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

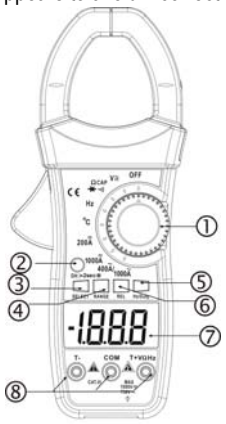
This LCD Auto Range Intelligent Digital AC/DC clamp multimeter is a portable, 4000 counts multimeter. It is ideally suited for field, laboratory, shop and home applications. The meter can be connected with mobile phone by Bluetooth, and display on phone by APP, you can remote monitoring the measurement 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 "🔋" 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 "Ω ⊣◀ •))) ⊣⊢" 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△=measurement value-Reference value*. Press it again to exit.
7) LCD display: 4000 counts digit, full function symbol display.
8) T+VΩ 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: 51.3×24.5mm.
Range control: Auto range control.
Polarity: Automatic negative polarity indication.
Zero adjustment: Automatic.
Over range indication: Only the "OL" display.
Low Battery Indication: "🔋" 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℃, humidity＜80%RH.
Storage Environment: Temperature -20～60℃, humidity＜90%RH.
Power supply: 9V Zinc-carbon battery.
Dimension: 225(H)×77(W)×45(D)mm.
Weight: Approx. 330g (including batteries).

2.2 ELECTRICAL SPECIFICATIONS

Accuracies are ±(% of reading +number in last digit) at 23±5℃,≤70%RH.

2.2.1 DC Voltage

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

Overload protection: 1000V DC/750Vrms AC
Impedance: 10MΩ, More than 100MΩ on 400mV scale

2.2.2 AC Voltage

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

Average sensing, calibrated to rms of sine wave
Overload protection: 1000V DC/750Vrms AC
Impedance: 10MΩ.

2.2.3 DC Current

Range		Accuracy	Resolution
200A		±(3.0% of rdg + 12 digits)	0.1A
1000A	0～800A	±(3.5% of rdg + 12 digits)	1A
	800～1000A	±(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		±(3.0% of rdg + 12 digits)	0.1A	50～60Hz
1000A	0～800A	±(3.5% of rdg + 12 digits)	1A	
	800～1000A	±(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
400Ω	±(1.0% of rdg + 3 digits)	0.1Ω
4kΩ	±(1.0% of rdg + 2 digits)	1Ω
40kΩ		10Ω
400kΩ		100Ω
4MΩ		1kΩ
40MΩ	±(1.5% of rdg + 3 digits)	10kΩ

Overload protection: 250V DC/250Vrms AC

2.2.6 Capacitance

Range	Accuracy	Resolution
51.2nF	±(3.0% of rdg + 10 digits)	10PF
512nF	±(2.5% of rdg + 5 digits)	100PF
5.12μF		1nF
51.2μF		10nF
100μF	±(5.0% of rdg + 10 digits)	100nF

Overload protection: 250V DC/250Vrms AC

2.2.7 Frequency

Range	Accuracy	Resolution	Sensitivity
5.12Hz	± (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
℃	-20~150℃	± (3℃+ 1digit)	1℃
	150~1000℃	± (3% of rdg + 2digits)	

Overload protection: 250V DC/250Vrms AC

2.2.9 Diode and Audible continuity test

Range	Description	Test Condition
⊣◀	Display read approximately forward voltage of diode	Forward DC current approx. 0.4mA Reversed DC voltage approx. 1.5V
·ı))	Built-in buzzer sounds if resistance is less than 100Ω	Open circuit voltage approx. 0.5V

Overload protection: 250V DC or AC rms

3. MEASURING INSTRUCTION

3.1 DC & AC Voltage measurement

1) Connect the black test lead to "COM" socket and red test lead to the "VΩHz" socket.

2) Set the selector switch to desired "V⎓≂" position, it shows symbol for testing DC voltage, if you want to test AC voltage, push "SELECT" button switch.

3) Connect test leads across the source or load under measurement.

4) You can get reading from LCD. The polarity of the red lead connection will be indicated along with the DC voltage value.

3.2 DC Current Measurement

1) Set the selector switch to desired "200A⎓ "or "1000A⎓" position.

2) Press the "REL" the display show "0".

Note: As the jaw core may remain some magnetic force after using for a while. If the display can not reach "0" When press the "REL", please take following process to correct it:

A. To change the direction of the measured DC current.

B. Open the JAWS several times.

3) Open the clamp by pressing the jaw-opening handle and insert the cable (one cable only) to be measured into the jaw.

4) Close the clamp and get the reading from the LCD panel.

Note: Before this measurement, disconnect the test lead with the meter for safety. Non unit sign display of DCA.

3.3 AC Current measurement

1) Set selector switch to desired "400/1000A～" position.

2) Open the clamp by pressing the jaw-opening handle and insert the cable (one cable only) to be measured into the jaw.

3) Close the clamp and get the reading from the LCD panel.

Note:

a) Before this measurement, disconnect the test lead with the meter for safety.

b) In same occasion that the reading is hard to read, push the D.HOLD button and read the result later.

3.4 Resistance measurement

1) Connect the black test lead to "COM" socket and red test lead to the "VΩHz" socket.

2) Set the selector switch to desired "Ω" position, the present function is resistance measurement, if it is other function, push the SELECT to select resistance measurement.

3) Connect the probes across circuit to be tested.

