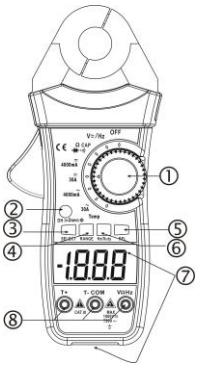
3 3/4 AUTO RANGE
DIGITAL DUAL DISPLAY AC/DC CLAMP MULTIMETER
OPERATION MANUAL

This LCD Auto Range & Auto Power off Digital AC/DC clamp multi meter is a portable, 3 3/4-digit multi meter. It is ideally suited for field, laboratory, shop and home applications.

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 HOL and the " H" symbol disappear. 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 "CAP⏭·))Ω" range. Push the key to choose resistance, diode or continuity test. Press "SELECT" in " V≅ rang , choose AC voltage or DC voltage test。
4) RANGE key：Push the key to select manual mode, push it again to change the range, press the key for more than 2 seconds to go back auto range mode. But in Hz/Duty and Capacitance measurement, it can not select manual range mode.
5) .REL key：Push the key, the present display value will be stored in memory, then the new display value is the difference between input value and stored data. In Hz/Duty measurement, it can not work.
6）Hz/DUTY key：In Hz range, push the key, you can measure the duty, push again, go back to Hz measurement. In voltage range, push it, you can measure Hz and duty, but the measurement range will be smaller, and the auto range mode will be changed to manual range mode
7) LCD Display：LCD Dual Display, facilitates reads the data.
8) V Ω Input Jack 、T-COM Input Jack、T+ Input Jack

2. SPECIFICATIONS

2.1 GENERAL SPECIFICATIONS

Display: 3 3/4 digit LCD with a max. reading of 3999.
Range control: Auto range control.
Polarity: Automatic negative polarity indication.
Zero adjustment: Automatic.
Over range indication: Only the "OL" display.
Low battery: The "🔋" is display when the battery voltage is below 7.2V.
Auto Power Off: 30 minutes after stopping the switch or no push button, the meter automatically enter to power off mode .Push button or run switch, auto power off disable.
Safety Standards: The meter is up to the standards of IEC1010 Double Insulation, Pollution Degree 2, Overvoltage Category Ⅲ.
Clamp opening size: 21mm.
Operating Environment: Temperature 32～104° F(0～40℃), humidity＜80%RH.
Storage Environment: Temperature -4～140° F(-20～60℃),humidity＜90%RH.
Power supply: 9V Zinc-carbon battery.
Dimension: 215(H)×79(W)×40(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	1.2% of rdg+5digits	0.1mV
4V	0.8% of rdg+5digits	1mV
40V		10mV
400V		100mV
1000V	1.5% of rdg+5 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
400mV	±(2.5% of rdg +15 digit)	0.1mV	50～100Hz
4V	1.2% of rdg+15 digits	1mV	50～400Hz
40V		10mV	
400V		100mV	
750V	2.5% of rdg+15 digits	1V	50～100Hz

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

2.2.3 DC Current

Range	Accuracy	Resolution
4000mA	3.5% of rdg+10 digits	1mA
30A	3.0% of rdg+10 digits	10m A

Overload protection: 1000Arms within 60 seconds

2.2.4 AC Current

Range	Accuracy	Resolution	Frequency
4000mA	3.5% of rdg+10 digits	1mA	50～60Hz
30A	3.0% of rdg+10 digits	10m A	

Average sensing, calibrated to rms of sine wave
Overload protection: 1000Arms within 60 seconds

2.2.5 Resistance

Range	Accuracy	Resolution
400Ω	1.8% of rdg+20 digits	0.1Ω
4kΩ	1.2% of rdg+10 digits	1Ω
40kΩ		10Ω
400kΩ		100Ω
4MΩ		1kΩ
40MΩ	2.0% of rdg+20 digits	10kΩ

