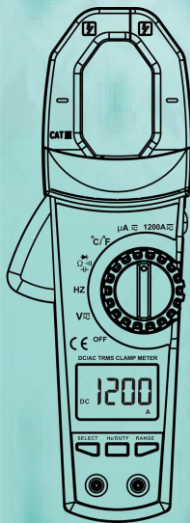


User Manual



LIMITED WARRANTY AND LIMITATION OF LIABILITY

Customers enjoy one-year warranty from the date of purchase.

This warranty does not cover fuses, disposable batteries, damage from misuse accident, neglect, alteration, contamination, or abnormal conditions of operation or handling, including failures caused by use outside of the product's specifications, or normal wear and tear of mechanical components.

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Introduction

This product is a battery-powered, true-rms, auto-ranging digital clamp meter with a 6000 counts LCD display and a backlight.

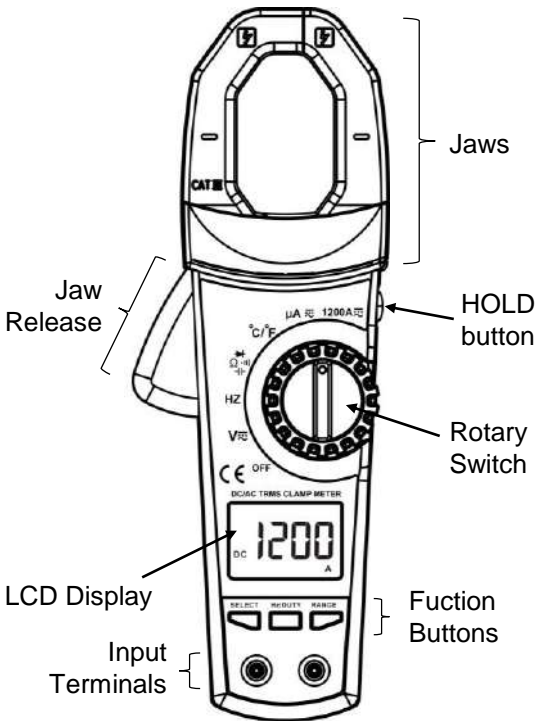
Safety Information

To avoid possible electrical shock, fire, or personal injury, please read all safety information before you use the product. Please use the product only as specified, or the protection supplied by the product can be compromised.

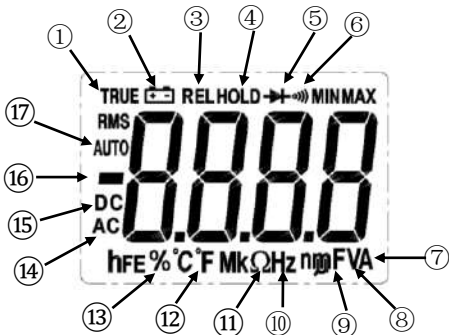
- Examine the case before you use the product. Look for cracks or missing plastic. Carefully look at the insulation around the terminals.
- The measurement must be made with correct input terminals and functions and within the allowable measuring range.

- Do not use the product around explosive gas, vapor, or in damp or wet environments.
- Keep fingers behind the finger guards on the probes.
- When the product has already been connected to the line being measured, do NOT touch the input terminal that is not in service.
- Disconnect the test leads from the circuit before changing the mode.
- When the voltage to be measured exceeds 36V DC or 25V AC, the operator shall be careful enough to avoid electric shock.
- Misuse of mode or range can lead to hazards, be cautious. “ OL ” will be shown on the display when the input is out of range.
- Low level of a battery will result in incorrect readings. Change the batteries when battery level is low. Do not make measurements when the battery door is not properly placed.

Instrument Overview



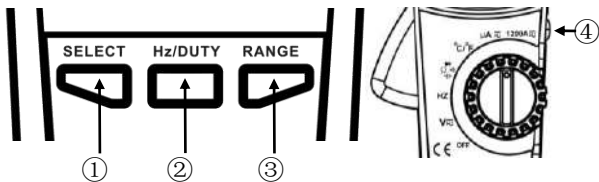
LCD Display



①	TRUE RMS	The product measures both sinusoidal and nonsinusoidal ac waveforms accurately.
②		Low battery. Replace batteries.
③	REL	Relative mode.
④	HOLD	Display freezes present reading.
⑤		Diode test.
⑥		Continuity test.

