USER'S MANUAL

Ⅰ. SUMMARIZE

This instrument is a 2000 counts hand-held automatic range True RMS clamp digital meter. The circuit design of the meter takes the large-scale integrated circuit ∑/△ analog-to-digital converter (ADC) as the core, and it has the full-range overload protection circuit, safe and reliable , Innovative appearance patent design, so it is a special electronic instrument with superior performance.

It can be used to measure, AC current, AC and DC voltage, low impedance AC voltage (LowZ), resistance, diode, continuity test and other parameters, at the same time, it has data hold / backlight display, maximum value measurement, torch function, NCV/Live judgment (Live), under-voltage display and automatic shutdown function.

Ⅱ. OPEN PACKING FOR CHECKING

Open the box, take out the meter, checking the items below if they are missing or damaging:

Manual	1pc
Test lead	1pair
1.5V AAA battery	2pcs
Carrying bag	1pc

Please contact with your supplier if you find out any problems.

Ⅲ. SAFETY NOTES

The meter's design is in accordance with the CE certification, IEC61010 related terms, in conformity with double insulation, Safety standard for overvoltage CAT III 600V. If you fail to use the clamp meter in accordance with the relevant operating instructions, the protection provided by the clamp meter will be weaken or lost.

1. Check the clamp meter and test lead before use to prevent any damage or abnormal phenomenon. If you find test lead and housing

insulation is obviously damaged, and the LCD has no display, etc., or you think the clamp meter cannot work properly, please do not use it again.

2. Do not use clamp meter before the back cover and battery cover are not properly covered to avoid electric shock.

3. Remember that the fingers do not exceed the hand part of the test lead range when measuring, do not contact exposed electricity wires, connectors, unused inputs or measured circuits to prevent electric shock.

4. The function switch must be placed in the correct position before measurement. It is strictly forbidden to change range during measurement to prevent damage to the clamp meter.

5. Do not apply more than DC/AC 600V voltage between the terminal of the clamp meter and the ground to avoid electric shock and damage to the clamp meter.

6. Be careful when measuring voltage higher than 36V DC, 25V AC to avoid electric shock,.

7. Use the clamp meter according to the

instructions of manual, and it is forbidden to measure the voltage or current higher than the allowable input value. Before making online resistance, diode, or circuit continuity measurements, you must first cut off all power supplies in the circuit and discharge all capacitors to avoid the measurement results is not accurate.

8. When the LCD displays the "🔋" sign, please replace the battery in time to ensure the measurement accuracy. When you not plan to use this clamp meter for a long time, you should remove the battery.

9. Do not change the internal wiring of the clamp meter to avoid damage of the instrument and hidden danger of the user.

10. Do not store or use the clamp meter in a high temperature, high humidity, flammable, explosive and strong electromagnetic field environment.

11. Please use a soft cloth and neutral detergent to clean the case of the clamp meter for

maintenance, do not use abrasive and solvent to prevent the case from being corroded, damaging the instrument and endangering safety.

Ⅳ. ELECTRIC SYMBOL

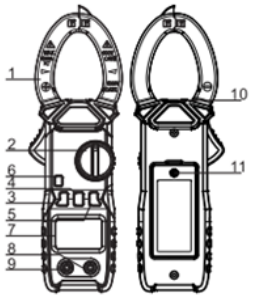
⚠	Warning	⎓	DC
⚠	High Voltage danger	~	AC
⏚	Ground	⎓~	AC and DC
▣	Dual insulation	CE	Accord with order of the European Union
▭	Low battery Voltage	▭	Fuse

Ⅴ. GENERALSPECIFICATION

5.1. Max. Indication: 1999, 3 times / sec.
5.2. Polarity indication: The positive and negative polarities automatically display.
5.3. Over range indication: LCD displays OL
5.4. Low battery indication: "🔋" symbol displays
5.5. Operation temperature: 0～40℃, relative humidity <75%
5.6. Storage environment:-10℃~50℃, relative humidity <80%RH;
5.7. Power：2*1.5V AAA battery LR03

