UNI-T HY-UT60S

UNI-T UT60S Smart Digital Multimeter User Manual

Model: HY-UT60S

1. Introduction

The UNI-T UT60S is a versatile smart digital multimeter designed for accurate electrical measurements. It features a 9999-count display, True RMS capability, and various measurement functions including AC/DC voltage, current, resistance, capacitance, frequency, duty cycle, diode, and continuity tests. The UT60S also includes non-contact voltage (NCV) detection, a backlight, and relative mode for enhanced usability. This manual provides essential information for the safe and effective operation and maintenance of your UT60S multimeter.

Figure 1: Front view of the UNI-T UT60S Smart Digital Multimeter.

2. Product Overview and Key Features

The UT60S multimeter is equipped with a clear LCD display and intuitive controls for various measurement modes. Understanding its components and features is crucial for proper operation.

- **9999 Counts:** Provides high resolution for precise measurements.
- **True RMS:** Ensures accurate readings for non-sinusoidal AC waveforms.
- **Bluetooth (UT60BT model):** Allows data transmission to a mobile device for logging and analysis.
- **Duty Cycle:** Measures the percentage of time a signal is active.
- **Diode/Continuity Test:** For checking diodes and circuit continuity.
- **Temperature:** Measures temperature using a K-type thermocouple (included).
- **Non-Contact Voltage (NCV):** Detects AC voltage without direct contact.
- **Analog Bar/Data Hold:** Provides a visual representation of readings and freezes the display.
- **Backlight/Relative Mode:** Improves visibility in low light and allows for relative measurements.
- **Auto/Manual Range:** Automatically selects the appropriate measurement range or allows manual selection.

- **Low Battery Indication:** Alerts when battery replacement is needed.
- **Three-color LED Light Indicator:** Provides visual feedback for certain functions.

Figure 2: Labeled diagram showing key components and functions of the UT60 series multimeter.

Figure 3: Contents of the UNI-T UT60S package, including the multimeter, test leads, temperature probe, and instruction manual.

3. Setup

3.1 Battery Installation

The UT60S requires 1 Lithium Metal battery (included). 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. Unscrew the retaining screws and carefully remove the cover.
4. Insert the battery, observing the correct polarity (+/-) as indicated inside the compartment.
5. Replace the battery cover and secure it with the screws.

Figure 4: Battery compartment location and details on the back of the multimeter.

3.2 Connecting Test Leads

Always connect the black test lead to the "COM" (common) jack. Connect the red test lead to the appropriate input jack based on the measurement you intend to perform (e.g., "VΩHz" for voltage/resistance/frequency, "mA" for milliampere current, "A" for ampere current).

4. Operating Instructions

Before operating, ensure you have read and understood all safety warnings. Select the correct function and range before connecting the test leads to the circuit.

4.1 Basic Measurements

- **Voltage (AC/DC):** Turn the function switch dial to the V~ (AC) or V- (DC) position. Connect the test leads in parallel to the circuit or component.
- **Current (AC/DC):** Turn the function switch dial to the A~ (AC) or A- (DC) position. Connect the multimeter in series with the circuit. Ensure the correct input jack (mA or A) is used.
- **Resistance (Ω):** Turn the function switch dial to the Ω position. Connect the test leads across the component.
- **Continuity Test:** Turn the function switch dial to the continuity position. The multimeter will beep if continuity is detected.
- **Diode Test:** Turn the function switch dial to the diode position. Connect the test leads across the diode.

Figure 5: The dual display feature allows for simultaneous viewing of related measurements like AC voltage and frequency, or frequency and duty cycle.

