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› AstroAI Digital Multimeter and Analyzer TRMS 6000 Counts Volt Meter Ohmmeter Auto-Ranging Tester; Accurately Measures Voltage Current Resistance Diodes Continuity Duty-Cycle Capacitance Temperature Blue

## AstroAI AST-6000-D

# AstroAI Digital Multimeter Instruction Manual

Model: AST-6000-D

## 1. INTRODUCTION

The AstroAI Digital Multimeter is a versatile and reliable tool designed for accurately measuring various electrical parameters. It features True RMS 6000 counts, auto-ranging capability, and a large backlit LCD screen for easy readability. This multimeter is ideal for troubleshooting automotive and household electrical problems, measuring AC/DC Current, AC/DC Voltage, Capacitance, Frequency, Duty Cycle, Resistance, Diodes, Continuity, and Temperature.

## 2. WHAT'S IN THE BOX

- 1 x AstroAI 6000 Counts Multimeter
- 1 x 9V 6F22 Battery
- 1 x Pair of Test Leads
- 1 x Multi-Function Socket
- 1 x User Manual



Figure 2.1: Contents of the AstroAI Digital Multimeter package, including the multimeter, test leads, multi-function socket, battery, and user manual.

## 3. PRODUCT OVERVIEW

### 3.1 Controls and Display

The multimeter features a large, bright LCD display for clear readings. Key controls include the Function Switch for selecting measurement modes, and buttons for Range, Select, Relative, Hz/Duty, Max/Min, and Hold/Light. Input jacks are provided for 10A,  $\mu$ A/mA, COM, and INPUT connections.

# WHAT'S IN THE BOX



Figure 3.1: Detailed view of the AstroAI Digital Multimeter's display and control layout, indicating the function switch, buttons, and input jacks.

## 4. SETUP

### 4.1 Battery Installation

The multimeter requires one 9V battery (included). To install or replace the battery, open the battery compartment

located on the back of the device. Ensure correct polarity before closing the compartment securely.

## 4.2 Test Lead Preparation

Before using the test leads, remove the protective caps from the probe tips. This ensures proper contact and accurate measurements.



Figure 4.1: A hand demonstrating the removal of the protective cap from the test lead probe before use.

## 5. OPERATING INSTRUCTIONS

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### 5.1 General Safety

Always ensure the multimeter is set to the correct function and range before making any measurements. Double ceramic fuses provide anti-burn and overload protection. Always prioritize safety when working with electrical circuits.

### 5.2 Auto-Ranging Feature

The multimeter's auto-ranging capability automatically selects the appropriate measurement range, simplifying the measurement process. This feature is particularly useful for users who may not know the expected value of the measurement.

# DUAL CERAMIC FUSES

Anti-Burn Double Protection



Figure 5.1: The multimeter's display showing the auto-ranging function in action, simplifying measurement selection.

## 5.3 Measuring DC Voltage

To measure DC voltage, turn the function switch to the 'V=' position. Connect the red test lead to the 'INPUT' jack and the black test lead to the 'COM' jack. Place the probes across the component or circuit to be measured. The reading will appear on the LCD screen.

# ACCURATE, SAFE AND MULTI-FUNCTIONAL

Auto-Ranging TRMS 6000 Counts Digital Multimeter

$V \approx$   
AC/DC  
Voltage

$A \approx$   
AC/DC  
Current

$\Omega$   
Resistance

$\cdot \cdot \cdot$   
Continuity

$\pm \epsilon$   
Capacitance

$\rightarrow \mid$   
Diodes

$H_z$   
Frequency

$\%$   
Duty Cycle

$^{\circ}C/^{\circ}F$   
Temperature

HOLD  
Hold

TRMS  
TRMS

$\checkmark$   
Fuse



Figure 5.2: The AstroAI Digital Multimeter actively measuring DC voltage, typically used for batteries or DC power sources.

## 5.4 Measuring AC Voltage

For AC voltage measurements, set the function switch to the 'V~' position. Connect the test leads as you would for DC voltage. Place the probes across the AC source. The True RMS feature ensures accurate readings for non-sinusoidal waveforms.

# AUTO & MANUAL RANGING

Intuitive Operation without Complex Settings

Range

Relative

Hz/Duty



Figure 5.3: The multimeter measuring AC voltage from a standard wall outlet, demonstrating its capability for alternating current circuits.

