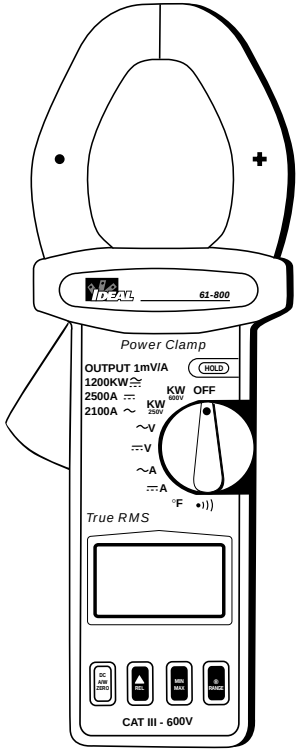
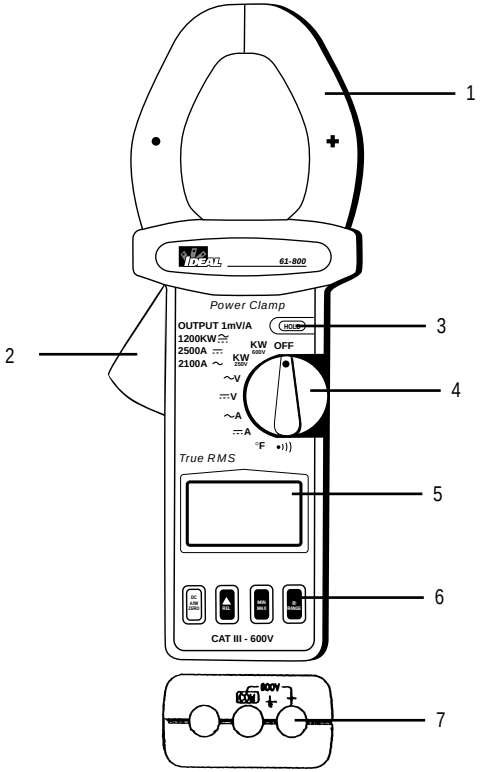
#61-800

800 Series
Power Clamp Meter





1. **Transformer Jaw**
2. **Transformer Trigger**
3. **Data Hold Button**
4. **Rotary Function Switch**
5. **LCD Display**
6. **Function Buttons**
7. **Input Terminals**

WARNING!

1. DO NOT UNDER ANY CIRCUMSTANCES EXCEED THESE RATINGS:
   - Voltage is not to exceed 800 Volts.
   - Wattage, Resistance and Continuity functions are not to be performed on circuits capable of delivering greater than 600 Volts.
   - Current measurements are not to be performed on circuits capable of delivering greater than 500 Volts
2. To avoid electrical shock hazards and/or damage to the meter:
   - Do not exceed the voltage ratings for the meter. Use caution when measuring voltage.
   - Do not use during electrical storms. AC power sources with inductive loads or electrical storms may result in high voltage. High energy transients can damage meter and present a dangerous shock hazard.
   - Turn off power to the circuit or device being measured before taking resistance and capacitance measurements. Fully discharge all capacitors before measuring.
3. Ensure meter is in proper working order before using. Visually inspect meter for damage. Performing a continuity check can verify proper operation. If the meter reading goes from overload to zero, this typically means the meter is in proper working order.
4. Visually inspect leads for damage before using. Replace if insulation is damaged or leads appear suspect.
5. Never ground yourself when taking electrical measurements. Do not touch exposed metal pipes, outlets, fixtures etc. Keep your body isolated from ground by using dry clothing, rubber shoes, mats, or any other approved insulating material. Keep your fingers behind the finger guards on the probes. Work with others.
6. Before beginning all unknown measurements, set meter to highest possible range.
7. Before breaking a circuit for testing, turn off the power to the circuit. When disconnecting from a circuit, disconnect the hot lead first, then the common lead.
8. Disconnect the meter from the circuit before turning off any indicator, including motors, transformers, and solenoids.

Data Hold Button

- The data hold button is used to capture and hold a reading on the LCD display.
- Press the button again to release the reading.

