User Manual

A. Introduction

This product is a battery-powered, true-rms, auto-ranging digital multimeter with a 6000 counts, LCD display and backlight.

B. Safety Information

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

(1) Do **NOT** exceed the "**maximum value**" indicated in the Specification.
(2) Examine the connection of the test leads and the insulation of the product before measuring voltage higher than 36V DC or 25V AC.
(3) Disconnect the test leads from the circuit before changing the mode。
(4) 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.
(5) 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)	1000V	Input Resistance:10MΩ
	60.00V	0.01V			
	600.0V	0.1V			
	1000V	1V			
DC Voltage (mV)	60.00mV	0.01mV		600mV	
	600.0mV	0.1mV			
AC Voltage (V)	6.000V	0.001V	±(1.0%+3)	750V	Input Resistance:10MΩ（600mV range, ＞60MΩ） Frequency Response: 40Hz-1kHz
	60.00V	0.01V			
	600.0V	0.1V			
	750V	1V			
AC Voltage (mV)	60.00mV	0.01mV		600mV	
	600.0mV	0.1mV			
DC Current (A)	6.000A	0.001A	±(1.2%+3)	10A	MAX.Current：10A（no more than 15 seconds） No Voltage input at this mode Frequency Response(AC): 40Hz-1kHz
	10.00A	0.01A			
DC Current (mA)	60.00mA	0.01mA		600mA	
	600.0mA	0.1mA			
AC Current (A)	6.000A	0.001A	±(1.5%+3)	10A	
	10.00A	0.01A			
AC Current (mA)	60.00mA	0.01mA		600mA	
	600.0mA	0.1mA			

Function	Range	Resolution	Accuracy	MAX.Value	Other
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	±(1.5%+3)		
Capacitance	9.999nF	0.001nF	±(5.0%+20)	9.999mF	No Voltage input at this mode
	99.99nF	0.01nF	±(2.0%+5)		
	999.9nF	0.1nF			
	9.999μF	0.001μF			
	99.99μF	0.01μF			
	999.9μF	0.1μF			
	9.999mF	0.001mF	±(5.0%+5)		
Frequency	99.99Hz	0.01Hz	±(0.1%+2)	9.999MHz	
	999.9Hz	0.1Hz			
	9.999kHz	0.001kHz			
	99.99kHz	0.01kHz			
	999.9kHz	0.1kHz			
	9.999MHz	0.001MHz			
Duty Cycle	1%~99%	0.1%	±(0.1%+2)		
Diode	√(DC forward current is 5mA，voltage is 3V）				No Voltage input at this mode
Continuity	√(no more than 50Ω)				

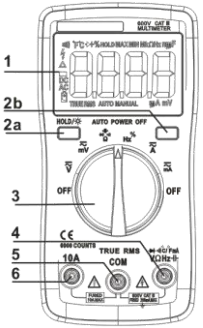
General Specifications	
Display（LCD）	6000 counts
Ranging	Auto
Material	ABS
Update Rate	3 times/second
Ture RMS	√
Data Hold	√
Backlight	√
Low Battery Alert	√
Auto Power Off	√

Mechanical Specifications		
Dimension	130*65*32mm	
Weight	114g/128g(w/ batteries)	
Battery Type	1.5V AAA Battery * 2	
Warranty	One year	
Environmental Specifications		
Operating	Temperature	0~40℃
	Humidity	＜75%
Storage	Temperature	-20~60℃
	Humidity	＜80%

D. Instruction

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

1. LCD display
2. buttons
   2a. HOLD: To hold the current reading, press this button and you will see "HOLD" on the display; press again to cancel. To turn on the backlight, press this button for more than 2 seconds; long-press again to turn off.
   2b. SELECT: To toggle between AC/DC, Diode/ Resistance/Capacitance/Continuity, or ℃/℉, press this button.
3. Rotary Switch: To change mode or range。(from OFF, clockwise)
   3a. OFF
   3b. AC/DC Voltage (V) (Voltage-V)
   3c. AC/DC Voltage (mV) (Voltage-mV)
   3d. Resistance/Continuity/Diode/Capacitance
   3e. Frequency/Duty Cycle
   3f. AC/DC Current (A) (Cureent-A)
   3g. AC/DC Current (mA) (Current-mA)
   3h. OFF
4. VΩHz: Input terminal for voltage, resistance, capacitance, frequency, current (mA), continuity, diode, and duty cycle measurements.
5. COM: Common terminal for all measurements.
6. 10A: Input terminal for current (V) measurements.



(2) Measure AC/DC Current

1. Connect the black test lead to the COM Terminal and connect the red test lead to the VΩHz Terminal or the 10A Terminal (choose based on the value of current) ;
2. Turn the rotary switch to the Current-A Mode or the Current-mA Mode;
3. Press SELECT to toggle between AC/DC;
4. Break the circuit path to be measured. Then connect the test leads across the break and apply power;
5. Read the measured current on the display.

*Caution:

a. Do not measure current that exceeds the MAX Value as indicated in the Specifications;
b. Use the 10A Terminal and the Current-A Mode when you are measuring an unknown current. Then switch to the VΩHz Terminal and the Current-mA Mode if necessary.

Do not input voltage exceeds 36V DC or 25V AC when you are at the setting of measuring current.

(3) Measure AC/DC Voltage

1. Connect the black test lead to the COM Terminal and connect the red test lead to the VΩHz Terminal;
2. Turn the rotary switch to the Voltage-V Mode or the Voltage-mV Mode;
3. Press SELECT to toggle between AC/DC;
4. Touch the probes to the correct test points of the circuit to measure the voltage;
5. 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.

(4) Measure Resistance

1. Connect the black test lead to the COM Terminal and connect the red test lead to the VΩHz Terminal;
2. Turn the rotary switch to 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. Connect the black test lead to the COM Terminal and connect the red test lead to the VΩHz Terminal;
2. Turn the rotary switch to the Resistance Mode, press SELECT once to toggle to 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. Connect the black test lead to the COM Terminal and connect the red test lead to the VΩHz Terminal;
2. Turn the rotary switch to the Resistance Mode, press SELECT twice to toggle to 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. Connect the black test lead to the COM Terminal and connect the red test lead to the VΩHz Terminal;
2. Turn the rotary switch to the Resistance Mode, press SELECT three times to toggle to 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 stablized.

*Caution:

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

(8) Measure Frequency and Duty Cycle

1. Connect the black test lead to the COM Terminal and connect the red test lead to the VΩHz Terminal;
2. Turn the rotary switch to the Frequency Mode; press SELECT once to toggle to the Duty Cycle Mode if you want to measure duty cycle;
3. Touch the probes to the desired test points of the circuit;
4. Read the measured frequency/duty cycle value on the display.

*Caution:

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

(9) 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 restart the product, press SELECT button;
4. 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. Genearl Maintenance

Beyond replacing batteries and fuses, 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.
(6) Replace fuses as above steps. Use only fuses of the same type as the original ones.

Warning:

1. Do NOT exceed the "maximum value" indicated in the Specification;
2. Do NOT input voltage at the Current Mode, 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 or fuses.

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
No current input	Replace fuse

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.