**AC 400A TRMS Clamp Meter**

**INSTRUCTION MANUAL**

**ENGLISH**

**FEATURES**
- True RMS
- 400A AC
- 700V AC (600V DC)
- Resistance 40MΩ
- DC Microamps 200µA
- Diode test
- Non-contact voltage detection
- Data hold
- Manual ranging options
- Worklight
- Audible voltage indicator
- Auto power off (low select button)
- Low battery indicator
- Overmolded grip
- Test lead storage
- Battery compartment latches
- Auto-calibration

**GENERAL SPECIFICATIONS**
- Operating Temperature: 32° to 104°F (0° to 40°C)
- Storage Temperature: 14° to 122°F (-10° to 50°C)
- Operating Altitude: 6,562 ft (2,000m)
- Pollution Degree: 2
- Display: 3 3/4 digit, 4000 count
- Recharge-Rate (Charge): 50%
- Over-range: “OL” is displayed
- Dimensions: 8.93” X 3.13” X 1.55”
- Weight: 0.95 lb
- Calibration: Recommended Annually
- CAT Rating: CAT III 1000V
- Battery Type: (AAA) 2 X
- Test Leads: Test lead w/Safety Clips
- Accuracy: ±1% of reading + full least significant digit

**IMPORTANT SAFETY WARNINGS**

**WARNING**
Read entire Safety Notes section regarding potential hazards and proper instructions before using this meter. In this manual the word “WARNING” is used to indicate conditions or actions that may pose serious physical hazards to the user. The word “CAUTION” is used to indicate conditions or actions that may damage the instrument.

**WARNING**
To ensure safe operation and service of the tool, follow these instructions. Failure to observe these warnings can result in severe injury or death.

**WARNING**
- Before each use, verify meter operation by measuring a known voltage or current.
- Never use the meter on a circuit with voltages that exceed the category based rating of the meter.
- Do not use the meter during electrical storms or in wet weather.
- Do not use the meter or test leads if they appear damaged.
- Ensure meter leads are fully seated and probe fingers are away from the metal probe contact when making measurements. Always grip the leads behind the finger guards molded into the probe.
- Do not open the meter to replace batteries while the probes are connected.
- Use caution when working with voltages above 80V DC or 250V AC RMS. Such voltages pose shock hazards.
- To avoid false readings that can lead to electrical shocks, replace batteries if a low battery indicator appears.
- Always use proper personal protective equipment (PPE) to prevent shock and arc strikes where hazardous live conductors are exposed.
- Always turn off power to a circuit or assembly before testing, retrieving, or exposing the circuit while testing or servicing.
- Always follow the manufacturer’s instructions and safety guidelines provided with the tool before using.
- Do not cut the circuit or connect to mains socket while the meter is connected to the power source.

**SYMBOLS**

- AC (Alternating current)
- DC (Direct current)
- CAT III Voltage
- CAT III 1000V
- CAT II
- CAT I
- CAT III 1000V
- CAT III 600V
- CAT II
- CAT I
- CAT III 1000V
- CAT III 600V
- CAT II
- CAT I
- CAT III 1000V
- CAT III 600V
- CAT II
- CAT I
- CAT III 1000V
- CAT III 600V
- CAT II
- CAT I