LCD Display

- 3-3/4 digit display with maximum indication of 3999.
- Function symbols, units, analog bargraph, low battery symbol, min/max symbols, relative symbol, and zero symbol are included.

Function Buttons

DC A/W ZERO Button

- The DC A/W Zero button is used to zero out the DCA residual value.
- Press this button until the LCD displays a zero value and the zero symbol.
- This button does not force the meter into manual range mode.
- Press and hold the DC A/W Zero button for 2 seconds to disable this function.

Δ REL Button

- The Δ REL button captures the current reading and sets it to zero to be used as a zero reference value for all subsequent measurements.
- Press this button until the LCD displays a zero value and the Δ symbol.
- This function can also be used to offset the value caused by the residual magnetism remaining in the core for DC current or wattage measurements.
- This button will force the meter into manual range mode.
- The relative function will be disabled if the Min/Max function is enabled.
- Press and hold the Δ REL button for 2 seconds to disable this function.

MIN/MAX Button

- The Min/Max button is used to toggle between the minimum and maximum values captured by the clamp meter.
- Press once to display the minimum value.
- Press again to display the maximum value.
- Press a third time to return to normal measurement mode.

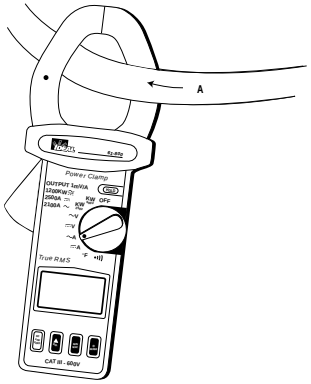
Range Button

- Pressing the range button enables manual ranging.
- While in manual range mode, pressing the range button toggles between the ranges in the selected function.
- Press and hold the range button for 2 seconds returns the meter to auto-ranging mode.

AC Current Measurements

AC Current Range	Resolution	Accuracy (50/60Hz)	Accuracy (40-1Khz)
400A	0.1A	±(1.5% +5)	±(2.0% +5)
1000A	1A	±(2.0% +5)	±(2.5% +5)
1000-2100A	1A	±(2.5% +5)	±(3.0% +5)

Overload Protection: 3000A
TRMS Measurements on AC Range
Accuracies specified at Crest Factor <3



To Measure AC Current

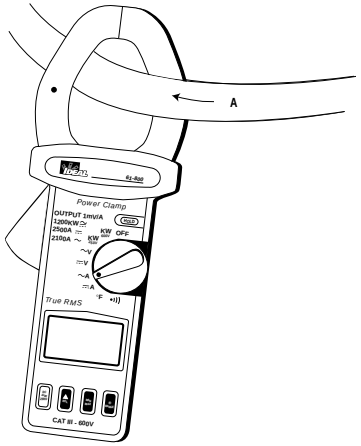
> **⚠ Warning**
> Make sure the test leads are disonnected prior to current measurements.

1. Set rotary switch to ~A.
2. Using the trigger to open the jaws, fully enclose the conductor within the clamp.
3. Release the trigger and be sure that the jaws have closed completely.
4. If the meter is in auto-ranging mode, the range will be automatically selected.
5. If the meter is in manual ranging mode, press the range button to select the desired range.
6. Measure AC current.

DC Current Measurements

DC Current Range	Resolution	Accuracy
400A	0.1A	±(1.5% +3)
2000A	1A	
2000-2500A	1A +	±(2.0% +3)

Overload Protection: 3000A



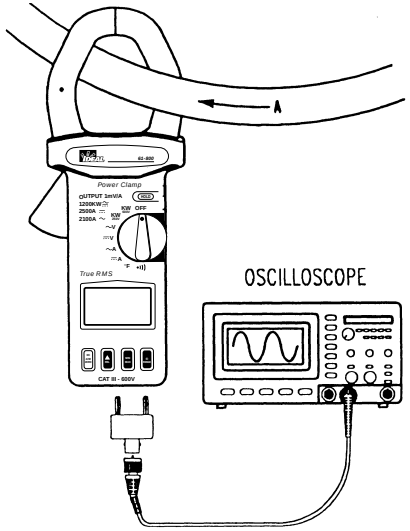
To Measure DC Current

> **⚠ Warning**
> Make sure the test leads are disconnected prior to current measurements.

