Avidsen 107101

Avidsen 107101 Pocket Digital Multimeter User Manual

Model: 107101

1. Safety Information

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

- Always ensure the multimeter is in the correct function and range before making measurements.
- Do not exceed the maximum input values specified for each range.
- Exercise extreme caution when working with live circuits. High voltages can be dangerous.
- Inspect test leads for damage before each use. Do not use if insulation is compromised.
- This device features double insulation for enhanced safety.
- Do not operate the multimeter if it appears damaged or if the casing is open.
- Keep the device away from water and moisture.

2. Product Overview

The Avidsen 107101 is a compact, pocket-sized digital multimeter designed for various electrical measurements. It features a 3.5-digit display for clear readings and comes with two insulated test probes.

Image: Avidsen 107101 Pocket Digital Multimeter with its test leads.

Key Features:

- Measures AC/DC Voltage
- Measures DC Current
- Measures Resistance
- Diode Test Function
- Transistor Gain (hFE) Measurement
- 50 Hz Square Wave Generator
- 3.5-digit, 0.5-inch Digital Display
- Double Insulation

3. Setup

Battery Installation:

The Avidsen 107101 multimeter operates on a 12V battery (Type 23A). To install or replace the battery:

1. Ensure the multimeter is turned off and test leads are disconnected.
2. Locate the battery compartment cover on the back of the device.

3. Carefully remove the screw(s) securing the cover and open it.
4. Insert the 12V (Type 23A) battery, observing the correct polarity (+ and -).
5. Replace the battery compartment cover and secure it with the screw(s).

Connecting Test Leads:

Connect the red and black test leads to the appropriate input jacks on the multimeter. The black lead typically connects to the 'COM' (common) jack, and the red lead connects to the 'VΩmA' jack for most measurements.

4. Operating Instructions

To operate the multimeter, turn the rotary switch to the desired function and range. The display updates measurements approximately twice per second.

4.1. AC/DC Voltage Measurement:

1. Connect the black test lead to the 'COM' jack and the red test lead to the 'VΩmA' jack.
2. Turn the rotary switch to the desired ACV (Alternating Current Voltage) or DCV (Direct Current Voltage) range. Select a range higher than the expected voltage.
3. Connect the test probes in parallel across the circuit or component to be measured.
4. Read the voltage value on the digital display.

4.2. DC Current Measurement:

1. Connect the black test lead to the 'COM' jack and the red test lead to the 'VΩmA' jack.
2. Turn the rotary switch to the desired DCA (Direct Current Amperage) range.
3. **Important:** Connect the test probes in series with the circuit. Break the circuit and insert the multimeter.
4. Read the current value on the digital display.

4.3. Resistance Measurement:

1. Connect the black test lead to the 'COM' jack and the red test lead to the 'VΩmA' jack.
2. Turn the rotary switch to the desired Ω (Ohms) range.
3. **Important:** Ensure the circuit or component is de-energized before measuring resistance.
4. Connect the test probes across the component to be measured.
5. Read the resistance value on the digital display.

4.4. Diode Test:

1. Connect the black test lead to the 'COM' jack and the red test lead to the 'VΩmA' jack.
2. Turn the rotary switch to the diode symbol (usually a triangle with a line).
3. Connect the red probe to the anode and the black probe to the cathode of the diode. The display will show the forward voltage drop.
4. Reverse the probes. The display should show 'OL' (Overload) for a good diode.

4.5. Transistor Gain (hFE) Measurement:

This function allows you to measure the DC current gain (hFE) of NPN and PNP transistors.

1. Turn the rotary switch to the 'hFE' position.
2. Identify the Emitter (E), Base (B), and Collector (C) terminals of the transistor.

3. Insert the transistor leads into the corresponding sockets in the hFE test socket on the multimeter, ensuring correct NPN or PNP type selection.
4. Read the hFE value on the digital display.

4.6. 50 Hz Square Wave Generator:

The multimeter can generate a 50 Hz square wave signal for testing purposes.

1. Turn the rotary switch to the '50Hz Square Wave' position.
2. The square wave output will be available at the 'VΩmA' and 'COM' jacks.
3. Connect an oscilloscope or other suitable device to observe the generated waveform.

5. Maintenance

Cleaning:

Wipe the device with a damp cloth and a mild detergent. Do not use abrasive cleaners or solvents. Ensure the device is dry before use.

Storage:

When not in use for extended periods, remove the battery to prevent leakage. Store the multimeter in a cool, dry place, away from direct sunlight and extreme temperatures.

6. Troubleshooting

- **No Display:** Check battery installation and ensure the battery has sufficient charge. Replace if necessary.
- **'OL' or '1' on Display:** This indicates an overload or out-of-range measurement. Select a higher range or check for an open circuit.
- **Incorrect Readings:** Verify the correct function and range are selected. Ensure test leads are properly connected and not damaged. Check the battery level.
- **No Square Wave Output:** Ensure the function is correctly selected and connections are secure.

7. Specifications

Specification	Value
Manufacturer	Avidsen
Part Number	AVI 107101
Item Weight	90 grams
Product Dimensions (LxWxH)	8 x 5 x 24 cm
Model Number	107101
Color	Multicolored
Style	Digital
Power Source Type	Battery Powered
Number of Item Units	1

Specification	Value
Extension Length	50 cm
Included Components	Tester
Batteries Included	No
Batteries Required	No
Measurement Type	Multimeter
Global Trade Item Number (GTIN)	03660211071014

8. Warranty and Support

For warranty information and technical support, please refer to the documentation included with your purchase or visit the official Avidsen website. Keep your proof of purchase for warranty claims.

Manufacturer: Avidsen

Website: www.avidsen.com (Example link, please verify actual manufacturer website)