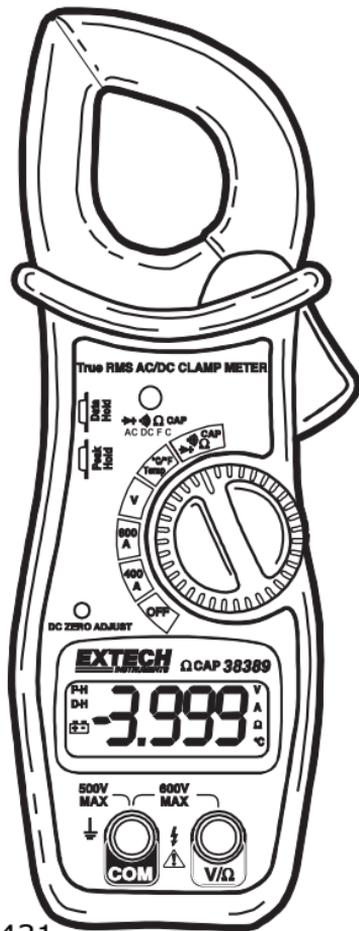


# User's Guide

# **EXTECH** INSTRUMENTS

## 600A True RMS AC/DC Clamp Meter

### Model 38389



**Test Equipment  
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# Safety

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## 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.
- Remove the battery if meter is to be stored for longer than 60 days.

## 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 600V.
- 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.

## UL

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

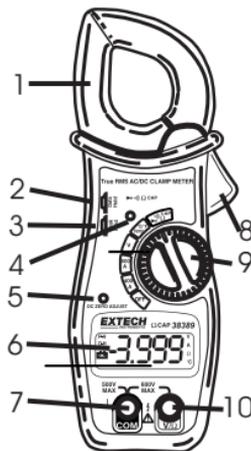
## CAUTIONS

- 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 or fuses.
- 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.

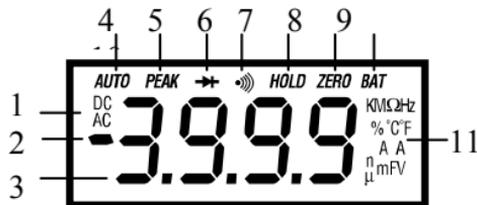
<b>Input Limits</b>	
<b>Function</b>	<b>Maximum Input</b>
A AC, A DC	600A
V DC, V AC	600V DC/AC
Resistance, Capacitance, Diode Test	250V DC/AC
Temperature	60V DC, 24V AC

# Meter Description

1. Current clamp
2. Data Hold button
3. Peak Hold button
4. Mode select button
5. ZERO button
6. LCD display
7. COM input jack
8. Clamp trigger
9. Rotary Function switch
10. V/ $\Omega$ /CAP/TEMP jack



1. AC (alternating current) and DC (direct current)
2. Minus sign
3. 4000 count (0 to 3999) measurement reading
4. AutoRange mode
5. Peak Hold mode
6. Diode test mode
7. Audible Continuity
8. Data Hold mode
9. ZERO (Relative) mode
10. Low Battery icon
11. Units of measure list



## Specifications

Function	Range & Resolution	Accuracy (% of reading)
DC Current	400.0 ADC	0 to 70A: $\pm (2.5\% + 0.6A)$ 70 to 300A: $\pm (3.0\% + 0.3A)$ 300 to 400A $\pm (3.5\% + 0.3A)$
	600 ADC	0 to 150A: $\pm (2.5\% + 4A)$ 151 to 350A: $\pm (3.0\% + 4A)$ 351 to 600A: $\pm (4.0\% + 6A)$
AC Current	400.0 AAC	0 to 70A: $\pm (3.0\% + 0.6A)$ 70 to 300A: $\pm (3.5\% + 0.3A)$ 300 to 400A $\pm (3.5\% + 0.6A)$
	600 AAC	0 to 150A: $\pm (3.0\% + 4A)$ 151 to 350A: $\pm (3.5\% + 5A)$ 351 to 600A: $\pm (4.0\% + 8A)$
DC Voltage	400.0 mVDC	$\pm (0.5\% + 5 \text{ digits})$
	4.000 VDC	$\pm (1.2\% + 3 \text{ digits})$
	40.00 VDC	
	400.0 VDC	
600 VDC	$\pm (1.5\% + 3 \text{ digits})$	
AC Voltage	4.000 VAC	$\pm (1.0\% + 5 \text{ digits})$
	40.00 VAC	$\pm (1.5\% + 3 \text{ digits})$
	400.0 VAC	
	600 VAC	
600 VAC	$\pm (2.0\% + 4 \text{ digits})$	
Resistance	400.0 $\Omega$	$\pm (1.0\% + 4 \text{ digits})$
	4.000K $\Omega$	$\pm (1.5\% + 2 \text{ digits})$
	40.00K $\Omega$	
	400.0K $\Omega$	
	4.000M $\Omega$	$\pm (2.0\% + 3 \text{ digits})$
	40.00M $\Omega$	$\pm (3.0\% + 5 \text{ digits})$
Temperature	-4 to 1400 $^{\circ}$ F	$\pm (3.0\% + 5^{\circ}$ F)
	-20 to 760 $^{\circ}$ C	$\pm (3.0\% + 3^{\circ}$ C)

