JUWEIAT AT24C

JUWEIAT AT24C 100A Digital Multimeter Voltmeter User Manual

Model: AT24C 100A

1. Introduction

This manual provides detailed instructions for the safe and effective use of your JUWEIAT AT24C 100A Digital Multimeter Voltmeter. This device is designed for measuring various electrical parameters including voltage, current, power, energy, frequency, and temperature. It features a 2.4-inch high-definition color screen and supports Bluetooth connectivity for app integration.

2. Safety Information

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

- Always ensure the device is properly connected and insulated before applying power.
- Do not exceed the maximum operating voltage of 300V or current of 100A.
- Avoid contact with live circuits. Use appropriate personal protective equipment.
- Do not operate the device in wet conditions or in the presence of flammable gases or vapors.
- If the device appears damaged, do not use it. Contact support for assistance.
- Only qualified personnel should perform installation and wiring.

3. Product Overview

The JUWEIAT AT24C 100A is a versatile digital multimeter designed for accurate measurement of AC electrical parameters. It features a 2.4-inch color display and a 32-bit ARM Cortex CPU core for efficient performance.

Key Features:

- Wide range of tests for Voltage, Current, Power Factor, Capacitance, Time, Frequency, and Temperature.
- 2.4-inch high-definition color screen for clear data display.
- Bluetooth connectivity for Apple and Android computer APP (E-test app).
- External large-diameter current transformer for non-contact current measurement up to 100A.
- Data hold function.
- Stores energy data when power is off (can be reset to 0).

Components:

- AT24C Digital Multimeter Unit
- External Current Transformer (100A)

Figure 3.1: Front view of the AT24C Digital Multimeter display, showing voltage, current, power, energy, frequency, power factor, and CO2 readings.

4. Setup

Proper installation is crucial for accurate measurements and safe operation. Follow these steps carefully.

4.1 Wiring the Multimeter

The multimeter requires connection to the AC input and output lines, and the current transformer must be correctly installed around the live wire.

1. Identify the AC input (L and N) and AC output (L and N) lines of the circuit you wish to monitor.
2. Connect the multimeter's input L and N terminals to the AC input lines.
3. Connect the multimeter's output L and N terminals to the AC output lines.
4. Install the external current transformer around the live (L) wire of the circuit. Ensure the wire passes through the center of the transformer.
5. Connect the small wires from the current transformer to the designated input on the multimeter unit.

