INSTRUCTION MANUAL

MADE IN CHINA

M101030019

⚠ Please read the manual carefully before using the meter and keep it well for future use.

INSTRUCTION MANUAL

DIGITAL CLAMP METER



90*120mm

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Overview

This instrument is a digital AC/DC miniature clamp meter,highly reliable and precise and is easy to carry. It has automatic range, reading hold, temperature measurement,automatic shutdown,backlight,full range overload protection and battery under - voltage indication. Whether used by professionals, factories, schools, enthusiasts or families,it is an ideal multi-functional instrument.

The meter can be used for the test of AC / DC, AC / DC voltage, resistance, capacity, diode, continuity, temperature or NCV test.

1. SAFETY INFORMATION

1.1 Warnings

⚠	Attention should be paid when using the meter. Improper operation may cause electric shock or damage to the meter. Please read the instructions before using it, and use the meter according to the operating instructions.

1.1.1 When using the meter, users must follow standard safety rules.

1.1.2 Before the meter is used, check whether the meter is damaged. If the meter is damaged, it cannot be used due to poor performance.

1.1.3 Attention should be paid to prevent electric shock, arc discharge and other injuries when measuring around bare conductors or buses.

1.2 Use

1.2.1 Users should first check whether the meter shell is damaged, whether the insulation layer of the test pen is complete and whether the range of the gear is correct.

1.2.2 Do not exceed the indicated value of the protection range in each measurement range or switch the gear during the measurement.

1.2.3 It is forbidden to touch the top of the test pen(the metal section) when the meter is connected to the tested circuit.

1.2.4 If the measured voltage is higher than 60V DC or 30V AC (valid value),be careful to avoid electric shock and place your finger after the protection device of the test pen sheath.

1.2.5 Don't measure when the voltage between the input terminal and the ground exceeds 600V.

1.2.6 Remove the test pen from the tested circuit before the rotary switch changes the measurement function.

1.2.7 Don't store or use the meter under the sun,high temperature or humidity.

1.3 Symbols

Symbols used on the body of the instrument and in the instruction manual:

⚠	Warning (important safety information,refer to the instruction manual)
⚿	Can be used for dangerous live conductor
▣	Double insulation protection (E)
CAT III	Overvoltage (installation) III according to IEC-61010 Overvoltage Category III refers to the level of pulse withstand voltage protection provided
CE	Complies with the directives of the European Union
⏚	Ground

1.4 Maintenance

1.4.1 Non-professional repairman shall not open the bottom shell to adjust or repair the instrument.

1.4.2 In order to avoid electric shock caused by wrong reading,the battery should be replaced immediately when the instrument displays 🔋.

1.4.3 When the instrument is not in use, switch to OFF.

1.4.4 If the instrument is not used for a long time, the battery should be taken out to prevent the liquid from damaging the instrument.

1.4.5 The cycle of the meter shall be one year and it shall be recalibrated under the condition that the temperature is 18℃-28℃ and the relative humidity lower than 75%.

2. SPECIFICATIONS

2.1 Overview

*Automatic range

Full range overload protection

Maximum input voltage for COM and INPUT：AC600V,DC 600V

Working height: up to 2000m

Display: LCD

Maximum display value: 1999 digits

Polar indication: automatic indication, - is negative.

Overrange display: "OL" or "-OL".

Sampling time: About 3 times/second.

Automatic shutdown time: 15 minutes.

Power supply: 2x 1.5 AAA battery

Battery low voltage display: LCD displays 🔋.

Working temperature: 0℃ to 40℃.

Storage temperature: -10℃ to 50℃.

Dimensions: 185x84x31mm

Weight: 140g (Industry battery)

2.2 Description of the display

Display symbols

Symbols	Description
🔋	Battery undervoltage / low battery.
⏲	Automatic shutdown function
−	Negative input polarity
⎓	AC voltage
⎓	DC voltage
◀))	Continuity test
▶|	Diode test
NCV	Non-contact AC voltage detection
H	Reading hold
⏚	Capacity measurement
Ω	Resistance measurement
°C/°F	Temperature measurement
A	Current measurement
Z	Clear the DC/AC

2.3 Description of keys

Keys	Function
SEL	Selection
HOLD/🔦	Reading hold(shortly press)/Backlight(long press)
ZERO	Clear the low number of the DC

2.4 Description of the input socket

Input sockets	Description
COM	Connect the input terminal with the black test pen.
INPUT	AC /DC Voltage, resistance, capacity, diode, continuity measurement, temperature (connect with the red test pen).

2.5 Accessories

1. Meter	One
2. Instruction manual	One
3. Test pen wire	A pair
4. 1.5x2 AAA battery	A pair
5. Thermocouple	One
6. Bag	One

3. OPERATION GUIDE

3.1 Reading hold/ Backlight

The reading hold mode can hold the current reading on the display by shortly pressing the HOLD key.Change the gear of measuring function or shortly press the HOLD key to exit the reading hold mode.

Press the 🔦 key FOR 2 seconds to turn on or off the backlight..

3.2 Automatic shutdown

(1) If there is no operation within 15 minutes after starting,this meter will shut down automatically and enter the sleep state.

(2) Press HOLD button under the automatic shutdown mode to turn on the meter.

3.3 Measurement guide

This meter adopts automatic range design. When measuring AC/DC voltage, resistance and capacity, the value will be automatically displayed

3.4 Measurement of AC/DC voltage

1. Turn the rotary switch to 🔋position and shortly press SEL key to switch to AC or DC.
2. Plug the black and red test pen to COM socket and Input socket respectively.
3. Connect the test pen to the tested circuit.

