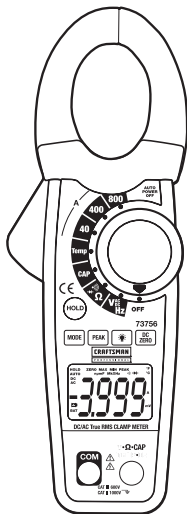


## Owner's Manual



### AC/DC True RMS Clamp Meter

Model No.  
73756



**CAUTION:** Read, understand and follow Safety Rules and Operating Instructions in this manual before using this product.

- Safety
- Operation
- Maintenance
- Español

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## **ONE YEAR FULL WARRANTY**

**ONE YEAR FULL WARRANTY ON CRAFTSMAN PROFESSIONAL AC/DC TRUE RMS Clamp Meter**

If this CRAFTSMAN Professional AC/DC True RMS Clamp Meter fails to give complete satisfaction within one year from the date of purchase, RETURN IT TO THE NEAREST SEARS STORE OR OTHER CRAFTSMAN OUTLET IN THE UNITED STATES, and Sears will replace it, free of charge.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Sears, Roebuck and Co., Dept. 817WA, Hoffman Estates, IL 60179

**For Customer Assistance Call 9am - 5pm (ET)**

**Monday through Friday 1-888-326-1006**

**WARNING: USE EXTREME CAUTION IN THE USE OF THIS DEVICE.** Improper use of this device can result in injury or death. Follow all safeguards suggested in this manual in addition to the normal safety precautions used in working with electrical circuits. DO NOT service this device if you are not qualified to do so.

## SAFETY INSTRUCTIONS

This meter has been designed for safe use, but must be operated with caution. The rules listed below must be carefully followed for safe operation.

1. **NEVER** apply voltage or current to the meter that exceeds the specified maximum:

Input Limits	
Function	Maximum Input
A DC or A AC	800A DC/AC
V DC or V AC	600V DC/AC
Resistance, Capacitance, Frequency, Diode Test	250V DC/AC
Temperature	60V DC/24V AC

2. **USE EXTREME CAUTION** when working with high voltages
3. **DO NOT** measure voltage if the voltage on the "COM" input jack exceeds 600V above earth ground
4. **DO NOT** measure current of circuits whose voltage is greater than 500V above earth ground
5. **NEVER** connect the meter leads across a voltage source while the function switch is in the resistance or diode mode. Doing so can damage the meter
6. **ALWAYS** turn off the power and disconnect the test leads before opening the cover to replace the fuse or battery
7. **NEVER** operate the meter unless the back cover is in place and fastened securely

## SAFETY SYMBOLS



This symbol adjacent to another symbol, terminal or operating device indicates that the operator must refer to an explanation in the Operating Instructions to avoid personal injury or damage to the meter.

**WARNING**

This **WARNING** symbol indicates a potentially hazardous situation, which if not avoided, could result in death or serious injury.

**CAUTION**

This **CAUTION** symbol indicates a potentially hazardous situation, which if not avoided, may result damage to the product.



This symbol advises the user that the terminal(s) so marked must not be connected to a circuit point at which the voltage with respect to earth ground exceeds (in this case) 600 VAC or VDC.



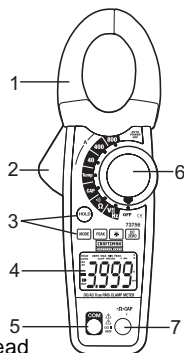
This symbol adjacent to one or more terminals identifies them as being associated with ranges that may, in normal use, be subjected to particularly hazardous voltages. For maximum safety, the meter and its test leads should not be handled when these terminals are energized.



This symbol indicates that a device is protected throughout by double insulation or reinforced insulation.