Overload protection: 250V DC/250Vrms AC

2.2.6 Capacitance

Range	Accuracy	Resolution
51.2nF	3.5% of rdg+10 digits	10PF
512nF	2.5% of rdg+10 digits	100PF
5.12μF		1nF
51.2μF		10nF
100μF	3.5% of rdg+10 digits	100nF

Overload protection: 250V DC/250Vrms AC

2.2.7 Frequency

Range	Accuracy	Resolution	Sensitivity
51.2Hz	0.5% of rdg+5 digits	0.01Hz	Range of input voltage:1.5V~10 V, If input voltage over range, need adjust
512Hz		0.1Hz	
5120Hz		1Hz	
51.2kHz		10Hz	

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℃+2	＜400℃	1℃
	150～300℃	3.0% of rdg+2 digits	＜400℃	1℃
	300～1000℃	3.5% of rdg+10 digits	≥400℃	1℃

Overload protection: 250V DC/250Vrms AC

2.2.9 Diode and Audible continuity test

Range	Description	Test condition
“ ”	Display read approx. Forward voltage of diode.	Forward DC current approx. 0.4mA Reversed DC voltage approx. 1.5V
”	Built-in buzzer sounds if resistance is less than 70Ω	Open circuit voltage aprox. 0.5V

Overload protection: 250V DC/250Vrms AC

3. MEASURING INSTRUCTION

3.1 DC Voltage measurement

1) Connect the black test lead to "COM" socket and red test lead to the "VΩ" socket.
2) Set the selector switch to desired "mV" or "V " position and connect the probes across the source or load under measurement.
3) Read the result from the LCD panel.

3.2AC Voltage measurement

1) Connect the black test lead to "COM" socket and red test lead to the "VΩ" socket.
2) Set the selector switch to desired "V～" position and connect the probes across the source or load under measurement.
3) Read the result from the LCD panel.

3.3 DC Current Measurement

1) Set the selector switch to desired "4000mA⎓ “or "30A ⎓" position.
2) Press the "REL" the display show "0". Due to the high sensitivity of the clamp meter, must zero in the same direction as in measurement to avoid interference by external magnetic field.

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 Press the "REL" more several times.

3) Open the clamp by pressing the jaw-opening handle and insert the cable 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.

3.4AC Current measurement

1) Set selector switch to desired "4000mA”or “30A～" 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:

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

3.5 Resistance measurement

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

3.6 Capacitance measurement

1) Connect the black test lead to "COM" socket and red test lead to the " VΩ" socket.
2) Set the selector switch to desired "CAP" position.
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

3.7 Frequency measurement

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

3.8 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 ℃" 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 ;
Please don’t importing the voltage in the temperature function.

3.9 Diode test

1) Connect the black test lead to "COM" socket and red test lead to the "VΩ" socket.
2) Set the selector switch to "⏩" position.
3) Push "SELECT" to select diode test.
4) Connect the black and red test probe to the cathode (-) and anode (+) ends of diode to be tested respectively, read the forward voltage drop (junction) value from the display. If reverse connected the probes to diode, display shows over-load.

Caution: Ensure that the circuit to be tested is "dead".
Max. input over-load: 250V rms＜10sec

3.10 Audible continuity test

1) Connect the black test lead to "COM" socket and red test lead to the "VΩ" socket.
2) Set the selector switch to "))" position.
3) Push "SELECT" to select audible continuity test.
4) Connect the probes across circuit to be tested, the beeper sounds continuously if the resistance is less than approx. 50Ω.

Caution: Ensure that the circuit to be tested is "dead".
Max .input over-load: 250V rms＜10sec

3.11 Relative measurement

Press "REL", you can measure the relative value and "REL" appears on the display, the auto range mode be changed to manual range mode. Press again, return to the previous condition and "REL" disappears, but you can not go back to auto range mode. In” Hz” measurement, you can not measure the relative value.

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 extemal 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.