## 5.5 Measuring Resistance

To measure resistance, turn the function switch to the 'Ω' position. Connect the red test lead to the 'INPUT' jack and the black test lead to the 'COM' jack. Place the probes across the resistor or component. Ensure the circuit is de-energized before measuring resistance.

# OPERATION NOTE

Please Take Off the Cap Before Using the Test Leads.

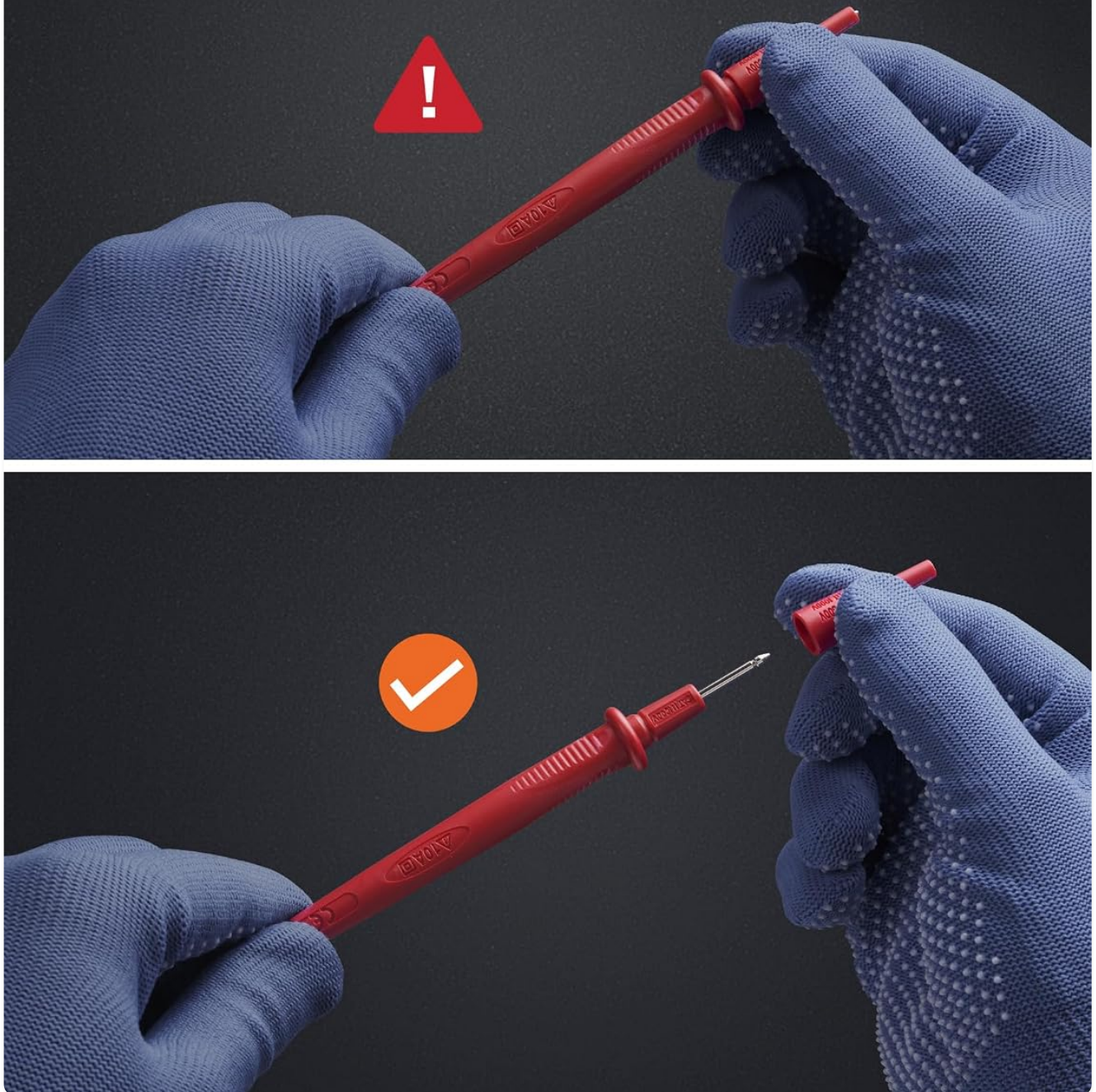


Figure 5.4: The multimeter measuring the resistance of various electronic components, indicating its use in circuit analysis.

