

AC CURRENT/LEAKAGE DIGITAL CLAMP TESTER MODEL MCL-1100D

INSTRUCTION MANUAL

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

- This handy type clamp tester has the biggest CT window in the world (108mm) and can measure AC line current and leakage current (0.1mA-3000A) just by clamping the conductor without disconnecting the circuit.
- DC mV analog data output for recorder.
- The least affection from external magnetic field.
- Continuous long time measurement and useful data hold function.

2. SAFETY PRECAUTIONS

This instrument has been manufactured and tested in accordance with safety regulations IEC 61010-1/EN 61010-1 and IEC 61010-2-032/EN 61010-2-032.

If used for its intended purpose, safety of the user and of the device is assured. The device may only be operated by properly trained personnel who are capable of recognizing the dangers associated with the measurement of electrical current and voltage.

Read the operating instructions completely and carefully before using the device, and follow all instructions included therein.

Meanings of symbols on the instrument:



Warning concerning a source of danger
(Attention : observe documentation!)



Continuous, doubled or reinforced insulation



Indicates EC conformity

CAT II Maximum allowable voltage at the circuit under test : 600V, category II

This instrument may not be used :

- If the battery compartment lid has been removed
- If visible damage is apparent
- With damaged connector cables
- If it no longer functions flawlessly
- After lengthy periods of storage under unfavorable conditions (e.g. humidity, dust, temperature)



Attention!

Do not perform measurements in the event of over-ranging!

Current which exceeds the measuring range may not be measured.

Do not perform measurements at bare wires!

Do not perform measurements at busbars!


Safe Handling

- The housing and the handle must be free of dust, grease and moisture.
- The operator's fingers may not be extended beyond the safety collar during measurement.
- Avoid excessive mechanical stress such as impact and vibration, as well as high temperatures and strong magnetic fields.

3. SPECIFICATIONS

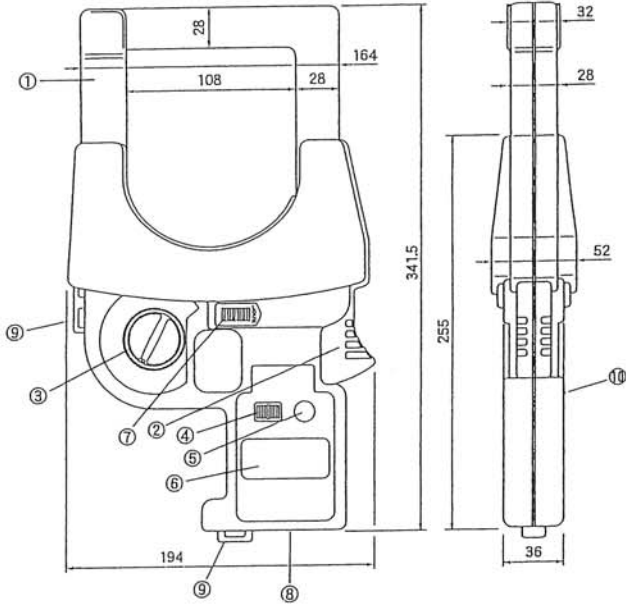
Measuring Function : AC current, AC leakage current
Measuring Method : CT (Clamp transducer)
Max Jaw Opening : 108mm ϕ (108x128mm)
Measuring Range : AC 300mA/3A/30A/300A/3000A(50/60Hz)
Range & Accuracy 5range manual (23°C \pm 5°C, less than 80% RH)

| Range | Resolution | Accuracy | Max. Input |
|--------------|------------------|-------------------------|------------|
| AC 300mA | 0.1mA | $\pm 1.5\%rdg \pm 8dgt$ | 3A rms |
| AC 3mA | 0.001A | | 30A rms |
| AC 30A | 0.01A | | 300A rms |
| AC 300A | 0.1A | | 3000A rms |
| AC 3000A | 1A | $\pm 2\%rdg \pm 8dgt$ | 3000A rms |
| DC mV Output | For the Recorder | ± 1.5 of full scale | |

