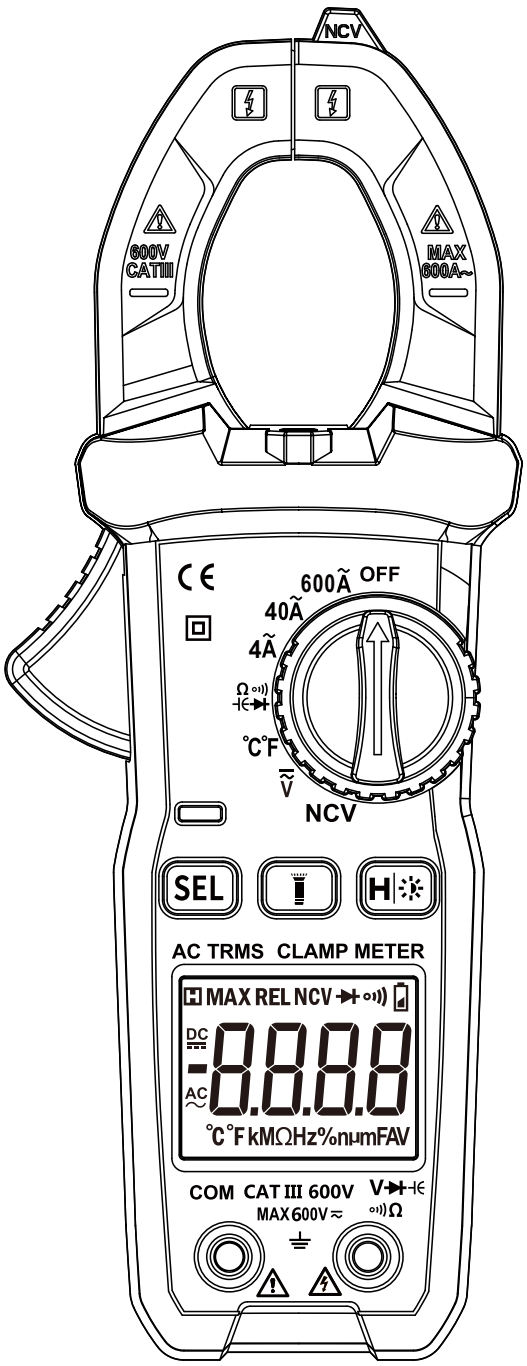
Instruction Manual

DIGITAL CLAMP MULTIMETER



Designed and Conforms to
IEC61010-1
CAT.III 600V

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

CE RoHS

Overall

This digital AC clamp meter is a stable and reliable instrument with micro smart IC and dual integral AD transformer as the core, coming with full range overload protection circuit. It can be used to test AC current , AC voltage, resistor, diode, circuit continuity.

Safety Standards

This instrument has been designed and manufactured with safety standards of IEC61010 , IEC61010-2-032, dual insulation CAT III 600V and pollution class 2.

Safety Symbols

⚠ Warning symbols, cautiously operate.

⚠ High voltage danger symbol.

Allow to be used nearby by conductors which are not dangerous with life.

Dual insulation (Class II safety equipment)

Ground.

Notice

⇨ Read the manual carefully , especially notice the "⚠" contents with "⚠" symbols. Please follow the instructions.

⇨ If the test pen needs to be replaced, replace a new one with the same model number or same specifications

⇨Check the instrument and test pen before use. If exposure of test leads, broken cover, abnormal display are found, do not use it.

⇨In test, do not touch the terminal not in use.

⇨When test DC voltage higher than 60V or AC voltage higher than 30V, do not reach your fingers beyond safety barrier.

⇨ When the measured range is unknown, put the test range at the maximum.

⇨ Do not test voltage higher than maximum range.

⇨ The test lead should be away from tested circuit before switch range selector.

⇨ Before test diode in live circuit, cut off the power and discharge all capacitors.

⇨Do not expose the instrument in strong light, high temperature or damp environments.

⇨Do not touch naked circuit lines, connectors or measured circuits.

