

---

# AC/DC Clamp Meter

## User Manual



**Part Number: 72-14400**

### 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.
- 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 before use.

Use great care 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.

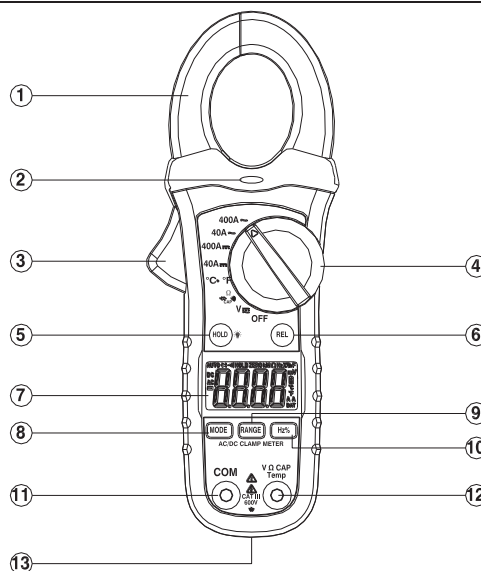
Always discharge capacitors and remove power from the device under test before performing Diode, Resistance or Continuity tests.

- 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.

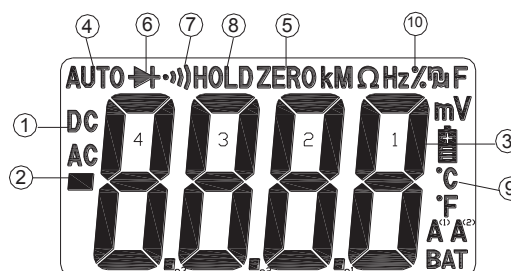
Input Limits	
Function	Maximum Input
A	400A DC/AC
V DC, V AC	600V DC/AC
Frequency, Resistance, Diode, Continuity , Capacitance Test	250V DC/AC
Temperature (°C/°F)	250V DC/ AC

### Meter Description

1. Current clamp
2. Non-contact AC voltage indicator light
3. Clamp trigger
4. Rotary Function swith
5. Data Hold/ Back Light button
6. Relative button
7. LCD display
8. MODE select button
9. Range button
10. Hz% Hlod button
11. COM input jack
12. V Ω CAP TEMP Hz jack
13. Battery Cover




1. **AC DC** AC (alternating current) and DC (direct current)
2. **—** Minus sign
3. **8.8.8.8** 4000 count (0 to 3999) measurement reading
4. **AUTO** AutoRange mode
5. **REL** Relative mode
6. **→|** Diode test mode
7. **•••••** Audible Continuity
8. **HOLD** Data Hold mode
9. **°C, °F, μ, m, V, A, K, M, Ω**, Units of measure list
10. **Hz %** Frequency/duty cycle test mode



### Specifications

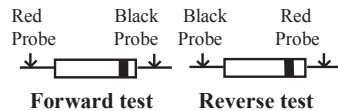
Function	Range & Resolution	Accuracy (% of reading)
AC Current (50/60Hz)	40.00 AAC	± (2.5 % + 8 digits)
	400 .0AAC	± (2.8 % + 5 digits)
DC Current	40.00 ADC	± (2.5 % + 5 digits)
	400 .0ADC	± (2.8 % + 5 digits)
DC Voltage	400.0 mVDC	± (0.8% + 2 digits)
	4.000 VDC	± (1.5% + 2digits)
	40.00 VDC	
	400.0 VDC	
600.0 VDC	± (2 % + 2 digits)	

AC Voltage (50-400Hz)	400.0mVAC	± (1.5% + 30 digits)
	4.000 VAC	± (1.5% + 5 digits)
	40.00 VAC	
	400.0 VAC	
	600.0 VAC	± (2.0% + 5 digits)
Resistance	400.0 Ω	± (1.0% + 4 digits)
	4.000K Ω	± (1.5% + 2 digits)
	40.00K Ω	
	400.0K Ω	
	4.000M Ω	± (2.5% + 3 digits)
40.00M Ω	± (3.5% + 5 digits)	
Capacitance	40.00nF	±(4.0% reading + 20 digits)
	400.0nF	±(3% reading + 5 digits)
	4.000 μ F	
	40.00 μ F	
	100.0 μ F	±(4.0% reading + 10 digits)
Frequency	10-10kHz Sensitivity: 100V(<50Hz); 50V(50 to 400Hz); 15V(401Hz to 10kHz)	±(1.5% reading + 2 digits)
Temp (type-K) (probe accuracy not included)	-20.0 to 760.0°C	± (3%rdg+5°C)
	-4.0 to 1400.0°F	± (3%rdg+9°F)

