



Multimeter User Manual

VM-200M

READ AND UNDERSTAND THIS MANUAL BEFORE USING THE INSTRUMENT

Failure to understand and comply with the **WARNING** and operating instructions can result in serious or fatal injuries and/or property damage.

Contact us: support@venlabtools.com

Made in China



Safety Information

US

The Meter conforms to IEC1010 600V (CAT II) over voltage safety standard and pollution level 2.

A Warning identifies conditions and procedures that are dangerous to the user.

To prevent possible electrical shock, fire, or personal injury:

- Do not alter the Product and use only as specified, or the protection supplied by the Product can be compromised.
- Do not use the Product around explosive gas, vapor, or in damp or wet environments.
- Do not operate the Product with covers removed or the case open. Hazardous voltage exposure is possible.
- Do not apply more than the rated voltage, between the terminals or between each terminal and earth ground.
- Do not use test leads if they are damaged. Examine the test leads for damaged insulation, exposed metal, or if the wear indicator shows. Check test lead continuity.
- Use the correct terminals, function, and range for measurements.
- The range switch should be placed in the correct range position.
- The input signal is not allowed to exceed the specified limit value to prevent electric shock and damage to the instrument.
- When measuring televisions or switching power supplies, be aware that there may be pulses in the circuit that can damage the circuit.
- Remove the batteries if the Product is not used for an extended period of time, or if stored in temperatures above 50°C.

Features

Display HOLD

In the Display HOLD mode, the Meter freezes the display.

1. Press the ' **HOLD** ' button, the meter display will hold the measured reading.
2. Press the ' **HOLD** ' button again to release the data, and the meter will return to the normal measurement state.

WARNING:

To avoid electric shock, when Display ' **HOLD** ' is activated, be aware that the display will not change when you apply a different voltage.

Backlight

1. Press ' **LIGHT** ' button to toggle the backlight on and off.
2. The backlight automatically turns off after 30 seconds.

NOTE:

When the battery power is low, the backlight brightness will not be enough.



Maintenance

Cleaning

- Turn off the power to the Meter and remove the test leads.
- Wipe the case with a damp cloth and mild detergent.
- Dirt or moisture in the terminals can affect readings.
- If there is any abnormality, stop using the meter immediately.

Measurement

Note:

- Check the battery first, if '  ' is displayed, the battery needs to be changed.
- '  ' signal besides sockets warns the maximum input voltage and current.
- Switch to the right range before measurement.
- The red lead mentioned in this manual is positive in polarity, the black lead is negative.

DC Voltage Measurement

1. Put the black lead into the ' **COM** ' port and the red lead into the ' **VΩmA** ' port.
2. Switch to the ' \overline{V} ' area, select suitable ranges and put the test leads to the loaded circuit.

AC Voltage Measurement

1. Put the black lead into the ' **COM** ' port and the red lead into the ' **VΩmA** ' port.
2. Switch to the ' \widetilde{V} ' area, select suitable ranges and put the test leads to the loaded circuit.

Voltage Measurement Note:

- If the correct range is unknown, choose the highest range, then switch from the high range to the low range.
- ' **OL** ' means overload, please switch to a higher range.
- The Maximum input voltage is 600V.
- Avoid electric shock when measuring high voltage.

DC Current Measurement

1. Put the black lead into the ' **COM** ' port and red lead into the ' **VΩmA** ' port if the current is under 200mA; put the red lead into the ' **10A** ' port if the current is between 200mA ~ 10A.
2. Switch to the ' **⎓** ' area, select suitable ranges and put the test leads to the loaded circuit.

Note:

- If the correct range is unknown, choose the highest range, then switch from the high range to the low range.
- When the red lead is in the "10A" port, the measuring time should be less than 10 seconds to avoid the circuit heating affecting the accuracy.
- ' **OL** ' means overload, please switch to a higher range.
- When the fuse is blown, replace it with the same specification.
- Do not measure AC current.

