



**DIGITAL CLAMP METER  
600.616**

Gebruiksaanwijzing

Mode d'Emploi

Gebrauchsanleitung

Brugsanvisning

Instruction Manual



Read this owner's manual thoroughly before use.

## SAFETY INFORMATION

The digital multimeter has been designed according to IEC-1010 concerning electronic measuring instruments with an over voltage category (CATI) and pollution degree 2.

## ELECTRICAL SYMBOLS



AC (Alternating Current)



DC (Direct Current)



Important safety information. Refer to the manual.



Dangerous voltage may be present.



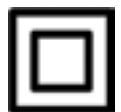
Earth ground



Fuse



Conforms to European Union directives




Double insulated

*Do not attempt to make any repairs yourself. This would invalid your warranty.  
Do not make any changes to the unit. This would also invalid your warranty.  
The warranty is not applicable in case of accidents or damages caused by  
inappropriate use or disrespect of the warnings contained in this manual.  
Mercury cannot be held responsible for personal injuries caused by a  
disrespect of the safety recommendations and warnings.  
This is also applicable to all damages in whatever form.*

## **WARNING**

To avoid possible electric shock or personal injury, follow these guidelines:

- Do not use the meter if it is damaged. Before you use the meter, inspect the case. Pay particular attention to the insulation surrounding the connectors
- Inspect the test leads for damaged insulation or exposed metal. Check the test leads for continuity. Replace damaged test leads before you use the meter.
- Do not use the meter if it operates abnormally. Protection may be impaired. When in doubt, have the meter serviced.
- Do not operate the meter around explosive gas, vapour, or dust.
- Do not apply more than the rated voltage, as marked on the meter, between terminals or between any terminal and earth ground.
- Before use, verify the meter's operation by measuring a known voltage.
- When servicing the meter, use only specified replacement parts.
- Use with caution when working above 30V AC RMS, 42V peak, or 60V dc. Such voltages pose a shock hazard.
- When using the probes, keep your fingers behind the finger guards on the probes.
- Connect the common test lead before you connect the live test lead. When you disconnect test leads, disconnect the live test lead first.
- Remove the test leads from the meter before you open the battery door.
- Do not operate the meter with the battery door or portions of the cover removed or loosened.
- To avoid false readings, which could lead to possible electric shock or personal injury, replace the batteries as soon as the low battery indicator (") appears.

## **FRONT PANEL DESCRIPTION**

### **1. Transformer Jaws**

Pick up the AC current flowing through the conductor.

### **2. “DATA HOLD” Button**

A push button for selecting Data Hold function.

### **3. Function / Range Switch**

Function / Range switch for selecting measurement function and range.

### **4. Display**

3 ½ digits LCD, Max. reading 1999.

### **5. Drop-proof Wrist Strap:**

Prevent the instrument from slipping off the hand while in use.

### **6. “EXT” Jack**

Plug-in connector for the banana plug “EXT” from an external insulation resistance tester unit.

### **7. “COM” Jack**

Plug-in connector for the black test lead while measuring voltage, resistance and continuity; and for connecting the banana plug “COM” from the insulation tester unit while measuring insulation resistance.

### **8. V.Ω Input Connector:**

Plug-in connector for the red test lead while measuring voltage, resistance and continuity; and for connecting the banana plug “V.Ω” from the insulation tester unit while measuring insulation resistance.

### **9. Trigger**

Press the level to open the transformer jaws; when the finger pressing on the level is released, the jaws will close again.

## **INTRODUCTION**

The meter is a portable, 3 ½ digits LCD clamp meter with insulation test function (with optional 500V insulation tester unit) designed for being used by electricians, technicians, serviceman and hobbyists who need an instrument that is accurate, reliable, and always ready for use. It is powered by a standard 9V battery, and can provide 150-200 operating hours, which depends on the type of battery and using conditions. It has rugged structure design, good feeling held in operator's hand and convenient use.

