

Operating Instructions

CURRENT CLAMP

1 INTRODUCTION

The Current Clamp aids in measuring AC or DC current flow through a wire or cable.

Safety Precautions

Do not operate this tool before reading these instructions in their entirety. The following guidelines must be followed to avoid accidents that can result in electric shock or personal injury.

- Pay close attention to **▲ WARNING** stamped on the tool's case. This warning, as well as all warnings and precautions used throughout these instructions, must be followed to avoid electric shock and/or personal injury.
- The RESPONSIBLE PARTY shall be made aware that, if the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- Before using this tool, verify its proper operation on a known similar function source where the unit value is also known. Take corrective action based on the indicated results.

To prevent electrical shock and/or damage to the tool or the equipment under test, observe the following safety precautions:

- DO NOT apply more than the rated voltage, as marked on the tool and tester, between terminals or between any terminal and earth ground.
- Use caution when working above 30V AC rms, 42 V peak, or 60 V DC. Such voltages pose a shock hazard.
- To avoid false readings that could lead to possible electric shock or personal injury, replace the batteries as soon as the low battery indicator lights.
- Always inspect the test leads prior to every use. If any damage is found, **do not** use the tool.

- Always consider electrical and electronic equipment to be energized (live). Never assume any equipment is de-energized.
- Never ground yourself when taking electrical measurements. Isolate yourself from ground by using dry rubber insulating mats to cover all exposed/grounded metal. Stand on rubber mats and wear dry clothing.
- Use one hand, instead of two, whenever possible to take measurements. If two hands must be used, use extreme caution not to contact any energized conductors with your hands. Be certain test leads are dry and clean.
- Do not hold the tool beyond the hand grip when taking measurements.

- Don't become part of the circuit. Think safety. Act safely.

If working on a vehicle, take the following added precautions:

- Only work on vehicle in a well ventilated area.
- Always wear safety eye protection.
- Avoid moving fan blades or any potentially moving parts.
- Avoid hot engine parts.
- Put transmission in "park" (automatic transmission vehicles) or "neutral" (manual transmission vehicles). Set the parking brake.
- Turn the ignition "off" before connecting or disconnecting any testing equipment.
- Put blocks on drive wheels.
- Avoid wearing loose clothing or jewelry when working on a vehicle.
- Read your vehicle's service manual and follow it's safety procedures.

2 SPECIFICATIONS

General

- Captured Conductor Size: 0.75 in. (19mm) maximum
- Power Indicator: Green LED
- Low Battery Indicator: Red LED
- Operating Temperature: 32 F to 122 F (0C to 50C), 70% relative humidity
- Storage Temperature: -4 F to 158 F (-20C to 70C), 80% relative humidity
- Battery Type: 9V DC, NEDA 1604, 6F22, 006P
- Dimensions:
 - Height: 10.25 in. (260mm)
 - Width: 2.25 in. (57mm)
 - Depth: 1.25 in. (32mm)
- Lead: Coil cable with straight banana plug or 36-inch (91cm) test lead clipped together

Electrical [at 73±9 F (23±5 C) 70% relative humidity maximum]

- Effective Measurement Range:
 - 10mV/1A: 100mA to 20A DC or RMS AC for 200mV range of the tester.
 - 1mV/1A: 1A to 200A DC or RMS AC for 200mV range of the multimeter.
 - 200A to 600A DC or RMS AC for 2V range of the multimeter.

- Accuracy

System accuracy: Current clamp accuracy + tester accuracy

For example, if the measured conductor carries a 1A current, set the Current Clamp to 1mV/100mA range to get an output signal of 10mV. Suppose the accuracy of the units is 1.5%, the tolerance limit should be between 10.15mV maximum and 9.85mV minimum.

When the unit is connected to a tester with an accuracy of 0.5% in 200mV range, the reading displayed on the tester will be 10.20mV max. (10.15mV × (1+0.5%) = 10.20mV) and 9.80mV min. (9.85mV × (1-0.5%) = 9.80mV)

- Current Clamp Accuracy

DCA range = 1mV/100mA: ±(1.5%+50mA) 100mA~20A

DCA range = 1mV/1A: ±(2.0%+0.5A) 1A~200A; ±(2.5%+5A) 200A~600A

ACA range = 1mV/100mA: ±(2.0%+50mA) 100mA~20A (40Hz~400Hz)

