KEYSIGHT U1242C

KEYSIGHT U1242C Handheld Digital Multimeter User Manual

Model: U1242C

1. Introduction

The KEYSIGHT U1242C is a robust and reliable handheld digital multimeter (DMM) designed for professional and industrial use. It offers high accuracy, durability, and advanced features for various electrical measurements. This manual provides essential information for the safe and efficient operation, maintenance, and troubleshooting of your U1242C DMM.
Key features include:

- 50,000 counts resolution on dual display
- 0.03% basic DC voltage accuracy
- True RMS AC measurement
- Data logging to DMM (max. 200 points) & PC with software bundle
- IP 67 certified for dust and water resistance
- Withstands up to 3-meter (10 feet) drop
- Built-in LED flashlight

2. Safety Information

WARNING: Read and understand all safety instructions before operating this device. Failure to follow these instructions may result in injury or damage to the meter.

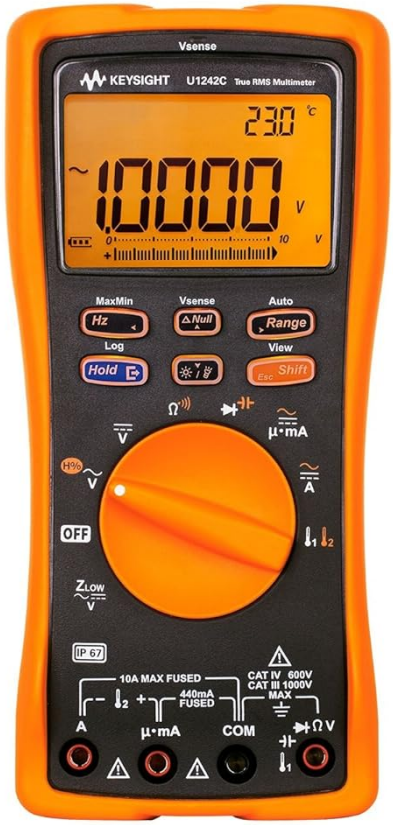
- This product is intended for professional use only.
- Always adhere to local and national safety codes.
- Do not use the meter if it appears damaged or if the insulation is compromised.
- Ensure test leads are in good condition and properly connected before making measurements.
- Do not exceed the maximum input limits for any function.
- Use caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC. These voltages pose a shock hazard.
- Always turn off the circuit power and discharge all high-voltage capacitors before performing resistance,

continuity, or diode tests.

- Replace the battery and fuses only with the specified type and rating.

3. Product Overview

3.1 Front View



This image displays the front of the KEYSIGHT U1242C Digital Multimeter, showing its large orange casing, the dual display screen, the rotary dial for function selection, and the input jacks for test leads. Various buttons for functions like Max/Min, Hz, Log, Hold, and Range are visible around the display.

3.2 Side View

This image shows the side profile of the KEYSIGHT U1242C Digital Multimeter, highlighting its ergonomic design and the textured grip on the orange casing. The side view emphasizes the compact and robust build of the device.

3.3 Back View

This image presents the back of the KEYSIGHT U1242C Digital Multimeter, revealing the battery compartment cover, the kickstand for hands-free operation, and the product label with model and serial number information. The robust construction of the casing is also evident.

3.4 Controls and Connectors

- **Display:** Large dual display for primary and secondary readings.
- **Rotary Switch:** Selects measurement functions (Voltage, Current, Resistance, etc.).
- **Function Buttons:** Max/Min, Hz, Log, Hold, Range, View, Shift.
- **Input Jacks:**
    - **VΩHz:** Input for voltage, resistance, frequency, capacitance, and diode tests.
    - **COM:** Common input for all measurements.
    - **mAµA:** Input for milliampere and microampere current measurements.
    - **10A MAX FUSED:** Input for high current measurements (up to 10A).

4. Setup

4.1 Battery Installation

1. Ensure the multimeter is turned OFF.
2. Locate the battery compartment on the back of the meter.
3. Use a screwdriver to loosen the screw securing the battery cover.
4. Remove the battery cover.
5. Insert the specified batteries (e.g., 4 x AAA batteries) observing the correct polarity (+/-).
6. Replace the battery cover and tighten the screw securely.

4.2 Test Lead Connection

Always connect the test leads to the appropriate input jacks for the measurement you intend to perform. Incorrect connection can lead to damage to the meter or personal injury.

- For most measurements (Voltage, Resistance, Continuity, Diode, Capacitance, Frequency), connect the black test lead to the **COM** jack and the red test lead to the**VΩHz** jack.
- For current measurements (mA/µA), connect the black test lead to the**COM** jack and the red test lead to the **mAµA** jack.
- For high current measurements (up to 10A), connect the black test lead to the**COM** jack and the red test lead to the **10A MAX FUSED** jack.

5. Operating Instructions

This section outlines the basic steps for performing common measurements with your U1242C DMM.

5.1 Measuring AC/DC Voltage

1. Turn the rotary switch to the desired voltage range (V~ for AC, V- for DC). The meter may have an auto-ranging feature.
2. Connect the black test lead to the**COM** jack and the red test lead to the**VΩHz** jack.
3. Connect the test probes in parallel across the circuit or component to be measured.
4. Read the voltage value on the display.

5.2 Measuring AC/DC Current

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

1. Turn the rotary switch to the desired current range (A~ for AC, A- for DC, or mA/µA ranges).
2. Connect the black test lead to the **COM** jack.
3. For mA/µA measurements, connect the red test lead to the **mAµA** jack. For 10A measurements, connect the red test lead to the **10A MAX FUSED** jack.
4. Open the circuit where current is to be measured and connect the meter in series with the circuit.
5. Read the current value on the display.