## **OPERATING FEATURES**

|                        |   |
|------------------------|---|
| <b>AC Current</b>      | 200A - 1000A                                  |
| <b>Insulation Test</b> | 20MΩ - 2000MΩ                                 |
|                        | ( With optional 500V insulation tester unit ) |
| <b>AC Volage</b>       | 750V  |
| <b>DC Volage</b>       | 1000V   |
| <b>Resistance</b>      | 200Ω - 20kΩ                                   |
| <b>Continuity Test</b> | <50Ω with audio tone                          |

The display of the meter is liquid crystal assembly providing reliable and readable display in all light conditions. The decimal point is automatically positioned, and the polarity sign (minus) is lighted for negative DC measurement (that no sign appears is defaulted as positive) so that the display can be read directly while making measurement. Over-range measurement is indicated by figure "1" only. In addition, the display includes low battery indication. If low battery sign is indicated, the operator should replace the exhausted battery with a new one.

## **SPECIFICATIONS**

The following specifications assume a 1-year calibration cycle and operating conditions of temperature scale of 18°C to 28°C (64°F to 82°F) with relative humidity up to 80% unless otherwise noted.

## AC Current

| <i>Range</i> | <i>Resolution</i> | <i>Accuracy(50Hz-60HZ)</i>                        |
|--------------|-------------------|---|
| 200A         | 100mA             | $\pm(2.5\%$ of rdg + 8 digits)                    |
| 1000A        | 1A                | $\pm(2.5\%$ of rdg + 5 digits) for 800A and below |
|              |                   | $\pm(3\%$ of rdg + 5 digits) for other current    |

Frequency response: 50~60Hz  
 Indication: Average (rms of sine wave)  
 Overload protection: 1200A within 60 seconds.  
 Jaw opening: 2" (5cm)

## Insulation Test (with optional 500V insulation tester unit)

| <i>Range</i>   | <i>Resolution</i> | <i>Accuracy(50Hz-60HZ)</i>                           |
|----------------|-------------------|--|
| 20M $\Omega$   | 10K $\Omega$      | $\pm(2\%$ of rdg + 2 digits)                         |
| 1000M $\Omega$ | 1M $\Omega$       | $\pm(4\%$ of rdg + 2 digits) for up to 500M $\Omega$ |
|                |                   | $\pm(5\%$ of rdg + 2 digits) for above 500M $\Omega$ |

## AC Voltage

| <i>Range</i> | <i>Resolution</i> | <i>Accuracy(50Hz-60HZ)</i>   |
|--------------|-------------------|------------------------------|
| 100s0V       | 1V                | $\pm(2\%$ of rdg + 5 digits) |

Indication: Average (rms of sine wave)  
 Input impedance: 9M  $\Omega$   
 Overload Protection: 750V AC/DC on all ranges.

## DC Voltage

| <i>Range</i> | <i>Resolution</i> | <i>Accuracy(50Hz-60HZ)</i>   |
|--------------|-------------------|------------------------------|
| 750V         | 1V                | $\pm(2\%$ of rdg + 5 digits) |

Overload Protection: 1000V DC/AC peak on all ranges  
 Input impedance: 9M  $\Omega$

## Resistance

| <i>Range</i> | <i>Resolution</i> | <i>Accuracy(50Hz-60HZ)</i> |
|--------------|-------------------|----------------------------|
| 200Ω         | 1Ω                | ±(1.0% of rdg + 2 digits)  |
| 20KΩ         | 10Ω               |                            |

## Continuity Test

| <i>Range</i> | <i>Accuracy</i>   |
|--------------|---|
| •)))         | When the resistance <50Ω, the built-in buzzer will sound. |

## ENVIRONMENT

**Normal operation:** 18°C ~ 28°C (64°F ~ 82°F)

**Usable condition:** 0°C ~ 50°C (32°F ~ 122°F)

**Storage condition :** -20°C ~ 60°C (-30°F ~ 140°F) with battery removed and <80% R.H.

**Relative Humidity:** <80%

## FUNCTION CHARACTERISTICS

**Measurement method:** Dual slope integration A/D converter

**Reading rate:** 3 times/second

**Polarity:**

Automatic polarity indication, “-“ displayed for negative polarity

**Overload indication:** Only figure “1” on the LCD.

**Power supply:** 9V 6F22

**Battery life:** up to 200 hours (for Zinc carbon).

**Low battery indication:** “+ -” displayed on the LCD when approximately 20% of battery life remains.

**Display:** 3-1/2 digits LCD (1999 count, 0.5” high).

**Data hold:**

Current reading will be held on the LCD if the button is pressed.

