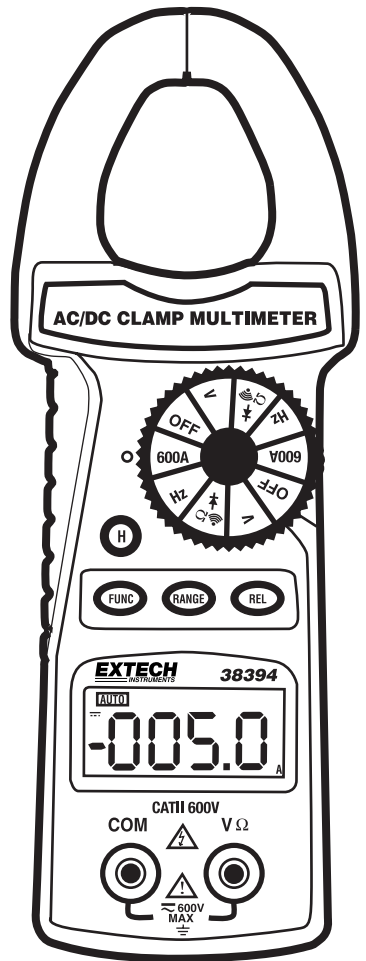


User's Manual

EXTECH
INSTRUMENTS

Digital AC/DC Clamp Meter
Model 38394



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Back to the Extech 38394 Product Info Page

INTRODUCTION

Congratulations on your purchase of Extech's 38394 AC/DC Clamp Meter. This clamp meter measures AC/DC Current to 600A, DC/AC Voltage, Resistance, Frequency, and Continuity. Proper use and care of this meter will yield years of reliable service.

SAFETY

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

WARNING: This indicates that a potentially hazardous condition which, if not avoided, could result in death or serious injury.

CAUTION: This indicates that a potentially hazardous condition which, if not avoided, could result in injury or damage to the meter.

Safety Precautions

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

1. Always remove the test leads before making current measurements.
2. Always remove the test leads before replacing the batteries.
3. Inspect the condition of the jaws, test leads and the meter for any damage before operating the meter. Repair any damage or replace meter before use.
4. Do not exceed the maximum rated input limits.
5. Use great care when making measurements, especially when the voltages are greater than 25VAC rms or 35VDC. These voltages are considered a shock hazard.
6. Always discharge capacitors and remove power from the dut before performing Resistance or Continuity tests.
7. Remove the batteries from the meter if the meter is to be stored for long periods.
8. Ensure that the selected meter function matches the measurement to be taken
9. If the measured current is higher than the range selected for long periods, overheating may occur compromising the safety and the operation of the meter's internal circuits
10. To avoid discharge risks and erroneous readings, do not measure current on high voltage conductors (>600V)

SPECIFICATIONS

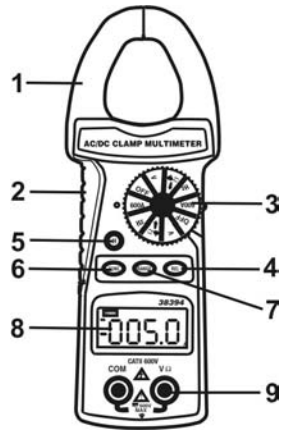
| Function | Range | Accuracy | | |
|------------------|--|------------------------------------|-----------------|----------------------------------|
| AC/DC Current | 240.0A | ±(2% rdg + 5d) (AC @ 50/60Hz) | | |
| | 600A | ±(2% rdg + 8d) | | |
| AC Voltage | 2.400V, 24.00V, 240.0V, 600.0V | ±(1.2% rdg + 5d) (AC @ 50/60Hz) | | |
| DC Voltage | 240.0mV | ±(0.5% rdg + 2d) | | |
| | 2.400V, 24.00V, 240.0V, 600V | ±(1.0% rdg + 2d) | | |
| Resistance | 240.0Ω, 2.400kΩ, 24.00kΩ, 240.0kΩ | ±(1% rdg + 5d) | | |
| | 2.400MΩ | ±(2% rdg + 2d) | | |
| | 24.00MΩ | ±(3.5% rdg + 5d) | | |
| Frequency (≥ 5V) | 50.00Hz, 500.0Hz, 5.000kHz, 50.00kHz, 100.0kHz | ±(1% rdg + 5d) | | |
| Continuity | Audible tone <40Ω approximately | | | |
| Input Limits | Function | Maximum Input | Function | Maximum Input |
| | V DC/AC | 600V DC or AC Peak | Frequency | 250V DC or AC peak |
| | A DC/AC | 600A DC/AC, fused | Resistance | 400V DC or AC peak (<10 seconds) |

| | |
|---------------------------------------|--|
| Conductor Size: | 1.18" (30mm) maximum |
| Battery type: | 2 x 1.5V AA |
| Range Selection: | Automatic ranging |
| Display: | 5000 Count LCD |
| Overload Indication: | "OL" |
| Low Battery Indication: | Battery icon |
| Environmental conditions | Installation Category II, Pollution degree 2, Altitude: 2000 meters, Indoor use only |
| Operating Temperature/Humidity | 32° to 122°F (0°C to 50°C) / <80% RH |
| Storage Temperature/Humidity | 14° to 140°F (-10°C to 60°C) / <80% RH |
| Dimensions | 7.0x4.2x1.3" (178x64x33mm) |
| Weight | 8.3 oz. (230g) |
| Zero Adjust | Uses REL (Relative) push button |
| Diode | Short/Open, Good/Defect Test |
| Sample Time | 0.35 sec approximately. |
| Input Impedance | 10MΩ for ACV & DCV |






