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Proster T58A

Proster Digital Multimeter T58A User Manual

MODEL: T58A

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1. Introduction

Thank you for choosing the Proster Digital Multimeter T58A. This professional-grade multimeter offers high-precision measurements with 9999 counts and advanced functionalities including True RMS (TRMS), Low Impedance (LOZ) to prevent ghost readings, Non-Contact Voltage (NCV) detection, HFE for transistor testing, and an infrared sensor for temperature. It is designed for electricians, technicians, and enthusiasts requiring a reliable tool for various electrical and electronic applications.

This manual provides detailed instructions for safe and effective use of your multimeter. Please read it thoroughly before operation and keep it for future reference.

2. Safety Information

Always observe basic safety precautions when using this multimeter to avoid electric shock, injury, or damage to the meter or equipment under test.

- **Overload Protection:** The multimeter is designed with overload protection to enhance safety and reliability.
- **Inspect Before Use:** Before each use, inspect the meter and test leads for any damage. Do not use if damaged.
- **Proper Terminal Connection:** Ensure test leads are connected to the correct input terminals for the desired measurement. The device includes light indicators for correct cable connection.
- **Voltage Limits:** Do not apply more than the rated voltage, as marked on the meter, between terminals or between any terminal and ground.
- **Working Environment:** Use the meter in a dry environment. Avoid using it in wet or damp conditions.
- **Battery Safety:** Replace batteries when the low battery indicator appears to ensure accurate readings.
- **Fuse Replacement:** Only replace fuses with specified types and ratings. Two spare fuses are included.

SMART PROTECTION

Built-in double safety tube



Figure 2.1: Smart Protection with Built-in Double Safety Tube

3. Package Contents

The Proster Digital Multimeter T58A package includes the following items:

- 1x Proster Digital Multimeter (9999 counts)
- 1x Pair of Test Leads (Red and Black)
- 1x Temperature Probe
- 1x Pair of Alligator Clips
- 2x Spare Fuses
- 3x AAA 1.5V Batteries
- 1x Screwdriver
- 1x User Manual
- 1x Carrying Case



Figure 3.1: Package Contents

4. Product Overview

The Proster T58A is a compact yet robust digital multimeter designed for comprehensive electrical measurements. It features a large, backlit LCD display for clear data visualization in various lighting conditions, including dark environments. The device is housed in a durable ABS casing and includes an adjustable rear stand and a hanging hook for convenient use.



Figure 4.1: Proster Digital Multimeter T58A

Key Features:

- **9999 Counts Display:** Provides high-resolution measurements.
- **True RMS (TRMS):** Ensures accurate readings for non-sinusoidal AC waveforms.
- **LOZ (Low Impedance):** Prevents false readings caused by ghost voltages.
- **NCV (Non-Contact Voltage):** Detects live wires without direct contact.
- **HFE (Transistor Test):** Measures the current gain of transistors.
- **Infrared Sensor:** For temperature measurement.
- **Large Backlit LCD:** Easy to read in all conditions.
- **Data Hold:** Freezes the displayed reading for easy recording.
- **Auto Power Off:** Conserves battery life after 15 minutes of inactivity.
- **Integrated Stand and Hook:** For hands-free operation.



Figure 4.2: Multimeter Functions Overview

5. Setup

5.1 Battery Installation

1. Ensure the multimeter is turned off.
2. Locate the battery compartment on the back of the device.
3. Use the included screwdriver to open the battery cover.
4. Insert three (3) AAA 1.5V batteries, observing the correct polarity (+/-).
5. Securely close the battery cover.

5.2 Connecting Test Leads

Connect the test leads to the appropriate input terminals based on the measurement you intend to perform. The multimeter features light indicators to help ensure correct connections.