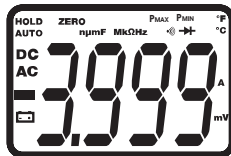
## CONTROLS AND JACKS

1. Current clamp
2. Clamp opening trigger
3. Control buttons:
  - Data Hold
  - Mode
  - Peak
  - Backlight
  - DCA Zero
4. Backlit LCD Display
5. COM negative input jack for black test lead
6. Rotary function switch
7. V•Ω•CAP•TEMP•HZ• positive input jack for red lead



## SYMBOLS AND ANNUNCIATORS

HOLD	Data Hold
Minus Sign	Negative reading display
0 to 3999	Measurement display digits
DC ZERO	DCA Zero
P <sub>MAX</sub> P <sub>MIN</sub>	Peak capture
AUTO	Auto Range mode
DC/AC	Direct Current/Alternating Current
BAT	Low battery
mV or V	Milli-volts or Volts (Voltage)
Ω	Ohms (Resistance)
A	Amperes (Current)
F	Farad (Capacitance)
Hz	Hertz (Frequency)
°F and °C	Fahrenheit and Celsius units (Temperature)
n,m,μ,M,k	Unit of measure prefixes: nano,milli,micro,mega,& kilo
•)))	Continuity
▶	Diode test



## SPECIFICATIONS

Function	Range	Resolution	Accuracy
DC Current (A DC)	40.00A	0.01A	$\pm (5\% + 10d)$
	400.0A	0.1A	$\pm (5\% + 10d)$
	800A	1A	$\pm (2.8\% + 10d)$
AC Current (A AC) 50/60Hz	40.00A	0.01A	$\pm (5\% + 10d)$
	400.0A	0.1A	$\pm (5\% + 10d)$
	800A	1A	$\pm (2.8\% + 10d)$
DC Voltage (V DC)	400.0mV	0.1mV	$\pm (0.8\% + 10 \text{ digits})$
	4.000V	1mV	$\pm (1.5\% + 2 \text{ digits})$
	40.00V	10mV	
	400.0V	0.1V	
	600V	1V	$\pm (2.0\% + 3 \text{ digits})$
AC Voltage (V AC)	400.0mV	0.1mV	$\pm (1.0\% + 10 \text{ digits})$
	4.000V	1mV	$\pm (1.5\% + 5 \text{ digits})$
	40.00V	10mV	
	400.0V	0.1V	
	600V	1V	$\pm (2.0\% + 5 \text{ digits})$
Resistance	400.0 $\Omega$	0.1 $\Omega$	$\pm (1.0\% + 4 \text{ digits})$
	4.000k $\Omega$	1 $\Omega$	$\pm (1.5\% + 2 \text{ digits})$
	40.00k $\Omega$	10 $\Omega$	
	400.0k $\Omega$	0.1k $\Omega$	
	4.000M $\Omega$	1k $\Omega$	$\pm (2.5\% + 3 \text{ digits})$
	40.00M $\Omega$	10k $\Omega$	$\pm (3.5\% + 5 \text{ digits})$
Capacitance	4.000nF	1pF	$\pm (5.0\% + 30 \text{ digits})$
	40.00nF	10pF	$\pm (5.0\% + 20 \text{ digits})$
	400.0nF	0.1nF	$\pm (3.0\% + 5 \text{ digits})$
	4.000 $\mu$ F	1nF	
	40.00 $\mu$ F	10nF	
	400.0 $\mu$ F	0.1 $\mu$ F	$\pm (4.0\% + 10 \text{ digits})$
	4.000mF	1 $\mu$ F	$\pm (10\% + 10 \text{ digits})$
40.00mF	10 $\mu$ F	unspecified	
Frequency	4.000kHz	1Hz	$\pm (1.5\% + 2 \text{ digits})$
	Sensitivity: 100V (<50Hz); 50V (50 to 400Hz); 5V (401 to 4000Hz)		

Function	Range	Resolution	Accuracy
Temperature	-4 to 1400°F	1°F	± (3% reading + 9°F)
	-20 to 760°C	1°C	± (3% reading + 5°C)

**NOTE:** Accuracy specifications consist of two elements:

- (% reading) – This is the accuracy of the measurement circuit.
- (+ digits) – This is the accuracy of the analog to digital converter.