## 5.6 Measuring Continuity

Set the function switch to the continuity symbol (speaker icon). Connect the test leads. If there is a continuous path (low resistance) between the probes, the multimeter will emit an audible beep, indicating continuity.

## 5.7 Measuring Capacitance

To measure capacitance, turn the function switch to the ' $\mu$ ' symbol. Connect the red test lead to the 'INPUT' jack

and the black test lead to the 'COM' jack. Place the probes across the capacitor. Ensure the capacitor is discharged before measurement.

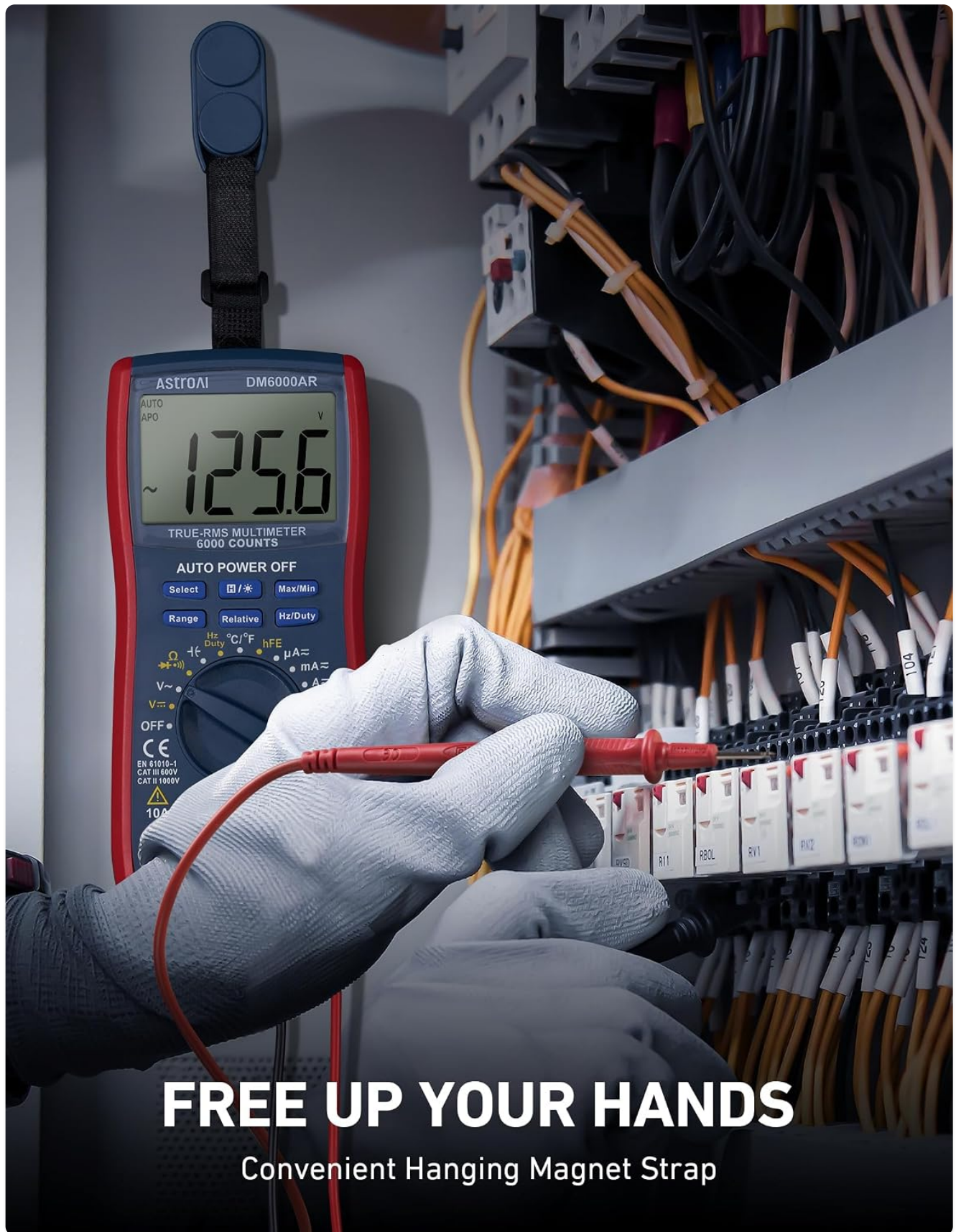


Figure 5.5: The multimeter measuring the capacitance of a component, useful for testing electronic circuits.

