Abestop ADM1041

Abestop ADM1041 Digital Benchtop Multimeter User Manual

Model: ADM1041 | Brand: Abestop

1. Introduction

This manual provides essential information for the safe and effective use of the Abestop ADM1041 Digital Benchtop Multimeter. The ADM1041 is a high-precision 4 1/2 digit multimeter with 55,000 counts, designed for various electrical measurements including DC/AC voltage, current, resistance, frequency, and temperature. It features True RMS measurement capability and a large, clear display for easy readability.

Figure 1: Abestop ADM1041 Digital Benchtop Multimeter. This image shows the front panel of the multimeter with its large display and various function buttons, highlighting its portable benchtop design and key features like True RMS and data hold.

2. Safety Information

Read all safety information and operating instructions before using this product. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Always ensure the multimeter is in good working condition and free from damage before use.
- Do not apply voltage or current that exceeds the maximum rated values for the multimeter. Refer to the specifications section for limits.
- Use caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC. These voltages pose a shock hazard.
- Always connect the common (COM) test lead before connecting the live test lead. Disconnect the live test lead first.
- Ensure the correct function and range are selected before making measurements.
- Do not operate the multimeter in explosive atmospheres or in the presence of flammable gases or dust.
- Replace fuses only with the specified type and rating.

- Do not attempt to repair or modify the multimeter. Refer servicing to qualified personnel.
- Keep hands and fingers behind the probe barriers during measurements.

3. Package Contents

Verify that all items listed below are included in your package. If any items are missing or damaged, contact your vendor.

- 1 x Abestop ADM1041 Digital Benchtop Multimeter
- 2 x Multimeter Test Leads (Probes)
- 1 x USB Cable
- 1 x Power Cable
- 2 x Alligator Clips
- 1 x Spare Fuse

Figure 2: Included Accessories. This image displays the standard accessories that come with the ADM1041 multimeter, including test leads, USB cable, power cable, alligator clips, and a spare fuse.

4. Product Overview

The Abestop ADM1041 features a clear layout for intuitive operation. Familiarize yourself with the main components before use.

Figure 3: Front and Rear Panel Layout. This image illustrates the various buttons for measurement functions, operation buttons, power button, menu selection buttons, input terminals, power connection, USB port, and mains fuse on the Abestop ADM1041 multimeter.

4.1 Front Panel

- **Display:** Large 3.5-inch LCD (480x320 pixels) for clear measurement readings.
- **Function Buttons:** Buttons for selecting measurement modes (V, A, Ω, Freq, Temp, etc.).
- **Operation Buttons:** Buttons for range selection, data hold, utility functions, and dual display mode.
- **Input Terminals:** Sockets for connecting test leads for various measurements (10A, µA/mA, COM, VΩHz).
- **Power Button:** To turn the device on and off.

4.2 Rear Panel

- **Power Input:** AC power connection (90V - 240V).
- **USB Port:** For PC communication and data logging.

- **Mains Fuse:** Protective fuse for the power input.

5. Setup

5.1 Power Connection

1. Ensure the multimeter is placed on a stable, level surface.
2. Connect the provided power cable to the power input on the rear panel of the ADM1041.
3. Plug the other end of the power cable into a suitable AC power outlet (90V - 240V).
4. Press the power button on the front panel to turn on the multimeter. The display should illuminate.

5.2 USB Connection (Optional)

The ADM1041 can be connected to a computer for data logging and remote control via its USB port.

1. Connect one end of the provided USB cable to the USB port on the rear panel of the multimeter.
2. Connect the other end of the USB cable to an available USB port on your computer.
3. Install the necessary drivers and software (e.g., DMMEasyControl, NI-VISA drivers) from the provided USB stick or manufacturer's website.
4. Once installed, you can use the software to read measurements, control the multimeter, and record data.

