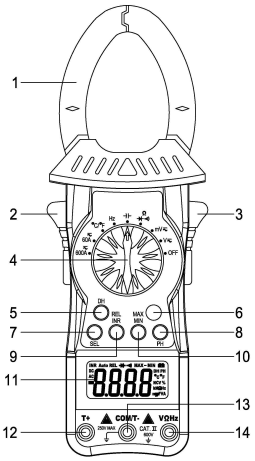
6205
6000 COUNTS DOUBLE OPEN JAW DC/AC TRUE-RMS CLAMP MULTIMETER OPERATION MANUAL

1. Overview
The auto range & auto power off clamp multimeter is characterized at double open jaw, portable and stable performance. Using 6000 counts digit LCD monitor with character 12.5mm high. With overall circuitry design centering on large-scale IC A/D converters in conjunction and over-load protection circuit, the meters give excellent performance and exquisite making as a handy utility instrument.
The meters can be used to measure DC & AC voltage, DC & AC current, resistance, capacitor, frequency, temperature, positive diode voltage fall and audible continuity.

2. Panel Layout


1. Clamp jaws: Opens 38mm to enclose conductor.
2, 3. Jaw-opening handle: Opens and closes the jaws.
4. Rotary Switch: Use this switch to select functions and ranges.
5. **DH (Data Hold)** key: Press the "**DH**" key to lock display value, and the "**DH**" sign will appear on the display, press it again to exit.
6. **CDS** sensor: The **CDS** sensor can reaction to the ambient brightness range, then automatically control the LCD backlight to lighten or go out.
7. **SEL (Select)** key: This key work on the "**Ω →|– •))**" range, press the key to choose resistance, diode or continuity test, on the voltage or current range, change to DC or AC, on the **°C/°F** range, change to ℃ or ℉ test; If press and hold **SEL** key to power on, "Auto Power Off " function will be disabled.
8. **PH (Peak Hold)** key: Press the "**PH**" key to lock **PEAK MAX, PEAK MIN** or **PEAK MAX-MIN** value, and the "**PH MAX**" or "**PH MIN**" or "**PH MAX-MIN**" sign will appear on the display, press it over 2 seconds to exit.
9. **REL/INR (Relative/Inrush)** key: Press the "**REL/INR**" key, the meter enters relative measuring mode, "**REL**" will display on the LCD and the present reading becomes the reference value and displayed on the display. Relative measurement R*EL△=measurement value-Reference value*. Press the key for more than 2 seconds to measure inrush current at **AC Current** range, and the "**INR**" sign will appear on the display, press it can measure inrush current repeatedly, press it over 2 seconds to exit.
10. **MAX/MIN** key: Press the "**MAX/MIN**" key to lock **MAX**, **MIN** or **MAX-MIN** value, and the "**MAX**", "**MIN**" or "**MAX-MIN**" sign will appear on the display, press it over 2 seconds to exit.
11. **LCD** display: 6000 counts digit, full function symbol display.
12. **T+:** Temperature "+" Input Jack
13. **COM/T-:** COM and Temperature "-" Input Jack
14. **VΩHz:** V/**Ω →|– •))**/⊣⊢/Hz Input Jack

3. Safety Information
3-1 The meter is designed according to IEC-1010 concerning electronic measuring instruments with an over-voltage category 600V (CAT Ⅱ) and pollution 2.
3-2 Follow all safety and operating instructions to ensure that the meter is used safely and is kept in good operating condition.
3-3 safety symbols:
⚠ Important safety information, refer to the operating manual.
⚠ Dangerous voltage may be presence.
⧈ Double insulation (protection Class II)

