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› MeterTo UT61C Digital Multimeter User Manual

MeterTo UT61C

MeterTo UT61C Digital Multimeter User Manual

Model: UT61C

Brand: MeterTo

1. INTRODUCTION

This manual provides essential information for the safe and effective operation of your MeterTo UT61C Digital Multimeter. The UT61C is an auto-ranging digital multimeter designed for measuring DC/AC voltage, DC/AC current, resistance, capacitance, frequency, and temperature. It features a 6000-count display and complies with CE, ETL, and GS standards, offering a high safety rating of CAT IV 600V.

2. SAFETY INFORMATION

Always observe safety precautions when using this multimeter to prevent electric shock or personal injury. Improper use can result in damage to the meter or the equipment under test.

- Do not apply more than the rated voltage, as marked on the meter, between terminals or between any terminal and ground.
- Use caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC. These voltages pose a shock hazard.
- Always disconnect the test leads from the circuit before changing functions.
- Ensure the test leads are in good condition and that the insulation is not damaged.
- Do not operate the meter if it appears damaged or if the case is open.
- Adhere to local and national safety codes.
- The UT61C is rated for CAT IV 600V and CAT III 1000V. Understand these categories and use the meter appropriately.

3. PACKAGE CONTENTS

Verify that all items are present in the package:

- MeterTo UT61C Digital Multimeter
- 9V Battery (6F22)

- Test Leads (one red, one black)
- Multi-purpose Socket
- K-type Temperature Probe
- English Manual (this document)

4. PRODUCT FEATURES

The MeterTo UT61C Digital Multimeter includes the following key features:

- 6000 Display Count
- Auto-ranging Functionality
- MAX/MIN/REL Mode for data analysis
- Data Hold Function
- Automatic Power Off to conserve battery life
- LCD Backlight for visibility in low-light conditions
- Low Battery Indication
- Analog Bar Graph Display
- Transistor Measurement Capability
- Diode and Continuity Buzzer Test
- Input Protection
- RS-232 and USB Interface for PC connectivity
- K-type Temperature Probe included

5. PRODUCT OVERVIEW

Familiarize yourself with the components of your UT61C multimeter.



Figure 1: Front view of the

UT61C Multimeter. This image displays the main components including the LCD screen, function buttons, rotary selector switch, and input terminals.



Figure 2: Angled view of the UT61C Multimeter with kickstand. This image shows the device from an angle, highlighting the integrated kickstand for hands-free operation.



Figure 3: Back view of the UT61C Multimeter. This image illustrates the rear of the device, including the battery cover and the mechanism for the kickstand.

6. SETUP

6.1. Battery Installation

1. Ensure the multimeter is turned OFF.
2. Locate the battery compartment on the back of the meter (refer to Figure 3).

3. Use a screwdriver to open the battery cover.
4. Insert a new 9V (6F22) battery, observing the correct polarity.
5. Replace the battery cover and secure it with the screw.

6.2. Connecting Test Leads

Always connect the black test lead to the COM (common) input jack. Connect the red test lead to the appropriate input jack based on the measurement type:

- For Voltage, Resistance, Capacitance, Frequency, Diode, Continuity, and Temperature measurements: Connect the red lead to the V Ω Hz input jack.
- For Current measurements (mA/ μ A): Connect the red lead to the mA μ A input jack.
- For High Current measurements (10A): Connect the red lead to the 10A MAX input jack.

7. OPERATING INSTRUCTIONS

Before taking any measurement, ensure the test leads are correctly connected and the rotary switch is set to the desired function.

7.1. DC/AC Voltage Measurement

1. Set the rotary switch to the V $^-$ (DC Voltage) or V $\sim$ (AC Voltage) position.
2. Connect the black test lead to the COM jack and the red test lead to the V Ω Hz jack.
3. Connect the test leads in parallel to the circuit or component under test.
4. Read the voltage value on the display.

7.2. DC/AC Current Measurement

Caution: Never connect the meter in parallel to a voltage source when measuring current. This can blow the fuse or damage the meter.

1. Set the rotary switch to the A $^-$ (DC Current) or A $\sim$ (AC Current) position, selecting the appropriate range (mA/ μ A or 10A).
2. Connect the black test lead to the COM jack. Connect the red test lead to the mA μ A jack for currents up to 600mA, or to the 10A MAX jack for currents up to 10A.
3. Open the circuit where current is to be measured and connect the meter in series with the load.
4. Read the current value on the display.

