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AOPUTTRIVER AP-770D

AOPUTTRIVER AP-770D Digital Multimeter User Manual

Model: AP-770D | Brand: AOPUTTRIVER

1. INTRODUCTION

This manual provides essential instructions for the safe and effective operation of your AOPUTTRIVER AP-770D Digital Multimeter. Please read this manual thoroughly before use and retain it for future reference. This device is designed for accurate measurement of various electrical parameters in a wide range of applications.

Safety Information

- Always adhere to local and national safety codes.
- Do not use the meter if it appears damaged or if the insulation on the test leads is compromised.
- Ensure the correct function and range are selected before making measurements.
- Avoid making measurements on circuits with voltages exceeding the meter's rated limits.
- Replace batteries and fuses only with the specified type and rating.

2. PACKAGE CONTENTS

Verify that all items listed below are present in your package:

- AOPUTTRIVER AP-770D Digital Multimeter
- Test Leads (Red and Black)
- K-Type Thermocouple (Temperature Probe)
- 9V Battery
- User Manual
- Carrying Pouch

PACKAGE CONTENTS



Figure 2.1: Contents of the AP-770D package, including the multimeter, test leads, temperature probe, battery, manual, and carrying pouch.

3. PRODUCT OVERVIEW

Familiarize yourself with the components of your AP-770D Digital Multimeter:



KEY FUNCTION

- 1 NCV red light
- 2 CDS sensor
- 3 NCV green light
- 4 NCV detection area
- 5 Display
- 6 SELECT key
- 7 HOLD key
- 8 RANGE key
- 9 REL ▲ key
- 10 Hz/Duty key
- 11 MAX/MIN key
- 12 Transistor hFE test Input jack
- 13 Rotary Switch
- 14 VΩHz $\uparrow\downarrow\leftrightarrow$
- 15 COM T-
- 16 20A Input jack
- 17 μ AmA T+

Figure 3.1: Front view of the AP-770D with key functions labeled.

1. **NCV Red Light:** Indicates non-contact voltage detection.
2. **CDS Sensor:** Light sensor for auto backlight.
3. **NCV Green Light:** Indicates non-contact voltage detection.
4. **NCV Detection Area:** Point for non-contact voltage sensing.
5. **Display:** Large LCD for reading measurements.
6. **SELECT Key:** Toggles between functions within a rotary switch position.
7. **HOLD Key:** Freezes the current display reading.
8. **RANGE Key:** Switches between auto-ranging and manual ranging.
9. **REL ▲ Key:** Activates relative measurement mode.
10. **Hz/Duty Key:** Selects frequency or duty cycle measurement.
11. **MAX/MIN Key:** Records maximum and minimum readings.
12. **Transistor hFE Test Input Jack:** For testing transistor gain.
13. **Rotary Switch:** Selects the desired measurement function.
14. **VΩHz Input:** Input terminal for voltage, resistance, frequency, capacitance, diode, and continuity measurements.
15. **COM Input:** Common (negative) terminal for all measurements.

16. **20A Input Jack:** Input terminal for high AC/DC current measurements (up to 20A).

17. **μ A mA T+ Input:** Input terminal for microampere/milliamperere current and temperature measurements.



Figure 3.2: Dimensions of the AP-770D and its 180° swivel stand.

4. SETUP

4.1 Battery Installation

The AP-770D requires one 9V battery for operation. To install or replace the battery:

1. Ensure the multimeter is powered off and test leads are disconnected.
2. Locate the battery compartment cover on the back of the unit.
3. Use a screwdriver to loosen the screw securing the battery cover.
4. Remove the cover and insert the 9V battery, observing correct polarity.
5. Replace the battery cover and tighten the screw.

4.2 Initial Power-On

Turn the rotary switch from the 'OFF' position to any desired measurement function. The display will illuminate. The meter features an auto backlight that activates in low-light conditions.

5. OPERATING MODES

The AP-770D offers a variety of measurement functions. Always ensure the correct function is selected and test leads are connected to the appropriate input jacks.