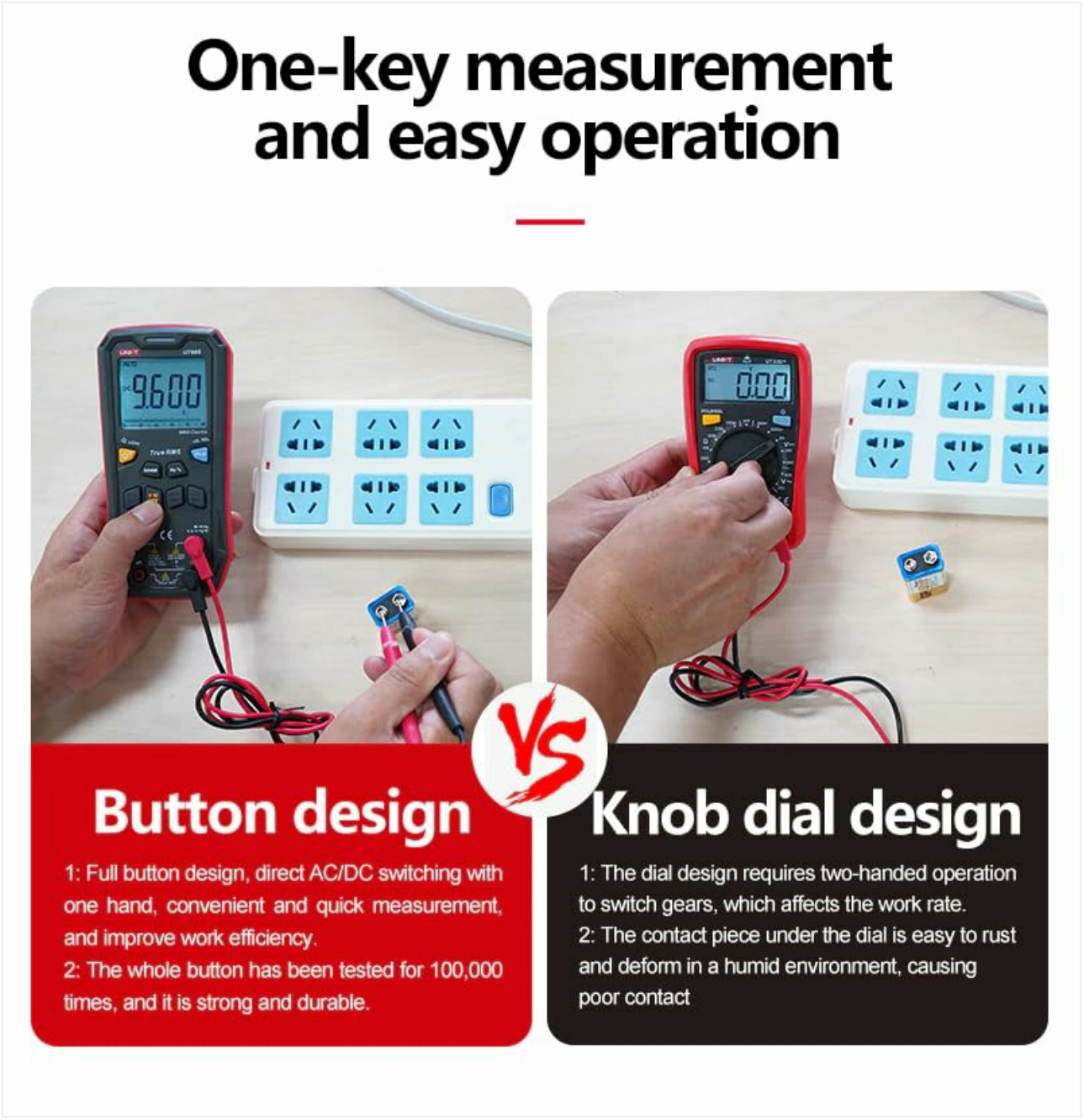

Figure 6: The UT60S features a button-based design for easy AC/DC switching and quick measurements, facilitating one-handed operation.

4.2 Advanced Functions

- **Non-Contact Voltage (NCV):** Activate the NCV function and bring the top of the multimeter near an AC voltage source. The LED indicator and audible alarm will signal the presence of voltage.
- **Backlight:** Press the "Light" button to activate the display backlight for improved visibility in dimly lit environments.
- **Data Hold:** Press the "HOLD" button to freeze the current reading on the display. Press again to release.
- **Relative Mode (RELΔ):** Press the "RELΔ" button to store the current reading as a reference value. Subsequent measurements will be displayed as the difference from this reference.

Figure 7: Examples of the UT60S multimeter in use for AC voltage measurement, non-contact voltage detection, refrigeration system inspection, and electronic circuit maintenance.

4.3 Bluetooth Data Transmission (UT60BT Model)

For the UT60BT model, the built-in Bluetooth module allows connection to the IDMM2.0 app (available on App Store and Google Play). This enables real-time data monitoring, logging, and analysis on your smartphone or tablet.

Figure 8: The UT60BT model can transmit measurement data to a smartphone application for convenient monitoring and recording.

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Video 1: An overview of the UNI-T Multimeter UT60S, UT60EU, and UT60BT models, demonstrating key features and applications.

5. Maintenance

5.1 General Care

- Keep the multimeter dry. If it gets wet, wipe it dry immediately.
- Use and store the multimeter in normal temperature environments. Extreme temperatures can shorten the life of electronic devices.
- Handle the multimeter gently and carefully. Dropping it can damage circuit boards and mechanical parts.
- Keep the multimeter away from dust and dirt, which can cause corrosion of electronic components.
- Wipe the multimeter with a damp cloth occasionally to keep it looking new. Do not use harsh chemicals, cleaning solvents, or strong detergents.

5.2 Battery Replacement

When the low battery indicator appears on the display, replace the battery as described in Section 3.1. Remove the battery if the multimeter will not be used for an extended period to prevent leakage.

