



1000A AC CLAMP METER

ACM-2311

User's Manual



Safety

International Safety Symbols



This symbol, adjacent to another symbol or terminal, indicates the user must refer to the manual for further information.



This symbol, adjacent to a terminal, indicates that, under normal use, hazardous voltages may be present



Double insulation

SAFETY NOTES

- Do not exceed the maximum allowable input range of any function
- Do not apply voltage to meter when resistance function is selected.
- Set the function switch OFF when the meter is not in use.

WARNINGS

- Set function switch to the appropriate position before measuring.
- When measuring volts do not switch to current/resistance modes.
- Do not measure current on a circuit whose voltage exceeds 240V.
- When changing ranges using the selector switch always disconnect the test leads from the circuit under test.
- Do not exceed the maximum rated input limits.

CAUTIONS

Improper use of this meter can cause damage, shock, injury or death. Read and understand this user manual before operating the meter.

Always remove the test leads before replacing the battery.

Inspect the condition of the test leads and the meter itself for any damage before operating the meter.

Repair or replace any damage_parts_before use.

Use carefully when making measurements if the voltages are greater than 25VAC rms or 35VDC. These voltages are considered a shock hazard.

Remove the battery if the meter is to be stored for long periods.

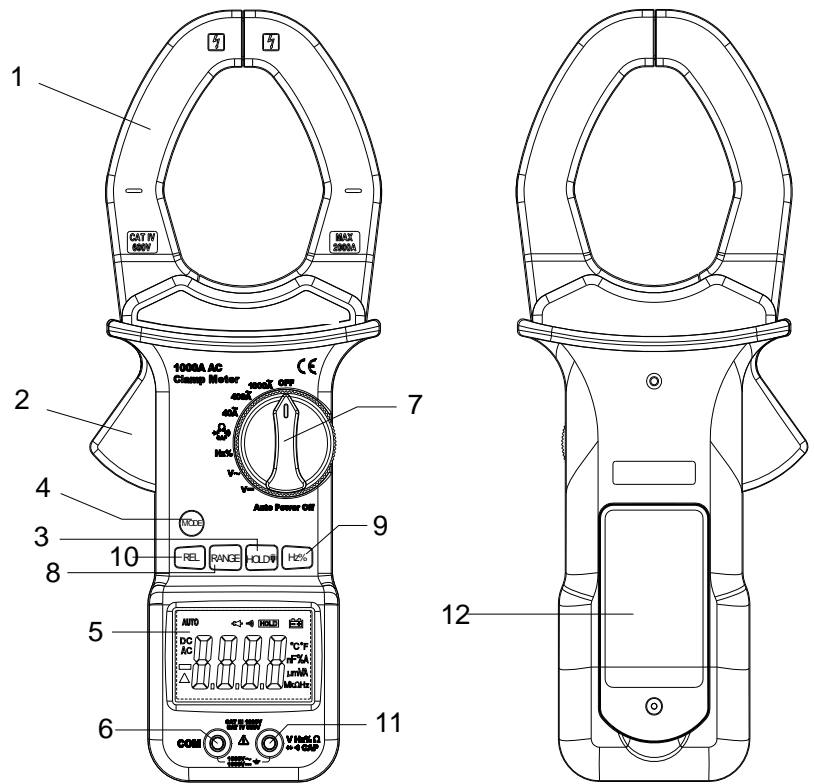
Always discharge capacitors and remove power from the device under test before performing Diode, Resistance or Continuity tests.

- Voltage checks on electrical outlets can be difficult and misleading because of the uncertainty of connection to the recessed electrical contacts. Other means should be used to ensure that the terminals are not "live".
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

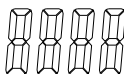



Input Limits	
Function	Maximum Input
A AC	1000A
V DC, V AC	1000V DC/AC
Resistance, Diode, Continuity, Capacitance, Frequency, Duty Cycle	1000V DC/AC

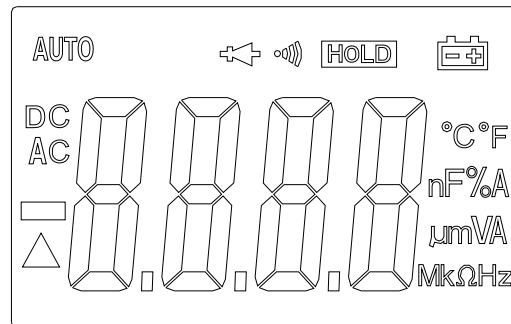
Meter Description

1. Current clamp
2. Clamp trigger
3. Data Hold and Backlight button
4. Mode select button
5. LCD display
6. COM input jack
7. Rotary Function switch
8. Range select button
9. Hz/%duty button
10. Relative button
11. V Ω C diode Hz% jack
12. Battery Cover



