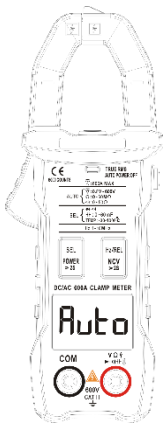


## User Manual



### A. Introduction

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

### 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 leads and the insulation of the product before measuring voltage higher than 36V DC or 25V AC.
- Disconnect the test leads 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.

	Hazardous Voltage		Earth
	Double Insulated		Low Battery
	Risk of Danger. Check the User Manual.		N/ L Wire Judgement

### C. Specifications

Electrical Specifications					
Function	Range	Resolution	Accuracy	MAX.Value	Frequency Response
DC Voltage (V)	6.000V	0.001V	± (0.5%+3)	600V	/
	60.00V	0.01V			
	600V	1V			
AC Voltage (V)	6.000V	0.001V	± (1.0%+3)	600V	40Hz-1kHz
	60.00V	0.01V			
	600.0V	1V			
DC Current (A)	60.00A	0.01A	± (2.0%+30)	600A	/
	600.0A	0.1A			
AC Current (A)	60.00A	0.1A	± (2.0%+30)	600A	40Hz-1kHz
	600.0A	0.1A			

Function	Range	Resolution	Accuracy	MAX.Value	Frequency Response	
Resistance	600.0Ω	0.1Ω	± (1.5%+3)	60MΩ	/	
	6.000kΩ	0.001kΩ	± (1.5%+3)			
	60.00kΩ	0.01kΩ	± (0.5%+3)			
	600.0kΩ	0.1kΩ				
	6.000MΩ	0.001MΩ				
60.00MΩ	0.01MΩ	± (1.5%+3)				
Capacitance	6.000nF	0.001nF	± 2.0%+5	60.00mF	/	
	60.00nF	0.01nF				
	600.0nF	0.1nF				
	6.000μF	0.001μF				
	60.00μF	0.01μF				
	600.0μF	0.1μF				
	6.000mF	0.001mF				± (5.0%+5)
	60.00mF	0.01mF				
Frequency	6.000Hz	0.001Hz	± (0.1%+2)	10.00MHz	/	
	60.00Hz	0.01Hz				
	600.0Hz	0.1Hz				
	6.000kHz	0.001kHz				
	60.00kHz	0.01kHz				
	600.0kHz	0.1kHz				
	6.000MHz	0.001MHz				
10.00MHz	0.01MHz					
Diode			✓			
Continuity			✓			
Inrush Current			✓			
Peak Hold			✓			
Flashlight/Backlight			✓/✓			
Temperature	(-30~1000)℃	1℃	± (2.5%+5)	1000℃	/	
	(-22~1832)°F	1°F		1832°F		
General Specifications						
Display (LCD)	6000 counts					
Ranging	Auto					
Material	ABS					
Update Rate	3 times/second					
True RMS	✓					
Data Hold	✓					
Low Battery Alert	✓					
Auto Power Off	✓					
Mechanical Specifications						
Dimension	172*64*32mm					
Weight	161g					
Battery Type	15V AA 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)

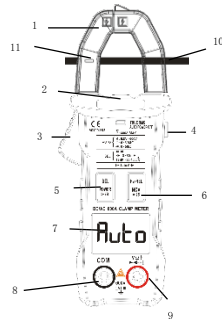
- Jaw
- Flashlight
- Jaw release
- Hold / Inrush Current / Peak Hold  
HOLD: To press this button once and you will see “HOLD” on the display;  
Inrush current: under AC current mode, press this button twice and you will see “INRUSH” on the display;  
Peak hold: To press this button twice after connecting test leads to the Terminals and you will see “Peak HOLD” on the display;
- Power / Select  
Power: Press this button for more than 2 seconds to turn it on / off.  
Select: Press this button for switching functions after connecting test leads to the Terminals. Under current mode, short press this button to switch to test AC/DC current.
- Frequency / REL/NCV: Under non-capacitance mode, short press to enter frequency mode; Under capacitance mode, short press to enter REL function; Press this button over 2 seconds to enter NCV mode, stop press to exit.
- LCD display
- COM: Common terminal for all measurements.
- Input terminal for voltage, resistance, capacitance, temperature, frequency, continuity, diode measurements and judging N/L wires.
- Wire to be measured
- Marked position