⑦	A	Current test. (Ampere)
⑧	V	Voltage test. (Volt)
⑨	F	Capacitance test. (Farad)
⑩	Hz	Frequency test. (Hertz)
⑪	Ω	Resistance test. (Ohm)
⑫	°C °F	Temperature test. (Fahrenheit or Celsius)
⑬	%	Duty cycle test.
⑭	AC	Alternating current.
⑮	DC	Direct current.
⑯	■	Negative readings.
⑰	AUTO	Auto range. The product selects the range with the best resolution.
n k M μ		Measurement units.

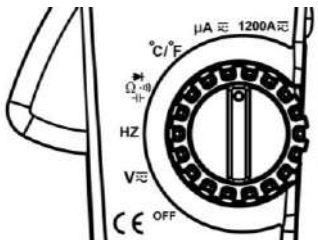
Function Buttons



①	<p>Selects alternate measurement modes on a rotary switch setting, including:</p> <ol style="list-style-type: none">1. DC V/AC V2. Resistance/Continuity/Diode/Capacitance3. Celsius/Fahrenheit4. DC μA/AC μA5. DC A/AC A
②	<p>When the rotary switch is at V\sim, push SELECT once to toggle to AC V testing mode, then push this button to enter Frequency/Duty Cycle (with high voltage) testing mode.</p> <p>When the rotary switch is at Hz, push this button to enter Frequency/Duty Cycle (with low voltage) testing mode.</p>

③	<p>Push this button once to enter the manual range mode. In manual range mode, each push increases the range; when the highest range is reached, the next push will lead to the lowest range. To exit the manual range mode, push the button for more than 2 seconds or turn the rotary switch.</p>
④	<p>Push once to hold the current reading on the display; push again to continue normal operation.</p> <p>Push for more than 2 seconds to turn on the backlight; long-push again to turn off or the backlight automatically turns off after 2 minutes.</p>








Rotary Switch



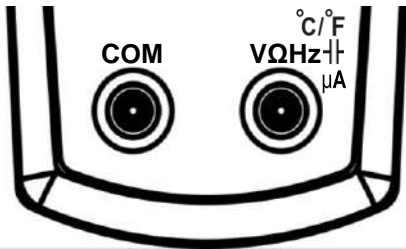
OFF

Turn off the product at this position.

- The product automatically powers off after 15 minutes of inactivity.
- The built-in beeper beeps 5 times 1 minute before auto power off.
- To restart the product from auto power off, press the SELECT button or turn the rotary switch back to the OFF position and then to a needed position.
- To disable the Auto Power Off function, hold down the SELECT button when turning on the product, you will hear five beeps if you have successfully disabled the function.

	<p>DC voltage $\leq 1000V$ AC voltage $\leq 750V$ When the product is at the AC V mode, push the Hz/Duty button to enter: Frequency with high voltage Duty Cycle from 1%~99%</p>
	<p>Frequency with low voltage Duty Cycle from 1%~99%</p>
	<p>Ohms $\leq 60M\Omega$ Continuity. Beeper turns on at $< 50\Omega$ Diode test. Displays  above 3V Farads $\leq 9.999mF$</p>
	<p>Celsius: -20~1000 Fahrenheit: -4~1832</p>
	<p>DC A from $\leq 6000\mu A$ AC A from $\leq 6000\mu A$</p>
	<p>DC A $\leq 1200A$ AC A $\leq 1200A$</p>

Input Terminals



COM	Common (return) terminal for all measurements.
VΩHz	Input terminal for the measurements of: 1. AC/DC voltage 2. Resistance 3. Capacitance 4. Frequency 5. Temperature 6. Continuity 7. Diode 8. Duty cycle 9. AC/DC current to 6000μA

Measurements Instruction

Measure AC/DC Voltage

1. Connect the black test lead to the COM Terminal and the red lead to the V Ω Hz Terminal.
2. Turn the rotary switch to **V $\overline{\sim}$** .
3. Press SELECT to toggle between AC/DC.
4. Touch the probes to the correct test points of the circuit to measure the voltage.
5. Read the measured voltage on the display.