## 5.8 Measuring Temperature

The multimeter can measure temperature using the included K-type thermocouple. Plug the thermocouple into the appropriate jacks (usually the  $\mu\text{A}/\text{mA}$  and COM jacks, or dedicated temperature jacks if available). Turn the function

switch to '°C/°F' and place the thermocouple tip at the point where temperature needs to be measured.

# EASY TO READ FROM ANY ANGLE

Large Backlight LCD Screen for Easy Low-Light Reading



Figure 5.6: The multimeter measuring the temperature of a liquid using the provided thermocouple, demonstrating its temperature measurement capability.

## 5.9 Measuring Current (AC/DC)

To measure current, select the appropriate 'A=' (DC Current) or 'A~' (AC Current) range on the function switch. Connect the red test lead to the '10A' or 'µA/mA' jack depending on the expected current, and the black test lead to the 'COM' jack. The multimeter must be connected in series with the circuit to measure current. Exercise caution and

ensure the circuit is de-energized before connecting the multimeter in series.

## 5.10 Diode Test

Set the function switch to the diode symbol. Connect the red test lead to the 'INPUT' jack and the black test lead to the 'COM' jack. Place the probes across the diode. The display will show the forward voltage drop of the diode. A reading of 'OL' (Overload) indicates an open circuit or reverse bias.

## 5.11 Duty Cycle and Frequency

The multimeter can measure frequency (Hz) and duty cycle (Duty) by selecting the 'Hz/Duty' position on the function switch. Connect the test leads to the circuit where the frequency or duty cycle needs to be measured. This feature is useful for analyzing pulse-width modulated signals and AC waveforms.

## 5.12 Transistor Test

The multi-function socket can be used to test transistors. Insert the transistor leads into the corresponding holes (E, B, C for Emitter, Base, Collector) on the socket, ensuring correct NPN or PNP type selection. The multimeter will display the hFE (current gain) value.

## 5.13 Operational Videos

The following videos provide visual demonstrations of the multimeter's operation and features:

Demonstration of the AstroAI Multimeter's display and quick testing capabilities.

Overview of the AstroAI Multimeter's features and suitability for hobbyists.

