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› UNI-T UT620C+ Digital DC Low Resistance Meter Micro Ohm Meter Cable Wire/Coil/Motor Resistance Tester 0.001mΩ~300.0kΩ User Manual

## UNI-T UT620C+

# UNI-T UT620C+ Digital DC Low Resistance Meter

Instruction Manual

## 1. INTRODUCTION

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The UNI-T UT620C+ is a high-precision digital DC low resistance meter designed for accurate measurement of resistance in various electrical components. It is ideal for testing cables, wires, coils, motors, transformer windings, and resistance between metal riveted parts and grounding electrodes. This manual provides detailed instructions for the safe and effective use of your UT620C+ meter.

## 2. SAFETY INFORMATION

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Please read and understand all safety warnings and operating instructions before using this instrument. Failure to follow these instructions may result in injury or damage to the meter.

- **Do Not Apply Voltage:** Never apply external voltage to the input terminals of the meter. This instrument is designed for resistance measurement only.
- **Battery Safety:** Ensure correct battery polarity when installing. Do not short-circuit, disassemble, or expose batteries to high temperatures.
- **Environmental Conditions:** Use the meter within specified temperature and humidity ranges. Avoid using in wet or dusty environments.
- **Maintenance:** Only qualified personnel should perform repairs. Do not open the casing unless instructed for battery replacement.
- **Proper Connection:** Always ensure secure and correct connections of test leads to the device under test.

## 3. PRODUCT OVERVIEW

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The UT620C+ is a robust and portable micro-ohm meter featuring a large LCD display and intuitive controls. It offers high resolution and accuracy for demanding resistance measurement applications.

### 3.1 Key Features

- Micro-ohm level measurement, resistance measurement range: 0.001mΩ~300.0KΩ.

- Resolution up to  $1\mu\Omega$ .
- Measurement current  $\leq 1A$ .
- 500 groups of data storage.
- Large LCD display for clear readings.
- Automatic shutdown for power saving.
- Rechargeable lithium battery.
- Compact design, easy to carry and operate.

### 3.2 Components

The package includes the UT620C+ meter, test leads, power adapter, USB cable, and user manual.



Figure 3.2.1: UT620C+ Meter and Included Accessories. This image displays the main unit, carrying case, test leads, power adapter, and USB cable.



Figure 3.2.2: Front View of the UT620C+ Meter. Shows the large LCD display, control buttons (ZERO, OK, DEL, SAVE, HOLD, READ, AUTO), and power button.



Figure 3.2.3: Top View of the UT620C+ Meter. Displays the C1, P1, P2, and C2 input terminals for four-wire measurement.

## 4. SETUP

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### 4.1 Battery Installation and Charging

The UT620C+ uses a rechargeable lithium-ion battery. The battery is typically pre-installed. To access the battery compartment for inspection or replacement, remove the screws on the back cover.



Figure 4.1.1: Battery Compartment. Shows the location of the 3.7V/3200mAh Li-ion battery.

To charge the battery, connect the provided USB cable to the meter's USB port and the power adapter, then plug the adapter into a power outlet. The battery indicator on the display will show charging status.

### 4.2 Connecting Test Leads

The UT620C+ utilizes a four-wire (Kelvin) measurement method for high accuracy, which minimizes the effect of lead resistance. Connect the test leads to the C1, P1, P2, and C2 terminals on the top of the meter. Ensure the connections are firm.

## 5. OPERATING INSTRUCTIONS

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### 5.1 Power On/Off



button to turn it off. The meter features an automatic shutdown function to conserve battery life.

## 5.2 Resistance Measurement (Four-Wire Method)

The four-wire method ensures accurate measurements by separating the current-carrying leads from the voltage-sensing leads, thus eliminating the resistance of the test leads from the measurement.

1. Connect the four test leads to the C1, P1, P2, and C2 terminals on the meter.
2. Connect the other ends of the test leads to the device under test. Ensure good contact.
3. Press the **READ** button to initiate a measurement. The meter will display the resistance value.
4. For continuous measurement, use the **AUTO** mode.



Figure 5.2.1: Meter in Use.

Demonstrates the UT620C+ connected to a component for resistance measurement.