7.3. Resistance Measurement

1. Set the rotary switch to the Ω (Resistance) position.
2. Connect the black test lead to the COM jack and the red test lead to the V Ω Hz jack.
3. Ensure the circuit or component is de-energized before measuring resistance.
4. Connect the test leads across the component.
5. Read the resistance value on the display.

7.4. Capacitance Measurement

1. Set the rotary switch to the † (Capacitance) position.
2. Connect the black test lead to the COM jack and the red test lead to the V $\text{\AA}$ Hz jack.
3. Ensure the capacitor is fully discharged before measurement to prevent damage to the meter.
4. Connect the test leads across the capacitor terminals.
5. Read the capacitance value on the display.

7.5. Frequency Measurement

1. Set the rotary switch to the Hz (Frequency) position.
2. Connect the black test lead to the COM jack and the red test lead to the V $\text{\AA}$ Hz jack.
3. Connect the test leads in parallel to the circuit where frequency is to be measured.
4. Read the frequency value on the display.

7.6. Temperature Measurement

1. Set the rotary switch to the $^{\circ}\text{C}/^{\circ}\text{F}$ (Temperature) position.
2. Connect the K-type temperature probe to the V $\text{\AA}$ Hz and COM jacks, observing polarity.
3. Place the tip of the probe on or near the object whose temperature is to be measured.
4. Read the temperature value on the display.

7.7. Diode Test and Continuity Test

1. Set the rotary switch to the Diode/Continuity position.
2. Connect the black test lead to the COM jack and the red test lead to the V $\text{\AA}$ Hz jack.
3. For Diode Test: Connect the red lead to the anode and the black lead to the cathode of the diode. The display will show the forward voltage drop. Reverse the leads; the display should show 'OL' (Open Loop) for a good diode.
4. For Continuity Test: Connect the test leads across the circuit or component. If resistance is below approximately 50 $\text{\AA}$, the buzzer will sound, indicating continuity.

7.8. Transistor Measurement

1. Set the rotary switch to the hFE (Transistor) position.
2. Insert the transistor's emitter, base, and collector leads into the corresponding holes of the multi-purpose socket.
3. Read the hFE value on the display.

8. MAINTENANCE

8.1. Cleaning

Wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents. Keep the input terminals free from dirt and moisture.

8.2. Battery Replacement

When the “battery” symbol appears on the display, the battery needs to be replaced. Follow the steps in Section 6.1 to replace the 9V (6F22) battery.

8.3. Fuse Replacement

Warning: To avoid electric shock, disconnect the test leads before replacing the fuse. Use only fuses of the specified type and rating.

If the current measurement function stops working, the fuse may be blown. Refer to the specifications for the correct fuse type and rating. Open the back case of the meter to access and replace the fuse.

9. TROUBLESHOOTING

If the multimeter is not functioning as expected, consider the following common issues:

- **No display or dim display:** Check battery charge. Replace if low.
- **Incorrect readings:** Ensure test leads are properly connected to the correct input jacks and the rotary switch is on the correct function. Verify the circuit is de-energized for resistance/capacitance measurements.
- **Current measurement not working:** Check the fuse. Replace if blown (refer to Section 8.3).
- **'OL' (Open Loop) displayed:** This indicates an out-of-range measurement or an open circuit. For resistance, it means very high resistance. For diode test, it indicates reverse bias on a good diode.

10. SPECIFICATIONS

Parameter	Range/Value	Accuracy
DC Voltage (V)	1000V	±(0.5%+1)
AC Voltage (V)	750V	±(1%+3)
DC Current (A)	10A	±(1%+2)
AC Current (A)	10A	±(1.2%+5)
Resistance (Ω)	60MΩ	±(1%+2)
Capacitance (F)	4000μF	±(3%+5)
Frequency (Hz)	10Hz~10MHz	±(0.1%+4)
Temperature (°C)	-40°C~1000°C	±(1.2%+3)
Temperature (°F)	-40°F~1832°F	±(1.2%+4)
Display Count	6000	N/A
Bandwidth (Hz)	45Hz~1kHz	N/A
Duty Cycle	0.1%~99.9%	N/A

Parameter	Range/Value	Accuracy
Power	9V battery (6F22)	N/A
Display Size	65mm x 43mm	N/A
Product Net Weight	370g	N/A
Product Size	180mm x 87mm x 47mm	N/A
Safety Rating	CAT IV 600V, CAT III 1000V	N/A

11. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided with your purchase or contact MeterTo customer service. Keep your purchase receipt as proof of purchase.

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