# 6. MAINTENANCE

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## 6.1 Battery Replacement

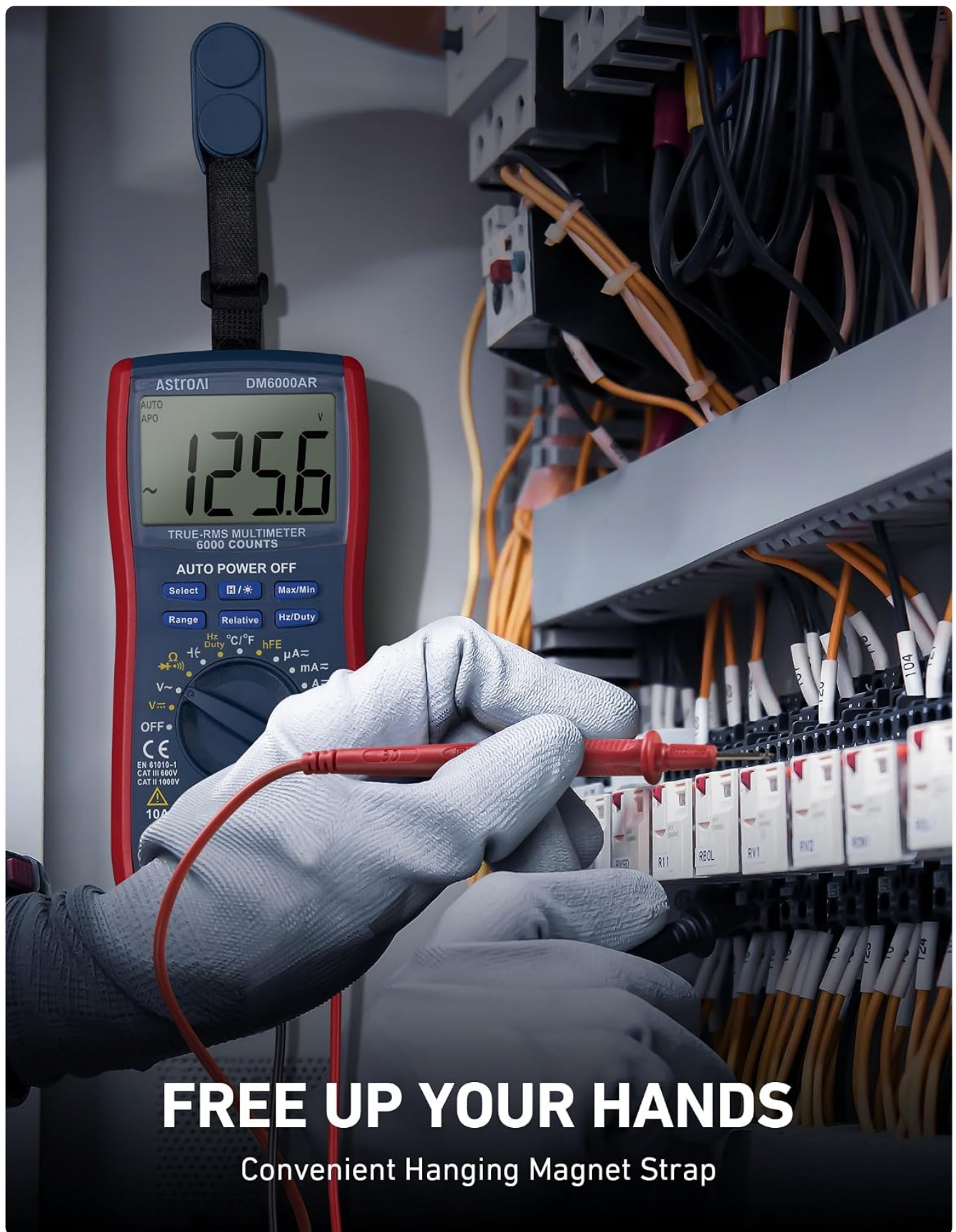
When the battery indicator appears on the display, replace the 9V battery to ensure continued accurate operation. Refer to the setup section for battery installation instructions.

## 6.2 Fuse Replacement

The multimeter is equipped with double ceramic fuses (F400mA/600V and F10A/600V) for protection. If the multimeter fails to function correctly in a current measurement mode, the fuse may need replacement. Always use fuses of the specified type and rating.

## 6.3 Cleaning

Clean the multimeter casing with a soft, damp cloth. Do not use abrasive cleaners or solvents. Keep the test leads clean and free from debris.



# FREE UP YOUR HANDS

Convenient Hanging Magnet Strap

Figure 6.1: The back of the multimeter, illustrating the location of the battery and fuse compartments for maintenance.

## 7. TROUBLESHOOTING

- **No Display/Power:** Check battery installation and ensure the battery has sufficient charge. Replace if necessary.
- **Incorrect Readings:** Verify the function switch is set to the correct measurement mode and range. Ensure test leads are properly connected to the correct input jacks.

- **No Continuity Beep:** Check if the continuity mode is selected. Ensure the circuit is not open.
- **Current Measurement Issues:** Check the fuses. A blown fuse will prevent current measurements.
- **Auto Shut-off:** The multimeter automatically shuts off after 15 minutes of inactivity to conserve battery. Press any button or turn the dial to reactivate.

## 8. SPECIFICATIONS

| Feature        | Specification              |
|----------------|----------------------------|
| Model Number   | AST-6000-D                 |
| Dimensions     | 7.48 x 3.54 x 1.38 inches  |
| Item Weight    | 357 Grams                  |
| Power Source   | 1 x 9V Battery (included)  |
| Display Counts | 6000 Counts                |
| True RMS       | Yes                        |
| Auto-Ranging   | Yes                        |
| Safety Rating  | CAT III 600V, CAT II 1000V |

## 9. WARRANTY AND SUPPORT

The AstroAI Digital Multimeter comes with a 3-year warranty. For any questions or technical support, please contact AstroAI's California-based support team. They typically respond within 24 hours.

For additional usage information, you can refer to the official User Manual PDF [AstroAI Digital Multimeter User Manual \(PDF\)](#)

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### 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.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details.](#)

### 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