Resistance Measurement

1. Put the black lead into the ' **COM** ' port and the red lead into the ' **VΩmA** ' port.
2. Switch to the ' **Ω** ' area, select suitable ranges and put the test leads to the loaded circuit.

Note:

- ' **OL** ' means overload, please switch to a higher range.
- ' **OL** ' will also be displayed if open-circuited.
- If the measured resistance is $> 1\text{M}\Omega$, it takes several seconds to get a stable reading, which is a normal phenomenon for the measurement of high resistance.
- Before testing a resistor in the circuit, please make sure the circuit is powered off and the capacitor is completely discharged.


hFE Measurement

1. Switch to the ' **hFE** ' range.
2. Please confirm whether the transistor is ' **PNP** ' or ' **NPN** '. Then put the ' **E. B. C** ' feet into the corresponding sockets.


Note:

- The Meter tests the approximate value of hFE, and the test conditions are base current 10uA and Vce about 3V.


Diode Measurement

1. Put the black lead into the ' **COM** ' port and the red lead into the ' **VΩmA** ' port.
2. Switch to the '  ' ranges and touch the diode anode with the red probe, the black probe contacts the diode cathode.


Note:

- ' **OL** ' will be displayed if open-circuited.
- If the test leads are connected reversely with the diode polarity, ' **OL** ' will also be displayed.
- '  ' is in the same range.


Continuity Measurement

1. Put the black lead into the ' **COM** ' port and the red lead into the ' **VΩmA** ' port .
2. Switch to the '  ' ranges and put the test leads to the circuit to be tested.
3. The Meter will buzz if the resistance between the two points is less than 50 Ω .

Note:

- ' **OL** ' will be displayed if open-circuited.
- The circuit should be tested when the power is off because any loaded signal would make a buzzer.
- '  ' is in the same range.

Specifications

Maxim Display	2000 counts
Low Battery Indication	'  ' displayed
Operation Temperature	0°C---40°C, <85%RH
Storage Temperature	-10°C---50°C, <85%RH
Battery Type	1.5V AA Batteries
Fuse	200mA/250V PPTC, 10A/250V fuse
Accessories	1 x Manual, 2 x AA Batteries, 2 x Test Leads
Input polarity indication	Automatically displays “-”
Data Hold	“H” displayed

DC Voltage

Range	Resolution	Accuracy	Overload Protection
200mV	0.1mV	± (0.5%+5)	250V
2V	0.001V		600V
20V	0.01V		
200V	0.1V		
600V	1V	± (0.8%+5)	
Input Impedance: 10MΩ			
Overload Protection: 200mV 250V; Other: DC/AC 600V			

AC Voltage

Range	Resolution	Accuracy
200V	0.1V	± (1.2%+10)
600V	1V	
Frequency Response: 40Hz~400Hz; T-RMS		

DC Current

Range	Resolution	Accuracy
200uA	0.1uA	± (1%+2)
2mA	1uA	± (1.5%+2)
20mA	0.01mA	
200mA	0.1mA	
10A	0.01A	± (3%+2)
Overload Protection: mA: 200mA / 250V PPTC 10A: 10A/250V fuse		



Resistance

Range	Resolution	Accuracy
200Ω	0.1 Ω	± (0.8%+3)
2KΩ	0.001KΩ	± (0.8%+2)
20KΩ	0.01KΩ	
200KΩ	0.1KΩ	
2MΩ	0.001MΩ	± (1%+3)
Overload Protection: 250V AC		

hFE

Range	Instruction	Condition
hFE	NPN or PNP, 0-1000	Base current 10uA, Vce about 3V

Diode and Audible Continuity

Range	Instruction	Condition
	Show forward voltage	OCV 3V DC
	<50Ω, buzz	OCV 3V

Three Year Warranty

3 年間保証

For further detail of warranty coverage and warranty repair information, send email to support@venlabtools.com



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