Note:

In the mV range of DC and AC, even if there is no test pen input or connection, the meter will display numerical value In this case, if the "+", and " COM " terminalare short-circuited, the meter will display zero, which is normal.

The AC/DC voltage range of this meter is:

gear 🔋2V, 20V, 200V, 600V

gear ⎓2V, 20V, 200V, 600V

3.5 Measurement of resistance / diode/ continuity/capacity

1. Turn the switch to Ω, press SEL key to choose corresponding functions, and plug the red and black test pens to the INPUT socket and COM socket respectively.
2. Capacity measurement

The capacity range of the meter is 200nF, 2uF, 20uF, 200uF, 2000uF.

3.6 Auto power capacity

Press SEL key to ⏚, which is the automatic switch for automatic range nF/F measurement

Note:

The capacity shall be fully discharged before measuring the capacity. Thus it takes some time to stabilize the reading as the capacity needs to be charged.

3. Resistance measurement

Press SEL key to Ω, which is the automatic switch for automatic range kΩ measurement

Note:

① The actual value of the resistance will be different from that measured on the circuit.

② When the meter is open circuit or the measured resistance value is too big, it will display "OL", which means the measured value is beyond the range.

4. Continuity measurement

If the resistance of the tested object is less than about 50Ω,the indicating light (red light) of the meter will be on for a long time and the buzzer will sound continuously.

5. Diode measurement

Press SEL key to ▶|.When measuring normal diode,the meter will display the forward voltage drop of the diode.Normal 0.5V to 0.8V forward voltage drop.

3.6 NCV test

Switch to NCV key and move the damp head close to the conductor. According to the detected signal strength, the meter judges the strength of the tested voltage, and the screen displays corred indicating light and the buzzer emits alarm sounds of different frequencies.

3.7 AC/DC measurement

1. Turn the range switch to A for current measurement, and press SEL key to switch to AC or DC according to the test demand.
2. Hold the trigger to open the jaws, and clamp a wire of the measured line in the center of the clamp head. When the left and right jaws are completely closed, the meter will display the measured current value.

Note:

(1) Only a single wire is clamped for measurement.It is impossible to accurately measure the current by clamping two wires at the same time.

(2) The measured wire is in the center of the clamp head.

(3) The maximum current for measurement is 60A.

(4) To ensure the readings are accurate, shortly press ZERO key under the DC current mode, which can clear the low number of the DC caused by electromagnetic interference in the use environment.

3.8 Temperature measurement

1. Set the range switch to the 🌡 position, the meter automatically measures shows the environment temperature at that time, and press SEL key to switch to °F.
2. To measure the object or the liquid, insert the red plug of the K-type thermocouple into the " INPUT " socket and the black plug into the " COM " socket,then the thermocouple probe comes into contact with the tested area.

4. TECHNICAL INDICATORS

4.1 DC Voltage

Range	Resolution	Accuracy
2V	0.001V	± (0.5% reading +3 digits)
20V	0.01V	
200V	0.1V	
600V	0.1V	

Input impedance: 10MΩ; Maximum input voltage: 600V

4.2 AC Voltage

Range	Resolution	Accuracy
2V	0.001V	± (1.0% reading +3 digits)
20V	0.01V	
200V	0.1V	
600V	0.1V	

Input impedance: 10MΩ; Maximum Input Voltage: 600V/

Frequency Response: 40Hz-1KHz

4.3 Resistance

Range	Resolution	Accuracy
200Ω	0.1Ω	±(0.8% reading +3 digits)
2kΩ	0.001kΩ	
20kΩ	0.01kΩ	
200kΩ	0.1kΩ	
2MΩ	0.001MΩ	
20MΩ	0.01MΩ	

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

4.4 Diode

Function	Range	Resolution	Test condition
Diode test ▶|	0.15V×2.5V	0.001V	Forward DC about 1mA; Open circuit voltage: about 2.5V. Display the approximate value of the diode forward voltage

Overload protection: 250V

4.5 Buzzer Continuity

Function	Range	Resolution	Description	Test condition
◀))	100Ω	1Ω	Resistance is less than 50Ω the buzzer sounds	Open circuit voltage: about 1V

Overload protection: 250V

4.6 Capacity

Range	Resolution	Accuracy
200nF	0.1nF	± (3.5%reading+10digits)
2uF	0.001uF	
20uF	0.01uF	
200uF	0.1uF	
2000uF	0.001uF	

Overload protection: 250V

4.7 AC Current

Range	Resolution	Accuracy
2A	0.001A	± (2.5% reading + 6digits）
20A	0.01A	± (3.0% reading + 6digits）
100A	0.1A	

Maximum input current:100A/ Frequency range: 40Hz-400Hz

4.8 DC Current

Range	Resolution	Accuracy
2A	0.001A	± (2.5% reading + 6digits）
20A	0.01A	± (3.0% reading + 6digits）
100A	0.1A	

4.9 Temperature

Range	Resolution	Accuracy
-20~1000℃	1℃	± (2.0% reading + 2 digits）
-4~1832℉	1℉	± (2.0% reading + 4 digits）

Overload protection: 250V

5. BATTERY REPLACEMENT

Please follow these steps to replace the battery:

1. Turn off the power supply of the meter.
2. Remove all the test lines from the measuring circuit.
3. Use a screwdriver to remove the screw that fixes the battery cover on the back of the meter.
4. Remove the battery cover.
5. Remove the old battery.
6. Replace it with a new 2 x 1.5V AAA battery.
7. Install the battery cover and use the screwdriver to fix the screw.