5.3 Measuring Resistance

1. Turn the rotary switch to the Ω (Ohms) range.
2. Connect the black test lead to the **COM** jack and the red test lead to the **VΩHz** jack.
3. Ensure the circuit or component is de-energized before measuring resistance.
4. Connect the test probes across the component to be measured.
5. Read the resistance value on the display.

5.4 Continuity Test

1. Turn the rotary switch to the continuity symbol (speaker icon).
2. Connect the black test lead to the **COM** jack and the red test lead to the **VΩHz** jack.
3. Ensure the circuit is de-energized.
4. Connect the test probes across the circuit or component.
5. The meter will beep if continuity is detected (resistance below a certain threshold).

5.5 Data Logging

The U1242C supports data logging. Refer to the detailed user manual for specific instructions on activating and managing data logging functions, including connecting to a PC with the software bundle for extended logging capabilities.

6. Maintenance

6.1 Cleaning

Wipe the meter's casing with a damp cloth and mild detergent. Do not use abrasives or solvents. Ensure the meter is completely dry before use.

6.2 Battery Replacement

When the battery indicator appears on the display, replace the batteries as described in Section 4.1. Prompt battery replacement ensures accurate readings and proper operation.

6.3 Fuse Replacement

WARNING: Always replace blown fuses with fuses of the exact same type and rating to maintain safety and performance.

1. Ensure the multimeter is turned OFF and all test leads are disconnected.
2. Open the battery compartment as described in Section 4.1.
3. Locate the fuse(s) inside the compartment.
4. Gently remove the blown fuse.
5. Insert a new fuse of the correct rating (e.g., 10A/1000V for the 10A input).

6. Replace the battery cover and tighten the screw securely.

6.4 Calibration

The U1242C is factory calibrated. For continued accuracy, periodic calibration by a qualified service center is recommended. Refer to KEYSIGHT's official support channels for calibration services.

7. Troubleshooting

Problem	Possible Cause	Solution
Meter does not turn on	Dead or incorrectly installed batteries	Replace batteries, check polarity
No reading or "OL" (Overload) displayed	Incorrect function selected; Open circuit; Input exceeds range	Select correct function; Check circuit continuity; Select higher range or auto-range
Inaccurate readings	Low battery; Dirty test leads; Environmental interference; Needs calibration	Replace battery; Clean leads; Move away from interference; Consider calibration
Current measurement not working	Blown fuse; Incorrect lead connection; Meter not in series	Check/replace fuse; Verify lead connection; Ensure meter is in series with circuit

8. Specifications

Feature	Specification
Model Number	U1242C
Display Counts	50,000
Basic DC Voltage Accuracy	0.03%
AC Measurement	True RMS
Ingress Protection (IP) Rating	IP 67
Drop Protection	Up to 3 meters (10 feet)
Power Source	Battery Powered
Item Weight	1 Pound (16 ounces)
Manufacturer	KEYSIGHT
Date First Available	May 22, 2018

9. Warranty and Support

9.1 Legal Disclaimer

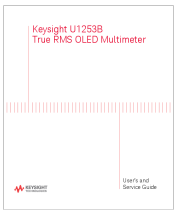
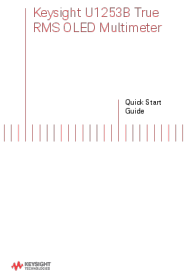
Keysight Technologies products are classified as industrial monitoring and control equipment designed exclusively

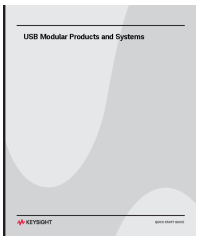
for professional or industrial use and related training programs. Keysight products are designed and certified to meet national industrial safety standards (such as Electrical Equipment for Measurement, Control and Laboratory Use) where products are sold solely for use by trained professionals. Keysight products are not intended for consumer use in a residential setting and may not meet consumer level standards for EMC and other regulated radiated emissions. Keysight products are intended for use in the country where the product was originally sold.

9.2 Technical Support

For technical assistance, service, or warranty claims, please contact KEYSIGHT customer support through their official website or authorized service centers. Provide your product model number (U1242C) and serial number when seeking support.

Related Documents - U1242C

	Keysight U1231A/U1232A/U1233A Handheld Multimeter Quick Start Guide A quick start guide for Keysight U1231A, U1232A, and U1233A handheld multimeters, covering setup, operation, and basic measurements.
	Keysight U1253B True RMS OLED Multimeter User's and Service Guide Comprehensive user and service guide for the Keysight U1253B True RMS OLED Multimeter, covering safety, environmental conditions, features, measurements, maintenance, and specifications.
	Keysight U1253B True RMS OLED Multimeter Quick Start Guide Quick start guide for the Keysight U1253B True RMS OLED Multimeter, covering setup, features, and basic measurements like voltage, current, resistance, capacitance, temperature, frequency, and square wave output.
	Keysight Truevolt Series Digital Multimeter: Operation and Service Guide Comprehensive guide for operating and servicing Keysight Truevolt Series Digital Multimeters, covering features, measurements, troubleshooting, and calibration.

	Keysight USB Modular Products and Systems Quick Start Guide Learn how to install and configure Keysight's USB Modular Products and Systems with this comprehensive Quick Start Guide, covering essential setup steps and features for test and measurement applications.
	Keysight U1731C/U1732C/U1733C Handheld LCR Meter User's Guide Comprehensive user's guide for the Keysight U1731C, U1732C, and U1733C Handheld LCR Meters. Learn about features, setup, measurements, and safety precautions for accurate component testing.