<b>Clamp jaw opening</b>	1.2" (30mm) approx.
<b>Display</b>	3-3/4 digits (4000 counts) backlight
<b>Diode Test</b>	Test current of 0.3mA maximum, open circuit voltage <3V DC typical
<b>Continuity Check</b>	Audible signal will sound if the resistance is less than 40Ω (approx.), test current <0.5mA
<b>Temperature Sensor</b>	Requires type K thermocouple
<b>Input Impedance</b>	10MΩ (VDC & VAC)
<b>AC Response</b>	True rms (AAC and VAC)
<b>ACV Bandwidth</b>	50Hz to 400Hz
<b>Crest Factor</b>	3.0 in 40A and 400A ranges, 1.4 in 800A range (50/60Hz and 5% to 100% of range)
<b>Overrange indication</b>	"OL" is displayed
<b>Auto Power Off</b>	25 minutes (approximately)
<b>Polarity</b>	Automatic (no indication for positive); Minus (-) sign for negative
<b>Measurement Rate</b>	2 times per second, nominal
<b>PEAK</b>	Captures peaks >1ms
<b>Low Battery Indication</b>	"BAT" is displayed if battery voltage drops below operating voltage
<b>Battery</b>	one 9 volt (NEDA 1604) battery
<b>Operating Temperature</b>	41°F to 104°F (5°C to 40°C)
<b>Storage Temperature</b>	-4°F to 140°F (-20°C 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. (2000) meters maximum
<b>Weight</b>	10.7 oz (303g)
<b>Size</b>	9.0" x 3.1" x 2.0" (229 x 80 x 49mm)
<b>Safety</b>	For indoor use and in accordance with the requirements for double insulation to IEC1010-1 (2001): EN61010-1 (2001) Overvoltage Category III 600V and Category II 1000V, Pollution Degree 2.

## **BATTERY INSTALLATION**

**WARNING:** To avoid electric shock, disconnect the test leads from any source of voltage before removing the battery cover.

1. Disconnect the test leads from the meter.
2. Remove the rear battery cover by removing the screw using a Phillips head screwdriver.
3. Insert the battery into battery clips, observing the correct polarity.
4. Put the battery cover back in place and secure with the screw.

**WARNING:** To avoid electric shock, do not operate the meter until the battery cover is in place and fastened securely.

**NOTE:** If your meter does not work properly, check the battery to make sure that it is still good and properly inserted.

## OPERATING INSTRUCTIONS

**WARNING:** Risk of electrocution. High-voltage circuits, both AC and DC, are very dangerous and should be measured with great care.

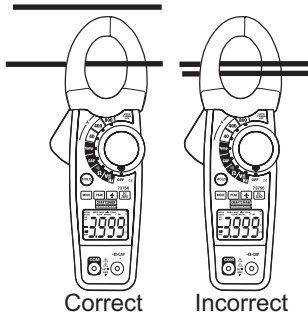
1. ALWAYS turn the function switch to the OFF position when the meter is not in use.
2. If "OL" appears in the display during a measurement, the value exceeds the range you have selected. Change to a higher range.

**NOTE:** On some low AC and DC voltage ranges, with the test leads not connected to a device, the display may show a random, changing reading. This is normal and is caused by the high-input sensitivity. The reading will stabilize and give a proper measurement when connected to a circuit.

### AC/DC Current Measurements

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

1. Set the Function switch to the 800A, 400A, or 40A range. If the approx. range of the measurement is not known, select the highest range then move to the lower ranges if necessary.
2. Use the **MODE** button to select AC or DC.
3. Press the **DC ZERO** button to zero the meter display.
4. Press the trigger to open jaw. Fully enclose only one conductor. For optimum results, center the conductor in the jaw.
5. The clamp meter LCD will display the reading.



## DC VOLTAGE MEASUREMENTS

**CAUTION:** Do not measure DC voltages if a motor on the circuit is being switched ON or OFF. Large voltage surges may occur that can damage the meter.

1. Insert the black test lead into the negative **COM** terminal and the red test lead into the positive **V- $\Omega$ -CAP-TEMP-Hz** terminal.
2. Set the function switch to the **V Hz** position.
3. Use the **MODE** button to select DC Voltage.
4. Connect the test leads in parallel to the circuit under test.
5. The clamp meter LCD will display the reading.



## AC VOLTAGE MEASUREMENTS

**WARNING:** The probe tips may not be long enough to contact the live parts inside some 240V outlets for appliances because the contacts are recessed deep in the outlets. As a result, the reading may show 0 volts when the outlet actually has voltage on it.