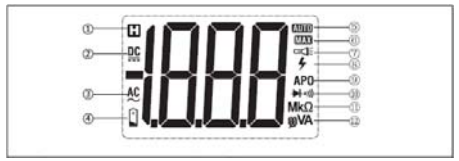
5.8. The Max. opening size of the clamp head: Diameter 35mm
5.9. Max. measuring current wire: Diameter 25mm
5.10. Size: 207×72×39 mm
5.11. Weight: approx.236g (including batteries)

Ⅵ. APPEARANCESTRUCTURE



1. Clamp jaw
2. Range knob
3. Torch switch
4. Data hold and backlight
5. Max. measurement
6. Select key
7. LCD
8. Input terminal
9. COM terminal
10. Torch
11. Battery cover screw

Ⅶ. DISPLAY SCREEN



①	Data hold	⑦	Torch

②	DC measurement	⑧	High voltage
③	AC measurement	⑨	Auto shut-down
④	Low battery	⑩	Diode, continuity test
⑤	Auto range	⑪	Ohm, Kilo ohm, Mega ohm
⑥	Maximum measurement	⑫	Voltage, current

Ⅷ. Button FUNCTION

Button Introduction: short press <2 seconds, long press ≥ 2 seconds

1. Data hold button (HOLD B/L)

Press the HOLD B/L key to enter the reading hold measurement mode, and press the HOLD B/L button again to exit it.

Long press the HOLD B/L key to turn on the backlight, and then long press the H0LD B/L key to turn it off. The backlight will be turned off automatically after 15 seconds since you turned

it on.
2. Select button (cancel the APO shutdown function, please refer to the eighth operation instruction in Chapter 10 for details)
Short press the select key to select the function, it can perform switch at resistance / diode / continuity range, switch at NCV/Live range.
3. Maximum value MAX key (only applicable to the present range)
Short press the MAX key, the LCD will displays the "MAX" symbol and enter the maximum measurement mode, short press it again, the "MAX" symbol on the LCD will disappear to exit the maximum/minimum measurement mode and AUTO(auto range).MAX tests are only available for AC/DCV.ACA, LowZ, resistance.
4. Torch
Short press this key to turn on (Normally open) /off the torch.

Ⅸ. OPERATE INSTRUCTIONS

1. AC current measurement

(1). Turn the dial knob to the AC current range, press and hold the trigger to open the clamp head and use the clamp head to grab the measured conductor, then slowly release the trigger until the clamp head is completely closed, please make sure whether the measured conductor is clamped in the center of the clamp head, otherwise, it will occur additional errors. The clamp meter can only measure one current conductor at a time. If two or more current conductors are measured at the same time, the measurement readings will be wrong.
(2). Read the True RMS of AC current directly from the display.
⚠ Note:
a. The current measurement function must be operated between 0℃C~40℃.
b. In order to ensure the accuracy of the measurement data, the measured conductor must be placed in the center of the clamp head. Otherwise, ±1.0% additional error of the reading will occur.

c. When the measured current is higher than 500A, the continuous test time cannot exceed 60 seconds.

2. AC and DC voltage measurement

(1) .Turn the meter knob to the AC and DC voltage range, Insert the red test lead into the "V Ω Live" jack and the black test lead into the COM jack.
(2) .Connect the red and black test lead to the measured circuit and read the reading directly from the display.
⚠Note:
a. Do not input voltage higher than DC/AC600V to avoid damage of the instrument.
b. When measuring high voltage, pay special attention to avoid electric shock.
c. Disconnect the test lead from the measured circuit after all measurement operations are completed.
d. When the measured voltage is higher than 24V DC/AC safe voltage, the LCD of this meter displays the high-voltage prompt " ϟ " for

warning.
e. When measuring voltage above 36V, pay attention to wear safety protection equipment.

3. LowZ low impedance AC voltage measurement

(1).Insert the red test lead into the "V Ω Live" jack and the black test lead into the COM jack.
(2).Turn the meter knob to the low impedance AC voltage measurement range, and connect the test leads in parallel to the measured power supply or load.
(3).Read the True RMS of AC voltage directly from the display.
⚠Note:
►Do not input voltage higher than AC 300V. Although it is possible to measure higher voltage, it may easily damage the meter.
►When measuring high voltage, pay special attention to avoid electric shock.
►Test a known voltage before use the meter, it is to confirm whether the product function is correct.

