

**AC CURRENT
ANALOG CLAMP-ON TESTER**

MODEL M-3000

INSTRUCTION MANUAL

Thank you very much for selecting our digital AC clamp-on tester.

This model is complex instrument and employ a very reliable mechanical/electronic design.

Before you use your new instrument, read this Instruction Manual completely and familiarize yourself thoroughly with all functions. With proper use and care, your tester will give you years of satisfactory service.

MULTI MEASURING INSTRUMENTS CO.,LTD.
Akihabara Murai Bldg. 7F, 1-26 Kanda Sakuma-cho,
Chiyoda-ku, Tokyo, Japan, 101-0025
TEL : +81-3-3251-7013 FAX : +81-3-3253-4278
Home Page : <http://www.mutimic.com/>
E-mail : multi@multimic.com

1. FEATURES

- High accuracy analog display with taut band meter.
- Meter hold function.
- AC/DC voltage resistance and temperature measurements.

2. ⚠CAUTION

- Before operating this instrument, familiarize yourself with all instructions outlined in this manual.
- Always check to make sure that the function switch is set to the proper position.
- When making measurements, use CAUTION as dangerous voltages may be present in normally safe areas.
- To avoid electrical shock, use CAUTION when working above 60V DC or 25V AC rms.
Such voltages pose a shock hazard.
- Never make measurements with the case opened.
- Never fail to keep the maximum tolerable input.
- Never operate this instrument if it becomes wet, damp or has any liquid condensation build-up on any part of the instrument.
- Never make measurements for uninsulated conductors or bus bars.

3. SPECIFICATIONS

Safety standard : Meets the requirements for double insulation to IEC 1010-2-032, IEC 1010-1(1995), EN 61010-1(1995) installation Category III 600V phase to earth.

E.M.C. standard : The instrument meets EN 50081-1 and EN 50082-1(1992)

Withstanding voltage : AC 5500V, 1 minute (between outer case and core of CT)

Jaw opening capability : 40mm ϕ

Current : AC 6A/15A/60A/150A/500A

Accuracy : $\pm 3\%$ of F.S.(50/60Hz)

Voltage : AC 0~300V/600V DC 0~60V

Accuracy : $\pm 3\%$ of F.S.(50/60Hz)

Resistance : 0~1K Ω /100K Ω (50 Ω /5K Ω center)

Accuracy : $\pm 3\%$ of scale length

Temperature : - 50 $^{\circ}$ C to 200 $^{\circ}$ C(Thermistor sensor)

Operating temperature : 0 $^{\circ}$ C to 40 $^{\circ}$ C, < 80%RH (non-condensing)

Storage temperature : - 10 $^{\circ}$ C to 60 $^{\circ}$ C, < 70%RH (non-condensing)

Power supply : 1.5V ("AAA" size, R03) x2

Size : 69(W)x210.5(H)x34(D)mm

Weight : Approx. 403g

Accessories : Carrying case.....1

Instruction manual.....1

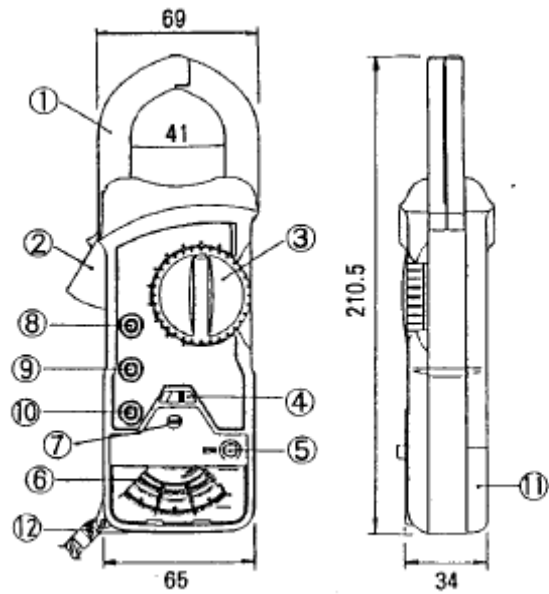
Batteries.....1

Test lead.....1set

Optional Accessories : MT-3000 Thermistor sensor probe

4. DIMENSIONS AND PANEL FUNCTION

- ① Current transducer(Jaw)
- ② Jaw opening lever
- ③ Range selector switch
- ④ Meter lock knob
- ⑤ Zero Ω adjustment knob
- ⑥ Pointer
- ⑦ Pointer zero adjustment screw
- ⑧ Input terminal(V)
- ⑨ COM terminal
- ⑩ Input terminal(Ω)
- ⑪ Battery cover



5. METHOD OF MEASUREMENT

5-1. Preparation and Caution before Measurement

- Before measurements, be sure the meter lock function is released.
- Set the Zero (0) position of the pointer. If the position is incorrect, adjust it by the pointer zero adjustment screw.

5-2. Reading Method of The Scale

No.	Function	Range	Multiplying factor
①	Current	6A	$\times 0.1$
		15A	$\times 1$
		60A	$\times 1$
		150A	$\times 10$
		600A	$\times 10$
②	Voltage	$\sim 300V$	$\times 1$
		$\sim 600V$	$\times 1$
		$\dots 60V$	$\times 0.1$
③	Resistance	$\times 1$	$\times 1$
		$\times 100$	$\times 100$
④	Temperature	$\times 100$	$\times 1$

5-3. Measurement of AC Line Current

- ① Set the range selector switch to a range appropriate to the current to be measured. Start the measurement at top range and then work down to lower range.
- ② Clamp the conductor of the circuit at the center of CT.
- ③ If you make measurements in a dark place or in a place where it is difficult to see the readings, use the meter lock function.