1. Set rotary switch to ⎓ A.
2. Push and hold the DCA Zero button until the reading shows zero.
3. Using the trigger to open the jaws, fully enclose the conductor within the clamp.

4. Release the trigger and be sure that the jaws have closed completely.
5. If the meter is in auto-ranging mode, the range will be automatically selected.
6. If the meter is in manual ranging mode, press the range button to select the desired range.
7. Measure DC current.

Connecting to an Oscilloscope, Chart Recorder or Data Logger



Current Range (AC, DC)	Output	Accuracy
0-400A	1mV/A	±(2.5% +0.5A)
400-2100A	1mV/A	±(2.5% +5A)

Overload Protection: 600VAC

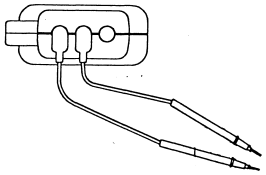
To Connect to a Monitoring Device

1. The analog output of the meter is proportional to the current measurement (1mV/A).
2. Connect the monitoring device to the input terminals of the power clamp meter. The red terminal is positive and the black terminal is negative .
3. Connect these two terminals to an oscilloscope, chart recorder or data logger to observe the wave form, or record the data for future analysis.

AC Voltage Measurements

AC Voltage Range	Resolution	Accuracy (50/60Hz)	Accuracy (40-1kHz)	Input Impedance
4V	1mV	±(1.5% +5)	±(2.0% +5)	5M
40V	10mV			
400V	100mV			
600V	1V			

Overload Protection: 800V
TRMS Measurements on AC Range
Accuracies specified at Crest Factor <3



To Measure AC Voltage

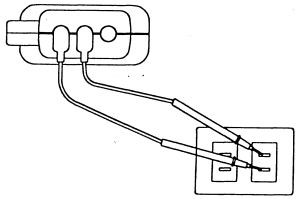
1. Set the rotary switch to ~V.
2. Insert the black test lead into the COM terminal and the red test lead into the + terminal.
3. Connect the test probes in parallel with the load or circuit.
4. If the meter is in auto-ranging mode, the range will be automatically selected.

5. If the meter is in manual ranging mode, press the range button to select the desired range.
6. Measure AC voltage.

DC Voltage Measurements

DC Voltage Range	Resolution	Accuracy	Input Impedance
400mV	0.1mV	±(1.5% +3)	10M
4V	1mV		5M
40V	10mV		
400V	100mV		
600V	1V		

Overload Protection:800V



To Measure DC Voltage

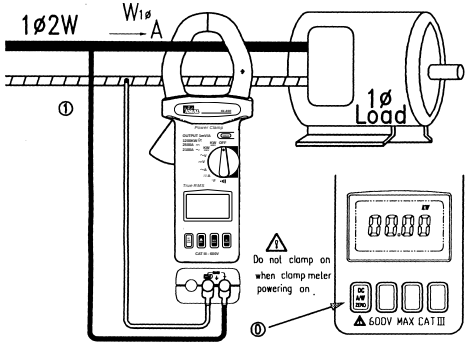
1. Set the rotary switch to ⎓V.
2. Insert the black test lead into the COM terminal and the red test lead into the + terminal.
3. Connect the test probes in parallel with the load or circuit.
4. If the meter is in auto-ranging mode, the range will be automatically selected.
5. If the meter is in manual ranging mode, press the range button to select the desired range.
6. Measure DC voltage.

AC+DC Watt Measurement

AC+DC Watt Range (250V max)	Resolution	Accuracy
40kW	0.01kW	±(2.5% +5)
400kW	0.1kW	

AC+DC Watt Range (600V max)	Resolution	Accuracy
400kW	0.1kW	±(2.5% +5)
1200kW	1kW	