5.1 Voltage Measurement (AC/DC)

To measure voltage:

1. Set the rotary switch to the 'V~' (AC Voltage) or 'V \pm ' (DC Voltage) position.
2. Connect the red test lead to the 'V Ω Hz' input jack and the black test lead to the 'COM' input jack.
3. Connect the test probes across the circuit or component to be measured.
4. Read the voltage value on the display.

5.2 Current Measurement (AC/DC)

To measure current:

1. Set the rotary switch to the appropriate current range (μ A, mA, or A). Use the 'SELECT' button to toggle between AC and DC current if applicable.
2. Connect the red test lead to the ' μ A mA T+' or '20A' input jack (depending on expected current) and the black test lead to the 'COM' input jack.
3. Connect the test probes in series with the circuit to be measured.
4. Read the current value on the display.

5.3 Resistance Measurement

To measure resistance:

1. Set the rotary switch to the ' Ω ' (Resistance) position.
2. Connect the red test lead to the 'V Ω Hz' input jack and the black test lead to the 'COM' input jack.
3. Connect the test probes across the component to be measured. Ensure the circuit is de-energized.
4. Read the resistance value on the display.

5.4 Capacitance Measurement

To measure capacitance:

1. Set the rotary switch to the '—||—' (Capacitance) position.
2. Connect the red test lead to the 'V Ω Hz' input jack and the black test lead to the 'COM' input jack.
3. Connect the test probes across the capacitor. Ensure the capacitor is discharged before testing.
4. Read the capacitance value on the display.

5.5 Frequency and Duty Cycle Measurement

To measure frequency or duty cycle:

1. Set the rotary switch to the 'Hz' position.
2. Connect the red test lead to the 'V Ω Hz' input jack and the black test lead to the 'COM' input jack.

3. Connect the test probes across the signal source.
4. Press the 'Hz/Duty' button to toggle between frequency and duty cycle readings.

5.6 Diode Test

To perform a diode test:

1. Set the rotary switch to the ' $\rightarrow|$ ' (Diode) position.
2. Connect the red test lead to the 'V Ω Hz' input jack and the black test lead to the 'COM' input jack.
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 for a good diode. Reverse the probes; the display should show 'OL' (Open Loop).

5.7 Continuity Test

To perform a continuity test:

1. Set the rotary switch to the ' \blacksquare ' (Continuity) position.
2. Connect the red test lead to the 'V Ω Hz' input jack and the black test lead to the 'COM' input jack.
3. Connect the test probes across the circuit or component.
4. If continuity exists (resistance below a certain threshold), the buzzer will sound.

5.8 Temperature Measurement

To measure temperature:

1. Set the rotary switch to the ' $^{\circ}\text{C}/^{\circ}\text{F}$ ' (Temperature) position.
2. Connect the K-type thermocouple to the ' $\mu\text{A mA T+}$ ' and 'COM' input jacks, observing polarity.
3. Place the thermocouple tip on or in the object whose temperature is to be measured.
4. Read the temperature value on the display. Use the 'SELECT' button to switch between Celsius and Fahrenheit.

TEMPERATURE MEASURING FUNCTION

Test temperature of solution, liquid or jelly with probe



Figure 5.1: Measuring temperature of a liquid using the AP-770D's temperature probe.

5.9 Non-Contact Voltage (NCV) Detection

To detect AC voltage without contact:

1. Set the rotary switch to the 'NCV' position.
2. Move the NCV detection area (top of the meter) close to the conductor being tested.
3. The NCV red and green lights will flash, and the buzzer will sound, indicating the presence of AC voltage. The intensity of the indication increases with stronger voltage.

NCV FUNCTION

Detect whether the wire has electricity without breaking the wire or touching the electrode.



Figure 5.2: Using the NCV function to detect live wires without direct contact.

