

OPERATION INSTRUCTION

I Introduction


This series digital clamp meter are portable digital clamp meter, can be used for measuring ACA, ACV, DCV, resistance, diode, continuity buzzer, etc. The meter is easy to use, and convenient to be taken, and is ideal for electricity measurement. It is especially suitable for the measurement of refrigerating equipment, electricity maintenance and large current application.

II Safety standard

This meter is strictly follows the Safety Requirements GB4793 on Electronic Measuring Instrument, IEC61010 and IEC61010-2-032 safety standard. It is up to safety standard for double insulation, over-voltage CAT-II 600V and pollution level 2.


Before use, please read through the operating manual.

1. When measure voltage above 30V, measure AC power line with inductive load; when measure AC power line during electricity fluctuation, be cautious of electric shock.
2. Before measuring, check if measurement function switch is in correct position. Check pen for reliable contact, correct connection and good insulation to avoid electric shock.
3. Clamp meter only meets safety standard when used with its supporting test leads. When the test leads damaged, replace with the same model or electric specification test leads.
4. Measure limit voltage which is beyond allowed range will cause damage to the clamp meter and injury to operator. Allowable limit voltage is indicated on the surface of clamp meter. Do not test the input signal which beyond this standard so as to prevent electric shock or damage to the clamp meter.
5. Do not apply voltage which is above 600V between clamp meter terminal and earth so as to prevent electric shock or damage to the clamp meter.
6. Do not attempt to calibrate or service the clamp meter. When necessary, it should be done by personnel with specialized training or qualification.
7. When measure, function/range selection switch must be at correct range gear. When shift function/range selection switch, please disconnect test leads from the object under test, and make sure the input end has no signal input. Do not shift function/range selection switch in the middle of measurement.

8. When LCD shows “”, please replace battery in time to make sure measurement accuracy.
9. Do not change clamp meter circuit without permission, so as to prevent damage to clamp meter or safety risk.

III. Features

3.1 General

- 3.1.1 Maximum display: 1999
- 3.1.2 Measurement mode: dual integral A/D conversion
- 3.1.3 Conversion rate: 3 times/second
- 3.1.4 Over range display: “OL” is shown at the top digit
- 3.1.5 Lack of battery power: Displaying “”.(about 2.4V)
- 3.1.6 Maximum span of jaw: 30mm
- 3.1.7 Working environment: 0°C-40°C, ≤80%RH.
- 3.1.8 Storage environment: -10°C-60°C, ≤80%RH.
- 3.1.9 Power: 3V(1.5V AAA *2)
- 3.1.10 Size: 174 (L) *60 (W) *34 (H) mm
- 3.1.11Weight: About 140g (including battery’s weight)

3.2 Technical specifications

Accuracy: ±(% reading + digit)

Ambient temperature: 23°C±5°C

Ambient humidity: ≤75%RH

3.2.1 DCV

Range	Accuracy	Resolution
200mV	±(0.5%+4d)	0.1mV
2V		0.001V
20V		0.01V
200V		0.1V
600V	±(1.0%+6d)	1V

Input impedance: 10MΩ

Overload protection: 1000V DC or 750V AC peak

Operation steps as below:

1. Insert the black probe into the "com" Jack and the red probe into the "Ω / V" Jack.
2. Turn the range switch to the corresponding V range. Automatic DC voltage measurement mode opens, according to the input value measurement, the internal switch will convert to the corresponding range.
3. When the measured voltage is reliable, the LCD will display the measured voltage, and the polarity of the point which connected with the red lead will also display on the screen.
4. The input voltage should not exceed DC1000V or AC750V. If it exceeds, it will damage the instrument circuit.
5. Pay special attention to avoid electric shock when measuring high voltage circuit
6. After completing all measurement operations, disconnect the probe from the circuit under test.

3.2.2 ACV

Range	Accuracy	Resolution
2V	±(0.8%+10d)	0.001V
20V		0.01V
200V		0.1V
600V	±(1.2%+10d)	1V

Input impedance: 10MΩ

Overload protection: 1000V DC or 750V AC peak

Frequency response: 40~400Hz

Operation steps as below:

1. Insert the black probe into the "com" Jack and the red probe into the "Ω / V" Jack.
2. Turn the range switch to the corresponding V range. Automatic AC voltage measurement mode opens, according to the input value measurement, the internal switch will convert to the corresponding range.
3. When the measured voltage is reliable, the LCD will display the measured voltage..
4. The input voltage should not exceed AC750V RMS. If it exceeds, it will damage the instrument circuit.
5. Pay special attention to avoid electric shock when measuring high voltage circuit
6. After completing all measurement operations, disconnect the probe from the circuit under test.

3.2.3 RESISTANCE

Range	Accuracy	Resolution
200Ω	±(0.8%+5d)	0.1Ω
2kΩ		1Ω
20kΩ		10Ω
200kΩ		100Ω
2MΩ		1KΩ
20MΩ	±(1.5%+10d)	10KΩ

Open circuit: 1V

Overload protection: 550V DC or AC peak

Note: when using the 600 Ω measuring range, the probe should be short circuited, and the lead resistance should be measured, and then subtracted from the actual measurement.

1. Insert the black probe into the "com" Jack and the red probe into the "Ω / V" Jack. Turn to the proper range and press the "select" key to choose the automatic range of resistance.
2. When measuring the on-line resistance, all the power supplies of the circuit under test must be turned off and all capacitors are completely discharged. In this way you can get a accurate value.
3. Do not input voltage at the resistance range, which is absolutely prohibited, although the instrument has voltage protection function in this range!

3.2.4 DIODE AND CONTINUITY TEST

Range	Displaying value	Test condition
→ o))	Positive voltage drop of diode	Tested current: about 1mA; Open-circuit voltage: about 3V
	Buzzer sounds long, the resistance is less than (50±20)Ω	Open-circuit voltage: about 3V

Overload protection: 550V DC or AC peak

1. Insert the black probe into the "com" Jack and the red probe into the "Ω / V" Jack.(The polarity of the red lead is +)
2. Turn to the proper range, and press SELECT key to choose the diode test, and connect the test leads to the diode, the reading is the positive volt drop. For silicon PN junction, it is generally about 500mA-800mA. If the diode is open circuit or polarity reversal, it will display "OL"
3. Press the "SELECT" key, select the buzzer test, connect the probe to two points of the line to be tested, if there is a built-in beep, the resistance between the two points is less than (50 ± 20) Ω

Note: it is forbidden to input voltage at resistance, diode and peak range to avoid damaging the instrument.

3.2.5 ACA

Range	Accuracy	Resolution
2A	±(3.5%+5d)	0.001A
20A	±(3%+5d)	0.01A
200A	±(3%+10d)	0.1A
600A	±(3%+10d)	1A

1. Turn to range "2000mA/20A" or "200A/600A".
2. Press and hold the trigger to open the clamp head and clamp the conductor to be measured then slowly release the trigger until the clamp head is completely closed. Please make sure whether the conductor to be measured is clamped in the center of the clamp head. If it is not placed in the center, additional error will be generated. Test one current conductor at a time, if you test two or more current conductors at the same time, the measurement reading will be wrong.
3. Please do not measure the small current less than 0.01A. If it is less than this value, the instrument can measure and display, but with big error. Please do not measure the current bigger than 600A at 600A range, if it is bigger than this value, although LCD shows a value, but with big error.

NOTE:

Frequency response: 50 Hz;

At ACA range, if the clamp meter is close to the place with strong magnetic field, the clamp meter will display unstable or incorrect induction reading, but it will not affect the measurement results.