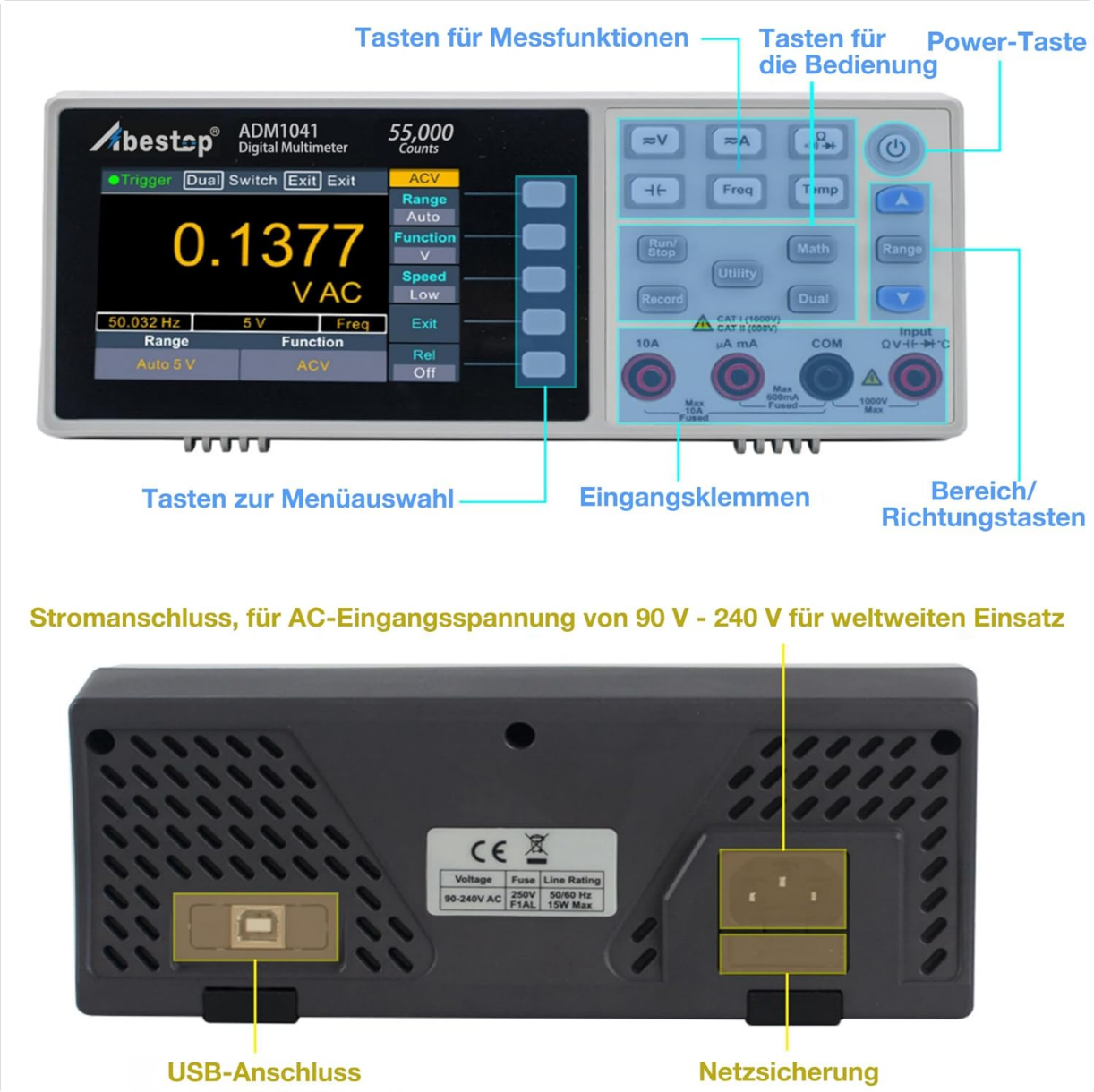

Figure 4: USB Communication. This image demonstrates the Abestop ADM1041 multimeter connected to a laptop via a USB cable, illustrating its capability for PC communication, remote control, and data recording for statistical analysis.

6. Operating Instructions

The ADM1041 offers a wide range of measurement functions. Always ensure the correct function and input terminals are selected for your measurement.

