

User Manual

A. Introduction

This product is a battery-powered, true-rms, auto-ranging pen-type digital multimeter with a 6000 counts LCD display and a backlight. Five functional buttons instead of the traditional rotary switch enables one-hand operation, which makes your measurements more convenient and efficient.

B. Safety Information

To avoid possible electrical shock, fire, or personal injury, please read all safety information before you use the product.

- Do **NOT** exceed the “maximum value” indicated in the Specification.
- Examine the connection of the test lead and the insulation of the product before measuring voltage higher than 36V DC or 25V AC.
- Disconnect the test lead from the circuit before changing the mode.
- Misuse of mode or range can lead to hazards, be cautious. “OL” will be shown on the display when the input is out of range.
- Safety symbols:

	Hazardous Voltage		Earth
	Double Insulated		Low Battery
	Risk of Danger. Check the User Manual.		

C. Specifications

Electrical Specifications					
Function	Range	Resolution	Accuracy	MAX.Value	Other
DC Voltage (V)	6.000V	0.001V	±(0.5%+3)	600V	Input Resistance:10MΩ
	60.00V	0.01V			
	600.0V	0.1V			
DC Voltage (mV)	60.00mV	0.01mV	±(1.0%+3)	600mV	Input Resistance:10MΩ (600mV range, >60MΩ)
	600.0mV	0.1mV			
	6.000V	0.01V			
AC Voltage (V)	60.00mV	0.01mV	±(0.5%+3)	60MΩ	Frequency Response: 40Hz-1kHz
	600.0mV	0.1mV			
	6.000V	0.01V			
Resistance	600.0Ω	0.1Ω	±(0.5%+3)	60MΩ	No Voltage input at this mode
	6.000kΩ	0.001kΩ			
	60.00kΩ	0.01kΩ			
	600.0kΩ	0.1kΩ			
	6.000MΩ	0.001MΩ			
	60.00MΩ	0.01MΩ			

Function	Range	Resolution	Accuracy	MAX.Value	Other
Capacitance	9.999nF	0.001nF	±(5.0%+20)	9.999mF	No Voltage input at this mode
	99.99nF	0.01nF			
	999.9nF	0.1nF			
	9.999μF	0.001μF	±(2.0%+5)		
	99.99μF	0.01μF			
	999.9μF	0.1μF			
Frequency	9.999mF	0.001mF	±(5.0%+5)	9.999MHz	
	99.99Hz	0.01Hz			
	999.9Hz	0.1Hz			
	9.999kHz	0.001kHz	±(0.1%+2)		
	99.99kHz	0.01kHz			
	999.9kHz	0.1kHz			
Diode	√ (DC forward current is 5mA, voltage is 3V)			No Voltage input at this mode	
	Continuity √ (no more than 50Ω)				
NCV	√				

General Specifications		Mechanical Specifications		
Display (LCD)	6000 counts	Dimension	202*51*33mm	
Ranging	Auto/Manual	Weight	113g	
Material	ABS	Battery Type	1.5V AAA Battery * 2	
Update Rate	3 times/second	Warranty	One year	
Ture RMS	√	Environmental Specifications		
Data Hold	√	Operating	Temperature	0~40°C
Backlight	√		Humidity	<75%
Low Battery Alert	√	Storage	Temperature	-20~60°C
Auto Power Off	√		Humidity	<80%
Flashlight	√			

D. Instruction

(1) Front Panel (see the picture on the right)

- LCD display
- buttons

2a. On/OFF & SELECT

To turn on the product, push this button for more than 2 seconds; long-push again to turn off.

To toggle between ACV/DCV/NCV, or DCmV/ACmV/Resistance/Continuity/Diode /Capacitance/Frequency, press this button.

2b. HOLD & Backlight

To hold the current reading, push this button and you will see “HOLD” on the display; push again to cancel.

To turn on the backlight, push this button for more than 2 seconds; long-push again to turn off.

2c. RANGE

Push this button to enter the manual range; each push increases the range; when the highest range is reached, next push will go back to the lowest range.

To exit the manual range mode, push the button for more than 2 seconds.

2d. REL & Flashlight

To enter the Relative Mode, push this button; push again to exit.

To turn on the flashlight, push this button for more than 2 seconds; long-push again to turn off.

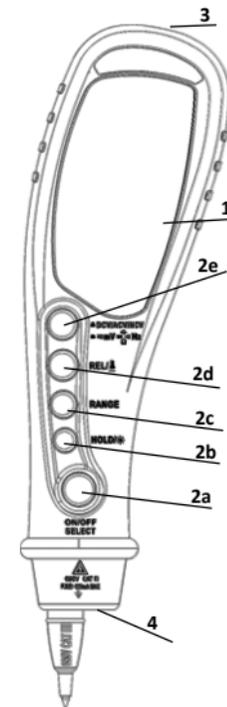
2e. Function Choice

Push this button to toggle between and , each of the two symbols contain several testing modes:

- when is shown on the display, you can push SELECT to toggle between DCV/ACV/NCV.
- when is shown on the display, you can push SELECT to toggle between DCmV/ACmV/ Resistance/Continuity/Diode/Capacitance/Frequency

3. COM: Common terminal for all measurements.

4. Flashlight



(2) Measure DCV/ACV

1. Push the Functional Choice button until  is shown on the display to measure DCV; or Push SELECT once to measure ACV;
2. Touch the probes to the correct test points of the circuit to measure the voltage;
3. Read the measured voltage on the display.