METER DESCRIPTION

Front panel

1. Current Jaws
2. Jaw opening trigger
3. Rotary function switch
4. REL key
5. DATA HOLD key
6. Function key
7. Range key
8. LCD display
9. COM & V/ Ω input jacks



Symbols and Units of measure

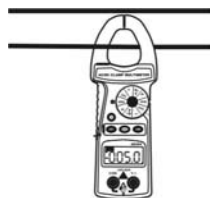
| | |
|---|-----------------------|
|  | AC Current or Voltage |
|  | DC Voltage |
|  | Continuity |
|  | Diode test |
| Hold | Display Data Hold |
| Auto | Auto Range |
|  | Low Battery icon |
| V | Volt (voltage) |
| Ω | Ohm (resistance) |
| A | Amp (current) |
| REL | Relative Mode |
| Hz, KHz | Frequency |

OPERATING INSTRUCTIONS

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 **600A** range.
2. Press the **FUNC** key to select AC or DC (the AC/DC icons will toggle on the LCD with each key press).
3. Press the trigger to open jaw. Fully enclose one conductor to be measured.
4. The clamp meter will display reading and automatically select the proper range



AC/DC Voltage Measurements

1. Set the Function Switch to the **V** position.
2. Press the **FUNC** key to select AC or DC Voltage. The meter will display the selected unit of measure (AC or DC) on the left side of the LCD.
3. Insert the black test lead to the **COM** input jack and the red test lead to the **V** jack.
4. Connect the test leads in PARALLEL with the circuit to be measured.
5. Read the measured value from the LCD display.



Manual Range

This meter is automatic ranging. However, the range can be manually held and selected. To manual hold the range, press the **RANGE** key until the desired display range is selected. The units of measure and decimal positioning will change with each press of the **RANGE** key.

Resistance Measurements

CAUTION: Before taking any in-circuit resistance measurements, remove power from the circuit under test and discharge all capacitors.

1. Insert the black test lead to the **COM** input jack and the red test lead to the Ω input jack.
2. Set the Function switch to the $\bullet))) \rightarrow \Omega$ position, press the **FUNC** key if necessary to display the Ω icon.
3. Connect the test leads to the device under test and read the measured value on the LCD display.

Continuity Test

CAUTION: Before taking measurements, remove power from circuit under test and discharge all capacitors

1. Insert the black test lead to the **COM** input jack and the red test lead to the Ω input jack.
2. Set the Function switch to the $\bullet))) \rightarrow \Omega$ position.
3. Press the **FUNC** key until the “ $\bullet)))$ ” icon appears on the upper right-hand portion of the LCD.
4. Connect the test lead tips to the device to be measured.
5. If the resistance is $< 40\Omega$ (approx.) a tone will sound.

Frequency Measurements

CAUTION: Before taking any in-circuit measurements, remove power from the circuit under test and discharge all capacitors.

1. Insert the black test lead to the **COM** input jack and the red test lead to the **V Ω** input jack.
2. Set the Function switch to the **Hz** position.
3. Connect the test lead tips to the device under test.
4. Read the measured value from the LCD display.

Diode Test

CAUTION: Before taking measurements, remove power from circuit under test and discharge all capacitors

1. Insert the black test lead to the **COM** input jack and the red test lead to the **V/ Ω** input jack
2. Set the Function switch to the **•))) Ω** position
3. Press the **FUNC** key until the "**▶**" icon appears on the upper right-hand side of the LCD.
4. Connect the test lead tips to the device to be measured
5. Note the displayed reading
6. Reverse the test lead polarity by swapping the red and black lead connection. Note this reading also.
 - a. If one reading displays a value and the other reading displays "OL", the diode is good
 - b. If both readings display "OL", the device is open
 - c. If both readings are very small or 0, the device is shorted

Data Hold

Press the **HOLD** key momentarily to freeze the present reading on the LCD. **Hold** will appear in the display. Press the **H** key again to return to normal operation.

Relative Mode

The Relative mode permits the user to store a reference reading and compare all subsequent readings to the stored reference value. Subsequent readings will display a value that is the difference between the actual reading and the stored value.

1. Press the **REL** key when the desired value is displayed on the meter. This becomes the stored reference.
2. Take measurements and note that the meter displays the actual reading minus the reference reading.
3. Press the **REL** key to return to normal operation.

Using Relative Mode to zero the meter

Press the **REL** key to zero the meter. Ensure that the test leads and clamp jaw are not connected to any circuit while doing so. The display will read zero and all subsequent readings will be displayed relative to zero. Zero as often as necessary.