4. Special Cautions for Operation
4-1 The meters can be safe only according to standard procedures when used in conjunctions with the supplied test leads. To replace damaged test leads with only the same model or same electric specifications.
4-2 To avid risk of electric shock, do not use the meters before the cover is in place.
4-3 The range switch should be right position for the testing.
4-4 To avoid electric shock and damaging the instruments, the input signals are forbidden to exceed the specified limits.
4-5 When measuring TV set or switched power, attention should be paid to the possible pulses that may bring destruction to the circuit.
4-6 Range switch position is forbidden to be changed at random during measurement.
4-7 Take caution against shock in the course of measuring voltage higher than DC 60V & AC 30V.
4-8 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.
4-9 Keep the fingers after the protection ring when measuring through the instrument lead.
4-10 Keep the fingers after the protection ring when measuring through the clamp.
4-11 After operation is finished, set function switch at OFF to save battery power.
4-12 If the meter is without usage for long time, take out battery to avoid damage by battery leakage.

5. GENERAL SPECIFICATIONS
5-1 Max Voltage between input terminal and Earth Ground: CAT Ⅱ 600V
5-2 Over-range Indication: display "OL" for the significant digit.
5-3 Automatic display of negative polarity "-" .
5-4 Low Battery Indication: "🔋" displayed.
5-5 Max LCD display: 6000 counts digit.
5-6 Auto range & Manual range control
5-7Auto Power Off: When measurement exceeds 15 minutes without switching mode and pressing key, the meter will switch to standby mode. Press any key to exit standby mode. When restart the system, press and hold **SEL** key to disable auto power off.
5-8 Auto LCD backlight
5-9 Clamp opening size: 38mm.
5-10 Power supply: 1.5V×3 "AAA" R03P battery
5-11 Operating Temp.: 0℃ to 40℃ (relative humidity <85%)
5-12 Storage Temp.:-10℃ to 50℃ ((relative humidity <85%)
5-13 Guaranteed precision Temp.: 23±5℃ (relative humidity <70%)
5-14 Dimension: 193(H)×73(W)×26(D)mm.
5-15 Weight: Approx. 325g (including battery).

6. Testing Specifications
Accuracy is specified for a period of year after calibration and at 18℃ to 28℃ (64℉ to 82℉) with relative humidity to 70%.

6-1 DC Voltage

Range	Resolution	Accuracy
60mV	0.01mV	±(0.8% of rdg + 2 digits)
600mV	0.1mV	±(0.5% of rdg + 2 digits)
6V	1mV	
60V	10mV	
600V	100mV	±(0.8% of rdg + 2 digits)

-- Impedance: 10MΩ, More than 100MΩ on 60mV/600mV range
-- Overload protection: 600V DC or AC rms

6-2 AC Voltage (True RMS)

Range	Resolution	Accuracy
60mV	0.01mV	±(1.5% of rdg + 3 digits)
600mV	0.1mV	
6V	1mV	±(1.0% of rdg + 3 digits)
60V	10mV	
600V	100mV	±(1.5% of rdg + 3 digits)

-- Impedance: 10MΩ, More than 100MΩ on 60mV/600mV range
-- Overload protection: 600V DC or AC rms
-- Frequency Range: 40 to 400Hz

6-3 DC Current

Range	Resolution	Accuracy
60A	0.01A	±(2.5% of rdg + 10 digits)
600A	0.1A	±(3.0% of rdg + 10 digits)

-- Overload protection: 600A DC or AC rms

6-4 AC Current (True RMS)

Range	Resolution	Accuracy
60A	0.01A	±(2.5% of rdg + 10 digits)
600A	0.1A	±(3.0% of rdg + 10 digits)

-- Overload protection: 600A DC or AC rms
-- Frequency Range: 40 to 100Hz

6-5 Resistance

Range	Resolution	Accuracy
600Ω	0.1Ω	±(1.0% of rdg + 3 digits)
6kΩ	1Ω	±(1.0% of rdg + 2 digits)
60kΩ	10Ω	
600kΩ	100Ω	
6MΩ	1kΩ	
60MΩ	10kΩ	±(1.5% of rdg + 3 digits)