SYMBOLS ON THE DISPLAY

1. **AC DC** AC (alternating current) and DC (direct current)
2. **—** Minus sign
3.  4000 count (0 to 3999) measurement reading
4. **AUTO** AutoRange mode
5.  Diode test mode
6.  Relative
7.  Audible Continuity
8. **HOLD** Data Hold mode
9. μ ,m,V,A,K,M, Ω ,Hz ,%,n,F Units of measure list




Specifications



Function	Range & Resolution	Accuracy (% of reading)
AC Current	40.00 AAC	± (2.5% + 10 digits)
	400.0 AAC	± (2.5 % + 5 digits)
	1000 AAC	± (3.0 % + 4 digits)
DC Voltage	4.000 VDC	± (0.5% + 3 digits)
	40.00 VDC	
	400.0 VDC	
	1000 VDC	
AC Voltage	400.0 mVAC	± (1.0% + 8 digits)
	4.000 VAC	± (1.0% + 4 digits)
	40.00 VAC	
	400.0 VAC	
1000 VAC		
Resistance	400.0 Ω	± (1.0% + 4 digits)
	4.000K Ω	± (1.0% + 2 digits)
	40.00K Ω	
	400.0K Ω	
	4.000M Ω	± (1.5% + 3 digits)
40.00M Ω	± (2.0% + 3 digits)	
Capacitance	40.00nF	±(5.0% reading + 100 digits)
	400.0nF	±(3.0% reading + 5 digits)
	4.000 μF	±(3.5% reading + 5 digits)
	40.00 μF	
	100.0 μF	±(5.0% reading + 5 digits)
Frequency	5.000Hz	±(1.5% reading + 5 digits)
	50.00Hz	±(1.2% reading + 2 digits) Sensitivity: 10Vrms min.
	500.0Hz	
	5.000kHz	
	50.00kHz	
	500.0kHz	
	5MHz	±(1.5% reading + 10 digits)
10.00MHz		
Duty Cycle	0.5 to 99.0%	±(1.2% reading + 2 digits)
	Pulse width: 100μs - 100ms	

Note: No Autoranging & 400mV AC Voltage Range

Clamp size	Opening 55mm approx
Diode Test	Test current of 0.3mA typical; Open circuit voltage 1.5V DC typical.
Continuity Check	Threshold < 100Ω; Test current < 1mA
Low Battery Indication	"  " is displayed
Overrange Indication	"OL" is displayed
Measurements Rate	2 per second, nominal
Input Impedance	10MΩ (VDC and VAC)
Display	3-3/4 digits 4000 counts backlit LCD
AC Current	50/60Hz (AAC)

AC Voltage bandwidth	50~400Hz (VAC)
Operating Temperature	14 to 122°F (-10 to 50°C)
Storage Temperature	-14 to 140°F (-30 to 60°C)
Relative Humidity	90%(0°C to 30°C); 75%(30°C to 40°C); 45%(40°C to 50°C)
Altitude	Operating: 3000m; Storage 10,000m
Over voltage	Category III 1000V Category IV 600V
Battery	One "9V" Battery
Auto OFF	approx. 30 minutes
Dimensions/Weight	
Safety	For indoor use and in accordance with Overvoltage Category II, Pollution Degree 2. Category II includes local level, appliance, portable equipment, etc., with transient overvoltages less than Overvoltage Cat. III

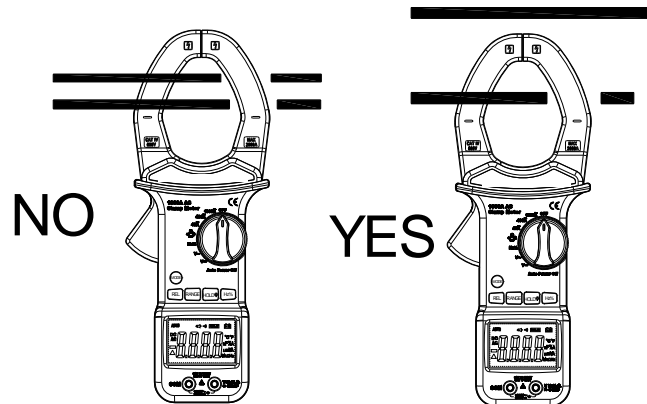
Operation

NOTICES: Read and understand all **warning** and **precaution** statements listed in the safety section of this operation manual prior to using this meter. Set the function select switch to the OFF position when the meter is not in use.