- **COM Terminal (Black Lead):** Always connect the black test lead to the COM (common) terminal.
- **V \bar{A} Hz Terminal (Red Lead):** For voltage, resistance, frequency, capacitance, diode, and continuity measurements.
- **m \bar{A} μ A Terminal (Red Lead):** For small current measurements (milliamperes, microamperes).
- **10A Terminal (Red Lead):** For large current measurements (up to 10 Amperes).

6. Operating Instructions

To operate the multimeter, turn the rotary dial to the desired function. Use the 'FUNC' button to cycle through sub-functions if available within a dial setting.

6.1 Measuring DC Voltage

1. Turn the rotary dial to the 'V—' position.
2. Connect the red test lead to the V \bar{A} Hz terminal and the black test lead to the COM terminal.
3. Connect the test probes across the DC voltage source or component to be measured.
4. Read the voltage value on the display.

6.2 Measuring AC Voltage

1. Turn the rotary dial to the 'V~' position.
2. Connect the red test lead to the V Ω Hz terminal and the black test lead to the COM terminal.
3. Connect the test probes across the AC voltage source or component.
4. Read the voltage value on the display.



Figure 6.1: AC Voltage Measurement

6.3 Measuring Current (AC/DC)

1. Turn the rotary dial to the 'A—' (DC Current) or 'A~' (AC Current) position.
2. For currents up to 10A, connect the red test lead to the '10A' terminal. For smaller currents, use the 'mA μ A' terminal. Connect the black test lead to the COM terminal.
3. **Important:** Connect the multimeter in series with the circuit to measure current.
4. Read the current value on the display.

6.4 Measuring Resistance

1. Turn the rotary dial to the ' Ω ' position.

2. Connect the red test lead to the V Ω Hz terminal and the black test lead to the COM terminal.
3. Connect the test probes across the component whose resistance you want to measure. Ensure the component is de-energized.
4. Read the resistance value on the display.

6.5 Measuring Capacitance

1. Turn the rotary dial to the '††' (Capacitance) position.
2. Connect the red test lead to the V Ω Hz terminal and the black test lead to the COM terminal.
3. Connect the test probes across the capacitor. Ensure the capacitor is discharged before testing.
4. Read the capacitance value on the display.