-- Overload protection: 250V DC or AC rms

6-6 Capacitance

Range	Accuracy	Resolution
9.999nF	±(3.0% of rdg + 10 digits)	1pF
99.99nF	±(2.5% of rdg + 5 digits)	10pF
999.9nF		100pF
9.999μF		1nF
99.99μF	±(5.0% of rdg + 10 digits)	10nF
999.9μF	±(10.0% of rdg + 20 digits)	100nF
9.999mF		1μF
99.99mF		10μF

-- Overload protection: 250V DC or AC rms

6-7 Frequency

Range	Accuracy	Resolution
9.999Hz	± (0.1% of rdg + 5 digits)	0.001Hz
99.99Hz		0.01Hz
999.9Hz		0.1Hz
9.999kHz		1Hz
99.99kHz		10Hz
999.9kHz		100Hz
9.999MHz		1kHz

-- Sensitivity: sine wave 0.6V rms (9.999MHz: 1.5V rms)

-- Overload protection: 250V DC or AC rms

6-8 Temperature

Range	Accuracy		Resolution
℃	-20~150℃	± (3℃+ 1digit)	1℃
	150~1000℃	± (3% of rdg + 2digits)	
℉	-4~302℉	± (5℉+ 2digits)	1℉
	302~1832℉	± (3% of rdg + 3digits)	

-- NiCr-NiSi K-type sensor

-- Overload protection: 600mA/250V PPTC Resettable Fuse

6-9 Diode and Audible continuity test

Range	Description	Test Condition
⊣◀	Display read approximately forward voltage of diode	Forward DC current approx. 1.5mA Reversed DC voltage approx. 3.2V
•))	Built-in buzzer sounds if resistance is less than 50Ω	Open circuit voltage approx. 1V

Overload protection: 250V DC or AC rms

7. OPERATING INSTRUCTIONS

7-1 Attention before operation

7-1-1 Check battery. When the battery voltage drop below proper operation range, the "⊟" symbol will appear on the LCD display and the battery need to changed.

7-1-2 Pay attention to the "⚠" besides the input jack which shows that the input voltage or current should be within the specified value.

7-1-3 The range switch should be positioned to desired range for measurement before operation.

7-2 Measuring DC & AC Voltage

7-2-1 Connect the black test lead to **COM/T-** jack and the red to **VΩHz** jack.

7-2-2 Set the rotary switch at the desired "**mV⎓**" or "**V⎓**" range position, it shows symbol for testing DC voltage, if you want to test AC voltage, push "**SEL**" button switch.

7-2-3 Connect test leads across the source or load under measurement.

7-2-4 You can get reading from LCD. The polarity of the red lead connection will be indicated along with the DC voltage value.

NOTE:

1."⚠" means you can't input the voltage more than 600V, it's possible to show higher voltage, but it may destroy the inner circuit or pose a shock.

2. Be cautious against shock when measuring high Voltage.

7-3 Measuring DC & AC Current

7-3-1 Set the rotary switch at the desired "**60A⎓**" or "**600A⎓**" range position, it shows symbol for testing DC current, if you want to test AC current, push "**SEL**" button switch.

7-3-2 Zero the reading by pressing "**REL/INR**" key for a reading of zero on the display.

7-3-3 Disconnect the test leads from the Meter.

7-3-4 Clamp the Jaws around the **one** conductor to be measured. Center the conductor within the Jaw using the Centering Marks as guides.

7-3-5 You can get reading from LCD. The arrow in the Jaw indicates the direction of positive current flow (positive to negative).

7-3-6 On **AC** current range, Press the "**REL/INR**" key for more than 2 seconds to measure inrush current, and the "**INR**" sign will appear on the display, press it can measure inrush current repeatedly, press it over 2 seconds to exit.

NOTE:

1. When the value scale to be measured is unknown beforehand, set the range selector at the highest position.

2. When only "OL" is displayed, it indicates over-range situation and the higher range has to be selected.

7-4 Measuring Resistance

7-4-1 Connect the black test lead to **COM/T-** jack and the red to **VΩHz** jack.

