

AMES CM600A

Ames 600A AC Clamp Meter User Manual

Model: CM600A

1. INTRODUCTION

The Ames 600A AC Clamp Meter (Model CM600A) is a versatile and essential tool designed for basic electrical troubleshooting. It offers a comprehensive range of measurement functions including AC current, AC/DC voltage, resistance, continuity, diode testing, capacitance, and frequency. Equipped with a 3-3/4 digit digital display, a built-in work light, and non-contact voltage measurement capability, this meter ensures efficiency and safety in various electrical applications. This manual provides detailed instructions to help you understand and effectively use your Ames 600A AC Clamp Meter.

2. SAFETY INFORMATION

Always adhere to safety precautions when operating electrical testing equipment. The Ames 600A AC Clamp Meter is CAT III 600V safety rated, independently tested by ETL. This rating indicates its suitability for measurements in building installation, such as distribution boards, circuit breakers, wiring, including cables, bus-bars, junction boxes, switches, socket outlets in the fixed installation, and equipment for industrial use and some other equipment, e.g., stationary motors with permanent connection to the fixed installation.

- Do not use the meter if it appears damaged or if the test leads are damaged.
- Always ensure the meter is set to the correct function and range before making measurements.
- Avoid contact with live circuits. Use appropriate personal protective equipment (PPE).
- To avoid electrical shock, remove test leads before opening the battery cover.
- Disconnect the test leads before making current clamp measurements.
- Do not exceed the maximum input limits for any function.

3. PRODUCT OVERVIEW

The Ames 600A AC Clamp Meter is designed for ease of use and accurate readings. Below is an image of the device, highlighting its key components.



Figure 3.1: Front view of the Ames 600A AC Clamp Meter, showing the clamp jaw, rotary dial, function buttons, and digital display.

Key Features:

- AC Current measurement up to 600A with a jaw opening of $\Phi 28\text{mm}/1.1\text{ in.}$
- AC/DC Voltage measurement up to 600V.
- Resistance measurement up to 40M Ω .
- Capacitance measurement up to 100 μF .
- Frequency measurement up to 10 KHz.
- 4000 Counts Digital Display.
- Autoranging for simplified operation.
- Auto Power Off feature to conserve battery life.
- Diode Test and Audible Continuity functions.
- Data Hold for convenient reading retention.
- Low Battery Indicator.
- Built-in worklight for illuminated measurements in low-light conditions.
- Built-in non-contact voltage (NCV) measurement for enhanced safety.

4. SETUP

4.1 Battery Installation

The Ames 600A AC Clamp Meter requires batteries for operation (batteries are not included). To install or replace batteries:

1. Ensure the meter is turned OFF and disconnect any test leads from the input terminals.
2. Locate the battery compartment cover on the back of the meter.
3. Use a screwdriver to loosen the screw(s) securing the battery cover.
4. Remove the battery cover.
5. Insert new batteries, observing the correct polarity (+ and -) as indicated inside the compartment.
6. Replace the battery cover and tighten the screw(s) securely.

4.2 Connecting Test Leads

For voltage, resistance, continuity, diode, capacitance, and frequency measurements, connect the test leads:

- Insert the black test lead into the "COM" (common) input jack.
- Insert the red test lead into the "INPUT" jack.

5. OPERATING INSTRUCTIONS

Turn the rotary dial to the desired measurement function. The meter features auto-ranging, simplifying operation by automatically selecting the appropriate range for the measurement.

5.1 AC Current Measurement (Clamp Function)

1. Turn the rotary dial to the "A~" (AC Current) position.
2. Press the clamp trigger to open the clamp jaw.
3. Enclose only one conductor (wire) within the clamp jaw. Ensure the jaw is fully closed.
4. Read the AC current value on the digital display.

5.2 AC/DC Voltage Measurement

1. Turn the rotary dial to the "V~" (AC Voltage) or "V-" (DC Voltage) position.
2. Connect the black test lead to the "COM" terminal and the red test lead to the "INPUT" terminal.
3. Touch the test probes to the circuit points where voltage is to be measured.
4. Read the voltage value on the digital display.

5.3 Resistance, Continuity, Diode, Capacitance, and Frequency Measurement

For these functions, turn the rotary dial to the corresponding symbol (e.g., Ω for Resistance, \bullet for Continuity, \blacktriangle for Diode, $\bullet F$ for Capacitance, Hz for Frequency). Use the "FUNC" button to cycle through multiple functions on a single dial position if applicable. Connect test leads as described in Section 4.2 and apply probes to the circuit under test.

5.4 Non-Contact Voltage (NCV) Measurement

1. Turn the rotary dial to the "NCV" position.
2. Move the top tip of the meter near a live conductor.
3. The meter will emit an audible beep and/or visual indication (e.g., LED light) when AC voltage is detected.

5.5 Additional Functions

- **Data Hold:** Press the "HOLD" button to freeze the current reading on the display. Press again to release.
- **Worklight:** Activate the built-in worklight for better visibility in dimly lit areas. Refer to the meter's specific button for this function.
- **Auto Power Off:** The meter will automatically power off after a period of inactivity to save battery life.
- **Low Battery Indicator:** A battery symbol on the display indicates when battery replacement is needed.

6. MAINTENANCE

6.1 Cleaning

To clean the meter, wipe the case with a damp cloth and a mild detergent. Do not use abrasives or solvents. Ensure the meter is completely dry before use.

6.2 Battery Replacement

When the low battery indicator appears on the display, replace the batteries as described in Section 4.1. Always use the specified battery type.

6.3 Calibration

For professional applications requiring certified accuracy, periodic calibration by a qualified service center is recommended. This ensures the meter maintains its specified measurement tolerances over time.

7. TROUBLESHOOTING

If you encounter issues with your Ames 600A AC Clamp Meter, refer to the following common troubleshooting steps:

Problem	Possible Cause	Solution
No display or dim display	Dead or low batteries	Replace batteries (refer to Section 4.1)

Problem	Possible Cause	Solution
Incorrect readings	Incorrect function selected; Damaged test leads; Meter needs calibration	Verify function setting; Check test leads for damage and replace if necessary; Consider professional calibration (refer to Section 6.3)
"OL" (Overload) displayed	Measurement exceeds selected range or meter's maximum capacity	Ensure meter is on auto-ranging or select a higher manual range if available; Do not exceed specified maximum input limits
Continuity buzzer not sounding	Circuit resistance too high; Test leads not making good contact	Ensure circuit is closed and resistance is within audible range; Check test lead connections

8. SPECIFICATIONS

Specification	Value
Brand	AMES
Model Number	CM600A
AC Current Range	600A
Jaw Opening	Φ28mm / 1.1 in.
AC/DC Voltage Range	600V
Resistance Range	40MΩ
Capacitance Range	100μF
Frequency Range	10 KHz
Display Counts	4000 Counts
Safety Rating	CAT III 600V (ETL Certified)
Power Source	Battery Powered (Batteries not included)
Item Weight	1.12 Pounds
Product Dimensions (L x W x H)	2.36 x 5.91 x 9.84 inches
Color	Black, Orange
UPC	792363640138

9. WARRANTY INFORMATION

For detailed warranty terms and conditions, please refer to the warranty card included with your product packaging or visit the official AMES website. Keep your purchase receipt as proof of purchase for any warranty claims.

10. SUPPORT

If you require further assistance or have questions not covered in this manual, please contact AMES customer support. Contact information can typically be found on the product packaging or the official AMES website. You can visit the official AMES Store for more information:[AMES Store on Amazon](#)



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