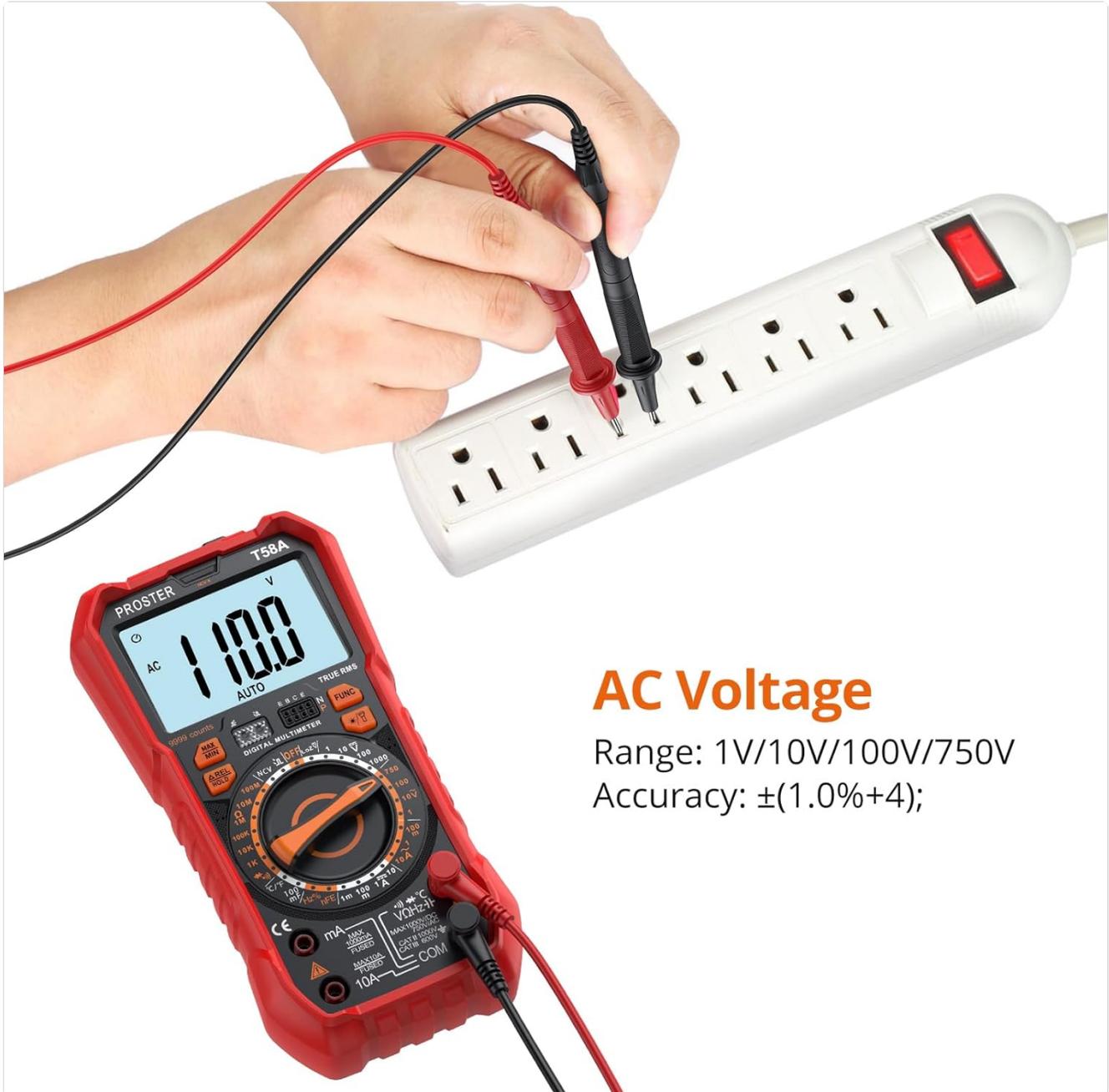


Figure 6.2: Capacitance Measurement

6.6 Measuring Frequency

1. Turn the rotary dial to the 'Hz' position.
2. Connect the red test lead to the V Ω Hz terminal and the black test lead to the COM terminal.

3. Connect the test probes across the circuit or signal source.
4. Read the frequency value on the display.

6.7 Diode Test

1. Turn the rotary dial to the '†' (Diode) position.
2. Connect the red test lead to the V \hat{A} Hz terminal and the black test lead to the COM terminal.
3. Connect the red probe to the anode and the black probe to the cathode of the diode.
4. A forward voltage drop will be displayed. Reverse the probes; an 'OL' (Open Line) reading indicates a good diode.

6.8 Continuity Test

1. Turn the rotary dial to the '•)' (Continuity) position.
2. Connect the red test lead to the V \hat{A} Hz terminal and the black test lead to the COM terminal.
3. Touch the test probes to the two points of the circuit or component you want to test for continuity.
4. If there is continuity (low resistance), the buzzer will sound, and the display will show a low resistance value. An 'OL' reading indicates an open circuit.

6.9 Temperature Measurement

1. Turn the rotary dial to the '°C/°F' (Temperature) position.
2. Connect the temperature probe to the appropriate input terminals (usually V \hat{A} Hz and COM, check markings on the meter).
3. Place the tip of the temperature probe on or in the object whose temperature you wish to measure.
4. Read the temperature value on the display.



Figure 6.3: Temperature Measurement

6.10 Non-Contact Voltage (NCV) Detection

1. Turn the rotary dial to the 'NCV' position.
2. Move the top end of the multimeter close to the conductor or outlet you suspect has AC voltage.
3. The meter will emit an audible beep and the NCV indicator light will flash if AC voltage is detected. The display may show dashes or a relative strength indicator.