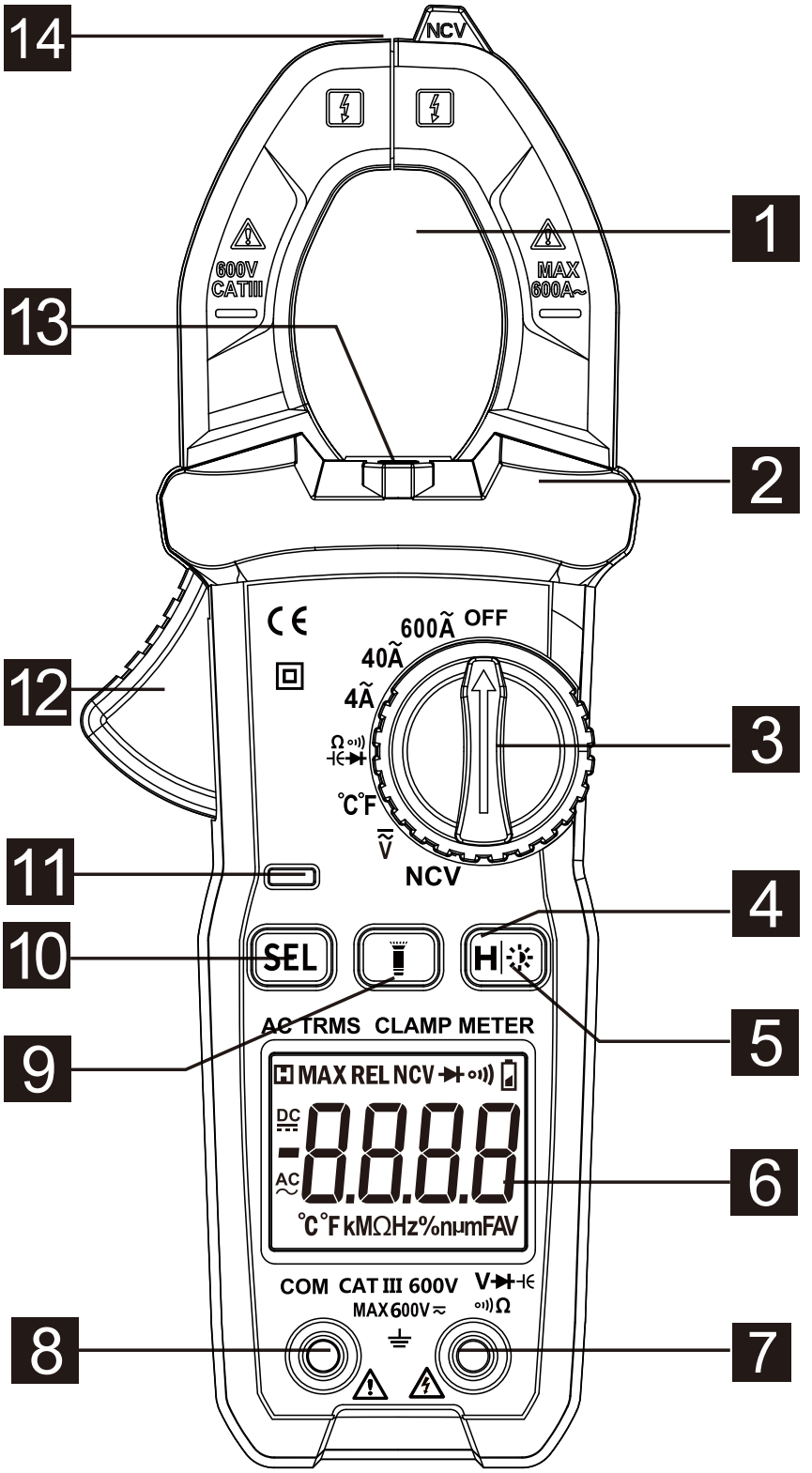
Accessories

1.Instruction manual	1
2.Test lead	1
3.thermocouple	1
4.Package	1
5.1.5V SIZE AAA battery	2

Description

1.Jaw Assembly: sampling AC.
2.Safety Barrier: prevent touching live conductors in test.
3.Rotatory Range Selector: select measuring functions and ranges.
4.Data Hold: press “H” button, the last reading keeps on display “H” symbol shows. Press “H” button again to resume normal test mode.
5.Backlight: press and hold 2 seconds to turn on backlight, press and hold 2 seconds again to turn off.
6.LCD: Maximum display 4000, reading height 12mm.
7.Input Terminal: red test lead positive input terminal in testing voltage, diode, transistor and continuity.
8.COM terminal: black test lead negative input terminal except AC measurement.
9.Flashlight: Press this button to turn on flashlight. Press again to turn off.
10.SEL: in  test mode, select between diode, resistor and continuity.
11. Warning Light: in continuity test, red light turns on with NCV warning.
12. Lever for Jaw OpeningClosing: press to open and release to close the jaw.
13. Clamp Body Light
14.NCV Sensor Probe: when strong AC signal is detected, red light turns on and buzzer sounds.

