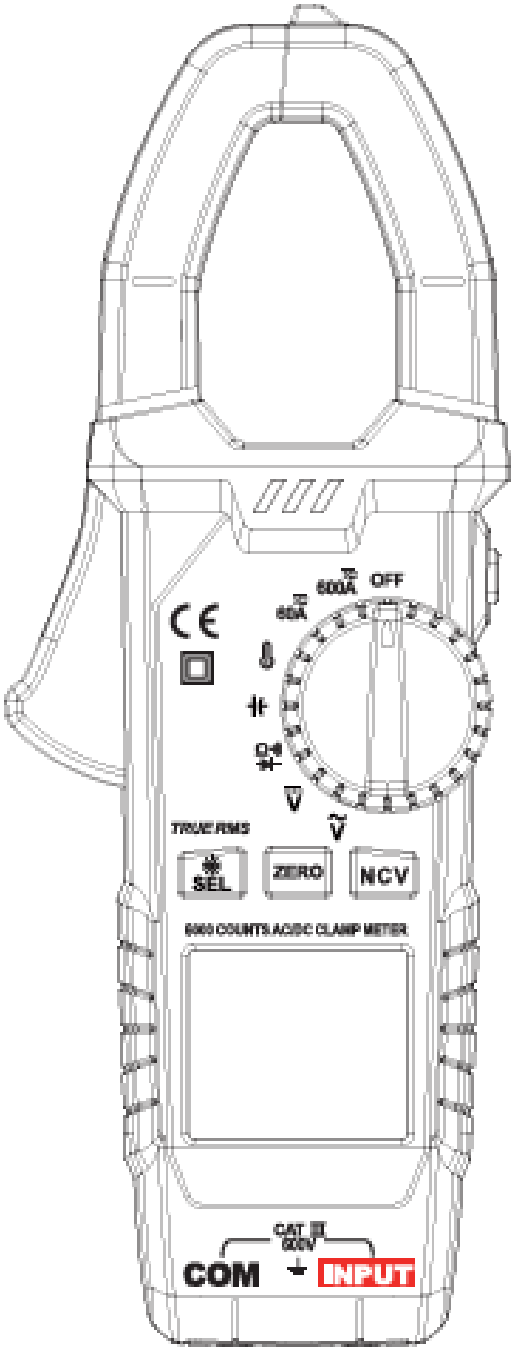
USERS MANUAL



DIGITAL CLAMP METER

Catalog

1. Safety information	1
1.1 Attention	1
1.2 Marks	2
1.3 Maintenance	2
2. Specifications	3
3. Symbol description	4
3.1 Description of display symbols	4
3.2 Description of buttons	5
3.3 Description of input socket	5
4. Functions	5
5. Operation guide	6
5.1 AC voltage	6
5.2 DC voltage	6
5.3 Resistance	7
5.4 Continuity test	7
5.5 Diode	7

Catalog

5.6 Capacity	8
5.7 Temperature	8
5.8 NCV test	8
5.9 AC/DC current measurement	9
6.Technical indicators	10
6.1 DC voltage	10
6.2 AC voltage	10
6.3 Resistance	10
6.4 Diode	11
6.5 Continuity test	11
6.6 Capacity	11
6.7 AC current	12
6.8 DC current	12
6.9 Temperature	12
7. Battery replacement	13
8. Accessories	13

Overview

This instrument is a clamp meter with 6000 counting, AC/DC automatic range. It has the functions of data hold, temperature measurement, automatic shutdown, backlight, flashlight, full- range overload protection and battery under-voltage indication.

It can be used to measure AC/DC current, AC/DC voltage, resistance, capacity, diode, continuity,temperature and NCV non-contact AC voltage. Whether used by professionals, factories, schools, enthusiasts or families, it is an ideal multi-functional instrument.

1. Safety information

1.1 attention

⚠	Please read the manual carefully before use to prevent the possible electric shock or damage to the instrument.

1.1.1 When using the instrument, the user must abide by the standard safety rules:

1.1.2 After receiving the instrument, please check whether it is damaged during transportation and whether the probe is in good condition.

1.1.3 When using, check whether the instrument housing is damaged, whether the insulation layer of the probe is complete and whether the functional range is correct.

1.1.4 It is forbidden to measure beyond the indicated value of the protection range, and to switch gears during measurement.

1.1.5 When the instrument is connected to the measuring circuit, the finger must be placed behind the probe sheath protection device, and it is forbidden to touch the top (metal part) of the probe.

1.1.6 If the measured voltage is higher than 60V DC or 30V AC (effective value), care should be taken, and the highest voltage measured at the COM terminal and the INPUT terminal should not exceed AC/DC 600V.

1.1.7 Before rotating the switch to change the measuring function, the probe should be removed from the circuit under test.