AC Current Measurements

WARNING: Ensure that the test leads are disconnected from the meter before making current clamp measurements.

- Set the Function switch to the **1000A** Or **400A** or **40A** range. In case of unknown Measurement, please select the higher range First and then move to the lower range if necessary.
- Press the trigger to open jaw. Fully enclose one conductor to be measured.
- The clamp meter LCD will display the reading.



DC/AC Voltage Measurements

- Insert the black test lead into the negative **COM** terminal and the red test lead into the positive **V** terminal.
- Set the function switch to the V position.
- Select AC or DC with the **MODE** button.
- Connect the test leads in parallel to the circuit under test.
- Read the voltage measurement on the LCD display.

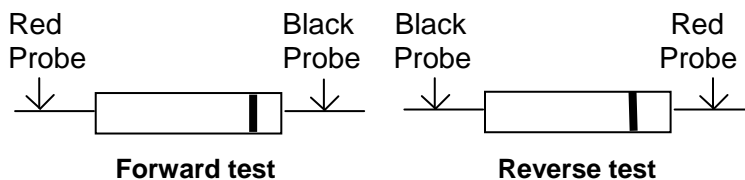
Resistance and Continuity Measurements

- Insert the black test lead into the negative **COM** terminal and the red test lead into the positive terminal.

2. Set the function switch to the Ω position.
3. Use the multifunction **MODE** button to select resistance.
4. Touch the test probe tips across the circuit or component under test. It is best to disconnect one side of the device under test so the rest of the circuit will not interfere with the resistance reading.
5. For Resistance tests, read the resistance on the LCD display.
6. For Continuity tests, if the resistance is $< 100\Omega$, a tone will sound.

Diode Measurements

1. Insert the black test lead banana plug into the negative **COM** jack and the red test lead banana plug into the positive diode jack.
2. Turn the rotary switch to the Ω position.
3. Press the **MODE** button until “ Ω ” appears in the display.
4. Touch the test probes to the diode under test. Forward voltage will indicate 0.4V to 0.7V. Reverse voltage will indicate “**OL**”. Shorted devices will indicate near 0mV and an open device will indicate “**OL**” in both polarities.



Capacitance Measurements

WARNING: To avoid electric shock, disconnect power to the unit under test and discharge all capacitors before taking any capacitance measurements. Remove the batteries and unplug the line cords.

1. Set the rotary function switch to the cap position.
2. Insert the black test lead banana plug into the negative (**COM**) jack. Insert the red test lead banana plug into the positive (**V**) jack.
3. Touch the test leads to the capacitor to be tested.
4. Read the capacitance value in the display

Frequency or % duty cycle measurements


1. Set the rotary function switch to the “**Hz/%**” position.
2. Insert the black lead banana plug into the negative **COM** jack and the red test lead banana plug into the positive **V** jack.
3. Select Hz or % duty with the **Hz/%** button.
4. Touch the test probe tips to the circuit under test.
5. Read the frequency on the display.

Data Hold and Backlight

To freeze the LCD meter reading, press the data hold button. The data hold button is located on the left side of the meter (top button). While data hold is active, the **HOLD** display icon appears on the LCD. Press the data hold button again to return to normal operation.

Note: The HOLD feature will activate when the Backlight is turned on. Press the HOLD key again to exit Hold.

The backlight function illuminates the display and is used when the ambient light is too low to permit viewing of the displayed readings.

Press the  (HOLD) button for one second to turn the backlight on and press the button a second time to turn the backlight off.

REL (relative value measurement)

REL key is the relative measurement key that acts with trigger . Except Hz/Duty , Diode and continuity , other functions can do the relative value measurement.

Manual Ranging

The meter turns on in the autoranging mode. Press the **Range** button to go to manual ranging. Each press of the range button will step to the next range as indicated by the units and decimal point location. Press and hold the **Range** button for two seconds to return to autoranging. Manual ranging does not function in the AC Current , Diode and Continuity check functions

Battery Replacement

1. Remove the one rear Phillips head screw
2. Open the battery compartment
3. Replace the Requires one "9V" battery (NEDA1604, 6F22 006P)
4. Re-assemble the meter