#### (2) Measure AC/DC Voltage

- The minimum voltage of this product is 0.8V. When the measured voltage is higher than 0.8V, the product will display the reading;
- Connect the black test lead to the COM Terminal and connect the red test lead to the Terminal;
- The DC or AC voltage will be matched automatically;
- Touch the probes to the correct test points of the circuit to measure the voltage;
- 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 AC/DC Current

- Turn power switch on
- Push the jaw release and center the wire within the clamp jaws (as in the picture). The wire should be in the marked position to keep measurement accuracy.
- Read the measured current on the display.  
\*Caution:  
a. Do not measure current that exceeds the MAX Value as indicated in the Specifications;  
b. Measure one wire at a time because current moving in different directions will cancel each other out.



(4) Measure Resistance

1. Connect the black test lead to the COM Terminal and connect the red test lead to the Terminal;
  2. The resistance will be matched automatically;
  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 / Diode

1. Connect the black test lead to the COM Terminal and connect the red test lead to the Terminal;
  2. Press SEL / Power once to toggle to the Continuity/Diode 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, and the indicator light will be on.
  5. Measure diode: Connect the red probe to the anode side and the black probe to the cathode side of the diode to be tested;
  6. Read the forward biased voltage value on the display;
  7. If the polarity of the test leads is reversed with diode polarity or the diode is broken, the display reading shows "OL".
- \*Caution:
- Do not input voltage at the Continuity / Diode Mode.

(6) Measure Capacitance

1. Discharge all capacitors before you test capacitance.
2. Connect the black test lead to the COM Terminal and the red lead to the Terminal.
3. Push Power button twice to enter the Capacitance Mode
4. Connect the red probe to the anode side and the black probe to the cathode side of the capacitor to be tested.
5. Read the measured capacitance value.

(7) Measure Frequency

1. Connect the black test lead to the COM Terminal and connect the red test lead to the Terminal;
2. Press Hz / NCV button once for AC current frequency without connecting the test lead to Terminals.
3. Press Hz / NCV button once to enter the Frequency Mode for DC voltage frequency after connecting the test lead to Terminals;
4. Touch the probes to the desired test points of the circuit;
5. Read the measured frequency value on the display.

(8) Measure NCV

1. Press Hz / NCV over 2 seconds to toggle to the NCV Mode;
2. 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.
3. Put the red probe into the terminal, then use the black probe to touch the Live line and Neutral line of the Main supply. You can judge the L-line or N-line by the beeps, if you can hear the strong beeps, this is the L-line, or it's a N-line.

(9) Measure Temperature

1. Connect the black thermocouple probe to the COM Terminal and connect the red thermocouple probe to the Terminal;
  2. Press SEL / POWER three times to toggle to the Temperature Mode after connecting the test lead to Terminals, and the display will show the room temperature, to switch °C/°F, press SEL / POWER button once again;
  3. Touch the probes to the desired test points;
  4. Read the measured temperature on the display.
- \*Caution:
- a. Do not input voltage at the Temperature Mode.

(10) Measure Inrush current

1. Turn power on, and press HOLD twice to toggle to Inrush Current Mode, the display will show "INRUSH";
2. Push the jaw release and center the wire within the clamp jaws. The wire should be in the marked position to keep measurement accuracy;
3. Turn on the engine or motor equipment, and the product will capture the maximum current within 100ms when motor is starting;
4. Read the measured temperature on the display.

(11) Peak Hold

1. Turn power on, and press HOLD twice after connecting the test lead to Terminals to toggle to Peak Hold Mode, the display will show "PEAK HOLD";
2. Touch the probes to the desired test points of the circuit;
3. Read the measured voltage value on the display.

(12) 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 Hz / NCV button when turning on the product, you will hear five beeps if you have successfully disabled the function.

E. General 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, the Continuity Mode, or the Temperature 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.

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