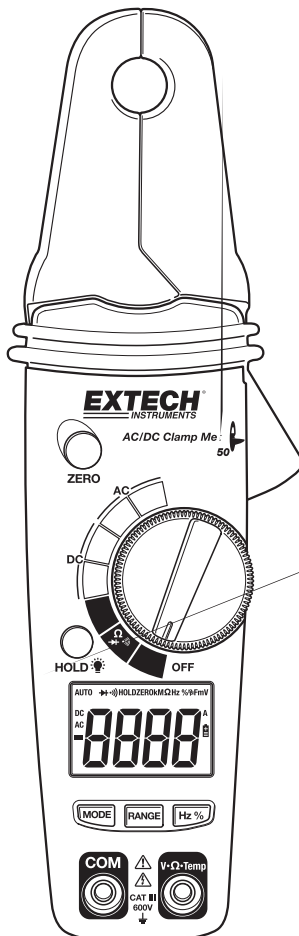


# User's Guide

**EXTECH**<sup>®</sup>  
INSTRUMENTS  
A FLIR COMPANY

## Model 380950 80A Mini AC/DC Clamp Meter



# Introduction

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Congratulations on your purchase of the Extech 80A Mini AC/DC Clamp Meter. The Model 380950 measures AC/DC Current, AC/DC Voltage, Resistance, Frequency, Capacitance, Duty Cycle, Diode Test, and Continuity. This clamp meter is shipped fully tested and calibrated and, with proper use, will provide years of reliable service.

## 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 240V.
- When changing ranges always disconnect the test leads from the circuit under test.

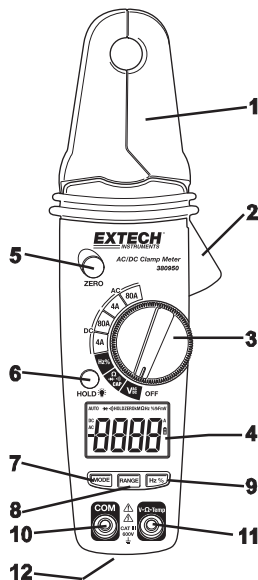
### CAUTIONS

- 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.
- 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.

Function	Maximum Input
A AC, A DC	80A DC/AC
V DC, V AC	600V DC/AC
Resistance, Frequency, Diode Test	250V DC/AC

## Meter Description

1. Conductor jaws
2. Jaw opening trigger
3. Function select switch
4. LCD Display
5. ZERO button
6. Data Hold and Backlight Button
7. Mode select button
8. Range select button
9. Hz/%/Duty Cycle button
10. COM input jack
11. V/ $\Omega$ /Hz jack
12. Battery cover (rear)



**AC** AC (alternating current)

**DC** DC (direct current)

**—** Minus sign

**AUTO** AutoRange mode

**ZERO** ZERO mode

**•)))** Audible Continuity

**HOLD** Data Hold mode

**⎓** Low Battery icon

**→|+** Diode test mode

**m** milli

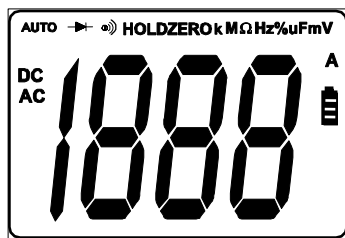
**V** Volts

**A** Amps

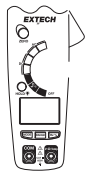
**K** kilo

**M** Mega

**$\Omega$**  Ohms







### **Auto/Manual Ranging**

The meter turns on in Autoranging mode. Press the **RANGE** button to enter manual ranging. Each press of the range button will step to the next range as indicated by the units and decimal point location. Press and hold the **RANGE** button for two seconds to return to Autoranging mode.

**Note:** Manual ranging does not function in AC Current or Diode and Continuity check functions. In Temperature function, it will change the resolution from 0.1° to 1°.

### **Data Hold**

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

### **Backlight**

Press and hold the **HOLD** button for >2 seconds to turn the backlight on/off.


**Note:** The HOLD feature will activate when the backlight is turned on. Press the HOLD button again to exit the Hold feature.

### **Zero Button**

Zeros Capacitance and DC Current measurements. Also allows the user to offset the meter by using the displayed value as the zero reference value. Press the ZERO key momentarily to activate and to exit Zero mode.

