Test.
3. For Diode Test: Connect the red lead to the anode and the black lead to the cathode. The forward voltage drop will be displayed. Reverse the leads to check for open circuit.
4. For Continuity Test: Connect the test leads across the circuit. An audible beep indicates continuity (low resistance).

4.10 Special Functions

- **PEAK Button:** Captures peak AC voltage/current values.
- **MAX/MIN Button:** Records maximum and minimum readings.
- **HOLD Button:** Freezes the current display reading.
- **Backlight/Flashlight Button:** Activates the display backlight and flashlight.

5. Maintenance

5.1 Cleaning

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

5.2 Battery Replacement

When the low battery indicator appears on the display, replace the batteries as described in the Setup section (3.1 Battery Installation).

5.3 Fuse Replacement

If the current measurement function fails, the fuse may need replacement. Always replace with fuses of the specified type and rating to maintain safety and performance.

- Ensure the meter is turned OFF and test leads are disconnected.
- Open the battery compartment cover.
- Carefully remove the old fuse.
- Insert a new fuse of the correct rating (e.g., F10A/600V for 10A range, F600mA/600V for mA range).
- Securely close the battery cover.

6. Troubleshooting

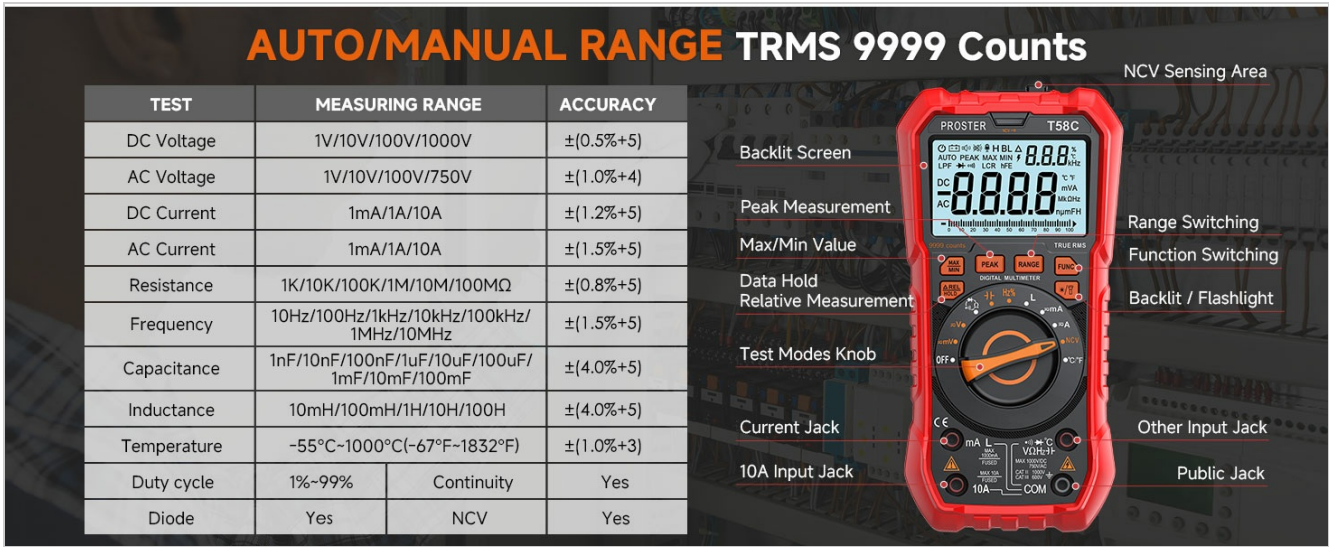
Problem	Possible Cause	Solution
Meter does not power on	Dead or incorrectly installed batteries	Replace batteries, ensuring correct polarity.
No reading or 'OL' (Overload) displayed	Incorrect function/range, open circuit, or value exceeds range	Select correct function/range. Check circuit for breaks. Ensure value is within meter's limits.
Inaccurate readings	Low battery, damaged test leads, external interference	Replace batteries. Inspect and replace test leads if damaged. Move away from strong electromagnetic fields.
Current measurement not working	Blown fuse, incorrect test lead connection	Replace fuse (see 5.3 Fuse Replacement). Ensure red lead is in the correct current jack ('mA' or '10A') and connected in series.
NCV not detecting voltage	Weak signal, NCV function not selected	Ensure NCV function is selected. Move closer to the AC source.