*Caution:

- a. Do not measure voltage that exceeds the MAX Value as indicated in the Specifications;
- b. Do not touch high voltage circuit during measurements.

(3) Measure ACmV/DCmV

1. Push the Functional Choice button until  is shown on the display to measure DCmV; or push SELECT once to measure ACV;
2. Touch the probes to the correct test points of the circuit to measure the voltage;
3. Read the measured voltage on the display.

*Caution:

- a. Do not measure voltage that exceeds the MAX Value as indicated in the Specifications;
- b. Do not touch high voltage circuit during measurements. Measure Resistance

(4) Measure Resistance

1. Push the Functional Choice button until  is shown on the display;
2. Push SELECT twice to enter the Resistance Mode, and the display will show "OL";
3. Touch the probes to the desired test points of the circuit to measure the resistance;
4. Read the measured resistance on the display.

*Caution:

- a. Disconnect circuit power and discharge all capacitors before you test resistance.
- b. Do not input voltage at the Resistance Mode.

(5) Measure Continuity

1. Push the Functional Choice button until  is shown on the display;
2. Push SELECT three times to enter the Continuity Mode;
3. Touch the probes to the desired test points of the circuit;
4. The built-in beeper will beep when the resistance is lower than 50Ω, which indicates a short circuit.

*Caution:

- a. Do not input voltage at the Continuity Mode.

(6) Measure Diode

1. Push the Functional Choice button until  is shown on the display;
2. Push SELECT four times to enter the Diode Mode;
3. Connect the red probe to the anode side and the black probe to the cathode side of the diode being tested;
4. Read the forward bias voltage value on the display;
5. If the polarity of the test leads is reversed with diode polarity or the diode is broken, the display reading shows "OL".

*Caution:

- a. Do not input voltage at the Diode Mode.
- b. Disconnect circuit power and discharge all capacitors before you test diode.

(7) Measure Capacitance

1. Push the Functional Choice button until  is shown on the display;
2. Push SELECT five times to enter the Capacitance Mode;
3. Connect the red probe to the anode side and the black probe to the cathode side of the capacitor being tested;
4. Read the measured capacitance value on the display once the reading is stabilized.

*Caution:

- a. Disconnect circuit power and discharge all capacitors before you test capacitance.

(8) Measure Frequency

1. Push the Functional Choice button until  is shown on the display;
2. Push SELECT six times to enter the Frequency Mode;
3. Touch the probes to the desired test points of the circuit;
4. Read the measured frequency value on the display.

*Caution:

- a. The Frequency Mode only applies to measure high frequency with low voltage.

(9) Test NCV

1. Push the Functional Choice button until  is shown on the display;
2. Push SELECT twice to enter the NCV Mode;
3. Hold the product and move it around, the built-in beeper will beep when the inner sensor detects AC voltage nearby. The stronger the voltage is, the quicker the beeper beeps.

(10) Auto Power Off

1. The product automatically powers off after 15 minutes of inactivity;
2. The built-in beeper beeps 5 times 1 minute before power off.
3. To disable the Auto Power Off function, hold down the SELECT button when turning on the product, you will hear five beeps if you have successfully disabled the function.

E. General Maintenance

Beyond replacing batteries, do not attempt to repair or service the product unless you are qualified to do so and have the relevant calibration, performance test, and service instructions.

- (1) Do not operate the product around hot, wet, flammable, explosive or magnetic environments.
- (2) Clean the product with damp cloth and mild detergent; do not use abrasives or solvents.
- (3) Remove the input signals before you clean the product.
- (4) Remove the batteries if you will not use the product for a long time to prevent possible battery leak.
- (5) When "" is shown on the display, batteries shall be replaced as below:
 1. Loosen the screw and remove the battery cover;
 2. Replace the used batteries with new batteries of the same type;
 3. Place the battery cover back and fasten the screw.

Warning:

- 1. Do NOT exceed the "maximum value" indicated in the Specification;**
- 2. Do NOT input voltage at the Resistance Mode, the Diode Mode, or the Continuity Mode;**
- 3. Do NOT use the product when the batteries or the battery cover is not placed properly;**
- 4. Turn off the product and remove the test leads from the test points before changing batteries.**

F. Troubleshooting

If your product do not function as normal, the following steps may help you. If the problem still cannot be solved, please contact your dealer.

Problem	Possible Reason
Display Malfunction	Low battery; replace batteries
 Symbol	Replace batteries

**LIMITED WARRANTY
AND LIMITATION OF LIABILITY**

Customers enjoy one-year warranty from the date of purchase. This warranty does not cover fuses, disposable batteries, or damage from accident, neglect, misuse, alternation, contamination, or abnormal conditions of operation or handling.

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