

User's Manual

EXTECH
INSTRUMENTS

Digital AC Clamp Meter

Model 38390



WARRANTY

EXTECH INSTRUMENTS CORPORATION warrants this instrument to be free of defects in parts and workmanship for one year from date of shipment (a six month limited warranty applies on sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department at (781) 890-7440 ext. 210 for authorization. **A Return Authorization (RA) number must be issued before any product is returned to Extech.** The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Extech's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

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Extech offers complete repair and calibration services for all of the products we sell. For periodic calibration, NIST certification or repair of any Extech product, call customer service for details on services available. Extech recommends that calibration be performed on an annual basis to ensure calibration integrity.

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Tech Support Hotlines

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INTRODUCTION

Congratulations on your purchase of Extech's 38390 AC Clamp Meter. This autoranging clamp meter measures AC Current to 400A, DC/AC Voltage, Resistance, 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 users 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 or replace any damage 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 device under test before performing Resistance or Continuity tests.
7. Remove the batteries from the meter if the meter is to be stored for long periods.

SPECIFICATIONS

Function	Range	Accuracy	Remarks
AC Current	40.00A 400.0A	± (2% + 15 digits)	Frequency: 50/60Hz; 660A overload protection
AC Voltage	400.0V 600V	± (1.5% + 10 digits)	Frequency: 40Hz to 450Hz; Input Z: 1MΩ; 660Vrms OL protect
DC Voltage	400.0V 600V	± (1% + 5 digits)	Input Z: 1MΩ; 660V overload protect
Resistance	0.3 to 400 Ω	± (1% + 5 digits)	-1.1 to -1.3V open circuit; 600Vrms overload protect
Continuity	Audible tone <40Ω approximately		-1.1 to -1.3V open circuit; 600Vrms overload protect
Note: Accuracy specified as ± (% of reading + number of digits) at 64°F to 82°F (18°C to 28°C) and RH<80%			

Conductor Size	0.9" (23mm) maximum
Operating principle	Dual slope integration
Battery type	2 x 1.55V button (ICE LR-44, NEDA 116A or A76)
Battery Life	200 hours
Auto Power off	After 30 minutes
Range Selection	Automatic ranging
Display	3-3/4 digit (3999 Count) LCD
Overload Indication	"OL"
Low Battery Indication	Battery icon
Environmental conditions	Installation Category II, Pollution degree 2, Altitude up to 2000 meters, Indoor use only
Operating Temperature/Humidity	32 to 104F (0°C to 40°C) / <80% RH
Storage Temperature/Humidity	14 to 140F (-10°C to 60°C) / <70% RH
Dimensions	7.4 x 2.5 x 1.2" (188 x 62.5 x 30.5mm)
Weight	6.5 oz. (185g)

METER DESCRIPTION

Symbols

	AC Current or Voltage
	DC Voltage
	Continuity
	Display Data Hold
	Auto Range
	Low Battery icon

Units

V	Volt (voltage)
Ω	Ohm (resistance)
A	Amps (current)

Front panel

1. Jaw opening trigger
2. Function switch (OFF, A, V, Ω)
3. COM input jack
4. Transformer Jaws
5. DATA HOLD key
6. AC/DC Selector key
7. LCD Display
8. V Ω input jack



OPERATING INSTRUCTIONS

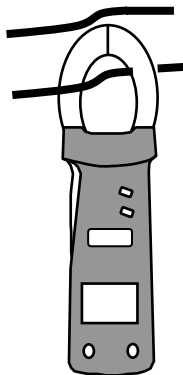
Precautions

1. Ensure that the selected meter function matches the measurement to be taken.
2. 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.
3. To avoid discharge risks and erroneous readings, do not measure current on high voltage conductors (>600V).

AC Current Measurements

WARNING: Make sure that the test leads are disconnected from the meter's terminals before making current measurements with the clamp jaw.

1. Set the Function switch to the **A** range..
2. Press the trigger to open jaw. Fully enclose one conductor to be measured.
3. The clamp meter will automatically select the proper range (Auto Range).
4. Read the measured value from the LCD display.



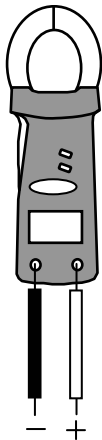
DC and AC Voltage Measurements

1. Set the Function Switch to the **V** position.
2. Press the **AC/DC** key (directly below the HOLD key) to select AC or DC Voltage. The meter will show the selection with an AC or DC symbol (upper left side of 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.

Resistance and Continuity Measurements

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

1. Set the Function switch to the Ω position.
2. Insert the black test lead to the **COM** input jack and the red test lead to the Ω input jack.
3. Connect test leads to the device to be measured.
4. Read the measured value from the LCD display.
5. If the resistance is $< 40\Omega$ (approx.) an audible signal will be heard.



Data Hold

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

MAINTENANCE

WARNING: To avoid electrical shock or damage to the meter, keep moisture from entering the meter housing. Also, remove the test leads before opening the meter housing.

Cleaning

Periodically wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents.

Battery Replacement

When the low battery symbol appears on the LCD, replace the meter's two button-batteries.

1. Remove power and remove test leads from meter
2. Remove the two rear Phillips screws and open the meter housing.
3. Remove and replace the two 1.55V button batteries per the following illustrations.
4. ICE replacement number: LR-44; NEDA replacement numbers: 116A or A76.
5. Replace the rear screws.

Battery Replacement Illustrations



1. Slide battery to right
2. Press on other side to lift battery
3. Remove battery
4. Insert battery on angle
5. Press to seat battery