**WARNING:** To avoid electric shock, make sure the probe tips are touching the metal contacts inside the outlet before assuming no voltage is present

**CAUTION:** Do not measure AC voltages if a motor on the circuit is being switched ON or OFF. Large voltage surges may occur that can damage the meter.

1. Insert the black test lead into the negative **COM** terminal and the red test lead into the positive **V·Ω·CAP·TEMP·Hz** terminal.
2. Set the function switch to the **V Hz** position.
3. Use the **MODE** button to select AC Voltage.
4. Connect the test leads in parallel to the circuit under test.
5. The clamp meter LCD will display the reading.



## RESISTANCE MEASUREMENTS

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

1. Insert the black test lead into the negative **COM** terminal and the red test lead into the **V· $\Omega$ ·CAP·TEMP·Hz** positive terminal.
2. Set the function switch to the  $\Omega$  position.
3. Touch the test probe tips across the circuit or component under test.
4. Read the resistance on the LCD display.



## 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 function switch to the **CAP** position.
2. Insert the black test lead banana plug into the negative COM jack and the red test lead banana plug into the **V· $\Omega$ ·CAP·TEMP·Hz** positive jack.
3. Touch the test probe tips across the part under test. If "disc" appears in the display, remove and discharge the component.
4. Read the capacitance value in the display.
5. The display will indicate the proper decimal point and value.

Note: For very large values of capacitance measurement it can take several minutes before the final reading stabilizes.



## FREQUENCY MEASUREMENTS

1. Insert the black test lead banana plug into the negative **COM** jack and the red test lead banana plug into the **V·Ω·CAP·TEMP·Hz** positive jack.
2. Set the function switch to the **V Hz** Position.
3. Press and hold the **MODE** button to select the Frequency (Hz) function. "**k Hz**" will appear in the display.
4. Touch the test probe tips across the part under test.
5. Read the Frequency value on the display.
6. The display will indicate the proper decimal point and value.
7. Press and hold the **MODE** button again to return to the voltage mode.



## TEMPERATURE MEASUREMENTS

1. Set the function switch to the **TEMP** position.
2. Insert the Temperature Probe into the negative **COM** and the **V·Ω·CAP·TEMP·Hz·** positive jacks, observing polarity.
3. Touch the Temperature Probe head to the device under test. Continue to touch the part under test with the probe until the reading stabilizes.
4. Read the temperature on the display. The digital reading will indicate the proper decimal point and value.
5. Use the **MODE** button to select °F or °C.

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



## CONTINUITY CHECK

**WARNING:** To avoid electric shock, never measure continuity on circuits or wires that have voltage on them.

1. Insert the black test lead into the negative **COM** terminal and the red test lead into the **V·Ω·CAP·TEMP·Hz·** positive terminal.
2. Set the function switch to the **•••••** position.
3. Use the **MODE** button to select continuity "**•••••**". The display icons will change when the **MODE** button is pressed.
4. Touch the test probe tips across the circuit or component under test.
5. If the resistance is  $< 40\Omega$ , a tone will sound.

## DIODE TEST

1. Insert the black test lead banana plug into the negative **COM** jack and the red test lead banana plug into the **V-Ω-CAP-TEMP-Hz** positive jack.
2. Turn the function switch to **→|←** position. Use the **MODE** button to select the diode function if necessary (diode symbol will appear on the LCD when in Diode test mode).
3. Touch the test probe tips to the diode or semiconductor junction under test. Note the meter reading.
4. Reverse the test lead polarity by reversing the red and black leads. Note this reading.
5. The diode or junction can be evaluated as follows:
  - If one reading displays a value (typically 0.400V to 0.900V) and the other reading displays **OL**, the diode is good.
  - If both readings display **OL** the device is open.
  - If both readings are very small or '0', the device is shorted.



## Data Hold

To freeze the LCD reading, press the **HOLD** button. While data hold is active, the **HOLD** icon appears on the LCD. Press the **HOLD** button again to return to normal operation.

## DC ZERO (Relative)

The **DC ZERO** is a relative feature and can be used in any function.

