

# DIGITAL CLAMP METER OPERATION MANUAL

## I. INTRODUCTION

clamp meter is 3 1/2 digit LCD and standard 9V battery operation for measuring DC voltage, AC and DC current, resistance and continuity test. All overload protection is provided. It is matching with 500V insulation test attachment for insulation test function. The knob switch design makes manual operation workable & function selector, range selector and power switch are all on one knob. It is a good tool for electric measurement.

## II. GENERAL SPECIFICATION

1. Display : 3 1/2 digit LCD and max. 1999 counts.
2. Polarity : Auto
3. Over range indication: Only the MSD "1" display.
4. Sampling rate: 3 times per second.
5. Low voltage indication: "LOBAT" sign
6. Hold: Data hold
7. Power: 9V carbon-zinc battery or alkaline battery
8. Battery life: approx. 200 hours (alkaline battery)  
approx. 150 hours (carbon-zinc battery)
9. Working environment: 0~50°C, <80% RH.
10. Storage environment: -20°C~60°C, <80% RH.
11. Dimension: 230(L)mm x 70(W) mm x 37(D)mm
12. Weight: approx. 310g (including battery).
13. Max. jaw opening: 50mm

## III. ELECTRICAL SPECIFICATION:

Accuracy is  $\pm$ (percentage of reading + number of digit) at 23 $\pm$ 5°C, <80%RH.

### 1. AC current

| Range | Accuracy      | Resolution |
|-------|---------------|------------|
| 200A  | $\pm(3\%+5d)$ | 100mA      |
| 1000A | $\pm(3\%+5d)$ | 1A         |

Frequency response: 50~60Hz

Indication: Average (rms of sine wave)

### 2. DC voltage

| Range | Accuracy        | Resolution |
|-------|-----------------|------------|
| 1000V | $\pm(0.8\%+2d)$ | 1V         |

Input impedance: 9M $\Omega$

Max. overload protection: **1000 V DC**

### 3. AC voltage

| Range | Accuracy        | Resolution |
|-------|-----------------|------------|
| 750V  | $\pm(1.2\%+4d)$ | 1V         |

Frequency response: 50~400Hz

Input impedance: 9M $\Omega$

Max. overload protection: **750 V AC rms**

## 4. Resistance

| Range        | Accuracy      | Resolution   |
|--------------|---------------|--------------|
| 200 $\Omega$ | $\pm(1\%+3d)$ | 0.1 $\Omega$ |
| 20k $\Omega$ | $\pm(1\%+1d)$ | 10 $\Omega$  |

Max. overload protection: **250 V DC / AC rms**

## 5. Continuity test

Range: 200 $\Omega$

When resistance less than 75 $\Omega$  build-in buzzer sounds.

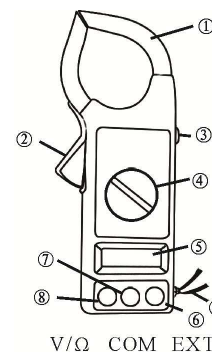
Max. overload protection: 250VDC/AC RMS

### High resistance

| Range          | Accuracy                      | Resolution   |
|----------------|-------------------------------|--------------|
| 20M $\Omega$   | $\pm(2\%+2d)$                 | 10k $\Omega$ |
| 2000M $\Omega$ | $\leq 500M\Omega \pm(4\%+2d)$ | 1M $\Omega$  |
|                | $> 500M\Omega \pm(5\%+2d)$    |              |

## IV. FRONT PANEL DESCRIPTION:

1. CLAMP
2. PRESSURE
3. HOLD switch
4. KNOB switch
5. LCD
6. insulation attachment TERMINAL
7. COM terminal
8. V/ $\Omega$  INPUT terminal
9. HAND BELL



## V. OPERATION:

### 1. AC current measurement:

- a. Set the knob switch to ACA 1000A position.
- b. Set the hold switch is loosing state.
- c. Press the "PRESSURE" down and clamp a wire. If clamp two or over wire, measure is useless.
- d. If the reading less than 200A, change the range to "200A" position in order to improve the Resolution.
- e. If in dark, press hold switch, and read the data in light place.

### 2. AC and DC voltage measurement:

- a. Set the knob switch to DCV1000V or ACV750V position.
- b. Set the hold switch is loosing state.
- c. Connect the red lead to "V/ $\Omega$ " jack and the black lead to "COM" jack.
- d. Connect the probes across circuit to be tested.

### 3. Resistance measurement:

- a. Set the knob to proper resistance position.
- b. Set the hold switch is loosing state.

- c. Connect the red test lead to "V. $\Omega$ " jack and the test black lead to "COM" jack.
- d. Connect the probes across resistance to be tested.
- e. When checking in-circuit resistance, be sure the circuit under test has all power removed and that all capacitor are fully discharged.

## 4. Continuity test:

- a. Set the knob switch to 200 $\Omega$  position.
- b. Connect the test lead to "V. $\Omega$ " jack and the test black lead to "COM" jack.
- c. If resistance value less than 100 $\Omega$  between two test leads, buzzer sounds.

## 5. High resistance measurement:

- a. Set the knob switch to "EXTERNAL UNIT" 20M $\Omega$  or 2000M $\Omega$  position, reading is unstable.
- b. Connect three plugs of test attachment to correspond jacks on front panel.
- c. Set the knob switch and attachment switch to 2000M $\Omega$  position separately.
- d. Connect resistance to input terminal of attachment.
- e. Set power switch of attachment to "ON" position, press "PUSH" button, indication lamp is light and reading. If reading less than 19M $\Omega$ , separately change meter and attachment range switch to 20M $\Omega$  in order to resolution.

### Note:

If low voltage indication lamp is light, should replacement battery.

## VI. MAINTENANCE:

1. **Your Digital Multi-meter is a precision electronic device. To avoid damage, do not tamper with the circuitry. Note:**
  - f. Don't input over 1000VDC or 750Vrms.
  - g. Don't input voltage signal on resistance range.
  - h. Before replacement battery, must remove leads from circuit and be turn off power.
2. **Replacement battery:**  
If appears "LOBAT" on LCD, user should immediately replace battery.