►After using LowZ low impedance function range, please wait 3 minutes before perform LowZ voltage measurement, in order to eliminate false voltages, the LowZ function of the meter will provide a low impedance on the entire wire circuit to obtain more accurate measurements.
►When the measured voltage is higher than 24V AC safe voltage, the LCD of this meter displays the high-voltage prompt " ϟ " for warning.

4. Resistance measurement

(1).Turn the knob to the "Ω⊣⊢" range, the meter defaults to the resistance range when turn it on.
(2).Insert the red test lead into the "V Ω Live" jack and the black test lead into the COM jack.
(3).Connect the test lead wire to both ends of the measured resistance.
(4).Read the measured resistance directly on the LCD.
⚠Note:

►If the tested resistor is under open circuit or the resistance of the measured resistor exceeds the maximum range of the meter, the display will show "OL"
►When measuring on-line resistance, all power supplies in the measured circuit must be turned off before the measurement, and all capacitors are released completely. In order to ensure the measurement is correct.
►When measuring low resistance, the test leads will have about 0.1Ω-0.2Ω measurement error. In order to obtain accurate readings, you can perform relative value measurement. First, short-circuit to input the resistance value of the test lead, then press the REL button, and then perform low resistance measurement after the meter automatically subtracts the short-circuit display value of the test lead.
►If the resistance value is higher than 0.5Ω when the test leads are short-circuited, you need to check whether the test leads are loose or other reasons.

►When measuring resistance above 1MΩ, it may take a few seconds for the reading to stabilize. It is normal for high resistance measurements. In order to obtain stable readings, you can buy an extra short alligator clip test line instead of our standard test leads to do the measurement.
►Disconnect the test lead from the measured circuit after all measurement operations are completed.

5. Diode and continuity test

(1) Insert the red test lead into the "V Ω Live" jack and the black test lead into the COM jack.
(2) Turn the knob to the resistance range, short press "SELECT" key to select diode or buzzer measurement mode.
(3) When under continuity test, if the resistance of the tested circuit is less than 50 Ω, the built-in buzzer will sound.
(4) In the diode measurement mode, connect the red test lead and black test lead to the positive and negative pole of the diode respectively, and

the LCD will display the forward voltage drop of the diode.
⚠Note:
►If the open circuit or polarity of the measured diode is reversely connect, the display will show "OL".
►When measuring diode and continuity test, all power supplies in the measured circuit must be turned off before the measurement, and all capacitors should release completely.
►Do not input voltage higher than DC or AC 30V to avoid personal safety injury.
►Disconnect the test lead from the measured circuit after all measurement operations are completed.

6. Live Wire Recognition Live

(1). Turn the knob to the Live range, short press the select button to switch the Live function, and the LCD displays Live.
(2).Insert the red test lead into the " VΩ⊣⊢Live℃℉ " jack, and touch the measured

position with the red test lead.
(3).If meter has audible and visual alarm, the tested wire connected to the red test lead is a live wire. If it is no change, the tested wire is not a live line.
⚠Note:
►The range must be operated in accordance with safety rules.
►This function only detects AC standard main live wire (AC 110V~AC 380V).

7. Non-contact AC voltage induction measurement NCV

(1). Turn the knob to NCV range, the meter defaults to NCV measurement, and the LCD displays NCV.
(2).The NCV induction voltage range is 48V~250V.Put the upper part of the clamp head of the instrument close to the measured charged electric field (AC power line, socket, etc.), when the instrument sensing AC voltage electric field, the meter will display "----" and the buzzer issued "drop, drop" alarm sound. As the intensity of the

induction electric field increases, the more horizontal sections of "----" displays on the LCD, and the higher the sound frequency of the buzzer.
Note: When the tested electric field voltage is ≥ AC 100V, pay attention to whether the conductor of the measured electric field is insulated to avoid electric shock.