AC Conversion : True rms reading
A/D Conversion : Dual integration mode
Display LCD, max. 3200 count with annunciators
Over Range Indication : "OL", on the LCD readout
Low Battery Indication : "  " mark on the LCD readout
Sampling : 2 times/sec.
Data Hold Function : Holding the data by pressing the data hold switch.
Filter Function : Cut the high frequency signal (Low pass filter 150Hz)
Output for Recorder : DC 300mV for full scale of each range
Auto/Power off : The meter is set to power off approx. 10 mute later after the power on.
Max. Circuit Voltage : Less than AC 500V, low voltage circuit
Safety standard : Meets the requirements for double insulation to IEC1010-2 installation category II ,600V phase earth.
Withstanding Voltage : AC 3700V, 1 minute (between outer case and core of CT)
Electromagnetic Compatibility (EMC) :
Interference emission IEC 61236-1
Interference immunity IEC 61236/A1
(Filter Switch must be on)
Operating Temperature : 0°C to 40°C, <80%RH (non-condensing)
Storage temperature : -10°C to 60°C, <70%RH (non-condensing)
Power Supply : 1.5V battery(UM-4 or AAA size) \times 2
Power consumption : Approx. 6mW
Battery Life : Approx.200 hours continuous
Dimension and Weight : 194(W) \times 341.5(H) \times 52(D)mm, approx. 1.9kg (including battenes)
Accessories : Batteries(UM-4)..... 2pcs
Instruction manual..... 1pc
Carrying case 1pc

4. DIMENSIONS AND PANEL FUNCTION

- ① Current transducer (Jaw)
- ② Jaw opening lever
- ③ Range selector switch
- ④ Filter switch
- ⑤ Data hold switch
- ⑥ LCD display
- ⑦ Jaw lock switch
- ⑧ Output terminal for recorder
- ⑨ Belt holder
- ⑩ Battery cover



5. METHOD OF MEASUREMENT

△ CAUTION

This tester is designed for low voltage applications. To avoid electrical shock or damage, the measurement is limited to the under 500V AC low voltage circuit.

5-1. Measurement of Line Current

- ① Set the "range selector switch" to 300mA range and verify all segment is displayed.
- ② Then, set the "range selector switch" to a range appropriate to the current to be measured.
- ③ Clamp the conductor of the circuit under test, and read the displayed value.

Note : Clamp around only one conductor of the circuit to be measured.

- ④ After measurement, always set the "range selector switch" to the off position.

Note : 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. Leakage Current Measurement for The Single Phase or Three Phase Electric Circuit

- ① Set the "range selector switch" to a range appropriate to the current to be measured.
- ② 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.

Note : 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".

5-3. Auto Power Off Function

The tester is set to power off automatically approx. 10 minutes later after the power on. To resume the power, press the "data hold switch" or turn the power on again 10 second later after the power off.

5-4. Low Pass Filter Function

The low pass filter function is equipped in the tester. To activate this function, set the "filter switch" to on position. More than 150Hz frequency is cut off.

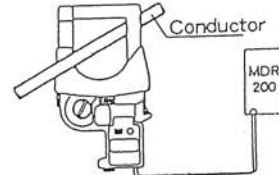
In case of Low Pass Filter Switch "Off", it may cause some influence of RF emission. Recommend to make this switch "On" always at the time of measurement.

5-5. Output Signal for Recorder

The analog signal (DC mV) output is provided from "output terminal for recorder". For long time recording, set the "jaw lock switch" to the lock position. The jaw of CT is locked to prevent the accidental opening.

△ CAUTION

Never apply any voltage to the output terminal for recorder.



6. REPLACEMENT OF BATTERIES

When the battery becomes exhausted or drops below the operating voltage, the "BAT" mark is displayed. Turn the range selector switch to "OFF", prior to installing batteries.

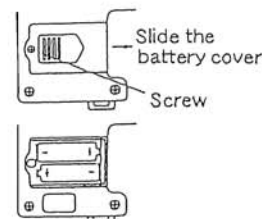
To install the batteries, remove the battery cover located on the unit back.

Loosen the screw on the 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.

△ CAUTION

Never replace the batteries during the measurement. Be sure to disconnect the clamp jaw from the line under test.



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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