***Do not measure voltage that exceeds the extremes as indicated in the Specifications.**

***Do not touch high voltage circuit during measurements.**

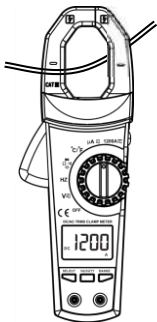
Measure AC/DC Current

1. For current $\leq 6000\mu\text{A}$:
 - ① connect the black test lead to the COM Terminal and the red lead to the V Ω Hz Terminal.

- ② Turn the rotary switch to μA $\overline{\sim}$.
- ③ Press SELECT to toggle between AC/DC
- ④ Break the circuit path to be measured, connect the test leads across the break and apply power.

2. For current $> 6000\mu\text{A}$:

- ① Turn the rotary switch to **1200A** $\overline{\sim}$.
- ② Press SELECT to toggle between AC/DC.
- ③ Push the jaw release and center the wire within the clamp jaws (as in the picture).



3. Read the measured current on the display.


***Do not measure current that exceeds the extremes as indicated in the Specifications.**

***Use the release jaw and the 1200A $\overline{\sim}$ Mode first when you are measuring an unknown current. Then switch to the V Ω Hz Terminal and the μA Mode if necessary.**

***Measure one wire at a time because currents moving in different directions will cancel each other out.**

***Do not input voltage at this setting.**


Measure Resistance

1. Connect the black test lead to the COM Terminal and the test lead to the V Ω Hz Terminal.
2. Turn the rotary switch to  , and the display will show “OL”.
3. Touch the probes to the desired test points of the circuit to measure the resistance.
4. Read the measured resistance on the display.

***Disconnect circuit power and discharge all capacitors before you test resistance.**

***Do not input voltage at this setting.**


Test for Continuity

1. Connect the black test lead to the COM Terminal and the red lead to the V Ω Hz Terminal.
2. Turn the rotary switch to  , press SELECT once to toggle to the Continuity Mode.
3. Touch the probes to the desired test points of the circuit.

4. The built-in beeper will beep when the resistance is lower than 50Ω , which indicates a short circuit.

***Do not input voltage at this setting.**


Test Diodes

1. Connect the black test lead to the COM Terminal and the red lead to the V Ω Hz Terminal.
2. Turn the rotary switch to  , press SELECT twice to toggle to the Diode Mode.
3. Connect the red probe to the anode side and the black probe to the cathode side of the diode being tested.
4. Read the forward bias voltage value on the display.
5. If the polarity of the test leads is reversed with diode polarity or the diode is broken, the display reading shows “OL”.

***Do not input voltage at this setting.**

***Disconnect circuit power and discharge all capacitors before you test diode.**

Measure Capacitance

1. Connect the black test lead to the COM Terminal and the red lead to the V Ω Hz Terminal.
2. Turn the rotary switch to  , press SELECT three times to toggle to the Capacitance Mode.
3. Connect the red probe to the anode side and the black probe to the cathode side of the capacitor being tested.
4. Read the measured capacitance value on the display once the reading is stabilized.

***Disconnect circuit power and discharge all capacitors before you test capacitance.**

Measure Frequency

1. Connect the black test lead to the COM Terminal and the red lead to the VΩHz Terminal.
2. Turn the rotary switch to **V_~**, push SELECT once to toggle to the AC V Mode, then push Hz/DUTY once to toggle to the Frequency Mode (applies to low frequency with high voltage); or turn the rotary switch to **HZ** (applies to high frequency with low voltage).
3. Touch the probes to the desired test points.
4. Read the measured frequency value on the display.

Measure Duty Cycle

1. Connect the black test lead to the COM Terminal and the red lead to the VΩHz Terminal.

2. Turn the rotary switch to **V_~**, push SELECT once to toggle to the AC V Mode, then push Hz/DUTY twice to toggle to the Duty Cycle Mode (applies to low frequency with high voltage); or turn the rotary switch to **HZ**, then push Hz/DUTY once to toggle to the Duty Cycle Mode (applies to high frequency with low voltage).
3. Touch the probes to the desired test points.
4. Read the measured duty cycle value on the display.

Measure Temperature

1. Connect the black thermocouple probe to the COM Terminal and the red probe to the VΩHz Terminal.
2. Turn the rotary switch to **°C/°F**, and the display will show the room temperature, to toggle between °C/°F, press SELECT button.

