ULTRICS Digital Multimeter D2

ULTRICS Digital Multimeter D2 User Manual

Model: Digital Multimeter D2 | Brand: ULTRICS

Introduction

Welcome to the ULTRICS Digital Multimeter D2 user manual. This device is designed for precise and reliable electrical measurements, suitable for professionals and DIY enthusiasts. It accurately measures AC/DC voltage, DC current, resistance, continuity, and diodes. This manual provides essential information for safe and effective operation, helping you to maximize the utility of your new multimeter.

Safety Information

WARNING: Always exercise extreme caution when working with electrical circuits. Improper use of this multimeter can result in electric shock, personal injury, or damage to the device.

- Do not exceed the maximum input values for any range.
- Do not use the multimeter if it or the test leads appear damaged. Inspect them before each use.
- Ensure the function switch is in the correct position before making measurements. Changing ranges while connected to a live circuit can cause damage.
- Disconnect power to the circuit before measuring resistance, continuity, or diodes.
- Use caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC. These voltages pose a significant shock hazard.
- Always connect the common (COM) test lead first, then the live lead. Disconnect the live lead first, then the common lead.
- Replace the battery when the low battery indicator appears to ensure accurate readings and proper device function.

This multimeter is rated CAT II 600V, indicating its suitability for measurements on circuits directly connected to the low-voltage installation.

Package Contents

Verify that all items are present in the package:

- 1 x ULTRICS Digital Multimeter D2
- 2 x Test Leads (Red and Black)

- 1 x 9V Battery
- 1 x User Manual (this document)

Image: Contents of the ULTRICS Digital Multimeter D2 package, including the multimeter, red and black test leads, and a 9V battery.

Product Overview

Familiarize yourself with the components of your ULTRICS Digital Multimeter D2.