1.2 Marks

⚠	Attention (important safety information, see the instruction manual)
⚡	High Voltage Warning Symbol Attention Danger
⧈	Double insulation protection (class II)
CAT III	Refers to the level of pulse withstand voltage protection provided by over-voltage (installation) level III and pollution degree 2 according to IEC-61010 standard
CE	Complies with the directives of the European Union
⏚	Ground

1.3 Maintenance

1.3.1 Non-professional maintenance personnel are forbidden to open the bottom shell to adjust or repair the instrument.

1.3.2 Instrument should be stored far away from high temperature, humidity, corrosive gases or objects.

1.3.3 If the instrument is stained with dirt or dust, please clean it with a soft cloth.

1.3.4 In order to avoid electric shock caused by incorrect reading, when the instrument displays the symbol ' ▭ ', the battery should be replaced immediately.

1.3.5 After the instrument is used, turn off the power supply and turn the switch to the OFF gear.

1.3.6 If the instrument is stored for a long time, the battery should be taken out to prevent leakage and corrosion.

1.3.7 The cycle of the instrument should be one year, and it is calibrated again under the conditions of 18°C~28°C and relative humidity less than 75%.

2. Specifications

Automatic range: Yes
Full-range overload protection voltage: 250V
The maximum input voltage at COM terminal and INPUT terminal: AC/DC voltage gear 600V
Operation altitude: Max. 2000m
Display: LCD
Maximal display value: 5999
Polarity indication: -Negative electrode
Overrange display: OL or -OL
Sampling time: About 3 times/second
Automatic shutdown: About 10 minutes
Power supply: 2xl.5V AAA battery
Low battery: LCD display symbol
Working temperature: 0°C~40°C
Storage temperature: -10°C ~ 50°C
Dimension: 200x75x37mm
Jaw size: 35mm
Weight (excluding battery) : 215g

3. Symbol description

3.1 description of display symbols

Symbols	Description
	Battery under-voltage indicator/Low battery charge
	Automatic shutdown function
—	Negative electrode
AC	AC
DC	DC
	Continuity test
	Diode test
NCV	Non-contact AC voltage detection
H	Reading hold mode
nF/uF/mF	Capacity measurement
Ω	Resistance measurement
°C/°F	Temperature measurement
A	Current measurement
Z	Clear the base of DC current gear
Hz	Frequency
AUTO	Automatic range

3.2 Description of buttons

SEL/ ☀	Function selection (short press)/backlight on or off (long press)
HOLD/ 🔦	Data hold (short press)/flashlight on or off (long press)
ZERO	DC
NCV	Non-contact AC voltage test

3.3 Description of input socket

Input socket	Description
COM	The COM terminal is connected with the black probe.
INPUT	The INPUT terminal is connected with the red probe.

4. Functions

4.1 HOLD and (🔦) flashlight: short press to lock the measured data, change the range or short press the HOLD button again to exit the data lock, long press (🔦) for 2 seconds to turn the flashlight on or off.

4.2 SEL function switch button: long press (☀) to turn the backlight on or off.

4.3 ZERO reset button: ensure the accuracy of the measured data. Short press the ZERO button under DC current mode to clear the base number caused by the electromagnetic interference in the use environment.

4.4 NCV function: The NCV non-contact AC voltage detection function can be switched by short pressing the NCV button in any gear.

4.5 Automatic shutdown function: If there is no operation for about 10 minutes, the instrument will automatically shut down. Press any button to restart the meter. Press the HOLD button to turn on the meter at the same time, which can cancel the automatic shutdown function and resume the automatic shutdown function after restarting.

4.6 Under-voltage indicator of battery:when ( ) appears on the screen, it means that the battery is low, please replace the battery in time.

5. Operation guide

5.1 ac voltage

(1) Turn the rotary switch to the ($\tilde{V}$) gear, and the instrument is at the AC voltage measuring state.

(2) The black probe is inserted into the COM terminal and the red probe is inserted into the IN PUT terminal.

(3) Connect the red and black probes to the line under test for measurement.

5.2 DC voltage

(1) Rotate the rotary switch to the ($\overline{\overline{V}}$) gear, and the instrument is at the DC voltage measurement state.

(2) The black probe is inserted into the COM terminal and the red probe is inserted into the INPUT terminal.

(3) Connect the red and black probes to the line under test for measurement.

5.3 Resistance

(1) Turn the switch to the (Ω) gear.

(2) The default resistance MΩ.

(3) Connect the red and black probes to the measured resistance.

Notes:

(1) The measured resistance on the circuit will be different from the actual resistance.

(2) During maintenance,it is forbidden to measure resistance with live circuit.

(3) When the instrument is open or the measured resistance is too large, "OL" will be displayed, indicating that the measured value is beyond the measuring range.

5.4 Continuity test

(1) Turn the rotary switch to the (Ω) gear.

(2) press SEL key to select ( ) gear.

(3) Connect the red and black probe to the line under test.

Notes:

The resistance value of the tested line is less than about 50Ω, the indicating light is always on, and the buzzer makes continuous sounds .

5.5 Diode

(1) Turn the rotary switch to the (Ω) gear.

(2) Press SEL key to select the ( ) gear.

(3) Connect the red and black probe to the diode under test.

Notes:

When measuring a normal diode, the meter displays the forward voltage drop of the diode under test.

5.6 Capacity

(1) Turn the rotary switch to the (⊣⊢) gear.

(2) Connect the red and black probe to the measured capacity.