8. Automatic shutdown function

In order to save power consumption and prolong battery life, the meter will turn on automatic shutdown function by default after it is turned on and displays "APO" symbol on the screen. If the user does not operate the meter within 14 minutes, the meter will beep 3 times to prompt. If there is still no operation, after another 1 minute, the meter will have a long beep before turn off the function, and enter the low-power sleep mode. If you want to wake it up , you can press the select key to turn it on.
Press the SELECT button to turn it on, the automatic shutdown function will cancel, and the

LCD does not display the "APO" symbol. After cancel the automatic shutdown function, the meter will not automatically shut down, but there will have prompt sound every 15 minutes.

Ⅹ. TECHNICAL CHARACTERISTIC

Accuracy calibration, ambient temperature 23℃ ± 5℃, humidity less than 75%RH.

1. AC current ACA

Range	Accuracy	Resolution	Overload protection
2A	±(4.0%+50)	0.001A	600A
20A	±(4.0%+35)	0.01A	
200A	±(4.0%+15)	0.1A	
600A		1A	

⚠Frequency response: 50Hz~60Hz;
Display: the current True RMS;
Suitable for10% to 100% of the range.
When the measured current is higher than 500A, the continuous test time cannot exceed 60 seconds.

2. AC voltage (ACV)TRUE RMS measurement

Range	Accuracy	Resolution	Overload protection
2V	± (0.8%+10)	0. 001V	600V DC/AC
20V		0. 01V	
200V	± (1.2%+25)	0. 1V	
600V	± (1.5%+25)	1V	

Input impedance: ≥10MΩ;
Frequency response: 40Hz~1k Hz;
⚠Display: Voltage True RMS; Suitable for10% to 100% of the range.

3. DC voltage (DCV)

Range	Accuracy	Resolution	Overload protection
200mV	± (0.5%+7)	0. 1mV	600V DC/AC
2V		0. 001V	
20V		0. 01V	
200V	± (1.0%+20)	0. 1V	
600V	± (1.2%+20)	1V	

Input impedance: ≥10MΩ;

4. Low impedance AC voltage LowZ V~

Range	Accuracy	Resolution	Overload

			protection
2V	± (0.8%+10)	0. 001V	300V DC/AC
20V		0. 01V	
200V	± (1.2%+25)	0. 1V	
300V	± (1.5%+25)	1V	

⚠ Display: AC voltage True RMS;
Suitable for10% to 100% of the range
Input impedance: ≤3kΩ;
Frequency response: 40Hz~1k Hz;

5.Resistance(Ω)

Range	Accuracy	Resolution	Overload protection
200Ω	± (1.0%+5)	0.1Ω	250V DC/AC
2kΩ		0.001kΩ	
20kΩ		0.01kΩ	
200kΩ		0. 1kΩ	
2MΩ		0.001MΩ	
20MΩ	± (1.5%+15)	0.01MΩ	

Open circuit voltage: about 1V;
The accuracy is 5% to 100% of the range.

6. Continuity test

Range	Accuracy
200Ω	The resistance value ≤ 50 Ω ,the buzzer will have sound.

Resolution: 0.1Ω
Open circuit voltage: about 1V
Overload protection: 250V AC/DC

7. Diode test

Range	Accuracy
2V	The open circuit voltage is about 3V, The short circuit ≤2mA

Resolution: 0.001V
Overload protection: 250V AC/DC

Ⅺ. INSTRUMENT MAINTENANCE

1. The power supply of this product is 2 AAA batteries, if the meter meets following conditions, please replace the batteries.
(1).When LCD displays low battery "🔋" symbol.
(2).When the brightness of the LCD back light decreases.
(3).When the buzzer sound of the meter

becomes smaller.
2. General maintenance
(1).The maintenance and service of this instrument must be completed by professional maintenance personnel or designated maintenance service department.
(2).Please take out the battery when it is not used for a long time to avoid corrosion of the instrument caused by battery leakage.
(3) Pay attention to waterproof, dustproof and anti-fall.