**Dimension:** 9”L x 2.7”W x 1.5”H (123cm x 7cm x 3.7cm)

**Weight:** about 11 ounces (310 grams) (including battery)



## **Accessories**

|                         |         |
|-------------------------|---------|
| Instruction manual:     | 1 copy  |
| Test leads:             | 1 pair  |
| 9V Zinc carbon battery: | 1 piece |
| Carrying Case:          | 1 piece |

## **OPERATING INSTRUCTION**

### **AC Current Measurement**

- 1) Make sure the "Data Hold" switch is not pressed.
- 2) Set the Function / Range Switch to the required ACA range.
- 3) Press the trigger to open the transformer jaws and clamp one conductor only. It is impossible to make measurements when two or three conductors are clamped at the same time.
- 4) The value displayed on the LCD is the AC current flowing through the conductor.

### **Insulation Resistance Test**

- 1) Set the Function / Range Switch to the insulation tester 2000M $\Omega$  range. In this condition, it is normal that the reading is unstable.
- 2) Insert the three banana plugs V. $\Omega$ , COM, EXT from the insulation tester unit to the corresponding V. $\Omega$ , COM, EXT input jacks on the clamp meter.
- 3) Set the Function / Range switch of the insulation tester unit to the 2000M $\Omega$  position.
- 4) Connect the test leads from the insulation tester unit to the appliance to be tested (the LED on the insulation tester unit will light).
- 5) Set the insulation tester Power switch to the "ON" position.
- 6) Push the "PUSH-500V" button, the red LED "500V" will light. The reading on the LCD of the clamp meter is the insulation resistance value; if the reading is below 19M $\Omega$ , set the rotary switch to range 200M $\Omega$  to increase the accuracy of the measurement.
- 7) If the insulation tester unit is not used, the power switch must set to OFF position. And the test leads must be removed from the input jacks; this can extend the battery life and prevent electrical shock hazard.

## **DC Voltage measurement**

- 1) Connect the red test lead to the "V.Ω" jack and the black test lead to the "COM" jack.
- 2) Set the Function / Range switch to the required DCV range. If the voltage to be measured is not known beforehand, set the Function and Range switch to the highest range and then turn down range by range until satisfactory resolution is obtained.
- 3) Connect the test leads to the source or load to be measured.
- 4) Read the voltage value displayed on the LCD along with the polarity of the red test lead.

## **AC Voltage measurement**

- 1) Connect the red test lead to the "V.Ω" jack and the black test lead to the "COM" jack.
- 2) Set the Function / Range switch to the required ACV range. If the voltage to be measured is not known beforehand, set the Function Range switch to the highest range and then turn down range by range until satisfactory resolution is obtained.
- 3) Connect the test leads to the source or load to be measured.
- 4) Read the voltage value displayed on the LCD.

## **Resistance Measurement**

- 1) Connect the red test lead to the "V.Ω" jack and the black test lead to the "COM" jack.
- 2) Set the Function / Range switch to the required Ω range.
- 3) Connect the test leads to the resistor to be measured and read the value displayed on the LCD.

**Note:** For resistance about 1MΩ and above, the meter may take a few seconds to stabilize. This is normal for high resistance readings.

## **Audible Continuity Test**

- 1) Connect the red test lead to the "V.Ω" and the black test lead to the "COM" jack.
- 2) Set the Function / Range switch to "•)))" range.
- 3) Connect the test leads to the two terminals of the circuit to be tested. If the resistance is less than about 50Ω, the built-in buzzer will sound.