6. Troubleshooting

Problem	Possible Cause	Solution
No display or dim display	Low battery; Multimeter off; Damaged display.	Replace battery; Turn on multimeter; Contact support.
Incorrect readings	Incorrect function/range selected; Poor test lead connection; Damaged test leads; Out of calibration.	Select correct function/range; Check connections; Replace test leads; Contact support for calibration.
No continuity beep	Circuit open; Multimeter not in continuity mode; Low battery.	Check circuit; Select continuity mode; Replace battery.
Bluetooth not connecting (UT60BT)	Bluetooth off on multimeter/phone; App not installed/updated; Interference.	Ensure Bluetooth is on; Install/update IDMM2.0 app; Move away from interference sources.

7. Specifications

Feature	Detail
Display Count	9999
True RMS	Yes
Non-Contact Voltage (NCV)	Yes
Auto/Manual Range	Yes
Power Source	Battery Powered (1 Lithium Metal battery included)
Product Dimensions	6.5 x 4.33 x 4.72 inches
Item Weight	1.32 Pounds (0.6 Kilograms)
Manufacturer	UNI-Trend
Country of Origin	China

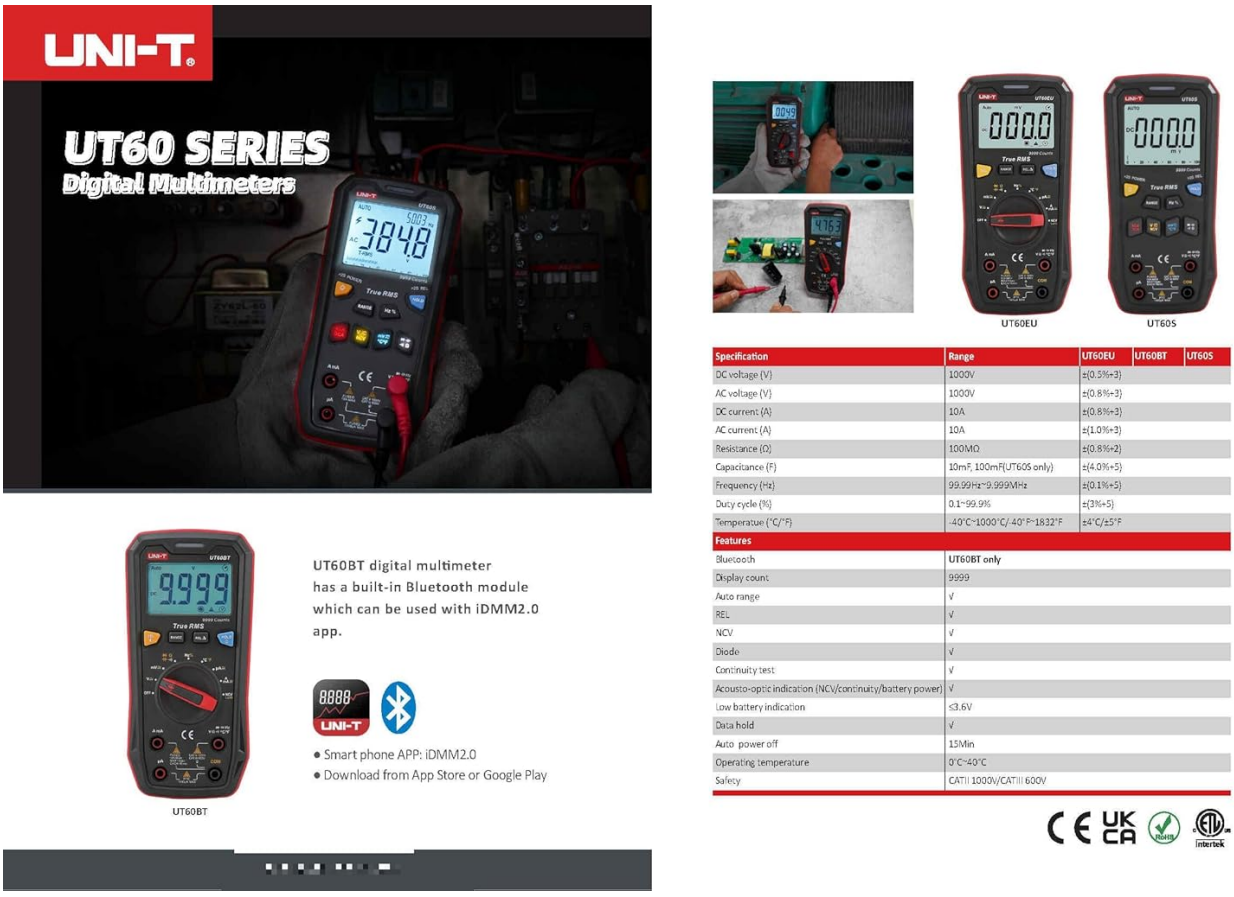

Figure 9: Detailed specifications for the UT60 series, including the UT60S model.

8. Warranty and Support

UNI-T products are manufactured to high quality standards. For warranty information and technical support, please refer to the official UNI-T website or contact their customer service directly. Keep your purchase receipt as proof of purchase for any warranty claims.

For further assistance, you may visit the UNI-T Store on Amazon.