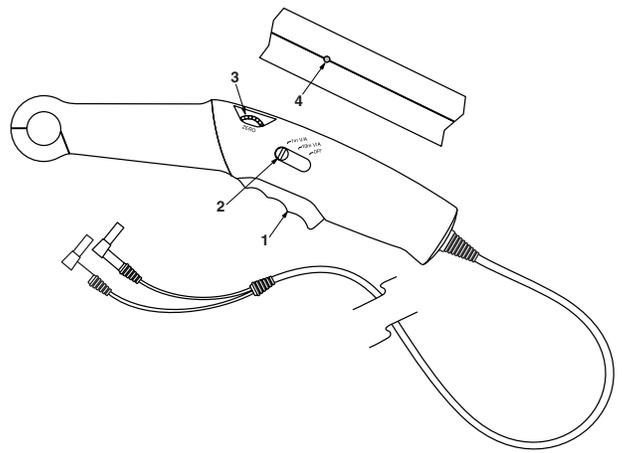
ACA range = 1mV/1A: ±(2.5%+0.5A) 1A~200A (40Hz~400Hz); ±(3.0%+5A) 200A~600A (40Hz~400Hz)

- Load Resistance: 10KΩ typical

- Temperature Coefficient: 0.1x(specified accuracy) Per degree C. (0 to 18, 28 to 50)

3 CONTROLS AND INDICATORS

1. **Trigger** - Opens and closes the Current Clamp jaws.
2. **OFF - 1m V/A - 10m V/A Switch** - Turns the Current Clamp power ON and OFF; sets the Current Clamp to the appropriate scale.
3. **ZERO Adjustment Thumbwheel** - Adjusts the Automotive Tester reading to "zero" prior to making DC current measurements.
4. **Power - Low Battery Indicator**
 - Lights GREEN when the Current Clamp is turned ON to indicate the unit is ready for use.
 - Lights RED when the Current Clamp is turned ON to indicate a low battery condition.



4 CLAMP CURRENT MEASUREMENT

1. Plug the BLACK test lead into the 'COM' jack; plug the RED test lead into the appropriate channel.
2. Set the tester's Function/Range Selector switch to the appropriate position for clamp current measurements.
3. Set the Current Clamp's **OFF - 1m V/A - 10m V/A** switch to the desired range. Verify the Power indicator lights GREEN.
4. If necessary, use the ZERO Adjustment Thumbwheel to "zero" the tester reading.
5. Squeeze the trigger to open the clamp jaws. Place the clamp jaws around the wire or cable from the source or load under measurement; release the trigger.
6. Read the results on the tester's display.

5 REPLACING THE BATTERY

NOTE: A 9-volt battery is required for operation of the Current Clamp.

1. Set the Current Clamp's **OFF - 1m V/A - 10m V/A** switch to the OFF position. Disconnect the Current Clamp from the Automotive Tester.
2. Remove the screw from the battery compartment cover. Use your finger or a small coin to remove the cover.
3. If necessary, remove the old battery from the battery connector.
4. Match the battery terminals with the battery connector contacts, and snap the battery connector securely onto the battery.
5. Place the battery in the battery compartment.
6. Reinstall the battery compartment cover.

WARRANTY AND SERVICING

LIMITED ONE YEAR WARRANTY

The Manufacturer warrants to the original purchaser that this unit is free of defects in materials and workmanship under normal use and maintenance for a period of one (1) year from the date of original purchase.

If the unit fails within the one (1) year period, it will be repaired or replaced, at the Manufacturer's option, at no charge, when returned prepaid to the Service Center with Proof of Purchase. The sales receipt may be used for this purpose. Installation labor is not covered under this warranty. All replacement parts, whether new or remanufactured, assume as their warranty period only the remaining time of this warranty.

This warranty does not apply to damage caused by improper use, accident, abuse, improper voltage, service, fire, flood, lightning, or other acts of God, or if the product was altered or repaired by anyone other than the Manufacturer's Service Center.

The Manufacturer, under no circumstances shall be liable for any consequential damages for breach of any written warranty of this unit. This warranty gives you specific legal rights, and you may also have rights, which vary from state to state. This manual is copyrighted with all rights reserved. No portion of this document may be copied or reproduced by any means without the express written permission of the Manufacturer. THIS WARRANTY IS NOT TRANSFERABLE. For service, send via U.P.S. (if possible) prepaid to Manufacturer. Allow 3-4 weeks for service/repair.

SERVICE PROCEDURES

If you have any questions, require technical support or information on UPDATES and OPTIONAL ACCESSORIES, please contact your local store, distributor or the Service Center.

USA & Canada:

(800) 544-4124 (6:00 AM-6:00 PM, Monday-Saturday PST)

All others: (714) 241-6802 (6:00 AM-6:00 PM, Monday-Saturday PST)

FAX: (714) 241-3979 (24 hr.)

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