Function	Range & Resolution	Accuracy (% of reading)
Capacitance	40.00 nF	± (5.0% + 7 digits)
	400.0 nF	
	4.000 uF	± (3.5% + 5 digits)
	40.00 uF	
	100.0 uF	± (5.0% + 5 digits)

<b>Clamp size</b>	Opening 1.3" (33mm) approx.
<b>Diode Test</b>	Test current of 0.3mA typical; Open circuit voltage 1.5V DC typical.
<b>Continuity Check</b>	Threshold <50Ω; Test current < 1mA
<b>Low Battery Indication</b>	"BAT" is displayed
<b>Overrange Indication</b>	"1 " is displayed
<b>Measurements Rate</b>	2 per second, nominal
<b>Temperature sensor</b>	Type K thermocouple
<b>Input Impedance</b>	7.8MΩ (VDC and VAC)
<b>Display</b>	3-3/4 digits (4000 counts) LCD
<b>AC bandwidth</b>	50/60Hz (AAC and VAC)
<b>AC response</b>	True rms (AAC and VAC)
<b>Operating Temperature</b>	14 to 122°F (-10 to 50°C)
<b>Storage Temperature</b>	-14 to 140°F (-30 to 60°C)
<b>Relative Humidity</b>	90%(0°C to 30°C); 75%(30°C to 40°C); 45%(40°C to 50°C)
<b>Altitude</b>	Operating: 3000m; Storage 10,000m
<b>Over voltage</b>	Category II 600V
<b>Battery</b>	9V Battery
<b>Auto OFF</b>	After 15 minutes of inactivity
<b>Dimensions/Weight</b>	8x3.2x1.7" (204x80x43mm)/0.62 lbs. (281g)
<b>Safety</b>	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

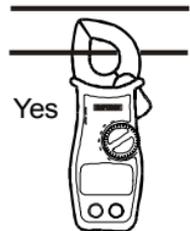
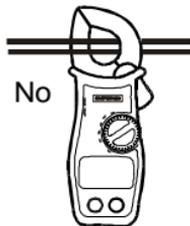
## Operation

**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/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 **600 or 400A** range. If the range of the measured is not known, select the higher range first then move to the lower range if necessary.
2. Select AC or DC with the AC/DC button. Press the zero button to zero the meter in the DCA mode only.
3. Press the trigger to open jaw. Fully enclose one conductor to be measured.
4. The clamp meter LCD will display the reading.



### AC/DC Voltage Measurements

1. Insert the black test lead into the negative **COM** terminal and the red test lead into the positive **V** terminal.
2. Set the function switch to the V position.
3. Select AC or DC with the AC/DC button.
4. Connect the test leads in parallel to the circuit under test.
5. Read the voltage measurement on the LCD 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 TEMP.
2. Insert the Temperature Probe into the negative (COM) and the positive 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

### Data Hold

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 **DH** display icon appears on the LCD. Press the data hold button again to return to normal operation.

### Peak Hold

To hold the highest reading on the LCD, press the peak hold button. The peak hold button is located on the left side of the meter (bottom button). The meter reading will not change as readings change, rather it will only display the highest reading encountered since the peak hold button was pressed. Press the peak hold button again to return to normal operation.

## Maintenance

**WARNING:** To avoid electrical shock, disconnect the meter from any circuit, remove the test leads from the input terminals and turn OFF the meter before opening the case. Do not operate with open case.

### Cleaning and Storage

Periodically wipe the case with a damp cloth and mild detergent; do not use abrasives or solvents. If the meter is not to be used for periods of longer than 60 days, remove the battery and store it separately

### Battery Replacement

1. Remove the Phillips head screw that secures the battery door.
2. Open the battery compartment
3. Replace the 9V battery
4. Replace and secure the door.

### Temperature Probe Replacement

The replacement bead wire probe with banana plug connectors is p/n TP873.

The use type k probes with a mini plug connector requires a mini-plug to banana plug converter (p/n 872000).



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