

# User's Guide

# **EXTECH**<sup>®</sup> INSTRUMENTS

## Extech AM300 300A AC Analog Clamp Meter

**Test Equipment  
Depot**  
1-800-517-8431

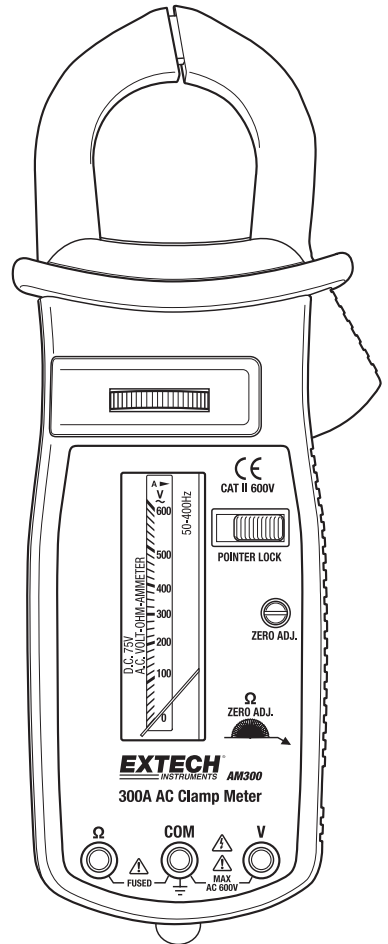
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## Introduction

Congratulations on your purchase of the Extech AM300 Analog Clamp Meter. This device measure AC Voltage and Current, DC Voltage, and Resistance. This meter is shipped fully tested and calibrated and, with proper use, will provide years of reliable service.

## Safety

### 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.

Function	Maximum Input
A AC	300A AC
V DC, V AC	600V DC/AC

- Do not apply voltage to meter when resistance function is selected.
- 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 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 Resistance 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.

## **STANDARDS**

### **PER IEC1010 OVERVOLTAGE INSTALLATION CATEGORY**

#### *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*

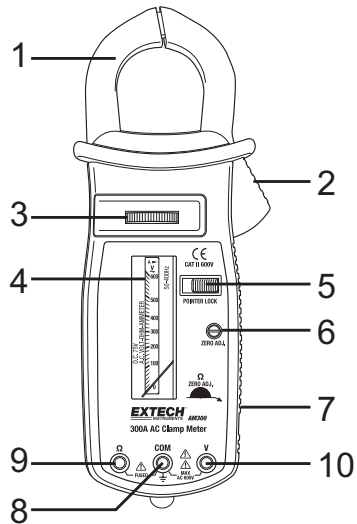
Equipment of OVERVOLTAGE CATEGORY IV is for use at the origin of the installation.

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

# Description

## Meter Description

1. Current clamp
2. Clamp opening trigger
3. Function Selector Switch
4. Scale Display
5. POINTER LOCK switch
6. Meter zero adjust
7. Zero ohms adjust
8. **COM** negative input jack for black test lead
9. **OHMS** positive input jack for red lead
10. **VOLT** positive input jack for red lead



## Specifications

Function	Ranges	Accuracy
<b>AC Current (50/60Hz)</b>	6, 15, 60, 150, and 300A AC	± 3% of Full Scale for 50/60Hz
<b>AC Voltage (50/60Hz)</b>	300 and 600V AC	± 3% of Full Scale
<b>DC Voltage</b>	75V DC	± 3% of Full Scale
<b>Resistance</b>	2000Ω (20Ω mid-scale)	± 3% of Scale Length

<b>Clamp jaw opening</b>	1.5" (38mm) max.
<b>Display</b>	Analog with Zero Adjustment
<b>Input Impedance</b>	240kΩ (75VDC range), 530kΩ (300VAC range, 1MΩ (600VAC range),
<b>AC bandwidth</b>	50 to 60Hz (50 to 400Hz for 15 through 300ACA ranges)
<b>Ambient conditions</b>	Temperature 32 - 104°F (0 - 40°C); Relative Humidity <80%
<b>Operating Altitude</b>	7000ft. (2000m) maximum.
<b>Battery</b>	One (1) 1.5V 'AA' Battery
<b>Fuse</b>	0.5A / 250V glass fuse (6mm x 30mm); spare fuse supplied
<b>Dimensions &amp; Weight</b>	9.0 x 2.8 x 1.5" (230 x 72 x 37mm); 14.7oz. (416g)
<b>Safety</b>	For indoor use and in accordance with the requirements for double insulation to IEC1010-1 (2001); EN61010-1 (2001) Overvoltage Category II 600V, Pollution Degree 2.

