

5. METHOD OF MEASUREMENT

5-1. Measurement of Leakage Current

- 5-1-1. Leakage current measurement for the grounded conductor
 - 1) Set the power switch to "ON" position.
 - 2) Set the range selector switch to a range appropriate to the current to be measured.
 - 3) Clamp the conductor of the circuit under test with the current transducer.
 - 4) If you make measurements in a dark place or in a place where it is difficult to see the readings, use the data hold switch.
- 5-1-2. Leakage current measurement for the single phase or three-phase electric circuit.
 - 1) Set the power switch to "ON" position.
 - 2) Set the range selector switch to a range appropriate to the current to be measured.
 - 3) To measure a leakage current in a single-phase electric circuit, clamp the two conductors together. Or clamp the three conductors together in the case of the three-phase electric circuit.
 - 4) If you make measurements in a dark place or in a place where it is difficult to see the readings, use the data hold switch.

5-2. Measurement of Line Current

- 1) Set the power switch to "ON" position.
 - 2) Set the range selector switch to a range appropriate to the current to be measured.
 - 3) Clamp the conductor of the circuit under test.
 - 4) If you make measurements in a dark place or in a place where it is difficult to see the readings, use the data hold switch.
- Note: Clamp around only one conductor of the circuit to be measured. (See Fig. 1)

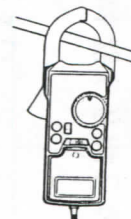


Fig. 1

CAUTION

This tester is designed for low voltage applications. To avoid electrical shock or damage, the measurement is limited to the circuit under 600V AC.

5-3. Measurement of Voltage

- 1) Insert the plugs of the test leads into "V" terminals. (See Fig. 2)
- 2) Set the power switch to "ON" position.
- 3) Set the range selector switch to the ACV range.
- 4) Contact the circuit under measurement with the testleads, and read the displayed value.

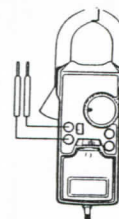


Fig. 2

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" means 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.

AC CURRENT/LEAKAGE DIGITAL CLAMP TESTER

MODEL MCL-400D

Instruction Manual

MULTI

Thank you very much for selecting our digital AC clamp 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.

1. FEATURES

- Digital clamp-on tester with wide range of leakage current measurement from 0.1A to 400A.

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.

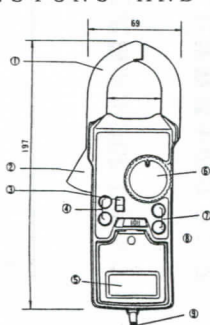
⚠ Never make measurements for uninsulated conductors or bus bars.

3. SPECIFICATION

Measuring method			Dual integration mode
Display			3.5 digit LCD
Accuracy (At the center of CT) (23±5°C, 80% RH or less)			
AC current (50/60Hz)	Range	Resolution	Accuracy
	0.2A	0.1mA	± 1.0% rdg ± 5 dgt
	2A	1mA	
	20A	0.01A	
	200A	0.1A	± 3.0% rdg ± 15 dgt (200A~400A)
	400A	1A	
AC voltage	600V	1V	± 1.0% rdg ± 5 dgt
Resistance	2kΩ	1Ω	± 1.0% rdg ± 3.0% of F.S.
	2MΩ	1kΩ	(Input protection: 250V DC or AC rms)
Jaw opening capability			40mmφ
Over range indication			Blanking of all digits except MSD1
Maximum indication			1999
Low battery indication			"B" mark on LCD readout
Sampling			2 times/s
Limitation of circuit voltage			Less than AC 600V
Data hold indication			"D·H" mark on LCD readout
Withstanding voltage			AC 2000V, 1 minute
Affection of magnetic field			3mA or less (at 100A near by conductor)
Power supply			UM-4(1.5V)×2 or type AAA×2

Size	69(W)×197(H)×32(D) mm
Weight	Approx. 370g(included batteries)
Accessories	Carrying case.....1 Instruction manual.....1 Batteries(UM-4).....2 Test lead.....1set

4. DIMENSIONS AND PANEL FUNCTION



- ① Current transducer(Jaw)
- ② Jaw opening lever
- ③ Data hold switch
- ④ Input terminals(V)
- ⑤ LCD display
- ⑥ Range selector switch
- ⑦ Input terminals(Q)
- ⑧ Power switch
- ⑨ Wrist strap

5-4. Measurement of Resistance

- 1) Insert the plugs of the test leads into "Ω" terminals. (See Fig. 3)
- 2) Set the power switch to "ON" position.
- 3) Set the range selector switch to the 2KΩ range or the 2MΩ range appropriate to the resistance to be measured.
- 4) Contact the circuit under measurement with the test leads, and read the displayed value.

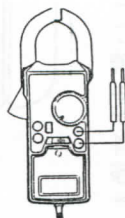


Fig. 3

CAUTION

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

6. REPLACEMENT OF BATTERIES

When the battery becomes exhausted or drops below the operating voltage, the "B" mark is displayed. Turn the power switch to "OFF", prior to installing batteries. To install the batteries, remove the rear case located on the unit back.

Loosen the screw on the rear case.

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.

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.

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