**OVERVIEW**

- A. Clamp: Measuring AC/DC current. Opens to 1 2/5” (31.7mm).
- B. Conductor Alignment Marks: Used to aid the visual alignment of a conductor when measuring inductive reactance. Greatest accuracy is achieved when the conductor is centered in the clamp meter at the intersection of these marks.
- C. Wire Separator/NCV Sensor: Used to isolate an individual wire from a bundle for testing. NCV sensor detects line voltage.
- D. Test Lead Holder: Used for hand-free use of the test probes.
- E. Worklight: Lights clamp area in dark work environments.
- F. Category Max Indicator: Maximum CAT Rating for clamp jaw.
- G. Head Guide: Used as a point of reference for the operator’s safety.
- H. NCV Alert Light: Indicates voltage when in NCV mode.
- I. Clamp Lever: Opens and closes clamp jaws. Do not allow fingers or objects to become pinched in the jaw as the jaws close.
- J. Hold Button: Press to hold the reading on the display. Press again to return to live reading.
- K. Hold and Test to Worklight: Press and hold again to turn off.
- L. Function/Blk: Turns on meter and is used to select the function.
- M. Select Button: Used to choose measurement range from a single-dial selection. AC or DC volts, Resistance or Continuity.
- N. Battery Cover Latch: Eases access for replacing batteries.
- O. Battery Cover Latches: Eases access for replacing batteries.
- P. Display: High contrast display.
- Q. Category Max Indicator: Maximum CAT Rating for input jacks.
- R. Input Jacks: Multifunction or Common jacks.
- S. Over-Range: “OL” is displayed during auto ranging mode
- T. Battery: Auto power off after 30 minutes of use. Press and hold “test” button while turning the meter on to disable Auto power off.
- U. Display: High contrast display.
- V. Category Max Indicator: Maximum CAT Rating for input jacks.
- W. Input Jacks: Multifunction or Common jacks.
- X. Over-Range: “OL” is displayed during auto ranging mode
- Y. Battery: Auto power off after 30 minutes of use. Press and hold “test” button while turning the meter on to disable Auto power off.
- Z. Display: High contrast display.
**Cat IV and Cat III Measurement Locations**

- Ensure the test lead shield is pressed firmly in place. Failure to use the Cat IV shield increases arc-flash risk.

**Cat II Measurement Locations**

- CAT II shields may be removed for Cat II locations. This will allow testing on recirculated conductors such as standard wall outlets. Take care not to lose the shield.

**WARNING:** Test Lead category protections apply only to test leads and should not be confused with the meter’s specific CAT rating. Observe the maximum category protection indicated on the meter the test leads are plugged into.

**CAUTION:** If the test leads need to be replaced, you must use a 18 mm one which should meet EN 61010-031 standard, rated CAT III 1000V or better.

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**AC/DC Voltage: < 750V AC/600V DC**

- Buzzer sounds at less than 40Ω.

**GOOD DIODE**

- **Features:**
  - Forward voltage drop if forward biased.
  - "O.L." if reverse biased.

**BAD DIODE**

- **Features:**
  - Forward voltage drop if forward biased.
  - "O.L." if reverse biased.

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**DC Low Amps: < 2000µA**

- **Features:**
  - Range: 0.1µA to 2000µA
  - Accuracy: ±(1.5% + 5 digits)
  - Overload Protection: 2000µA/600V RMS

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**Battery Replacement**

- **Features:**
  - When the batteries are too low for safe operation, the Low Battery indicator will display.
  - Retain latches until block symbols are aligned with arrows. Remove battery cover.
  - Replace the old batteries with 2 new (AAA) batteries.
  - Replace the battery cover.
  - Retain latches until the lock symbols are aligned with arrows.

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**Diode**

- **Features:**
  - Displays "OL" or "O.L." if reverse biased.

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**Non-Contact Voltage Detection**

- **Features:**
  - Select NCV and move the tip of the clamp meter near the voltage source.
  - An Audible and Visual alert will indicate voltage.
  - Do not use non-contact voltage detector to determine if there is current in the wire. Detection operation could be affected by socket design, insulation thickness, type and other factors.
  - Voltage indicator light may also light when voltage is present on the meter’s input jack or from external interference sources such as motors, flashlights, etc.

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**Turn on your favorite device and enjoy the music!**

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**Test Lead Notes**

- Use CAT III rated Test leads or higher.
- Do not attempt to measure more than 750V AC/600V DC.
- Do not measure resistance on a live circuit.
- Use CAT III rated Test leads or higher.
- "O.L." if reverse biased.
- Non-Contact Voltage Detection is used to detect power with the sensor located at the tip of the clamp head.
- Do not use non-contact voltage detector to determine if there is current in the wire. Detection operation could be affected by socket design, insulation thickness, type and other factors.
- Voltage indicator light may also light when voltage is present on the meter’s input jack or from external interference sources such as motors, flashlights, etc.

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**WARNING**

- Do not use non-contact voltage detector to determine if there is current in the wire. Detection operation could be affected by socket design, insulation thickness, type and other factors.
- Voltage indicator light may also light when voltage is present on the meter’s input jack or from external interference sources such as motors, flashlights, etc.