1. Press the **DC ZERO** button to zero the display. “**ZERO**” will appear in the display. The displayed reading is now the actual value less the stored “zero” value.
2. Press the **DC ZERO** button to view the stored value. “**ZERO**” will flash in the display.
3. To exit this mode, press and Hold the **ZERO** button until “**ZERO**” is no longer in the display.

## Peak Hold

The Peak Hold function captures the peak AC or DC voltage or current. The meter can capture negative or positive peaks as fast as 1 millisecond in duration.

1. Turn the function switch to the A or V position.
2. Use the **MODE** button to select AC or DC.
3. Allow time for the display to stabilize.
4. Press and Hold the **PEAK** button until “**CAL**” appears in the display. This procedure will zero the range selected.
5. Press the **PEAK** button, **Pmax** will display.
6. The display will update each time a higher positive peak occurs.
7. Press the **PEAK** button again, **Pmin** will display. The display will now update and indicate the lowest negative peak.
8. To return to normal operation, press and hold the **PEAK** button until the **Pmin** or **Pmax** indicator switches off.

**Note:** If the Function position is changed after calibration the Peak Hold calibration must be repeated for the new function selected.

### **LCD Backlight Button**

The LCD is equipped with backlighting for easier viewing, especially in dimly lit areas. Press the backlight button to turn the backlight on. Press again to turn the backlight off. Note that the meter does have an auto power off feature as described below.

### **Automatic Power OFF**

In order to conserve battery life, the meter will automatically turn off after approximately 25 minutes. To turn the meter on again, turn the function switch to the OFF position and then to the desired function position.

## **MAINTENANCE**

**WARNING:** To avoid electric shock, disconnect the test leads from any source of voltage before removing the back cover or the battery cover.

**WARNING:** To avoid electric shock, do not operate your meter until the battery cover is in place and fastened securely.

This multimeter is designed to provide years of dependable service, if the following care instructions are performed:


1. **KEEP THE METER DRY.** If it gets wet, wipe it off.
2. **USE AND STORE THE METER IN NORMAL TEMPERATURES.** Temperature extremes can shorten the life of the electronic parts and distort or melt plastic parts.
3. **HANDLE THE METER GENTLY AND CAREFULLY.** Dropping it can damage the electronic parts or the case.
4. **KEEP THE METER CLEAN.** Wipe the case occasionally with a damp cloth. DO NOT use chemicals, cleaning solvents, or detergents.
5. **USE ONLY FRESH BATTERIES OF THE RECOMMENDED SIZE AND TYPE.** Remove old or weak batteries so they do not leak and damage the unit.
6. **IF THE METER IS TO BE STORED FOR A LONG PERIOD OF TIME,** the batteries should be removed to prevent damage to the unit.

### **UL LISTED**

The UL mark does not indicate that this product has been evaluated for the accuracy of its readings.

## BATTERY REPLACEMENT

**WARNING:** To avoid electric shock, disconnect the test leads from any source of voltage before removing the battery cover.

1. When the battery becomes exhausted or drops below the operating voltage, “ ” will appear in the left-hand side of the LCD display. The battery should be replaced.
2. Follow instructions for installing batteries. See the Battery Installation section of this manual.
3. Dispose of the old battery properly.

**WARNING:** To avoid electric shock, do not operate your meter until the battery cover is in place and fastened securely.

**NOTE:** If your meter does not work properly, check battery to make sure that it is still good and properly inserted.

## **TROUBLESHOOTING**

There may be times when your meter does not operate properly. Here are some common problems that you may have and some easy solutions to them.

### **Meter Does Not Operate:**

1. Always read all the instructions in this manual before use.
2. Check to be sure the battery is properly installed.
3. Check to be sure the battery is good.

### **If You Do Not Understand How the Meter Works:**

1. Purchase "Multitesters and Their Use for Electrical Testing", (Item No. 82303).
2. Call our Customer Service Line **1-888-326-1006**.

## **SERVICE AND PARTS**

<b>Item Number</b>	<b>Description</b>
93894	9V battery
82378	Set of black and red Test Leads
73756-D	Replacement battery cover
73756-C	Front Cover
73756-CS	Rear cover screws
82377	Thermocouple probe

For replacement parts shipped directly to your home  
Call 9 am – 5 pm Eastern Time, M - F  
**1-888-326-1006**