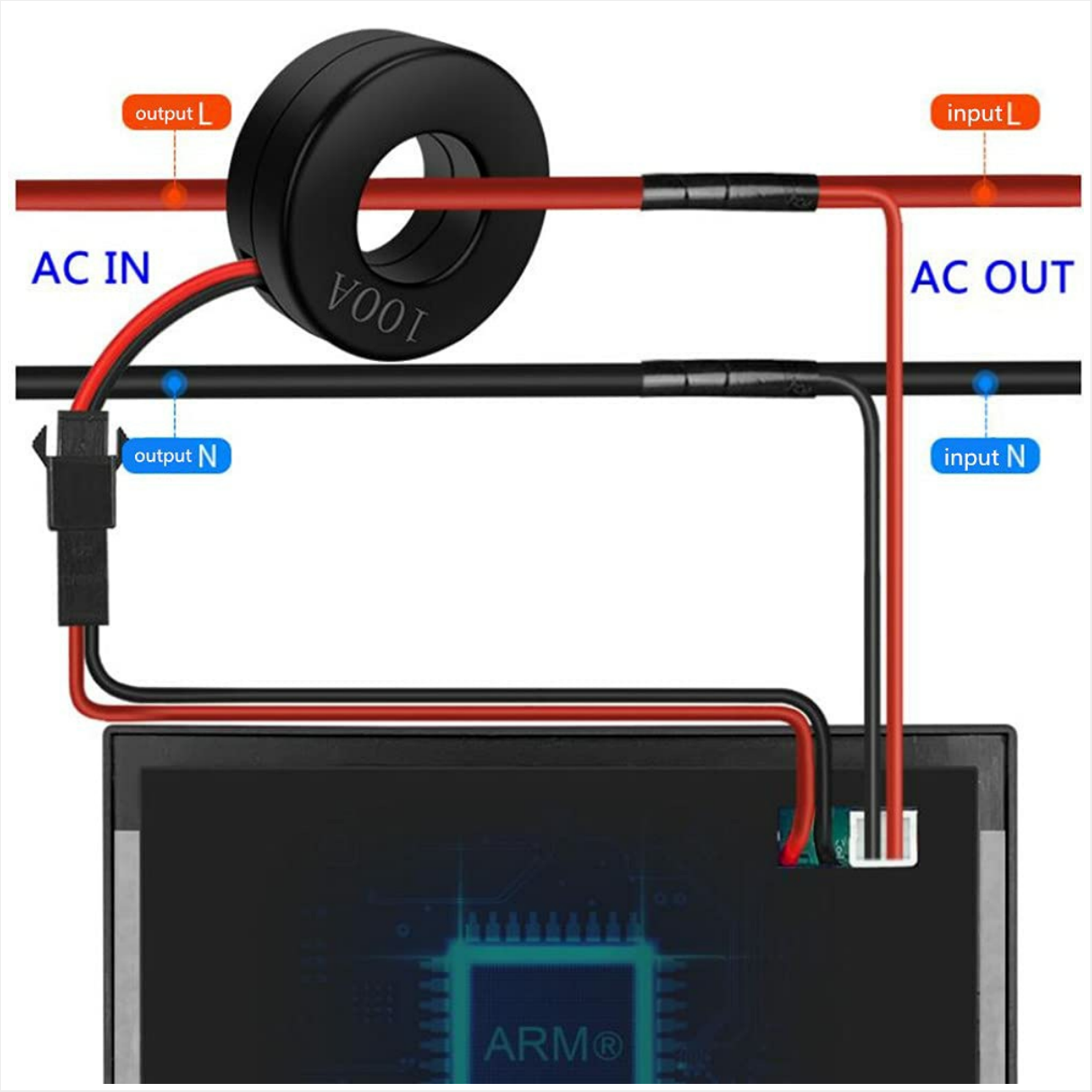

Figure 4.1: Wiring diagram showing connections for AC input, AC output, and the current transformer.