4) Read the result from the LCD panel.

Caution: Ensure that the circuit to be tested is "dead".

Max. input over-load: 250V rms＜10sec

3.5 Capacitance measurement

1) Connect the black test lead to "COM" socket and red test lead to the "VΩHz" socket.

2) Set the selector switch to desired "Ω⊣◀·))⊣⊢" position, push "SELECT" to choose Capacitance measurement.

3) Connect the probes to the capacitance to be tested.

4) Read the result from the LCD panel.

Caution:

a) Capacitors should be discharged before being tested.

b) This device adopts charging mode to measure capacitance, so when testing large capacitance, it will take longer time before the final indication, and the larger capacitor, the longer the time (For 100uF range, it will take about 15 seconds).

c) When testing small capacitance, to assure the measurement accuracy, first press "REL", then go on measuring.

Max. input over-load: 250V rms＜10sec

3.6 Frequency measurement

1) Connect the black test lead to "COM" socket and red test lead to the "VΩHz" socket.

2) Set the selector switch to desired "Hz" position.

3) Connect the probes to the point of measurement and read the frequency from the display.

Max. input over-load: 250V rms＜10sec

3.7 Temperature measurement

1) Connect the black test lead of the sensor to "T-" socket and the red test lead to the "T+" socket.

2) Set the selector switch to "°C" position.

3) Put the sensor probe into the temperature field under measurement.

4) Read the result from the LCD panel.

Max. input over-load: 250V rms＜10sec

A. The temperature function shows the random number at ordinary times, must insert the thermocouple in temperature test hole while examining temperature.

B. This meter in closure WRNM-010 type contact thermocouple limit temperature is 250 ℃ (300 ℃ shortly).

C. Please don't change the thermocouple at will, otherwise we can't guarantee to measure accuracy.

D. Please don't importing the voltage in the temperature function.

3.8 Diode & Audible continuity Testing

1) Connect the black test lead to "COM" socket and red test lead to the "VΩHz" socket.

2) Set the rotary switch at the "Ω⊣◀·))⊣⊢" range position, push "SELECT" to choose Diode or Audible continuity measurement.

3) On diode range, connect the test leads across the diode under measurement, display shows the approx. forward voltage of this diode.

4) On Audible continuity range, connect the test leads to two point of circuit, if the resistance is lower than approx. 100Ω, the buzzer sounds.

NOTE: Make sure the power is cut off and all capacitors need to be discharged under this measurement.

Max. input over-load: 250V rms＜10sec

3.9 Connect to mobile phone APP

The meter has serial data output function. It can be connected with mobile phone by Bluetooth, so the measured data can be recorded, analyzed, and processed by mobile phone APP. Before use this function, you need install the mobile phone APP by scan the QR code.

⚠NOTE: The mobile phone APP can be installed in iphone 4S iOS or android 4.30 system and up.

1) Make sure the "CLAMP METER" mobile phone APP successfully installed before any measurement.

2) Open the Bluetooth of the mobile phone, Run the "CLAMP METER" mobile phone APP to enter the main interface.

3) Turn on the meter, the meter will connect to mobile phone automatically, when the "Start" key change to green, click the "Start" key to measure and view the synchronic data or graph in the mobile phone APP.

4) The MAX or MIN value and corresponding time will display on the mobile phone APP, and the average value in a period of time from start measurement will display too.

5) Press the "Reset" key to reset measurement, the old data will be cleared and resume data recording. Press the "Stop" key to stop connection.

6) Press the "Data" key to view the data and time, Press the "Graph" key to view the graph, Press the "Save" key to save the data or the graph. Press the "Home" key to return the main interface.

7) More information about the mobile phone APP, please refer to the Help topic including in the APP.

4. CARE AND MAINTENANCE

4.1 CARING FOR YOUR MULTIMETER

Your Digital Multi meter is an example of superior design and craftsmanship. The following suggestions will help you care for the multi meter so you can enjoy it for years.

1) Keep the multi meter dry. If it gets wet, wipe it dry immediately. Liquids can contain minerals that can corrode electronic circuits.

2) Use and store the multi meter only in normal temperature environments. Temperature extremes can shorten the life of electronic devices, damage batteries and distort or melt plastic parts.

3) Handle the multi meter gently and carefully. Dropping it can damage the circuit boards and cause and can accuse the multi meter to work improperly.

4) When take current measurement, keep the cable at the center of the clamp will get more accurate test result.

5) Keep the multi meter away from dust and dirt, which can cause premature wear of parts.

6) Wipe the multi meter with a damp cloth occasionally to keep it looking new. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the multi meter.

7) Use only fresh batteries of the required size and type. Always remove old or weak batteries. They can leak chemicals that destroy electronic circuits.

8) Please take out the battery when not using for a long time.

4.2 9Volt battery replacement

1) Ensure the instrument is not connected to any external circuit. Set the selector switch to "OFF" position and remove the test leads from the terminals.

2) Open the cover of the battery cabinet by a screwdriver.

3) Replace the old batteries with the same type batteries.

4) Close the battery cabinet cover and fasten the screw.

Above picture and content just for your reference. Please be subject to the actual products if anything different or updated. Please pardon for not informing in advance.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception,
which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different
from that to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

FCC ID: 2A7T4-HP-7200-APP

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from that to which the receiver is connected.
-- Consult the dealer or an experienced radio/TV technician for help.
The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.
FCC ID: 2A7T4-HP-570C-APP