NON-VOLTAGE DETECTION FUNCTION



Rotate the button to NCV and place it on the object to be measured to measure whether the object is charged.

Figure 6.4: Non-Contact Voltage Detection

6.11 LOZ (Low Impedance) Measurement

The LOZ function is used to eliminate ghost voltages, which are false voltage readings that can appear on unused wires or open circuits due to capacitive coupling. When measuring voltage with LOZ, the meter applies a low impedance load to dissipate these ghost voltages, providing a more accurate reading of the actual voltage present.

1. Turn the rotary dial to the 'LOZ' position (if available as a direct setting or accessible via the 'FUNC' button in a voltage range).
2. Connect the test leads as you would for a standard voltage measurement.
3. Read the voltage value on the display.

6.12 HFE (Transistor Test)

The HFE function measures the DC current gain (hFE) of bipolar junction transistors (BJTs). This helps in checking the functionality and characteristics of transistors.

1. Turn the rotary dial to the 'HFE' position.
2. Insert the transistor leads (Emitter, Base, Collector) into the corresponding HFE test sockets on the

multimeter, ensuring correct NPN or PNP type.

3. Read the hFE value on the display.

6.13 Data Hold Function

Press the 'HOLD' button to freeze the current reading on the display. Press it again to release the hold and resume live measurements. This is useful for recording readings in difficult-to-view locations.

6.14 Backlight and Flashlight Functions

The multimeter features a backlight for the LCD display and a built-in flashlight to illuminate the test area.

- **Backlight:** Press the backlight button (often combined with another function or a dedicated light button) to turn the display backlight on or off.
- **Flashlight:** Press the flashlight button (often located near the top of the meter) to activate the built-in LED light.



Figure 6.5: Backlit Display for Easy Readability

7. Maintenance

7.1 Cleaning

Wipe the meter with a damp cloth and mild detergent. Do not use abrasives or solvents. Keep the terminals free from dirt and moisture.

7.2 Battery Replacement

When the low battery indicator appears on the display, replace the batteries promptly to ensure accurate measurements. Refer to Section 5.1 for battery installation instructions.

7.3 Fuse Replacement

If the current measurement function stops working, the fuse may need replacement. Always use fuses of the specified type and rating. Refer to the specifications section for fuse details. Two spare fuses are included in the package.

8. Troubleshooting

- **No Display/Meter Not Turning On:** Check battery installation and ensure batteries are not depleted. Replace if necessary.
- **'OL' Reading:** This typically indicates an open circuit, a value exceeding the meter's range, or incorrect lead connection for the selected function.
- **Inaccurate Readings:** Ensure test leads are properly connected, batteries are not low, and the correct function is selected for the measurement. Clean probes and terminals if dirty.
- **Current Measurement Not Working:** Check and replace the fuse if blown.
- **NCV Not Detecting:** Ensure the NCV function is selected and the meter is brought close enough to a live AC source.

9. Specifications

Feature	Value
Manufacturer	Proster
Model Number	T58A
Display Counts	9999
Weight	611 g
Product Dimensions	18.7 x 9.5 x 5.5 cm
Power Source	3 AAA Batteries (Alkaline, included)
Measurement Accuracy	+/-0.5% (general, varies by function)
Safety Standard	IEC 61010-1
DC Voltage Range	Up to 1000V
AC Voltage Range	Up to 750V
DC Current Range	Up to 10A

Feature	Value
AC Current Range	Up to 10A
Resistance Range	Up to 100MΩ
Capacitance Range	Up to 100mF
Frequency Range	Up to 10MHz
Temperature Range	-55°C to 1000°C (-67°F to 1832°F)

10. Warranty & Support

Proster products are designed for reliability and performance. For warranty information, technical support, or service inquiries, please refer to the contact details provided with your purchase or visit the official Proster website. Keep your purchase receipt as proof of purchase for warranty claims.