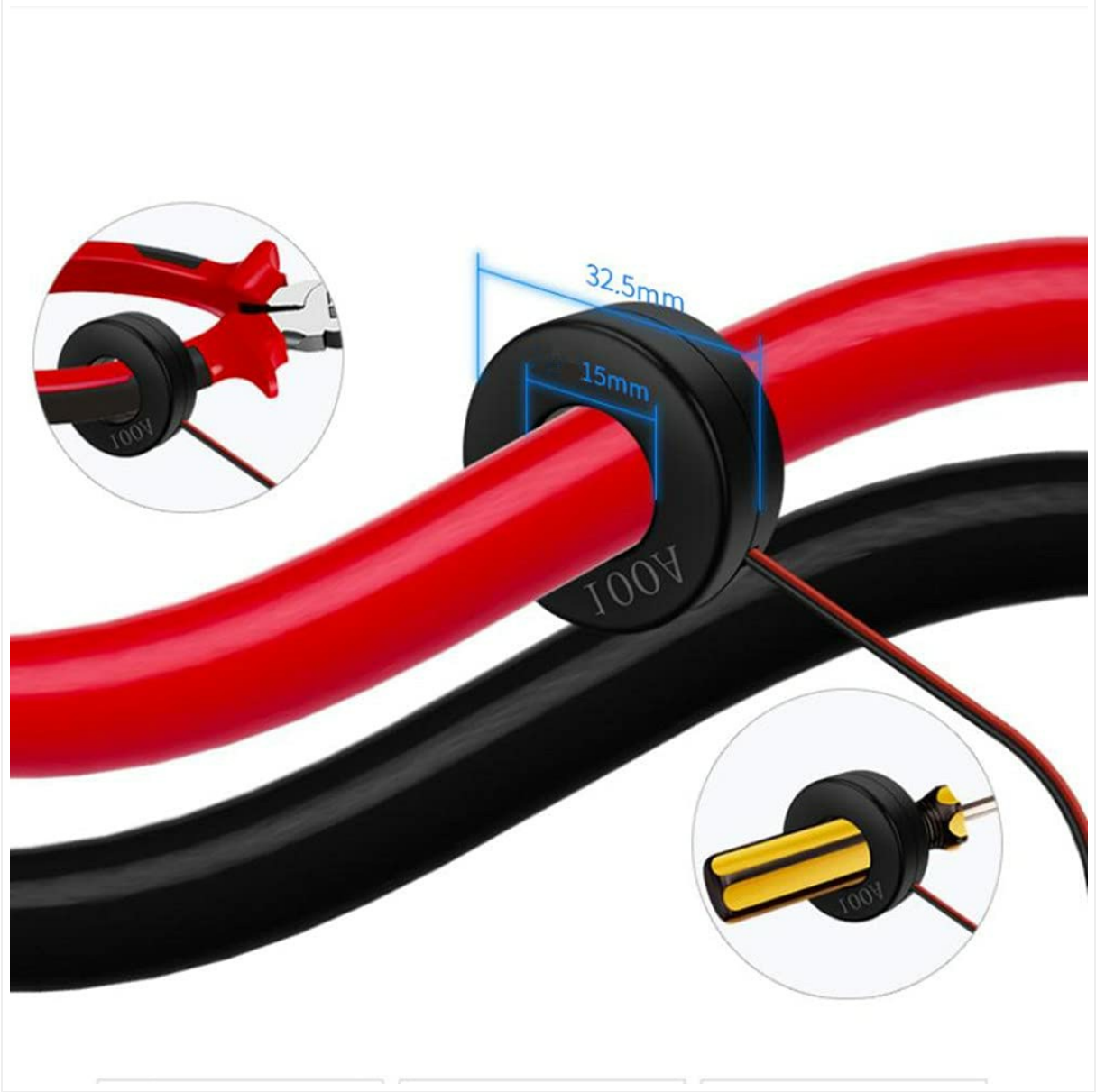

Figure 4.2: Illustration of how to install the external current transformer around a live wire for non-contact current measurement.

4.2 Mounting the Multimeter

The multimeter is designed for panel mounting. Ensure adequate space and ventilation.

- Cut an appropriate opening in your electrical panel or enclosure.
- Insert the multimeter into the opening and secure it using the provided mounting clips or screws.

Figure 4.3: Examples of the AT24C multimeter installed within electrical distribution boards and control panels.

4.3 Bluetooth App Connection

The AT24C supports Bluetooth connectivity for remote monitoring and data logging via a mobile application.

1. Download the "E-test" app from your device's app store (available for Apple iOS and Android).
2. Ensure Bluetooth is enabled on your mobile device.
3. Open the E-test app and search for available devices.
4. Select the AT24C from the list to establish a connection.

Figure 4.4: Screenshot illustrating the E-test mobile application interface, showing various measurement parameters and control options.

5. Operating Instructions

Once installed and powered, the AT24C will display real-time electrical measurements.

5.1 Powering On and Display

The device powers on automatically when connected to an AC power source. The 2.4-inch color screen will display the startup logo followed by the main measurement interface.

Figure 5.1: Displays the startup screen and different language and measurement interface options, including warnings for overpressure, overcurrent, and overpower.