Panel description



Instructions

AC and DC Voltage Measurement

Insert the read test lead into the " V⏵| •))Ω " jack and black test lead into the "COM" jack.

A.DC Voltage Measurement

Turn the rotatory range selector to V̄, connect the test lead to voltage to be measured. Read measurement value and polarity of red test lead from display.

B. AC Voltage Measurement

Turn the rotatory range selector to Ṽ , connect the test lead to voltage to be measured. Read measurement value from display.

Caution:

*If the measured voltage range is not known in advance, turn the rotatory range selector to maximum. Then decrease gradually to get satisfactory resolution.

*Beware of electric safety in measuring high voltage.

AC current measurement

1.Turn the rotatory range selector to AC current ;

2.Clamp the jaw around the conductor to be measured. Do not more than one conductors at the same time.

3.Read measurement value from display.

Notice

*If the measured current range is not known in advance, turn the rotatory range selector to maximum. Then decrease gradually to get satisfactory resolution.

Resistor Measurement

1.Insert the read test lead into the “ V Ω ” jack and black test lead into the “COM” jack.

2.Turn the rotatory range selector to“ ” , press “SEL” button to switch to Ω, place the test probe tips into contact with the sample to be measured.

3.Read measurement value from display.

Notice:

*If the measured sample has higher resistance beyond maximum range, “OL” will be display. Please change to use a meter with higher measurement range.

*When measuring a resistance, make sure power is off and all capacitors are fully discharged.

*When measuring resistance over 1M OHM, it might take a few seconds to stabilize the reading.

Diode and Continuity Test

Insert the read test lead into the “ V Ω ” jack and black test lead into the “COM” jack. Polarity of red test lead is “+”.

1. Turn the rotatory range selector to“ ”, press “SEL” button to switch to ⊣◀. Bring the red test lead in contact with positive electrode and black test lead in contact with negative electrode. Read forward voltage drop value from the display.

2. Turn the rotatory range selector to“ ”, press “SEL” button to switch to . Place the test leads in contact with two points of measured circuit. If the resistance is

less than 50 OHM, the beeper emits continuous sound.

Capacitance measurement

1. Insert the red pen and black pen into the "INPUT" and "COM "terminals. 2. Set the function range switch to "  " range, press to"**SEL**" switch to "  ", and connect the marker to two points of the measured capacitor.

3. Read the measurement results from the monitor.

Note:

If the measured capacitance exceeds the maximum value of the selected range, the display will appear "OL".

When checking the in-line capacitance, the power supply to the line under test must be cut off and all capacitors fully discharged.

Temperature measurement

1. Set the functional range switch to the TEMP range position. The LCD displays the current ambient temperature.

2. When the thermocouple is needed to measure the temperature, the red plug of the K-type thermoelectric couple can be inserted"INPUT" jack, black plug into "COM "jack, and use thermocouple probe to contact the measured object or area for measurement.

3 Display the reading on the LCD.

Auto Off

The unit powers off automatically when stay idle over 15 minutes to save power.

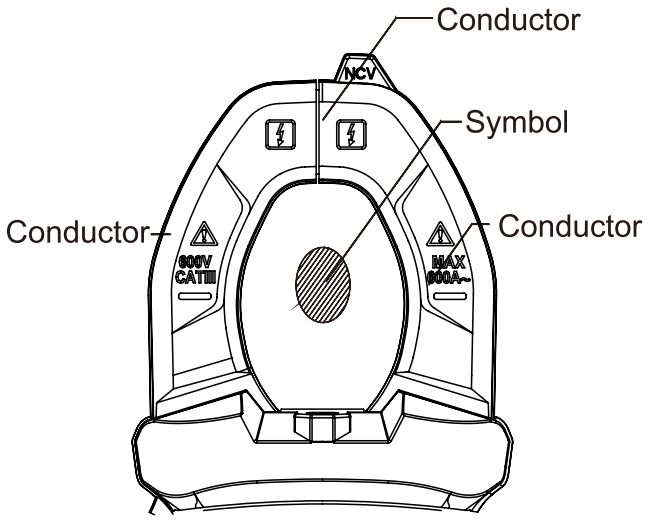
Accuracy

Accuracy: ±(a%+cts)

