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HOBBYIST

Low Cost Digital Multimeter

User Manual

QM1500

GENERAL INFORMATION & SAFETY INSTRUCTIONS

BEFORE FIRST USE

This compact pocket - sized 3 ½ digit multimeter is great for measuring DC and ac voltage, DC current, resistance and diode.

WARNING

- To avoid electrical shock hazard and/or damage to the multimeter, do not measure voltages that might exceed DC 1000V or AC 750V above earth ground.
- Before the use of the multimeter, inspect the test leads, connectors and probes for damage.

CAUTION

- Before attempting to open the case of the instrument, be sure to disconnect Test leads from any energised circuits.

Prior to using your multimeter, please read all the safety and operating instructions thoroughly. Please ensure you follow the steps below before using the product.

We recommend keeping the original packaging for storing the product when not in use.

Please pay close attention to the section entitled Important Safety and General Instructions. Find a safe and convenient place to keep this instruction manual for future reference.

Unpack the multimeter, but keep all packaging materials until you have ensured your new multimeter is undamaged and in good working order. Ensure you have all accessories listed in this manual.

WARNING: The manufacturer is not responsible for any potential injury from misuse

BOX CONTENTS

- 1 x Multimeter
- 1 x Set of Test Leads
- 2 x AAA Batteries
- 1 x User Manual

OVERVIEW

1. **Function and Range Switch**
   This switch selects the function and desired range also turning on the multimeter. To extend the life of this battery, the switch should be in the "OFF" position when the multimeter is not in use.
2. **Display**
   3 ½ digit, 7-segment, 0-5" high LCD.
3. **"Common" Jack**
   Plug in the connector for the black (negative) test lead.
4. **"V Ω mA" Jack**
   Plug in connector for red (Positive) test lead for all voltage, resistance, and current (except 10A) measurements.
5. **"10A" Jack**
   Plug in the connector for the red (positive) test lead for a 10A measurement.

OPERATING INSTRUCTIONS

DC VOLTAGE MEASUREMENT

1. Connect red test lead to “V Ω mA” jack. Black lead to “COM” jack.
2. Set the RANGE switch to the desired DCV position. If the voltage to be measured is unknown beforehand, set the switch to the highest range and reduce it until a satisfactory reading is obtained.
3. Connect test leads to the device or circuit being measured.
4. Turn on the power of the device or circuit being measured, and the voltage value will appear on the Digital Display and the voltage polarity.

AC VOLTAGE MEASUREMENT

1. Red lead to “V Ω mA”. Black lead to “COM”.
2. RANGE switch to the desired ACV position.
3. Connect test leads to the device or circuit being tested.
4. Read the voltage value on the Digital Display.

DC CURRENT MEASUREMENT

1. Red lead to “V Ω mA”. Black lead to “COM”. (For measurements between 200mA and 10A connect red lead to “10A” jack with fully depressed.)
2. RANGE switch to desired DCA position.
3. Open the circuit to be measured, and connect test leads IN SERIES with the load in which current is to be measured.
4. Read the current value on the Digital Display.

RESISTANCE MEASUREMENT

1. Red lead to “V Ω mA”. Black lead to “COM”.
2. RANGE switch to desired Ω Position.
3. If the measured resistance is connected to a circuit, turn off power and discharge all capacitors before measurement.
4. Connect test leads to the circuit being measured.
5. Read the resistance value on the Digital Display.

DIODE MEASUREMENT

1. Red lead to “V Ω mA”. Black lead to “COM”
2. RANGE switch to position
3. Connect the red test lead to the anode of the diode to be measured and the black test lead to the cathode.
4. The forward voltage drop in mV will be displayed. If the diode is reversed, figure 1 will be shown.

TRANSISTOR HFE MEASUREMENT

1. RANGE switch to the HFE position.
2. Determine whether the transistor is NPN or PAP type and locate the Emitter, Base and Collector leads. Insert the leads into the proper holes of the HFE socket on the front panel.
3. The meter will display the approximate HFE. value under the condition of the base current 10 µA and VCD 2.8V .

TEST SIGNAL USE

1. Range switch to position
2. A test signal appears between “V Ω mA” and “COM” jacks. The output voltage is approx SV p - p with 50 k ohm impedance.

MEASUREMENT SPECIFICATIONS

DC VOLTAGE

RANGE	RESOLUTION	ACCURACY
200mV	100µV	(±1.0% of reading + 10 digits)
2000mV	1mV	
20V	10mV	
200V	100mV	
1000V	1V	

Overload Protection: 220VAC for 200mV range, 1000VDC or 750VAC for other ranges.

AC VOLTAGE

RANGE	RESOLUTION	ACCURACY
200V	100mV	(±1.2% of reading + 10 digits)
750V	1V	

Overload Protection: 1000VDC or 750VAC for all ranges.
Response: Average, calibrated in RMS of SINE.
Frequency Range: 45Hz-450Hz

DC CURRENT

RANGE	RESOLUTION	ACCURACY
2000µA	1µA	(±2.0% of reading + 10 digits)
20mA	10µA	
200mA	100µA	
10A	10mA	(±2.5% of reading + 10 digits)

Overload Protection: 500mA/250V fuse (10A range unfused).
Measuring Voltage Drop: 200mV

RESISTANCE

RANGE	RESOLUTION	ACCURACY
200Ω 0	.1Ω (	±1.0% of reading + 8 digits)
2000Ω 1	Ω	(±1.2% of reading + 8 digits)
20kΩ 1	0Ω	
200kΩ 1	00Ω	
2000kΩ 1	kΩ	

Maximum Open Circuit Voltage: 2.8V
Overload Protection: 15 seconds maximum, 220V RMS all ranges.
Audible continuity.

SPECIFICATIONS

Display:	2000 count
Security Class:	Cat II 500V
Basic DCV Accuracy:	0.500%
DC Voltage:	200mV, 2V, 20V, 200V, 1000V (± 1.0%)
AC Voltage:	200V, 750V (max input 750V RMS) (± 1.2%)
DC Current:	200MA, 20mA, 200mA, 10A (± 2.5%)
Resistance:	200Ω, 2kΩ, 20kΩ, 200kΩ, 2MΩ (± 1.2%)
Measurement Type:	Average
Input Impedance:	1MΩ
Dimensions:	125(H) × 68(W) x 23(H)mm
Weight:	140g
Battery Type:	2 x AAA Batteries (Included)

WARRANTY

Our product is guaranteed to be free from quality and manufacturing defects for a period of 12 Months.

If your product becomes defective during this period, Electus Distribution will repair, replace, or refund where a product is faulty; or not fit for intended purpose.

This warranty will not cover modified product; misuse or abuse of the product contrary to user instructions or packaging label; change of mind and normal wear and tear.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and failure does not amount to a major failure.

To claim warranty, please contact the place of purchase. You will need to show receipt or other proof of purchase. Additional information may be required to process your claim. Should you not be able to provide proof of purchase with a receipt or bank statement, identification showing name, address and signature may be required to process your claim.

Any expenses relating to the return of your product to the store will normally have to be paid by you.

The benefits to the customer given by this warranty are in addition to other rights and remedies of the Australian Consumer Law in relation to the goods or services to which this warranty relates.

This warranty is provided by:

Electus Distribution
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Eastern Creek NSW 2766
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