Overload Protection: 600VAC



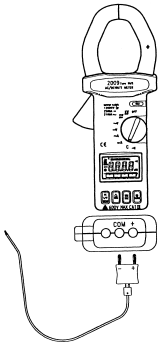
To Measure AC+DC Watts

1. Set the rotary switch to KW/600V or KW/250V.
2. Push and hold the DCA Zero button until the reading shows zero.
3. Insert the black test lead into the COM terminal and the red test lead into the + terminal
4. Connect the test leads to the circuit with the black lead to neutral, and the red lead to the active line.
5. Clamp around the active line.
6. If the meter is in auto-ranging mode, the range will be automatically selected.
7. If the meter is in manual ranging mode, press the range button to select the desired range.
8. Measure AC+DC Watts

Temperature Measurement

Temperature Range	Resolution	Accuracy
-50 to –400°F	0.1°F	±(1% +3)
-400 to 1000°F	1°F	

Overload Protection: 600VAC



To Measure Temperature

1. Turn the rotary switch to °F.
2. Connect the adapter with the – side into the COM terminal, and the + side into the + terminal. (61-XXX; not supplied)
3. Insert the K type thermocouple into the adapter. (61-XXX; not supplied)
4. If the meter is in auto-ranging mode, the range will be automatically selected.
5. If the meter is in manual ranging mode, press the range button to select the desired range.
6. Measure temperature

Resistance and Continuity Measurement

Resistance Range	Resolution	Accuracy	Audible Continuity
40-400Ω	0.1Ω	±(1% + 2)	<40

Open voltage 0.4V

To Measure Resistance and Continuity

1. Set the rotary switch to))).
2. Insert the black lead into the COM port and the red lead into the port.
3. Connect the test leads to the circuit to be measured
4. Measure resistance.
5. If the resistance is lower than 40Ω, the meter beeps.

General Specifications

Indoor Use

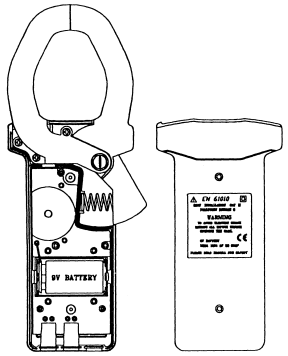
Conductor Size:	Cable 55mm (approx.)
	Bus Bar 65mm (D) x 24mm (W)
Battery Type:	9V
Display:	3-3/4 LCD with 40 seg. bargraph
Range Selection:	Auto and manual
Overload Indication:	Left most digit blinks
Power Consumption:	12mA (approx.)
Low battery Indication:	[+ −]
Sampling Time:	2 times/sec. (display)
	20 times/sec. (bargraph)
Operating Temperature:	4°C to 50°C
Operating Humitdity:	Less than 85% relative
Altitude:	Up to 2000M
Storage Temperature:	-20°C to 60°C
Storage Humidity:	Less than 75% relative
Dimension:	271mm (L) x 112mm (W) x 46mm (H)
	10.7" (L) x 4.4" (W) x 1.8" (H)
Weight:	647 g/22.8 oz. (batteries included)
Accessories:	Carrying bag x 1
	Users manual x 1
	9v battery x 1, installed
Options:	Thermal couple adapter
	K-type thermal couple

Maintenance

> **⚠ Warning**
> To avoid electrial shock, remove test leads before opening the cover. Repairs or servicing not covered in this manual should only be performed by qualified personnel.

Battery Replacement

> **⚠ Warning**
> Do not touch or adjust any components inside the clamp when the back case is removed.



1. Turn the power off and remove the test leads from the clamp meter.
2. Remove the screws from the back case.
3. Lift and remove the back case.
4. Remove the old battery and insert a new 9V battery.
5. Replace the back case, and secure the case screws.

Lifetime Limited Warranty

This meter is warranted to the original purchaser against defects in material or workmanship for the lifetime of the meter. During this warranty period, IDEAL INDUSTRIES, INC. will, at its option, replace or repair the defective unit, subject to verification of the defect or malfunction.

This warranty does not apply to defects resulting from abuse, neglect, accident, unauthorized repair, alteration, or unreasonable use of the instrument.

Any implied warranties arising out of the sale of an IDEAL product, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited to the above. The manufacturer shall not be liable for loss of use of the instrument or other incidental or consequential damages, expenses, or economic loss, or for any claim or claims for such damage, expenses or economic loss.

State laws vary, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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