Warranty: 1 year

Ambient Temperature: 18℃~28℃ , Ambient humidity: Less than 75%

Temperature co-efficient: 0.1xaccracy/1℃



Notice:

In measuring AC current, place the measured conductor at the center o the jaw, otherwise there might be an offset of 1.5%

DC Voltage

Range	Resolution	Accuracy
400 mV	0.1 mV	± (0.5%+3cts)
4V	0.001V	± (0.8%+2cts)
40V	0.01V	
400V	0.1V	
600V	1V	± (1.0%+2cts)

Input Resistance: 10MΩ

Max. Input Voltage: 600V DC or 600V rms AC

AC Voltage

Range	Resolution	Accuracy
4V	0.001V	± (1.0%+10cts)
40V	0.01V	
400V	0.1V	
600V	1V	± (1.2%+10cts)

Input Resistance: 10MΩ

Frequency Range: 40Hz~400Hz

Max. Input Voltage: 600V DC or 600V rms AC

AC Current

Range	Resolution	Accuracy
4A	0.001A	± (2.5%+10cts)
40A	0.01A	
600A	0.1A	

Frequency Range: 50Hz~60Hz

Max. Input current: 120% of full scale, less than 60 seconds.

Resistance

Range	Resolution	Accuracy
400Ω	0.1Ω	± (1.2%+2cts)
4kΩ	0.001kΩ	
40kΩ	0.01kΩ	
400kΩ	0.1kΩ	
4MΩ	0.001MΩ	
40MΩ	0.01MΩ	± (2.0%+5cts)

Overload: 600V DC or 600V rms AC

Capacitance

Range	Resolution	Accuracy
4.000nF	0.001nF	±(4.0%+50cts)
40.00nF	0.01nF	±(4.0%+3cts)
400.0nF	0.1nF	
4.000uF	1nF	
40.00uF	10nF	
400.0uF	100nF	
4.000mF	1uF	
40.00mF	10uF	

Overload: 600V DC or 600V rms AC

Temperature

Range	Resolution	Accuracy
-40~1000℃	1℃	± (2.0%reading+2℃)
-40~1832℉	1℉	±2.0% reading

Accuracy does not include the error of thermocouple probe.

Overload: 600V DC or 600V rms AC

Diode

Range	Resolution	Accuracy
	**1mV**	Forward voltage drop value (open circuit voltage about 2.3V)

Overload: 600V DC or 600V rms AC

Continuity

Range	Resolution	Accuracy
	0.1Ω	Beeper sounds when resistance is less than 50 OHM (open circuit voltage about 2.1V)

Overload: 600V DC or 600V rms AC

Technical Specifications

General: Max. Voltage between input and ground is CATII 600V DC and 600V AC

Display: LCD, max reading 4000

Principle: Dual Integral A/D transformer, auto range

Measuring frequency: 3 times/second

Unit Display: Display function and unit symbols

Electrode: negative input shows “—“

Overload Display: “OL”

Data Hold Display: “ H ”

Low Power Display: “  ”

Power supply: DC1.5V x2 Size AAA

Dimension: 185mm x 71mm x35mm

Max. Jaw Opening Size: 26mm

Temperature Environment for Use: 5C-35C

Temperature for Storing: -10C-50C

Maintenance

1.Before open back cover, take away the test leads from measured circuit.
2.Use wet cloth and a little detergent to clean the instruments. Do not use chemical or grinding solvent.
3.Stop using if any abnormal conditions occur.
4.Calibration or maintenance can only be performed by professionals.

Battery Replacement

Warning
To avoid electric strikes, take away test leads from measured circuit before open battery cover. Only replace batteries with same type and electric specifications.

When low power icon " " appears, batteries need to be replaced immediately.
1.Take away test leads from measured circuit. Turn rotatory range selector to OFF. Take away let leads from input jacks.
2.Use a screwdriver to unscrew the batter cover.
3.Take out used batteries and replace with new 1.5V Size AAA batterie.
4.Put on the cover and fasten screw tightly.