Notes:

① When measuring the capacity, it is necessary to discharge the capacity first, and the instrument will charge the capacity during the measurement, and it will take some time for the stable measurement.

5.7 Temperature

(1) Turn the switch to the ( ) gear, the instrument automatically measures the current ambient temperature, and press SEL button to convert the temperature to ℉.

(2) When measuring the temperature of an object or liquid, insert the red plug of the K thermocouple into the "INPUT" terminal and the black plug into the "COM" terminal, and the thermocouple probe contacts the object to be measured.

5.8 NCV test

Short press the NCV button in any gear to switch to NCV non-contact AC voltage test, and press or switch the gear gear again to quit the NCV test.Close the top of the clamp head of the meter to the conductor. The meter judges the measured voltage according to the intensity of the detected voltage signal. For the low voltage the screen displays --L, for the high voltage,the screen displays ---H, and the indicating light and buzzer give out warnings with different frequencies.

Notes:

(1) Even if there is no indication, the voltage may still exist. Don't rely on non-contact voltage test to determine whether there is voltage in the wire.

(2) The test process may be affected by factors such as socket design, different insulation thickness and types.

(3)External interference sources (such as flashlights, motors, electro-magnetism, etc.) may mistakenly trigger non-contact voltage test.

5.9 AC/DC Current measurement

(1) Set the range switch to A gear, and press SEL button to switch AC and DC current according to the test requirements.

(2) Open the jaw by holding the trigger, place the single wire of the tested line in the center of the clamp head and the instrument will display the accurate current value when the jaw is completely closed.

Note:

(1): It is only necessary to clamp a single wire to measure the current, and it is impossible to measure correctly by clamping two wires at the same time.

(2): The tested wire is at the center of the clamp head.

(3): Select the corresponding gear according to the measured current, and the maximum measured AC/DC current is 600A.

(4): Ensure the accuracy of the measurement data. Press ZERO button shortly under DC current mode to clear the base of DC current caused by electromagnetic interference in the use environment.

6. Technical indicators

6.1 DC voltage

Range	Resolution	Accuracy
600mV	0.001V	±（0.5% reading +3 digits）
6V	0.01V	
60V	0.1V	
600V	0.1V	

Input impedance： 10MΩ; The maximum input voltage： 600V

6.2 AC voltage

Range	Resolution	Accuracy
6V	0.01V	±（0.8% reading +5digits）
60V	0.1V	
600V	0.1V	

Input impedance： 10MΩ

The maximum input voltage： 600V/Frequency response： 40Hz-1KHz

6.3 Resistance

Range	Resolution	Accuracy
600Ω	0.001kΩ	±(1.0% reading + 3digits)
6kΩ	0.001kΩ	
60KΩ	0.01kΩ	
600KΩ	0.001MΩ	
6MΩ	0.01MΩ	
60MΩ	0.01MΩ	±(2.0% reading + 5digits)

Overload protection： 250V /open circuit voltage： 1.2V

6.4 Diode

Function	Range	Resolution	Test condition
Diode test	0.15V-2.5V	0.001V	Forward DC current: about 1mA; Open circuit voltage: about 2.5V. The approximate value of diode forward voltage drop

Overload protection: 250V

6.5 Continuity test

Function	Range	Resolution	Description	Test condition
	600Ω	1Ω	When the resistance is less than 30Ω, the buzzer sounds.	Open circuit voltage: about 1V

Overload protection: 250V

6.6 Capacity

Range	Resolution	Accuracy
600nF	0.1nF	± (4%reading+10digits)
6uF	0.001uF	
60uF	0.01uF	
600uF	0.1uF	
6mF	0.001mF	
60mF	0.01mF	

Overload protection: 250V

6.7 AC current

Range	Resolution	Accuracy
60A	0.01A	± (3.0% reading + 10digits)
600A	0.1A	

Maximum input current: 600A AC
frequency range: 40Hz ~ 400Hz

6.8 DC current

Range	Resolution	Accuracy
60A	0.01A	± (3.0% reading + 10digits)
600A	0.1A	

Maximum input current: 600A

6.9 Temperature

Range	Resolution	Accuracy
-20 ~ 1000°C	1°C	± (2.0% reading + 2 digits)
-4 ~ 1832°F	1°F	± (2.0% reading + 4 digits)

Overload protection: 250V

7. Battery replacement

⚠	In order to avoid electric shock or personal injury caused by wrong readings, the instrument display appears" ", replace the battery immediately. Before opening the battery cover and replacing the new battery, shut down and check that the test pen has been disconnected from the measured circuit.

1. Turn off the power supply,
2. Pull the test probe out of the tested circuit.
3. Unscrew the screws fixing the battery cover with a screwdriver.
4. Remove the battery cover.
5. Remove the old battery.
6. Replace with new 2 x 1.5V AAA batteries.
7. Install the battery cover and tighten the screws.

8. Accessories

1. Clamp meter	One
2. Instruction manual	One
3. Test pen	A pair
4. 1.5x2 AAA battery	Two
5. Thermocouple	One
6. Storage bag	One

USERS MANUAL

MADE IN CHINA

CE RoHS

M101040031

Before using the instrument,please read this manual carefully,and save it well for future using.