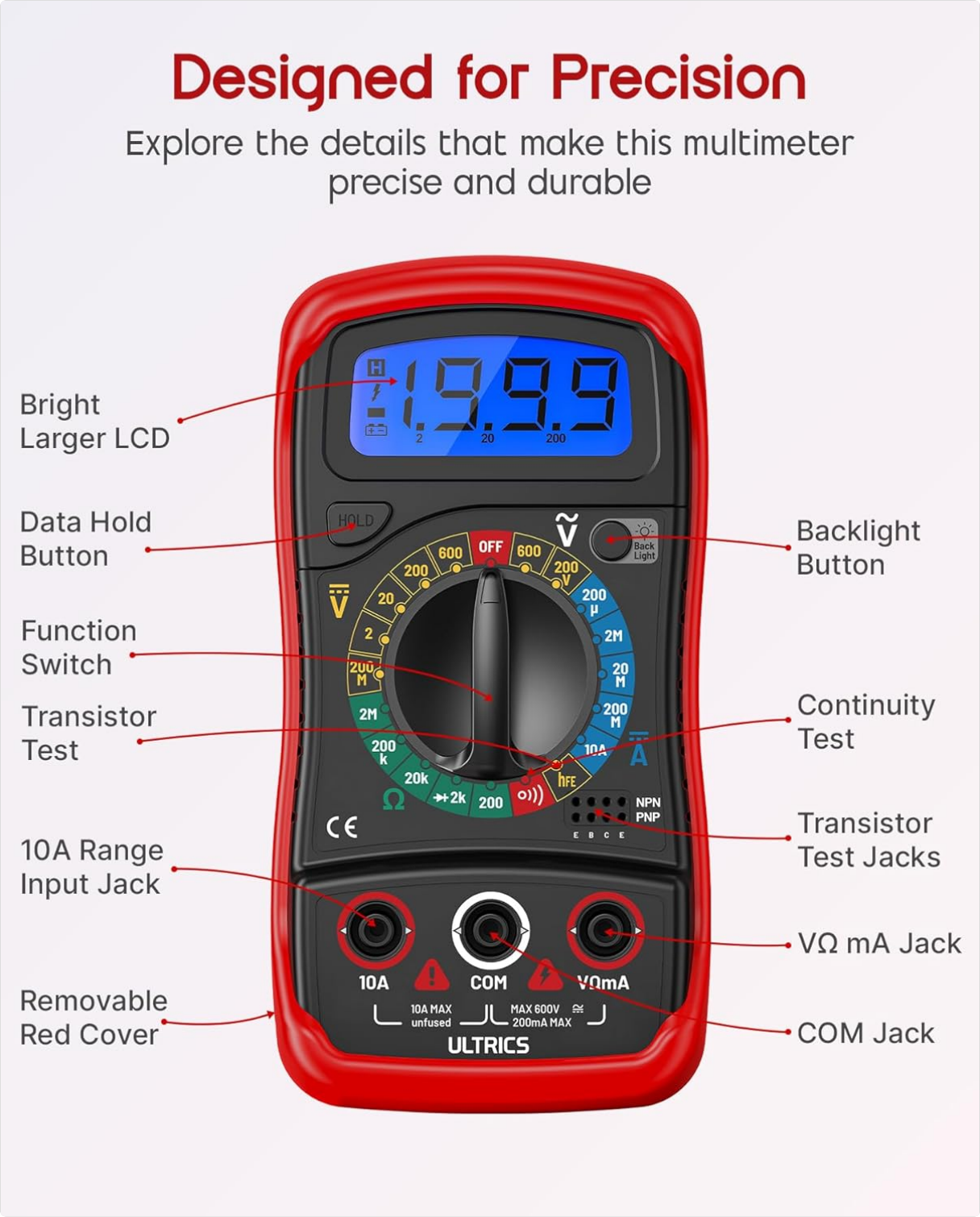


Image: Detailed diagram of the ULTRICS Digital Multimeter D2, highlighting its key components such as the LCD display, data hold button, backlight button, function switch, test lead jacks, and protective rubber shell.

1. **LCD Display:** Shows measurement readings, units, and polarity. Features a bright backlight for low-light conditions.
2. **Data Hold Button:** Freezes the current reading on the display for easier recording.
3. **Backlight Button:** Activates or deactivates the display backlight.
4. **Function Switch (Rotary Dial):** Selects the desired measurement function and range.
5. **10A Input Jack:** Used for measuring DC current up to 10 Amperes.
6. **COM (Common) Input Jack:** The negative (-) input for all measurements. Always connect the black test lead here.
7. **VΩmA Input Jack:** The positive (+) input for voltage, resistance, and milliampere current measurements. Connect the red test lead here.

8. **Transistor Test Jacks (hFE):** Used for testing NPN and PNP transistors.
9. **Protective Rubber Shell:** Provides durability and protection against minor impacts and splashes.
10. **Foldable Kickstand:** Allows for hands-free operation and easy viewing angle.

Setup

Installing the Battery

The ULTRICS Digital Multimeter D2 requires one 9V battery (included).

1. Locate the battery compartment on the back of the multimeter.
2. Use a screwdriver to remove the screw securing the battery cover.
3. Gently remove the battery cover.
4. Connect the 9V battery to the battery clips, ensuring correct polarity (+ to + and - to -).
5. Place the battery inside the compartment.
6. Replace the battery cover and secure it with the screw.

Connecting Test Leads

Always ensure test leads are securely connected before taking measurements.

1. Insert the black test lead's banana plug into the **COM** (Common) input jack.
2. For most measurements (voltage, resistance, continuity, diode, small current), insert the red test lead's banana plug into the **VΩmA** input jack.
3. For high current measurements (up to 10A DC), insert the red test lead's banana plug into the **10A** input jack.

Operating Instructions

This section details how to perform various measurements using your multimeter.

Image: Visual representation of the multimeter's versatile functions, including AC/DC Voltage, AC/DC Current, Diode, Continuity, Ampere, Capacity, Battery Test, Resistance, and Transistor measurements.

Measuring DC Voltage (VDC)

1. Connect the black test lead to the**COM** jack and the red test lead to the**VΩmA** jack.
2. Turn the function switch to the desired**VDC** range (e.g., 200mV, 2V, 20V, 200V, 600V). If unsure, start with the highest range and decrease as needed.
3. Connect the test leads in parallel across the component or circuit to be measured.
4. Read the voltage value on the LCD display.