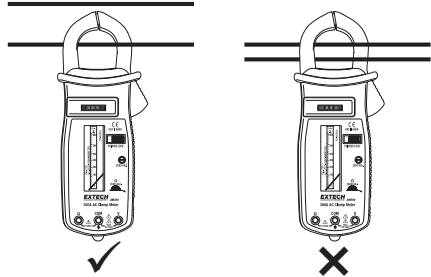
## Operation

**NOTES:** Read and understand all **Warning** and **Caution** statements in this operation manual prior to using this meter.

### AC Current Measurements

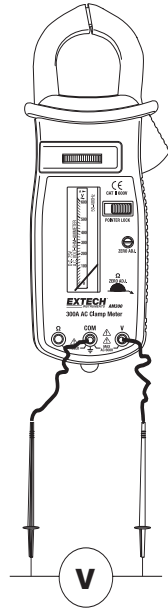
**WARNING:** Ensure that the test leads are disconnected from the meter before making current clamp measurements.

1. Set the scale to the highest range using the function thumbwheel switch. Step down to the lower ranges as necessary in order to keep the reading in the upper half of the scale.
2. Ensure that the Pointer Lock switch is set to the right-most position so that the pointer may freely move.
3. Turn the Zero Adjust screw 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 analog display pointer will indicate the current reading.



### AC/DC Voltage Measurements

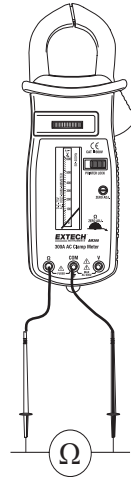
1. Insert the black test lead into the negative **COM** terminal and the red test lead into the positive **V** terminal.
2. Set the display to the highest AC or DC Voltage range using the thumbwheel switch. Step down to the lower ranges as necessary in order to keep the reading in the upper half of the scale.
3. Ensure that the Pointer Lock switch is set to the right-most position so that the pointer may freely move.
4. Turn the Zero Adjust screw to zero the meter display.
5. Connect the test leads in parallel to the circuit under test.
6. The analog display pointer will indicate the voltage reading.



## Resistance Measurements

**WARNING:** To avoid damage to the meter, do not apply voltage to the meter when measuring resistance. Ensure that the circuit, device, or component under test is disconnected from power before measuring resistance.

1. Insert the black test lead into the negative COM terminal and the red test lead into the OHMS positive terminal.
2. Set the display scale to the OHMS position using the thumbwheel switch.
3. Ensure that the Pointer Lock switch is set to the right-most position so that the pointer may freely move.
4. With the test leads open, adjust the meter zero so that the pointer is over the  $\infty$  symbol.
5. Touch the test lead tips together and adjust the 0 Ohms adjust until the pointer is over the 0 ohms position.
6. Touch the test probe tips across the circuit or component under test.
7. The analog display pointer will indicate the resistance reading.



### Pointer Lock Function

The Pointer Lock switch freezes the pointer's position and can be used as a 'data hold' feature. This feature is useful in dimly lit or hard to reach locations.

## Maintenance

**WARNING:** To avoid electrical shock, disconnect the meter from any circuit and remove the test leads from the input terminals before opening the case. Do not operate the meter with an 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 60 days or more, remove the battery and store it separately.

### Battery and Fuse Replacement

1. Remove the two (2) Phillips head screws at the rear of the meter.
2. Carefully open the meter housing.
3. Replace the 1.5V 'AA' battery if necessary
4. Replace the fuse if necessary with a 0.5A / 250V glass fuse (6mm x 30mm) or equivalent. Note that a spare fuse is provided inside the meter housing.
5. Close the meter and replace the meter screws securely.



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