

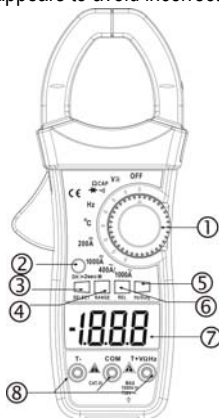
## 4000 COUNTS AUTO RANGE INTELLIGENT DIGITAL AC/DC CLAMP MULTIMETER OPERATION MANUAL

This LCD Auto Range Intelligent Digital AC/DC clamp multimeter is a portable, 4000 counts multimeter. It is ideally suited for field, laboratory, shop and home applications. The meter can be connected with mobile phone by Bluetooth, and display on phone by APP, you can remote monitoring the measurement condition, the distance control is 10~15m.

### 1. SAFETY INFORMATION

The following safety information must be observed to insure maximum personal safety during the operation at this meter.

- 1) When measuring voltage ensure that instrument is not switched to the current range, resistance range, diode and continuity range, capacitance range or temperature range.
  - 2) Use extreme care when measuring voltage above 50V. especially from sources where high energy is existed.
  - 3) Avoid making connections to "live" circuits whenever possible.
  - 4) Before making resistance measurements, diode or continuity test, capacitance test or temperature test, ensure that the circuit under test is de-energized.
  - 5) Always ensure that the correct function and range is selected.
  - 6) Extreme care should be taken when using the instrument to conjunction with a current transformer connected to the terminals if an open circuit occurs.
  - 7) Ensure that the test leads and probes are in good condition with no damage to the insulation.
  - 8) Take care not to exceed the over-load limits as given in the specifications.
  - 9) Before opening the cover of the battery cabinet to replace batteries. disconnect the test leads from any external circuit, set the selector switch to "OFF" position.
  - 10) Keep the fingers after the protection ring when measuring through the instrument lead.
  - 11) Change the battery when the symbol "E" appears to avoid incorrect data.
2. Panel Layout



- 1) Rotary Switch: Use this switch to select functions and ranges.
- 2) D.HOLD/ Back Light key: In any range, push the key, the present display value will be locked and the "H" symbol will appear, push it again to exit. Press "D.HOLD" button more than 2 seconds, the back light will light, press it more than 2 seconds again, the back light will light off.
- 3) SELECT key: This key work on the " $\Omega$   $\rightarrow$   $\rightarrow$   $\rightarrow$   $\rightarrow$ " range. Push the key to choose resistance, capacitance, diode or continuity test. Press "SELECT" in "V" range, choose AC voltage or DC voltage test.
- 4) RANGE Key: Press the "RANGE" key, the meter enters manual range mode, press it more than 2 seconds again, return to auto mode.
- 5) Hz/Duty Key: On "ACV/ACA" or "Hz" range, press the "Hz/Duty" key, you can choose the Frequency or Duty Cycle measurement.
- 6) REL Key: Press the "REL" key, the meter enters relative measuring mode, "REL" is displayed on the LCD and the present reading becomes the reference value and displayed on the display. Relative measurement  $REL\Delta = \text{measurement value} - \text{Reference value}$ . Press it again to exit.
- 7) LCD display: 4000 counts digit, full function symbol display.
- 8) T+V $\Omega$  Input Jack、COM Input Jack、T- Input Jack

### 2. SPECIFICATIONS

#### 2.1 GENERAL SPECIFICATIONS

Display: 4000 counts digit LCD with a max. reading of 4000 monitor with character 18mm high. LCD size: 51.3x24.5mm.  
 Range control: Auto range control.  
 Polarity: Automatic negative polarity indication.  
 Zero adjustment: Automatic.  
 Over range indication: Only the "OL" display.  
 Low Battery Indication: "E" displayed  
 Safety Standards: The meter is up to the standards of IEC1010 Double Insulation, Pollution Degree 2, Overvoltage Category II.

Clamp opening size: 40mm.

Operating Environment: Temperature 0~40°C, humidity < 80%RH.

Storage Environment: Temperature -20~60°C, humidity < 90%RH.

Power supply: 9V Zinc-carbon battery.