7-4-2 Set the rotary switch at the desired "**Ω⊣◀•))**" range position.

7-4-3 Connect test leads across the resistance under measurement.

7-4-4 You can get reading from LCD.

NOTE: Max. input overload: 250V rms＜10sec

1. For measuring resistance above 1MΩ, the mete may take a few seconds to get stable reading.

2. When the input is not connected, i.e. at open circuit, the figure 'OL' will be displayed for the over-range condition.

3. When checking in-circuit resistance, be sure the circuit under test has all power removed and that all capacitors have been discharged fully.

7-5 Measuring Capacitance

7-5-1 Connect the black test lead to **COM/T-** jack and the red to **VΩHz** jack.

7-5-2 Set the rotary switch at the desired "⊣⊢" range position.

7-5-3 Connect test leads across the capacitance under measurement.

7-5-4 You can get reading from LCD.

NOTE: Max. input overload: 250V rms＜10sec

1. Capacitors should be discharged before being tested.
2. When testing large capacitance, it will take longer time before the final indication (For 100uF~99.99mF range, it will take about 10 seconds).
3. When testing small capacitance (≤1uF), to assure the measurement accuracy, first press "**REL/INR**", then go on measuring.

7-6 Measuring Frequency

7-6-1 Connect the black test lead to **COM/T-** jack and the red to **VΩHz** jack.

7-6-2 Set the rotary switch at the desired "**Hz**" range position.

7-6-3 Connect the probe across the source or load under measurement.

7-6-4 You can get reading from LCD.

7-7 Measuring Temperature

7-7-1 Connect the black banana plug of the sensor to **COM/T-** jack and the red banana plug to the **T+** jack.

7-7-2 Set the rotary switch at the desired "**℃/℉**" range position, push "**SEL**" to choose ℃ or ℉ measurement.

7-7-3 Put the sensor probe into the temperature field under measurement.

7-7-4 You can get reading from LCD.

NOTE:

1. The accessory of the meter WRNM-010 type contact thermocouple limit temperature is 250 ℃ (300 ℃ shortly), please use special probe for test higher temperature.

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

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

7-8 Diode & Audible continuity Testing

7-8-1 Connect the black test lead to **COM/T-** jack and the red to **VΩHz** jack.

7-8-2 Set the rotary switch at the "**Ω⊣◀•))**" range position, push "**SEL**" to choose **Diode** or **Audible continuity** measurement.

7-8-3 On **diode** range, connect the test leads across the diode under measurement, display shows the approx. forward voltage of this diode.

7-8-4 On **Audible continuity** range, connect the test leads to two point of circuit, if the resistance is lower than approx. 50Ω, the buzzer sounds.

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

8. Battery replacement

8-1 When the battery voltage drop below proper operation range the "⊟" symbol will appear on the LCD display and the battery need to changed.

8-2 Before changing the battery, set the selector switch to "**OFF**" position and remove the test leads from the terminals. Open the cover of the battery cabinet by a screwdriver.

8-3 Replace the old battery with the same type battery (AAA R03P 1.5V×3).

8-4 Close the cover of the battery cabinet and fasten the screw.

9. Maintenance

9-1 You must replace the test leads if the lead is exposed, and should adopt the leads with the same specifications as origin.

9-2 Do not use the meter before the back cover is properly closed and screw secured. Upon any abnormality, stop operation immediately and send the meter for maintenance.

9-3 When take current measurement, keep the cable at the center of the clamp will get more accurate test result.

9-4 Repairs or servicing not covered in this manual should only by qualified personal.

9-5 Periodically wipe the case with a dry cloth and detergent. Do not use abrasives or solvents on this instruments.

9-6 Please take out the battery when not using for a long time.

10. Accessories

[1] Test Leads: electric rating 1000V 10A

[2] "K" type thermocouple sensor probe

[3] Operator's Manual

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.