Measuring AC Voltage (VAC)

1. Connect the black test lead to the**COM** jack and the red test lead to the**VΩmA** jack.

2. Turn the function switch to the desired **VAC** range (e.g., 200V, 600V).
3. Connect the test leads in parallel across the AC voltage source.
4. Read the voltage value on the LCD display.

Measuring DC Current (ADC)

CAUTION: Never connect the multimeter in parallel when measuring current. Always connect it in series with the circuit. Improper connection can damage the multimeter or the circuit.

1. **Turn off power to the circuit.**
2. For currents up to 200mA, connect the black test lead to the **COM** jack and the red test lead to the **VΩmA** jack.
3. For currents up to 10A, connect the black test lead to the **COM** jack and the red test lead to the **10A** jack.
4. Turn the function switch to the desired **ADC** range (e.g., 200µA, 2mA, 20mA, 200mA, 10A).
5. Break the circuit and connect the multimeter in series with the circuit.
6. **Turn on power to the circuit.**
7. Read the current value on the LCD display.
8. **Turn off power to the circuit** before disconnecting the multimeter.

Measuring Resistance (Ω)

CAUTION: Ensure the circuit is completely de-energized before measuring resistance. Measuring resistance on a live circuit can damage the multimeter.

1. Connect the black test lead to the **COM** jack and the red test lead to the **VΩmA** jack.
2. Turn the function switch to the desired **Ω** range (e.g., 200Ω, 2kΩ, 20kΩ, 200kΩ, 2MΩ, 20MΩ).
3. Connect the test leads across the component whose resistance you want to measure.
4. Read the resistance value on the LCD display.

Continuity Test

The continuity test checks for a complete circuit path. An audible buzzer will sound if continuity is detected.

1. Connect the black test lead to the **COM** jack and the red test lead to the **VΩmA** jack.
2. Turn the function switch to the **Continuity** (buzzer) position.
3. Connect the test leads across the circuit or component.
4. If the resistance is below approximately 50Ω, the buzzer will sound, indicating continuity.

Diode Test

The diode test measures the forward voltage drop of a diode.

1. Connect the black test lead to the **COM** jack and the red test lead to the **VΩmA** jack.
2. Turn the function switch to the **Diode** position.
3. Connect the red test lead to the anode (+) and the black test lead to the cathode (-) of the diode.
4. Read the forward voltage drop on the LCD display. Reverse the leads; the display should show "OL" (Overload) for a good diode.

Transistor hFE Test

This function tests the DC current gain (hFE) of NPN and PNP transistors.

1. Turn the function switch to the **hFE** position.

2. Identify the Emitter (E), Base (B), and Collector (C) leads of the transistor.
3. Insert the transistor leads into the corresponding holes in the**hFE** socket on the multimeter, ensuring correct NPN or PNP type.
4. Read the hFE value on the LCD display.

Data Hold Function

Press the **HOLD** button to freeze the current reading on the display. Press it again to release the hold and resume live readings.

Backlight Function

Press the **Backlight** button to turn the LCD backlight on or off, improving visibility in dim environments.

Image: A close-up view of the multimeter's LCD display, demonstrating its bright backlight feature for enhanced readability in various lighting conditions.

Maintenance

Cleaning

To clean the multimeter, wipe the case with a damp cloth and a mild detergent. Do not use abrasives or solvents, as these may damage the casing or display.

Battery Replacement

When the low battery indicator appears on the display, replace the 9V battery as described in the "Installing the Battery" section to ensure continued accurate readings.

Fuse Replacement

If the current measurement function stops working, the fuse may need replacement. This multimeter is equipped with internal fuses for protection.

1. **Ensure the multimeter is OFF and all test leads are disconnected.**
2. Remove the battery cover and battery.
3. Carefully open the main casing (this may require removing additional screws, typically located under the rubber shell).
4. Locate the fuse(s) on the circuit board. This model typically uses a 200mA/250V fuse for the mA range and a 10A/250V fuse for the 10A range.
5. Replace the blown fuse with a fuse of the same type and rating. Never use a fuse with a different rating.
6. Reassemble the multimeter, ensuring all screws are tightened and the casing is properly sealed.

