SPECIFICATIONS

Current range: 2 A to 400 A, dc or ac.
Accuracy: ±2% reading + 2A), dc or ac.
(Accuracy specified at 18° to 28°C.)
AC frequency response: 50 Hz to 400 Hz.
Output: 1 mV per Amp.
Input impedance (of DMM): 10 kΩ minimum.
Output cable: Coiled cord stretches to over 6 feet; connects to multimeter voltage jacks.
Maximum conductor size: 1.1” (30 mm).
Power requirement: 9 V battery (NEDA 1604).
Battery life: 100 hours typical.
Low battery indication: Red LED.
Operating temperature: 0° to 40°C, -70% to 90% R.H.
Storage temperature: -20° to +70°C, -80% R.H.
Dimensions (HxWxD): 7 x 2.75 x 1.3” (178 x 70 x 33 mm).
Weight: 11 oz. (320 gm).
Accessories included: Battery, Instruction Manual.

Fig. 1. Controls and indicators.

OPERATING INSTRUCTIONS

4. Turn on the CP-3 by moving the ON/OFF switch to ON. The green POWER indicator lights. If the red LO BAT indicator lights and remains lit, the battery is too low for dependable measurements and should be replaced. Consult the “Maintenance” section.

NOTE
It is normal for the LO BAT indicator to flash momentarily when the ON/OFF switch is first turned to ON.

5. Wait a few seconds for the DMM reading to settle down.
6. Open the spring-loaded clamp by pressing the trigger on the left side of the CP-3.
7. Position the clamp around a single wire or conductor carrying the current to be measured, and release the trigger. Make sure that the clamp is completely closed.
8. Read and observe the important information in the “Considerations” section.

CONSIDERATIONS

1. The output of the CP-3 is a voltage. Make sure you connect it to the voltage jack on the DMM, not to any current jack.
2. The clamp must be positioned around only one conductor of a circuit as shown in Fig. 2. If it is placed around two or more current-carrying conductors the reading will be false. A good example of a false reading would be an attempt to measure ac current by clamping around the line cord of an appliance. Current flowing in both directions tend to cancel the measurement, giving a false reading.
3. The DC current reading is positive when the current is flowing into the clamp from the front. The reading is negative when current is flowing outwards. See Fig. 3.
4. The input impedance of the DMM used must be 10 kΩ or greater. Since the input impedance of most DMM’s is 10 MΩ, this is totally nonproblem.

5. When making dc current measurements, a hysteresis effect can occur which makes it impossible to zero the clamp properly. To eliminate this effect, open and close the jaws several times and then zero again.
6. A good practice for measuring low currents is to loop an appropriate number of turns of the conductor through the jaws. The actual current is the measured value divided by the number of turns.
7. Table 1 shows which range gives the best resolution, given the meter type and expected current value. If unsure about the expected value, use the larger range listed. The CP-3 outputs a voltage of 1 mV per Amp of measured current. Therefore, at a current of 400 A, the voltage applied to the DMM is 400 mV.

Table 1. Range/resolution table.

<table>
<thead>
<tr>
<th>DMM type:</th>
<th>If the expected current is 0 to 200 A.</th>
<th>If the expected current is 200 to 400 A.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-1/2 digit</td>
<td>Use 200 mV range (max reading 199.9).</td>
<td>Use 2 V range (max reading 2000).</td>
</tr>
<tr>
<td>Current value is display reading, in Amps, with 0.1 A resolution.</td>
<td>Current value is display reading x 1000, in Amps, with 1 A resolution.</td>
<td></td>
</tr>
<tr>
<td>4-1/2 digit</td>
<td>Use 200 mV range (max reading 199.999).</td>
<td>Use 2 V range (max reading 4000).</td>
</tr>
<tr>
<td>Current value is display reading, in Amps, with 0.01 A resolution.</td>
<td>Current value is display reading x 10000, in Amps, with 0.1 A resolution.</td>
<td></td>
</tr>
<tr>
<td>3-3/4 digit</td>
<td>Use 400 mV range (max reading 399.9).</td>
<td>Current value is display reading, in Amps, with 0.1 A resolution.</td>
</tr>
</tbody>
</table>

*Higher readings are possible on the DMM. However, accuracy on the current clamp is specified to 400 A.

8. If the DMM has a Peak Hold or Max Hold capability, surge current may be measured by enabling the Peak (or Max Hold mode and clamping around the conductor before energizing the circuit under test. Note, however, that some current spikes may be too fast for a DMM to catch.
9. If the DMM has true RMS capability, the current measurement will be a true RMS value.