6.1 Basic Measurement Steps

1. Turn on the multimeter using the power button.
2. Select the desired measurement function (e.g., VDC, VAC, Resistance) using the function buttons.
3. Connect the test leads to the appropriate input terminals on the multimeter.
    - For most voltage, resistance, and frequency measurements, connect the black lead to the**COM** terminal and the red lead to the **VΩHz** terminal.
    - For current measurements, connect the black lead to the**COM** terminal and the red lead to either the **μA/mA** or **10A** terminal, depending on the expected current range.
4. Connect the test leads to the circuit or component under test.

5. Read the measurement value on the display.
6. Disconnect the test leads from the circuit, then from the multimeter.

6.2 Key Features and Functions

- **True RMS:** Provides accurate measurements for non-sinusoidal AC waveforms.
- **Auto Ranging:** Automatically selects the appropriate measurement range for convenience. Manual ranging is also available.
- **Dual Display:** Allows simultaneous display of two related measurement parameters (e.g., voltage and frequency). The secondary display updates at a slightly slower rate.
- **Data Logging:** The multimeter supports both manual and automatic data logging. Up to 1,000 values can be stored internally and exported via USB.
- **Mathematical Functions:** Includes Max/Min, dB/dBm, and Relative (REL) measurement functions for advanced analysis.
- **SCPI Support:** Supports Standard Commands for Programmable Instruments for automated testing and integration with control systems.

Figure 5: Large LCD Display. This close-up image highlights the high-resolution 3.5-inch LCD display of the ADM1041, showing a clear reading of 0.1377 VAC, along with frequency and range settings, emphasizing its readability and dual display capability.

7. Maintenance

7.1 Cleaning

To clean the multimeter, wipe the case with a damp cloth and a mild detergent. Do not use abrasives or solvents. Ensure the device is powered off and disconnected from all power sources and circuits before cleaning.

7.2 Fuse Replacement

If the current measurement function stops working, the fuse may need replacement. Refer to the rear panel for the fuse compartment location and specifications. Always replace with a fuse of the identical type and rating to prevent damage to the instrument or risk of injury.

7.3 Calibration

The ADM1041 is factory calibrated. For optimal accuracy, periodic calibration by qualified personnel is recommended. The device supports auto-calibration features as part of its quality assurance.

Figure 6: Quality Assurance. This image depicts various testing procedures, including high/low temperature tests, vibration tests, salt spray tests, and auto-calibration, indicating the rigorous quality control applied to the ADM1041 multimeter.

8. Troubleshooting

Problem	Possible Cause	Solution
Multimeter does not power on.	No power supply; faulty power cable; internal issue.	Check power cable connection and wall outlet. Try a different power cable. If problem persists, contact support.
No reading or "OL" (Overload) displayed.	Incorrect function/range selected; open circuit; measurement exceeds range.	Verify function and range. Check test lead connections. Ensure circuit is closed. Select a higher range if available.
Inaccurate readings.	Incorrect connection; environmental factors; uncalibrated.	Double-check test lead connections. Ensure stable environment. Consider professional calibration if accuracy is critical.
Current measurement not working.	Blown fuse.	Replace the fuse with the correct type and rating (refer to section 7.2).
USB communication failure.	Driver not installed; incorrect software settings; faulty USB cable.	Ensure USB drivers are correctly installed. Check software connection settings. Try a different USB cable.

9. Specifications

- **Model:** ADM1041
- **Display:** 3.5-inch LCD, 480x320 pixels, 55,000 counts (4 1/2 digits)
- **Measurement Precision:** High precision
- **True RMS:** Supported
- **AC Input Voltage:** 90V - 240V
- **Dimensions (L x W x H):** 23.5 x 6.5 x 8.79 cm
- **Weight:** 449.06 grams
- **Connectivity:** USB
- **Included Components:** Multimeter, 2x Test Leads, 1x USB Cable, 1x Power Cable, 2x Alligator Clips, 1x Spare Fuse
- **Country of Origin:** China

10. Warranty & Support

For warranty information and technical support, please refer to the documentation provided with your purchase or contact the seller directly. Abestop strives to provide reliable products and customer service. Please retain your proof of purchase for any warranty claims.