Storage

If the multimeter is not used for a long period, remove the battery to prevent leakage and store the device in a cool, dry place, away from direct sunlight and extreme temperatures.

Troubleshooting

Problem	Possible Cause	Solution
No display or dim display	Dead or low battery	Replace the 9V battery.
"OL" (Overload) displayed	Input value exceeds selected range; open circuit (for resistance/continuity)	Select a higher range; check for breaks in the circuit or component.
Incorrect readings	Incorrect function/range selected; poor test lead connection; low battery	Verify function switch position and range; ensure leads are firmly connected; replace battery.
Current measurement not working	Blown fuse	Replace the appropriate fuse (refer to Maintenance section).
No continuity buzzer	Open circuit; resistance too high	Ensure circuit is closed; check resistance value (buzzer typically activates below 50Ω).

Specifications

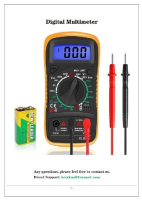
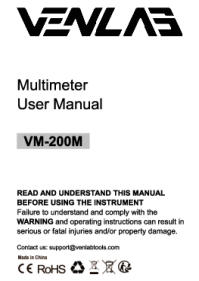
Feature	Detail
Model	Digital Multimeter D2
Display	3 ½ digit LCD, 1999 counts, with backlight
DC Voltage	200mV / 2V / 20V / 200V / 600V
AC Voltage	200V / 600V
DC Current	200µA / 2mA / 20mA / 200mA / 10A
Resistance	200Ω / 2kΩ / 20kΩ / 200kΩ / 2MΩ / 20MΩ
Diode Test	Yes
Continuity Buzzer	Yes
Transistor hFE Test	Yes
Data Hold	Yes
Power Source	9V Battery
Safety Rating	IEC CAT II 600V, CE, RoHS compliant
Dimensions (L x W x H)	14.6 x 10 x 5 cm (5.75 x 3.94 x 1.97 inches)
Weight	240 grams (0.53 lbs)

Warranty and Support

ULTRICS provides a 12-month warranty for this product, covering manufacturing defects from the date of purchase. Please retain your proof of purchase for warranty claims.
For technical support, warranty claims, or any questions regarding your ULTRICS Digital Multimeter D2, please contact ULTRICS customer service through the retailer's platform or the official ULTRICS website. Please have your purchase details and model number ready when contacting support.
Manufacturer: ULTRICS
Model Number: Digital Multimeter D2
ASIN: B0DYP62MW7

Related Documents - Digital Multimeter D2

	ULTRICS UT0021YB Digital Multimeter User Guide - Specifications and Operation Comprehensive user guide for the ULTRICS UT0021YB Digital Multimeter. Learn about safety precautions, specifications, operating instructions for measuring AC/DC voltage, current, resistance, and more. Includes product details and support information.

	[ULTRICS USB Charger Adapter: User Manual, Features, and Safety Guide] Comprehensive user manual for the ULTRICS USB Charger Adapter. Learn about its key features including QC 3.0 fast charging, Smart IC, multi-device charging, safety precautions, certifications (CE, RoHS), and proper disposal. Compatible with European power outlets.
	[Beizkna XL830L Digital Multimeter User Manual & Specifications] Comprehensive guide to the Beizkna XL830L Digital Multimeter, covering safety information, detailed specifications for DC/AC voltage, current, resistance, diode testing, continuity, transistor testing, and usage instructions.
	[Etekcity MSR-A2000 Digital Multimeter User Manual] User manual for the Etekcity MSR-A2000 Digital Multimeter, providing comprehensive instructions on safe operation, features, measurement procedures, technical specifications, warranty, and customer support.
	[KAIWEETS KM100 Digital Multimeter User Manual] Comprehensive guide to the KAIWEETS KM100 Digital Multimeter, covering safety operations, meter diagram, functions, measurement procedures for DC/AC voltage, DC current, resistance, continuity, and diode testing, along with technical specifications and maintenance.
	[VENLAB VM-200M Multimeter User Manual] User manual for the VENLAB VM-200M multimeter, detailing safety information, features, measurement procedures for DC voltage, AC voltage, DC current, resistance, hFE, diode testing, and continuity. Includes specifications and warranty information.