<b>Clamp size</b>	Opening 1.2" (30mm) approx
<b>Diode Test</b>	Test current of 0.3mA typical; Open circuit voltage 1.5V DC typical.
<b>Continuity Check</b>	Threshold <150Ω; Test current < 0.5mA
<b>Low Battery Indication</b>	"  " is displayed
<b>Overrange Indication</b>	"OL" is displayed
<b>Measurements Rate</b>	2 per second, nominal
<b>Input Impedance</b>	10MΩ (VDC and VAC)
<b>Display</b>	4000 counts LCD
<b>AC Current</b>	50-60Hz (AAC)
<b>AC Voltage bandwidth</b>	50-400Hz (VAC)
<b>Operating Temperature</b>	41 to 104°F (5 to 40°C)
<b>Storage Temperature</b>	-4 to 140°F (-20 to 60°C)
<b>Operating Humidity</b>	Max 80% up to 87°F (31°C) decreasing linearly to 50% at 104°F(40°C)
<b>Storage Humidity</b>	<80%
<b>Operating Altitude</b>	7000ft. (2000meters) maximum.
<b>Over voltage</b>	Category III 600V
<b>Battery</b>	One 9V Battery
<b>Auto OFF</b>	approx. 30 minutes
<b>Dimensions/Weight</b>	197x70x40mm/183g



3. Press the **MODE** button until “▶” 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.



For Continuity tests, if the resistance is <math>< 150\Omega</math>, a tone will sound.

### 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  $\Omega$  ▶ (•)) **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 “VDC/AC,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.

### Temperature Measurements

**WARNING:** To avoid electric shock, disconnect both test probes from any source of voltage before making a temperature measurement.

1. Set the function switch to °C °F.
2. Insert the Temperature Probe into the negative (COM) and the V jacks, making sure to observe the correct polarity.
3. Touch the Temperature Probe head to the part whose temperature you wish to measure. Keep the probe touching the part under test until the reading stabilizes (about 30 seconds).
4. Read the temperature in the display. The digital reading will indicate the proper decimal point and value.

**WARNING:** To avoid electric shock, be sure the thermocouple has been removed before changing to another measurement function

## Non-Contact AC Voltage Measurements

**WARNING:** Risk of Electrocution. Before use, always test the Voltage Detector on a known live circuit to verify proper operation

1. Touch the probe tip to the hot conductor or insert into the hot side of the electrical outlet.
2. If AC voltage is present, the detector light will illuminate.

**NOTE:** The conductors in electrical cord sets are often twisted. For best results, rub the probe tip along a length of the cord to assure placing the tip in close proximity to the live conductor.

**NOTE:** The detector is designed with high sensitivity. Static electricity or other sources of energy may randomly trip the sensor. This is normal operation

### MODE BUTTON

To select DC/ACV, OHM/ Diode/Continuity/CAP,

### Data Hold Button

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.

### REL BUTTON

For DCA and Capacitance Zero & Offset adjustment.

### RANGE BUTTON

When the meter is first turned on, it automatically goes into AutoRanging. This automatically selects the best range for the measurements being made and is generally the best mode for most measurements. For measurement situations requiring that a range be manually selected, perform the following:

1. Press the RANGE button. The "Auto Range" display indicator will turn off, The "Manual Range" display indicator will turn on
2. Press the RANGE button to step through the available ranges until you select the range you want.
  3. Press and hold the RANGE button for 2 seconds to exit the ManualRanging mode and return to AutoRanging.

### Battery Replacement

1. Remove the one rear Phillips head screw
2. Open the battery compartment
3. Replace the Requires One 9V battery
4. Re-assemble the meter

**Important Notice :** This data sheet and its contents (the "Information") belong to the members of the Premier Farnell group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Tenma is the registered trademark of the Group. © Premier Farnell Limited 2016.