5.2 Reading Measurements

The main display shows the following parameters:

- **Vol:** Voltage (V)
- **Cur:** Current (A)
- **Pwr:** Active Power (W)
- **Ene:** Energy Consumption (kWh)
- **Fre:** Frequency (Hz)
- **Factor:** Power Factor (PF)
- **Co2:** Carbon Dioxide Emissions (kg)
- **Timing:** Operation Time
- **ExTemp:** External Temperature (if sensor connected)
- **InTemp:** Internal Temperature

5.3 Using the Control Buttons

The device typically has buttons for navigation and settings:

- **M (Mode) Button:** Cycles through different display modes or settings menus.
- **+ / - Buttons:** Adjust values or navigate menu options.
- **Power Button:** May be used for backlight control or to enter/exit certain modes.

5.4 Resetting Energy Data

The AT24C stores energy data even when powered off. To reset the accumulated energy (kWh) to zero, navigate to the appropriate setting in the menu using the control buttons or through the E-test app.

5.5 App Functionality

The E-test app provides enhanced functionality:

- Real-time monitoring of all parameters.
- Curve export for historical data analysis.
- Version information and settings adjustments.
- Language switching (Chinese/English).
- Capacity battery timing clear zero function.

Figure 5.2: Detailed view of the E-test app interface, highlighting options for Bluetooth connection, language selection, curve export, and measurement parameter display.

6. Maintenance

To ensure the longevity and accuracy of your AT24C multimeter, follow these maintenance guidelines.

6.1 Cleaning

Wipe the device with a soft, dry cloth. Do not use abrasive cleaners or solvents, as these can damage the display or casing.

6.2 Protective Film

The display comes with a protective film. You may choose to keep it on for added scratch protection or remove it for clearer viewing.

Figure 6.1: The AT24C multimeter with its protective film partially removed from the screen.

6.3 Storage

Store the device in a cool, dry place away from direct sunlight and extreme temperatures when not in use.

7. Troubleshooting

This section addresses common issues you might encounter.

7.1 No Display/No Power

- Check all power connections to ensure they are secure and correctly wired.
- Verify that the AC power source is active.

7.2 Incorrect Readings

- Ensure the current transformer is correctly installed around the live wire and its small wires are properly connected to the multimeter.
- Verify that the input and output wiring matches the diagram.

7.3 Bluetooth Connection Issues

- Make sure Bluetooth is enabled on your mobile device.
- Ensure the "E-test" app is installed and updated to the latest version.
- Restart both the multimeter (by cycling power) and your mobile device.
- Ensure your device is within Bluetooth range of the multimeter.

7.4 Overload Warnings

The device may display warnings for overpressure, overcurrent, or overpower if the measured values exceed safe limits. Refer to Figure 5.1 for examples of these warning screens.

- **Overpressure (OVT):** Indicates voltage exceeds 150V (or a set threshold).
- **Overcurrent (OCT):** Indicates current exceeds 30A (or a set threshold).
- **Overpower (OPT):** Indicates power exceeds 300W (or a set threshold).

If these warnings appear, immediately reduce the load or disconnect the device from the circuit to prevent damage.

8. Specifications

Brand	JUWEIAT
Model Number	AT24C (AT24)
Measurement Type	Ammeter, Multimeter, Voltmeter, Wattmeter, Energy Meter
Minimum Operating Voltage	50 Volts
Maximum Operating Voltage	300 Volts
Maximum Current	100 Amps (with external transformer)
Display	2.4-inch High-Definition Color Screen
CPU Core	32-bit ARM Cortex
Connectivity	Bluetooth (Apple iOS, Android APP)
Power Source	Battery Powered (Internal, for data retention) / AC Powered (for operation)
Color	Black
Manufacturer	ATORCH

Country of Origin	USA

9. Warranty and Support

9.1 Product Warranty

This product typically comes with a 10-day replacement policy from the date of purchase for manufacturing defects. Please refer to your purchase documentation for specific warranty terms and conditions.

9.2 Customer Support

For technical assistance, troubleshooting beyond this manual, or warranty claims, please contact the retailer or manufacturer (ATORCH/JUWEIAT) directly through their official support channels. Have your product model number (AT24C) and purchase details ready when contacting support.