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**Length of Lead:**

- 4mm CAT III 1000V
- 6mm CAT IV

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**Voltage Indicator Light**

- Displays approx. 2V DC
- Displays approx. 25V AC
- Displays "OL" open-circuit

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**Features:**

- Range: 4V to 750V
- Accuracy: ±(1.2% + 5 digits)
- Overload Protection: 750V/1V RMS

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**Features:**

- Range: 4V to 30V
- Accuracy: ±(0.8% + 5 digits)
- Overload Protection: 30V AC/DC

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**Battery Replacement**

- **Features:**
  - When the batteries are too low for safe operation, the Low Battery indicator will display.
  - Retain latches until block symbols are aligned with arrows. Remove battery cover.
  - Replace the old batteries with 2 new (AAA) batteries.
  - Replace the battery cover.
  - Retain latches until the lock symbols are aligned with arrows.

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**Features:**

- Range Resolution Accuracy Overload Protection
  - 400mΩ 100mΩ ±(1.5% + 5 digits)
  - 4kΩ 1Ω ±(1.2% + 3 digits)
  - 400V 100mV ±(0.8% + 5 digits) 1000V RMS
  - 400A 0.1A ±(2.5% + 10 digits) 400A/600V RMS
  - 750V 2000µA ±(1.2% + 3 digits) 2000µA/600V RMS
  - 400V 100µA ±(1.2% + 3 digits)
  - 400mA 1mA ±(1.2% + 3 digits)

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**Battery Replacement**

- **Features:**
  - When the batteries are too low for safe operation, the Low Battery indicator will display.
  - Retain latches until block symbols are aligned with arrows. Remove battery cover.
  - Replace the old batteries with 2 new (AAA) batteries.
  - Replace the battery cover.
  - Retain latches until the lock symbols are aligned with arrows.

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**Features:**

- **Range Resolution Accuracy Overload Protection**
  - 40µA 0.1µA ±(1.5% + 5 digits) 2000µA/600V RMS
  - 400µA 1µA ±(1.2% + 3 digits)
  - 4.0V <3.0V DC ±0.3% ±5 digits
  - 40A 0.1A ±(3.0% + 10 digits) 400A/600V RMS
  - 400A 0.1A ±(2.5% + 10 digits)
  - 2000µA 1µA ±(1.2% + 3 digits)

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**DC Low Amps: < 2000µA**

- **Features:**
  - Range: 0.1µA to 2000µA
  - Accuracy: ±(1.5% + 5 digits)
  - Overload Protection: 2000µA/600V RMS

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**Non-Contact Voltage Measurement**

- **Features:**
  - NCV Sensor located in tip

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**AC Volts (45Hz to 400Hz)**

- **Features:**
  - True RMS Frequency Range: Sine 50Hz to 400Hz
  - Frequency width: 60Hz to 400Hz: 5% to 95%
  - Frequency width: 400Hz to 4kHz: 15% to 85%

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**DC Volts**

- **Features:**
  - True RMS Frequency Range: Square 50Hz to 400Hz
  - Frequency width: 0.1kHz to 4kHz: 0.5% error
  - Frequency width: 400Hz to 4kHz: 0.5% error

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**Non-Contact Voltage Measurement**

- **Features:**
  - NCV Sensor located in tip

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**Battery Replacement**

- **Features:**
  - When the batteries are too low for safe operation, the Low Battery indicator will display.
  - Retain latches until block symbols are aligned with arrows. Remove battery cover.
  - Replace the old batteries with 2 new (AAA) batteries.
  - Replace the battery cover.
  - Retain latches until the lock symbols are aligned with arrows.

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**Features:**

- **Range Resolution Accuracy Overload Protection**
  - 40MΩ 0.01MΩ ±(1.5% + 5 digits)
  - 4MΩ 0.001MΩ ±(1.5% + 5 digits)
  - 400kΩ 100Ω ±(1.5% + 5 digits)
  - 40kΩ 10Ω ±(1.5% + 5 digits)
  - 4kΩ 1Ω ±(1.5% + 5 digits)

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**Battery Replacement**

- **Features:**
  - When the batteries are too low for safe operation, the Low Battery indicator will display.
  - Retain latches until block symbols are aligned with arrows. Remove battery cover.
  - Replace the old batteries with 2 new (AAA) batteries.
  - Replace the battery cover.
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**Contact Us:**

99 Washington Street
Melrose, MA 02176
Phone 781-665-1400
Toll Free 1-800-517-8431

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