## Specifications

Function	Range & Resolution	Accuracy (of reading)
DC Current	4.000 ADC	± (2.8% + 10 digits)
	80.0 ADC	± (3.0% + 8 digits)
AC Current (50/60Hz)	4.000 AAC	± (3.0% + 10 digits)
	80.0 AAC	± (3.0% + 8 digits)
DC Voltage	400.0mV	± (1.0% + 15 digits)
	4.000V	± (1.0% + 3 digits)
	40.00V	± (1.5% + 3 digits)
	400.0V	
600V	± (2.0% + 3 digits)	
AC Voltage (50/60Hz)	400.0mV	± (1.0% + 30 digits)
	4.000V	± (2.0% + 5 digits)
	40.00V	
	400.0V	
600V		
Resistance	400.0Ω	± (1.0% + 4 digits)
	4.000kΩ	± (1.5% + 2 digits)
	40.00kΩ	
	400.0kΩ	
	4.000 MΩ	± (2.5% + 3 digits)
40.00MΩ	± (3.5% + 5 digits)	
Capacitance	40.00nF	± (5% + 30 digits)
	400.0nF	± (3% + 5 digits)
	4.000μF	± (3.5% + 5 digits)
	40.00μF	
100.0μF	± (5% + 5 digits)	
Frequency	5.000Hz	± (1.5% + 5 digits)
	50.00Hz	± (1.2% + 2 digits) Sensitivity: 10Vrms min.
	500.0Hz	
	5.000KHz	
	50.00KHz	
	500.0KHz	
	5.000MHz	
10.00MHz		
Duty Cycle	0.5% to 99.0%	± (1.2% + 2 digits)
	Pulse Width: 100μs-100ms, Frequency: 5Hz to 150KHz	
Analog Output (ACA & DCA ranges)	10mV/Amp ; Accuracy: ± (5%rdg + 2mV); Output impedance: approx 3kΩ	

<b>Jaw size</b>	12.7mm (0.5") approx.
<b>Display</b>	4000 count LCD
<b>Continuity</b>	Audible tone < 150Ω approx.
<b>Diode Test</b>	Open circuit voltage < 1.5VDC; Test current <1mA (typical)
<b>AC V bandwidth</b>	50Hz to 400Hz
<b>AC A bandwidth</b>	50/60Hz
<b>Low battery indication</b>	"  " is displayed
<b>Overrange indication</b>	"OL" is displayed
<b>Auto Power OFF</b>	After 25 minutes
<b>Measurement rate</b>	2 per second, nominal
<b>Input Impedance</b>	7.8MΩ (V DC and V AC)
<b>Operating Temperature</b>	-10°C to 50°C (14°F to 122°F)
<b>Storage Temperature</b>	-30°C to 60°C (-22°F to 140°F)
<b>Operating Humidity</b>	Max 80% up to 31°C (87°F) decreasing linearly to 50% at 45°C (113°F)
<b>Storage Humidity</b>	<80%
<b>Operating Altitude</b>	2000meters (6560ft) operating
<b>Batteries</b>	(2) 1.5V AAA batteries
<b>Weight</b>	200g (0.44lb)
<b>Size</b>	200x50x35mm (7.87" x 1.97" x 1.38")
<b>Safety</b>	For indoor use and in accordance with the requirements for double insulation to IEC1010-1 (1995): EN61010-1 (1995) Overvoltage Category III, Pollution Degree 2.

## **PER IEC1010 OVERVOLTAGE INSTALLATION CATEGORIES**

### *OVERVOLTAGE CATEGORY I*

Equipment of OVERVOLTAGE CATEGORY I is equipment for connection to circuits in which measures are taken to limit the transient overvoltages to an appropriate low level.

Note – Examples include protected electronic circuits.

### *OVERVOLTAGE CATEGORY II*

Equipment of OVERVOLTAGE CATEGORY II is energy-consuming equipment to be supplied from the fixed installation.

Note – Examples include household, office, and laboratory appliances.

### *OVERVOLTAGE CATEGORY III*

Equipment of OVERVOLTAGE CATEGORY III is equipment in fixed installations.

Note – Examples include switches in the fixed installation and some equipment for industrial use with permanent connection to the fixed installation.

### *OVERVOLTAGE CATEGORY IV*

Equipment of OVERVOLTAGE CATEGORY IV is for use at the origin of the installation.

Note – Examples include electricity meters and primary over-current protection equipment



## Maintenance

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**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 batteries and store them separately

### Battery Replacement

1. Remove the two rear battery cover Phillips head screws
2. Open the battery compartment
3. Replace the two 1.5V AAA batteries.
4. Re-assemble the meter
- 5.



You, as the end user, are legally bound (**EU Battery ordinance**) to return all used batteries, **disposal in the household garbage is prohibited!** You can hand over your used batteries / accumulators at collection points in your community or wherever batteries / accumulators are sold!

**Disposal:** Follow the valid legal stipulations in respect of the disposal of the device at the end of its lifecycle

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