



INSTRUCTION MANUAL

MT713

600A AC/DC CLAMP METER



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.

All rights reserved. Specifications are subject to change without notice. The contents of this manual are considered to be correct. If the user finds any errors or omissions, please contact the manufacturer.

The company shall not be liable for any accident or hazard caused by user's wrong operation;

The functions described in this manual are not grounds for using the product for a particular purpose.

1. INTRODUCTION

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

2. 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.

3. SAFETY SYMBOLS

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

4. ELECTRICAL SPECIFICATIONS

4.1. DC Voltage (V)

Range	Resolution	Accuracy	MAX. Value	Frequency Response
6.000V	0.001V	±(0.5%+3)	600V	
60.00V	0.01V			
600V	1V			

4.2. AC Voltage (V)

Range	Resolution	Accuracy	MAX. Value	Frequency Response
6.000V	0.001V	±(1.0%+3)	600V	40Hz-1kHz
60.00V	0.01V			
600.0V	1V			

4.3. DC Current (A)

Range	Resolution	Accuracy	MAX. Value	Frequency Response
60.00A	0.01A	±(2.0%+30)	600A	40Hz-1kHz
600.0A	0.1A			

4.4. AC Current (A)

Range	Resolution	Accuracy	MAX. Value	Frequency Response
60.00A	0.01A	±(2.0%+30)	600A	40Hz-1kHz
600.0A	0.1A			

4.5. Resistance

Range	Resolution	Accuracy	MAX. Value	Frequency Response
600.0kΩ	0.1kΩ	±(1.5%+3)	60MΩ	40Hz-1kHz
6.000kΩ	0.001kΩ			
60.00kΩ	0.01kΩ	±(0.5%+3)		
600.0kΩ	0.1kΩ			
6.000MΩ	0.001MΩ	±(1.5%+3)		
60.00MΩ	0.01MΩ			

4.6. Capacitance

Range	Resolution	Accuracy	MAX. Value	Frequency Response
6.000nF	0.001nF	±(5.0%+20)	60.00mF	40Hz-1kHz
60.00nF	0.01nF			
600.0nF	0.1nF			
6.000μF	0.001μF	±2.0%+5		
60.00μF	0.01μF			
600.0μF	0.1μF			
6.000mF	0.001mF	±(5.0%+5)		
60.00mF	0.01mF			

4.7. Frequency

Range	Resolution	Accuracy	MAX. Value	Frequency Response
6.000Hz	0.001Hz	±(0.1%+2)	1.000MHz	40Hz-1kHz
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			

4.8. Temperature

Range	Accuracy	MAX. Value
(-30~1000)°C	1°C	1000°C
(-22~1832)°F	1°F	1832°F

Diode, Continuity, Inrush Current, Peak Hold, Flashlight and Backlight functions included

4.8. General Specifications

Basic Functions	Range	
Display (LCD)	6000 counts	
Range	Auto	
Material	ABS	
Update Rate	3times/second	
True RMS	√	
Data Hold	√	
Low Battery Alert	√	
Auto power off	√	
Mechanical Specifications		
Dimension	172*64*32mm	
Weight	161g	
Battery type	1.5V AA battery * 2	
Warranty	One year	
Environmental Specifications		
Operating	Temperature	0~40°C
	Humidity	<75%
Storage	Temperature	-20~60°C
	Humidity	<80%

5. DESCRIPTION OF INSTRUMENT

5.1. Font Panel

- 1 - Jaw
- 2 - Flashlight
- 3 - Jaw release
- 4 - Hold/Inrush Current/Peak Hold HOLD: To press this button once and you will see "HOLD" on the display; Inrush current: To press this button twice and you will see "INRUSH" on the display; Peakhold: To press this button twice after connecting test leads to the Terminals and you will see "Peak HOLD" on the display;
- 5 - 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.
- 6 - Frequency/NCV: Press this button over 2 seconds into NCV mode and exit from release.
- 7 - LCDdisplay
- 8 - COM: Common terminal for all measurements.
- 9 - V_{AC} / V_{DC} Input terminal for voltage, resistance, capacitance, temperature, frequency, continuity, diode measurements and judging N/L wires.
- 10 - Wire to be measured
- 11 - Marked position



6. MEASURE AC/DC VOLTAGE

1. The minimum voltage of this product is 0.8V. When the measured voltage is higher than 0.8V, the product will display the reading;
2. Connect the black test lead to the COM Terminal and connect the red test lead to the V_{AC} Terminal;
3. The DC or AC voltage will be matched automatically;
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: Do not measure voltage that exceeds the MAX Value as indicated in the Specifications. Do not touch high voltage circuit during measurements.

7. MEASURE AC/DC CURRENT

1. Turn power switch on.
2. 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.
3. Press the SEL button to select between AC or DC Amperage
4. Read the measured current on the display.

CAUTION: Do not measure current that exceeds the MAX Value as indicated in the Specifications. Measure one wire at a time because current moving in different directions will cancel each other out.

8. MEASURE RESISTANCE

1. Connect the black test lead to the COM Terminal and connect the red test lead to the V_{AC} 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: Disconnect circuit power and discharge all capacitors before you test resistance. Do not input voltage at the Resistance Mode.

9. MEASURE CONTINUITY / DIODE

1. Connect the black test lead to the COM Terminal and connect the red test lead to the V_{AC} 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 50 Ω , 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.

10. 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 V_{AC} 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.

11. MEASURE FREQUENCY

1. Connect the black test lead to the COM Terminal and connect the red test lead

- to the V_{AC} Terminal;
2. Press Hz / NCV button once for AC current frequency
3. Touch the probes to the desired test points of the circuit
4. Read the measured frequency value on the display.

12. MEASURE NCV

1. Press and hold 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 V_{AC} terminal, then use the red 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 hear the strong beeps, this is the L-line. If you hear the weak beeps or no beeps, it's a N-line.

13. MEASURE TEMPERATURE

1. Connect the black thermocouple probe to the COM Terminal and connect the red thermocouple probe to the V_{AC} Terminal;
2. Press SEL / POWER once to toggle to the Temperature Mode after connecting the test lead to Terminals, and the display will show the room temperature, to switch $^{\circ}C/^{\circ}F$, press SEL / POWER button once again;
3. Touch the probes to the desired test points;
4. Read the measured temperature on the display.

CAUTION: Do not input voltage on the Temperature Mode

14. MEASURE INRUSH CURRENT

1. Turn power on - select AC Current, and press HOLD twice to toggle 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.

15. PEAK HOLD

1. Turn power on and Press HOLD once 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.

16. 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.

17. 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 "B" 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 on 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 correctly.
4. Turn off the product and remove the test leads from the test points before changing batteries or fuses.

18. TROUBLESHOOTING

If your product does not function as normal, the following steps may assist 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



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