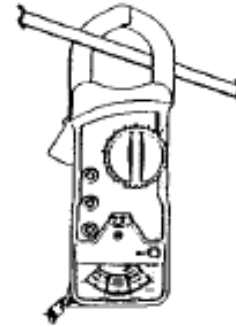


Fig.1

Note : Clamp around only one conductor of the circuit to be measured. (See Fig.1)

△CAUTION

- To avoid electrical shock or damage, the measurement is limited to the circuit under 600V AC and 600A AC.

5-4. Measurement of AC Voltage

- ① Connect the plug of red test lead into the “V” terminal and the plug of black test lead into the “COM” terminal.
- ② Set the range selector switch to “~300V” or “~600V” range appropriate to the voltage to be measured.
- ③ Contact the tips of the test leads to the circuit under test.
- ④ Read the voltage on the scale.

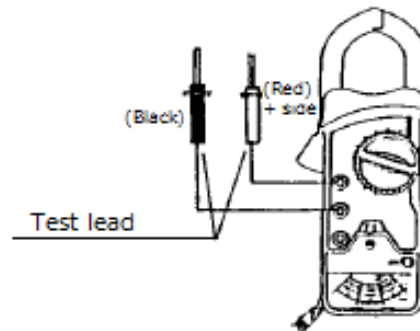


Fig.2

△WARNING

Do not make measurements of power lines carrying more than 250V. IN SOME CASES, POWER LINES MAY CARRY VOLTAGE SPIKES OF SEVERAL TIMES OF THE NORMAL SUPPLY VOLTAGE. THIS INSTRUMENT SHOULD NOT BE USED TO MEASURE POWER LINES.
* The term of “Power Line” mean the electrical circuit providing the power to factories, buildings, and etc.

△WARNING

POSSIBLE ELECTRICAL SHOCK. Do not make measurements if the case is damaged or the rear case is removed. Remove all electrical inputs before removing the rear case.

△WARNING

POSSIBLE ELECTRICAL SHOCK or FIRE HAZARD. Do not expose this tester to rain or moisture. Do not operate the tester in the presence of flammable gases or fumes.

△CAUTION

To avoid damage to the tester, disconnect test leads before changing functions. Do not exceed the maximum input limits.

5-5. Measurement of DC Voltage

- ① Connect the plug of red test lead into the “V” terminal and the plug of black test lead into the “COM” terminal.
- ② Set the range selector switch to “ $\overline{\text{---}}$.60V” range.
- ③ Contact the tips of the test leads to the circuit under test.
- ④ Read the voltage on the scale.

5-6. Measurement of Resistance

- ① Connect the plug of red test lead into the “ Ω ” terminal and the plug of black test lead into the “COM” terminal.
- ② Set the range selector switch to “ $\times 100$ ” or “ $\times 1$ ” range appropriate to the resistance to be measured.
- ③ Short the tips of test leads and adjust the pointer to indicate zero with the zero Ω adjustment knob.
- ④ Contact the tips of the test leads to the circuit under test.
- ⑤ Read the resistance on the Ω scale.
For $\times 100$ range, read the resistance value with 100 times.

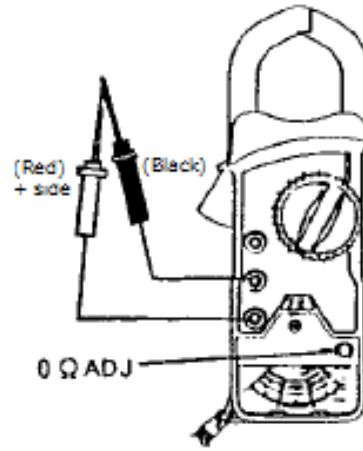


Fig.3

△CAUTION

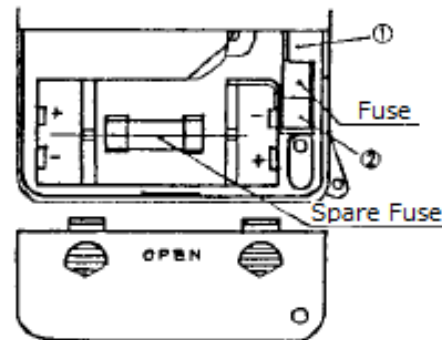
Be sure all voltage is turned OFF in the circuit before making resistance measurement.

5-7. Measurement of Temperature

Temperature measurement is available with MT-3000 thermistor probe (optional accessory). Please refer to MT-3000 instruction manual about the measuring method.

6. REPLACEMENT OF BATTERIES AND FUSE

Turn the power switch to "OFF", prior to installing batteries or fuse.
To install the batteries or fuse, remove the battery cover located on the unit back.
Loosen the screw on the battery cover.
Replace the two batteries (UM-4 or type AAA) with new ones, observing polarity. Use high-quality batteries which are guaranteed against leakage.
If the instrument is to be left unused for long periods of time, to prevent damage from leakage, remove the batteries.



△WARNING

Before changing batteries or fuse, removal all electrical input.

7. MAINTENANCE

When making requests for repair service, please bring the instrument directly to the dealer. If this is impossible, however, send the instrument directly to our sales office. When mailing this instrument, always pack it in its original or equivalent packing material and pack together with name, address, telephone number and the warranty documentation.

- To ensure speedy and reliable repair, always include information as the type of failure and cause.
- If required, always return accessories with the instrument.
- When contacting us, provide the model number and serial number of your instrument.