7. Specifications

Measurement Function	Measuring Range	Accuracy
DC Voltage	1V/10V/100V/1000V	±(0.5%+5)
AC Voltage	1V/10V/100V/750V	±(1.0%+4)
DC Current	1mA/1A/10A	±(1.2%+5)
AC Current	1mA/1A/10A	±(1.5%+5)
Resistance	1K/10K/100K/1M/10M/100MΩ	±(0.8%+5)
Frequency	10Hz/100Hz/1kHz/10kHz/100kHz/1MHz/10MHz	±(1.5%+5)
Capacitance	1nF/10nF/100nF/1uF/10uF/100uF/1mF/10mF/100mF	±(4.0%+5)
Inductance	10mH/100mH/1H/10H/100H	±(4.0%+5)
Temperature	-55°C~1000°C (-67°F~1832°F)	±(1.0%+3)
Duty Cycle	1%~99%	Yes
Continuity	Audible beep < 50Ω	Yes
Diode	Forward voltage drop	Yes
NCV	Non-Contact Voltage Detection	Yes

7.1 General Specifications

- **Display:** 9999 Counts with Analog Bar
- **True RMS:** Yes
- **Auto Ranging:** Yes
- **Power Source:** 3 x 1.5V AAA Batteries (included)
- **Auto Power-Off:** After 15 minutes of inactivity
- **Safety Rating:** CAT III 600V
- **Product Dimensions:** 8.86 x 5.12 x 2.76 inches
- **Item Weight:** 11.68 ounces (331 Grams)
- **Model Number:** PST317-US



A comprehensive table outlining the measuring ranges and accuracy for various functions of the Proster Digital Multimeter PST317-US.

8. Warranty and Support

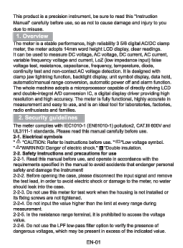
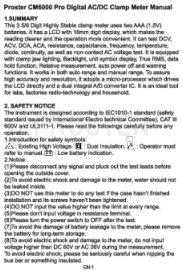
Proster products are designed for reliability and performance. For specific warranty details and customer support, please refer to the documentation included with your purchase or visit the official Proster website. Keep your purchase receipt as proof of purchase for any warranty claims.

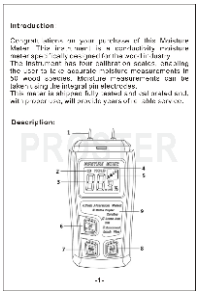
For technical assistance or inquiries, please contact Proster customer service through the contact information provided in your product packaging or on the official Proster brand store.

Online Resources:

- Proster Brand Store: Visit Proster Store

Related Documents - PST317-US

	Proster Clamp Meter TRMS 6000 Counts User Manual This user manual provides detailed instructions and specifications for the Proster Clamp Meter TRMS 6000 Counts, covering its features, operation, safety guidelines, and troubleshooting.
	Proster CM6000 Pro Digital AC/DC Clamp Meter User Manual Comprehensive user manual for the Proster CM6000 Pro Digital AC/DC Clamp Meter, detailing its features, specifications, operation, safety precautions, and troubleshooting. Covers DCV, ACV, DCA, ACA, resistance, capacitance, frequency, temperature, diode, continuity, and NCV measurements.
	Proster XL830L Digital Multimeter User's Manual User's manual for the Proster XL830L Digital Multimeter, covering safety precautions, general description, electronic symbols, function panel, operations instructions, technical specifications, maintenance, accessories, caution, warranty, and contact information.

	Proster Wire Tracker User Manual User manual for the Proster Multi-purpose Communication Network Wire Tracker, detailing its functions, specifications, and usage for tracking and verifying network and electric power cables.
	Proster RZMT-10 MD Digital Wood Moisture Meter User Manual and Specifications User manual and specifications for the Proster RZMT-10 MD digital wood moisture meter, detailing its features, operation, care, and technical specifications for measuring wood humidity. Includes wood species calibration groups.
	Proster Turntable Stylus Force Scale Gauge Tester User Manual User manual for the Proster Turntable Stylus Force Scale Gauge Tester (PST052-EN-1). Provides an overview, specifications, operation instructions, and calibration details for accurately measuring stylus force on turntables.