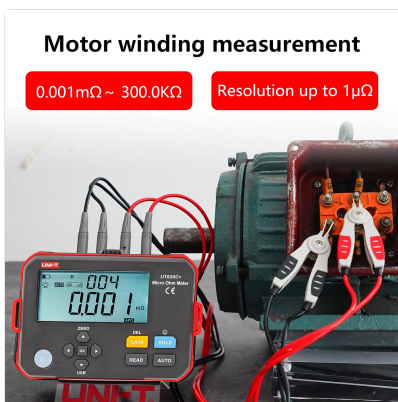


Figure 5.2.2: Motor Winding Measurement. Illustrates the application of the meter for measuring motor winding resistance.

### Measurement methods: Four-wire method



Figure 5.2.3: Four-Wire Measurement Method. Visual representation of how the four leads are connected for accurate resistance measurement.

## 5.3 Data Storage and Recall

The UT620C+ can store up to 500 groups of measurement data.

- To save the current measurement, press the **SAVE** button.
- To recall stored data, use the navigation buttons (**▲** / **▼**) and **OK** button to browse.
- To delete data, press the **DEL** button.



Figure 5.3.1: Data Storage Function. Shows the meter displaying stored measurement data.

## 5.4 Line-Set Calibration

The meter supports line-set calibration to ensure accuracy. Refer to the on-screen prompts or specific sections in the full user manual for detailed calibration steps.



Figure 5.4.1: Line-Set Calibration. Illustrates the difference in readings before and after performing a line-set calibration.

## 5.5 USB Interface

The UT620C+ features a USB Type-C interface for data transfer to a computer. This allows for further analysis and logging of measurement data using compatible software.



Figure 5.5.1: USB Interface. Shows the meter connected to a laptop, indicating data transfer capability.

## 6. MAINTENANCE

### 6.1 Cleaning

Wipe the meter's casing with a damp cloth and mild detergent. Do not use abrasive cleaners or solvents. Ensure the meter is dry before storage or next use.

### 6.2 Storage

When not in use for extended periods, store the meter in a cool, dry place, away from direct sunlight and extreme temperatures. It is recommended to fully charge the battery before long-term storage and recharge it periodically to maintain battery health.

### 6.3 Battery Care

To prolong battery life, avoid fully discharging the battery frequently. Recharge the battery when the low battery indicator appears. If the meter will not be used for a long time, remove the battery to prevent leakage.

## 7. TROUBLESHOOTING

Problem	Possible Cause	Solution
Meter does not power on	Low or dead battery; Battery not installed correctly	Charge the battery; Check battery installation and polarity
Inaccurate readings	Poor test lead connection; Uncalibrated meter; External interference	Ensure secure connections; Perform line-set calibration; Move away from strong electromagnetic fields
Display shows "OL" (Overload)	Resistance value exceeds range; Open circuit	Check if the circuit is open; Ensure the resistance is within the meter's range
Cannot save data	Memory full	Delete unnecessary stored data

## 8. SPECIFICATIONS

Specification	Value
Resistance Measurement Range	0.001mΩ ~ 300.0KΩ
Resolution	Up to 1μΩ
Measurement Current	≤ 1A
Accuracy	±0.1%FS (Full Scale)
Data Storage	500 groups
Display	Large LCD
Power Source	Battery Powered (2 Lithium Ion batteries required, included)
Battery Type	3.7V/3200mAh Li-ion battery
Min. Operating Voltage	4.2 Volts
Interface	USB Type-C
Dimensions	161mm x 117mm x 68mm (approx. 6.34 x 4.61 x 2.68 inches)
Weight	Approx. 1.8 kg (3.97 Pounds)
Color	Red & Black
Manufacturer	UNI-T



Figure 8.1: Product Dimensions. Shows the length (161mm), height (117mm), and depth (68mm) of the UT620C+ meter.

## 9. WARRANTY AND SUPPORT

UNI-T products are manufactured to high quality standards. For warranty information, technical support, or service, please contact your local distributor or visit the official UNI-T website. Keep your purchase receipt as proof of purchase.

For more information, you can visit the UNI-T Store on Amazon.