Dimension: 225(H)x77(W)x45(D)mm.

Weight: Approx. 330g (including batteries).

#### 2.2 ELECTRICAL SPECIFICATIONS

Accuracies are  $\pm$ (% of reading + number in last digit) at 23 $\pm$ 5°C,  $\leq$ 70%RH.

##### 2.2.1 DC Voltage

Range	Accuracy	Resolution
400mV	$\pm$ (0.5% of rdg + 2 digits)	0.1mV
4V		1mV
40V		10mV
400V		100mV
1000V	$\pm$ (0.8% of rdg + 2 digits)	1V

Overload protection: 1000V DC/750Vrms AC

Impedance: 10M $\Omega$ , More than 100M $\Omega$  on 400mV scale

##### 2.2.2 AC Voltage

Range	Accuracy	Resolution	Frequency
4V	$\pm$ (0.8% of rdg + 3 digits)	1mV	40~400Hz
40V		10mV	
400V		100mV	
750V	$\pm$ (1.2% of rdg + 3 digits)	1V	

Average sensing, calibrated to rms of sine wave

Overload protection: 1000V DC/750Vrms AC

Impedance: 10M $\Omega$ .

##### 2.2.3 DC Current

Range	Accuracy	Resolution
200A	$\pm$ (3.0% of rdg + 12 digits)	0.1A
1000A	0~800A $\pm$ (3.5% of rdg + 12 digits)	1A
	800~1000A $\pm$ (6.5% of rdg + 12 digits)	

Overload protection: 1000Arms within 60 seconds

It is recommended to measure the current above 10A.

##### 2.2.4 AC Current

Range	Accuracy	Resolution	Frequency
400A	$\pm$ (3.0% of rdg + 12 digits)	0.1A	50~60Hz
1000A	0~800A $\pm$ (3.5% of rdg + 12 digits)	1A	
	800~1000A $\pm$ (6.5% of rdg + 12 digits)		

Average sensing, calibrated to rms of sine wave

Overload protection: 1000Arms within 60 seconds

It is recommended to measure the current above 10A.

##### 2.2.5 Resistance

Range	Accuracy	Resolution
400 $\Omega$	$\pm$ (1.0% of rdg + 3 digits)	0.1 $\Omega$
4k $\Omega$	$\pm$ (1.0% of rdg + 2 digits)	1 $\Omega$
40k $\Omega$		10 $\Omega$
400k $\Omega$		100 $\Omega$
4M $\Omega$		1k $\Omega$
40M $\Omega$	$\pm$ (1.5% of rdg + 3 digits)	10k $\Omega$

Overload protection: 250V DC/250Vrms AC

##### 2.2.6 Capacitance

Range	Accuracy	Resolution
51.2nF	$\pm$ (3.0% of rdg + 10 digits)	10PF
512nF	$\pm$ (2.5% of rdg + 5 digits)	100PF
5.12 $\mu$ F		1nF
51.2 $\mu$ F		10nF
100 $\mu$ F	$\pm$ (5.0% of rdg + 10 digits)	100nF

Overload protection: 250V DC/250Vrms AC

##### 2.2.7 Frequency

Range	Accuracy	Resolution	Sensitivity
5.12Hz	$\pm$ (0.1% of rdg + 5 digits)	0.001Hz	Sine wave 0.6V~10V rms (5.12MHz: 1.5V~10V rms) If input voltage over range, need adjust
51.2Hz		0.01Hz	
512Hz		0.1Hz	
5.12kHz		1Hz	
51.2kHz		10Hz	
512kHz		100Hz	
5.12MHz	1kHz		

Overload protection: 250V DC/250Vrms AC

Duty cycle: 0.1%~99.9%

##### 2.2.8 Temperature (NiCr-NiSi sensor)

Range	Accuracy	Resolution
$^{\circ}$ C	-20~150 $^{\circ}$ C	$\pm$ (3 $^{\circ}$ C+ 1digit)
	150~1000 $^{\circ}$ C	$\pm$ (3% of rdg + 2digits)
		1 $^{\circ}$ C

Overload protection: 250V DC/250Vrms AC