5.10 hFE Test (Transistor Gain)

To test transistor hFE:

1. Set the rotary switch to the 'hFE' position.
2. Insert the transistor leads (Emitter, Base, Collector) into the corresponding holes in the 'Transistor hFE Test Input Jack'.
3. Read the hFE value on the display.

6. SPECIFICATIONS

Feature	Value
Display Count	40,000 Counts
True RMS	Yes

Feature	Value
Auto Range	Yes
NCV	Yes
AC/DC Voltage	Up to 1000V
AC/DC Current	Up to 20A
Resistance	Up to 60MΩ
Capacitance	Up to 60mF
Frequency	Up to 10MHz
Temperature	Yes (with K-type thermocouple)
Diode Test	Yes
Continuity Test	Yes (with buzzer)
hFE Test	Yes
Auto Backlight	Yes
Auto Power Off	Yes
Safety Standard	IEC-1010, CAT III 1000V
Power Source	9V Battery
Dimensions	20cm x 9cm x 4cm (approx.)
Weight	350 Grams

7. MAINTENANCE

7.1 Cleaning

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

7.2 Battery Replacement

When the battery symbol appears on the display, replace the 9V battery as described in Section 4.1.

7.3 Fuse Replacement

If the current measurement function fails, the fuse may need replacement. Refer to the full user manual for detailed instructions on fuse replacement. Always use fuses with the specified ratings (e.g., Fused 20A MAX, Fused 500mA MAX).

MECHANICAL BLOCKING SYSTEM

Automatically block other ports, the correct ports are left for you. no more worry about inserting the wrong test lead into the wrong port because of confusion or carelessness.



Figure 7.1: The mechanical blocking system helps prevent incorrect lead insertion, enhancing safety during use.

8. TROUBLESHOOTING

- **No Display:** Check battery installation and charge level. Replace battery if necessary.
- **'OL' on Display:** Indicates an over-range condition or open circuit. Select a higher range or check connections.
- **Incorrect Readings:** Ensure correct function and range are selected. Verify test lead connections and integrity.
- **Current Measurement Failure:** Check the fuse. Replace if blown (refer to Section 7.3).

9. WARRANTY AND SUPPORT

For warranty information or technical support, please refer to the contact details provided in your product packaging or visit the AOPUTTRIVER official website. Do not attempt to repair the device yourself, as this may void the warranty and pose a safety risk.

Related Documents - AP-770D

	<p>6000 Counts True-RMS Auto Range Intelligent Digital AC/DC Clamp Multimeter Operation Manual</p> <p>This document provides the operation manual for the AOPUTRIVER 6000 Counts True-RMS Auto Range Intelligent Digital AC/DC Clamp Multimeter (Model AP-570S-APP), detailing its features, specifications, operating instructions, and companion AiLink mobile application.</p>
	<p>7200APP DC/AC True-RMS Digital Clamp Multimeter User Manual</p> <p>User manual for the AOPUTRIVER 7200APP DC/AC True-RMS Digital Clamp Multimeter. This auto-ranging, 6000-count meter measures amperage, voltage, capacitance, continuity, and resistance, featuring Bluetooth connectivity via the AiLink app. Includes safety, operation, and maintenance details.</p>
	<p>AOPUTRIVER AP-570C-APP Bluetooth Connection Guide</p> <p>Step-by-step instructions for connecting the AOPUTRIVER AP-570C-APP clamp meter to your smartphone via Bluetooth. Includes troubleshooting tips for a seamless setup.</p>
	<p>Quick Start Guide - AOPUTRIVER Infrared Thermometer AP-2732</p> <p>Get started quickly with your AOPUTRIVER Infrared Thermometer (AP-2732). This guide covers battery installation, basic operation, and understanding the display readings for models like the AP-2732.</p>
	<p>AOPUTRIVER AR8500 Ammonia Gas Detector User Manual and Technical Specifications</p> <p>Comprehensive instruction manual for the AOPUTRIVER AR8500 Ammonia Gas Detector. Covers product description, technical parameters, operation, maintenance, and safety precautions for this precision measurement apparatus.</p>