



AC/DC Current Probe

925



Introduction

The Probe is a clamp-on AC/DC current probe for use with common digital multimeters and labsopes. It has been designed and tested according to IEC Publication 1010-2-032 (1994, 12) (Overvoltage Category III), Safety Requirements for Hand-help Current Clamps for Electrical Measurement and Test, the EMC Directive (EN 50081-1 and EN 50082-1). Designed to Protection Class II, Double or reinforced insulation requirements of UL 3111, CAN/CSA C22.2 No. 1010.1-92, ISA-DC82, and IEC 1010-2-032.

Specifications

Current Ranges:	0-1 to 400A AC/DC and 1A to 1000A dc/ac
Output Signals:	1mV per Amp AC/DC in the 400 Amp range 0.1mV per Amp AC/DC in the 1000 Amp range
Accuracy: (DC to 400Hz)	± (2% of reading + 5)
Working Voltage:	600V AC/DC rms
Common Mode Voltage:	42V DC or 30V AC
Storage Temperature:	-20°C to 60°C (-4°F to 140°F)
Operating Temperature:	0°C to 45°C (32°F to 95°F)
Relative Humidity:	0% to 80% (0°C to 35°C; 32°F to 113°F) 0% to 70% (35°C to 45°C; 95°F to 113°F)
Battery Type:	9V, NEDA 1604 or IEC 6LR61
Battery Life:	200 Hours typical (alkaline)
Max. Conductor Size:	1 Conductor 51mm (2.00 inch) 2 Conductor 25mm (.98 inch)
Maximum Jaw Opening:	52mm (2.04 inc.)
Output Cable:	1.6 meters (63 inches)
Dimensions:	205 x 97 x 44mm (8.07 x 3.82 x 1.73 in.)
Weight:	410g (14.5 oz.)

Compatibility

The Probe is compatible with any 4000 count millivolt measuring device that has the following features:

- Range and resolution capable of displaying millivolts with a 1 millivolt resolution for the 400 Amp range, and a resolution of 0.1 Millivolt for the 1000 Amp range.
- Accepts standard safety-shrouded plugs or a banana plug.
- Input impedance of greater than or equal to 10MΩ

Measuring AC Current

1. Connect the Probe to the input terminals on the DMM.
 2. Turn on the DMM and put the DMM in the DC millivolts measurement range.
 3. Toggle AC/DC switch to select AC and turn on the Probe. Set the Probe on the 400A or 1000A measurement range.
 4. Clamp the Probe around the conductor.
 5. Read the Display
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Measuring DC Current

1. Connect the Probe to the input terminals on the DMM.
 2. Turn on the DMM and put the DMM in the DC millivolts measurement range.
 3. Toggle AC/DC switch to select DC and turn on the Probe to set the Probe on the 400A or 1000A range.
 4. Zero the display by using the DCA Zero Adjustment knob.
 4. Clamp the Probe around the conductor. (If necessary, use the arrow direction mark to identify the direction of dc current flow.
 5. Read the display.
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Guidelines for Positioning the Probe Jaws

1. Center the conductor inside the Probe jaws.
 2. Make sure the Probe is perpendicular to the conductor.
 3. Avoid measurements, if possible, close to other current carrying conductors.
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Service

When the "LOW BAT" LED of this Probe is turned on, replace the battery installed within the Probe by setting switch to OFF, disconnecting leads from DMM and removing the screws that hold the case together.

Technical Support

Any questions or inquiries about service can be answered by contacting Ferret at:

Ferret Instruments, Inc.
1310 Higgins Drive
Cheboygan, MI 49721
(231) 627-5664, Fax (231) 627-2727
Toll Free (800) 627-5655

SAFETY PRECAUTIONS

—Read All Instructions Before Using The Probe—

Never use the Probe on circuits with voltages higher than 600V rms.

Keep your fingers behind the hand guard.

Be extremely cautious when clamping around uninsulated conductors or bus bars. Accidental contact with the conductor could result in electric shock.

Never use a Probe whose insulating protection has been impaired.

Always wear eye protection when testing vehicles. Be extra careful near batteries and moving parts. Do not lay tools on a battery.

Battery gas is highly explosive.

If a battery explodes flush the acid away from skin with generous amounts of water. Follow up with a neutralizing solution of baking soda and then more water.

Never use a wrench on the ungrounded battery terminal until the grounded one has been disconnected. Contact between the vehicle body metal and the hot terminal can cause sparks to ignite gas or even weld tools into a battery short circuit.

Keep the space around a battery well ventilated.

Do not make sparks or allow flames near batteries.

Before working on a vehicle set the brakes and block the wheels. Beware of automatic parking brake releases.

Keep your work area well ventilated and free of exhaust.

Avoid electrical shocks caused by getting close to live ignition wires or touching the coil TACH terminal. A person's reaction near a live engine can be more damaging than the shock.

Keep spark producing devices at least 0.5m (18") above the floor to reduce the hazard of igniting gasoline vapor.

Do not let test leads wind up in a moving fan or pulley. Route leads away.

Remove finger rings and metal wrist bands. They can short terminals and become very hot from electric current.