3. Touch the probes to the desired test points.
4. Read the measured temperature on the display.

***Do not input voltage at this setting.**

Maintenance


Beyond replacing batteries and fuses, do not attempt to repair or service the product unless you are qualified to do so and have the relevant calibration, performance test, and service instructions.

Clean the Product

Wipe the product with a damp cloth and mild detergent. Do not use abrasives or solvents. Dirt or moisture in the terminals can affect readings.

*Remove the input signals before you clean the product.

Replace the Batteries

When “” is shown on the display, batteries shall be replaced as below:

1. Remove the test leads and turn off the product before replacing the batteries.

2. Loosen the screw on the battery door and remove the battery door.
3. Replace the used batteries with new batteries of the same type.
4. Place the battery door back and fasten the screw.

Replace the Fuses

When a fuse is blown or do not work properly, it shall be replaced as below:

1. Remove the test leads and turn off the product before replacing the fuse.
2. Loosen the four screws on the back cover and the screw on the battery door, then remove the battery door and the back cover.
3. Replace the fuse with a new fuse of the same type.
4. Place the back cover and the battery door back and fasten the screws.

Specifications

<i>General Specifications</i>	
Display (LCD)	6000 counts
Ranging	Auto/Manual
Material	ABS
Update Rate	3 times/second
Ture RMS	√
Data Hold	√
Backlight	√
Low Battery Indication	√
Auto Power Off	√

<i>Mechanical Specifications</i>	
Dimension	240*90*45mm
Weight	288g(w/o batteries)
Battery Type	9V 6F22 Battery * 1
Warranty	One year

Environmental Specifications

Operating	Temperature	0~40°C
	Humidity	<75%
Storage	Temperature	-20~60°C
	Humidity	<80%

Electrical Specifications

<i>Function</i>	<i>Range</i>	<i>Resolution</i>	<i>Accuracy</i>
DC Voltage	600.0mV	0.1mV	$\pm(0.5\%+3)$
	6.000V	0.001V	
	60.00V	0.01V	
	600.0V	0.1V	
	1000V	1V	
AC Voltage	600.0mV	0.1mV	$\pm(1.0\%+3)$
	6.000V	0.001V	
	60.00V	0.01V	
	600.0V	0.1V	
	750V	1V	
DC Current (μ A)	600.0 μ A	0.1 μ A	$\pm(1.2\%+3)$
	6000 μ A	1 μ A	
DC Current (A)	60.00A	0.01A	$\pm(2.0\%+30)$
	600.0A	0.1A	
	1200A	1A	

<i>Function</i>	<i>Range</i>	<i>Resolution</i>	<i>Accuracy</i>
AC Current	600.0 μ A	0.1 μ A	$\pm(1.5\%+3)$
	6000 μ A	1 μ A	
AC Current (A)	60.00A	0.01A	$\pm(2.0\%+30)$
	600.0A	0.1A	
	1200A	1A	
Resistance	600.0 Ω	0.1 Ω	$\pm(0.5\%+3)$
	6.000k Ω	0.001k Ω	
	60.00k Ω	0.01k Ω	
	600.0k Ω	0.1k Ω	
	6.000M Ω	0.001M Ω	
	60.00M Ω	0.01M Ω	$\pm(1.5\%+3)$

<i>Function</i>	<i>Range</i>	<i>Resolution</i>	<i>Accuracy</i>
Capacitance	9.999nF	0.001nF	$\pm(5.0\%+20)$
	99.99nF	0.01nF	$\pm(2.0\%+5)$
	999.9nF	0.1nF	
	9.999 μ F	0.001 μ F	
	99.99 μ F	0.01 μ F	
	999.9 μ F	0.1 μ F	
	9.999mF	0.001mF	$\pm(5.0\%+5)$
Frequency	99.99Hz	0.01Hz	$\pm(0.1\%+2)$
	999.9Hz	0.1Hz	
	9.999kHz	0.001kHz	
	99.99kHz	0.01kHz	
	999.9kHz	0.1kHz	
	9.999MHz	0.001MHz	
Duty Cycle	1%~99%	0.1%	$\pm(0.1\%+2)$

<i>Function</i>	<i>Range</i>	<i>Resolution</i>	<i>Accuracy</i>
Temperature	(-20~1000)°C	1°C	±(2.5%+5)
	(-4~1832)°F	1°F	
Diode	√		
Continuity	√		

