

MODEL: A3390

DC/AC CLAMP METER

OPERATION MANUAL

1. SAFETY INFORMATION

Symbols:

Warning! Dangerous Voltage (Risk of electric shock).

Caution! Refer to the user's manual before using this Meter.

 **Double Insulation** (Protection Class II).

 Alternating Current (AC).

 Direct Current (DC).

Either DC or AC.

 **Ground**.

1.0 The following safety information must be observed to insure maximum personal safety during the operation at this meter.

1.1 Do not operate the meter if the body of meter or the test lead look broken.

1.2 Check the main function dial and make sure it is at the correct position before each measurement.

1.3 Do not perform resistance, capacitance, temperature, diode and continuity test on a live power system.

1.4 Do not apply voltage between the test terminals and test terminal to ground that exceed the maximum limit record in this manual.

1.5 Exercise extreme caution when measuring live system with voltage greater than 60V DC or 30V AC.

1.6 Keep the fingers after the protection ring when measuring through the clamp.

1.7 Change the batteries when the "" symbol appears to avoid incorrect data.

2. SPECIFICATIONS

2.1 GENERAL SPECIFICATIONS

● Display: 3 3/4 digits(4000 Count) LCD.

● Auto ranging.

● Polarity: Automatic negative polarity indication.

● Auto Zero adjustment in the DC current measurement..

● Over range indication: Symbol "OL" or "-OL" is displayed.

● Low battery indication: Display "" sign.

● Data hold: Display "DH" sign.

● Relative measurement: Display "REL" sign.

● Auto Power Off: When measurement exceeds 15 minutes without switching mode and pressing key, the meter will switch to standby mode. Press any key or switch selector switch to exit standby mode. When restart the system, press and hold **select** key to disable auto power off.

● Safety standards: CE EMC/LVD . The meter is up to the standards of IEC1010 Double Insulation, Pollution Degree 2, Over voltage Category II.

● Operating environment: Temperature: 0°C to 40°C; Humidity \leq 70% RH.

● Storage environment: Temperature: -10°C to 50°C; Humidity \leq 80% RH.

● Power supply: 3 \times 3V Lithium batteries(CR2032).

● Dimension: 190mm \times 64mm \times 22 mm

● Weight: Approx.150g (including battery).

2.2 ELECTRICAL SPECIFICATIONS

Accuracies are \pm (% of reading + number in last digit) at 23 \pm 5°C , \leq 75% RH.

2.2.1 DC Voltage

Range	Accuracy	Resolution
400mV	$\pm(0.5\%rdg+3dgt)$	0.1mV
4V		1mV
40V		10mV
400V		100mV
600V		1V

Overload protection: 600V DC or AC rms.

Impedance: 10M Ω

2.2.2 AC Voltage

Range	Accuracy	Resolution
400mV	NOT	0.1mV
4V	$\pm(1.0\%+3)$	1mV
40V		10mV
400V		100mV
600V		1V

Average sensing, calibrated to rms of sine wave

Frequency: 40~400Hz

Overload protection: 600V DC or AC rms

Impedance: 10M Ω .

2.2.3 DC Current

Range	Accuracy	Resolution
400.0A	$\pm(2.5\%+3)$	0.1A
1000A		1A

2.2.4 AC Current

Range	Accuracy	Resolution
400.0A	$\pm(2.5\%+5)$	0.1A
1000A		1A

Frequency: 40/60Hz

2.2.5 Resistance

Range	Accuracy	Resolution
400 Ω	$\pm(0.5\%+3)$	0.1 Ω
4k Ω		1 Ω
40k Ω		10 Ω
400k Ω		100 Ω
4M Ω		1k Ω
40M Ω	$\pm(1.5\%+3)$	10k Ω

Overload protection: 250V DC or AC rms

2.2.6 Diode and Audible continuity test

Range	Description	Test condition
DIODE Check	Display read approximately forward voltage of diode	(1)Testing current: approx. 0.6mA (2) Open voltage: approx. 1.5V
Continuity Check	Buzzer sounds if the resistance is less than 70 Ω \pm 30 Ω	Open circuit voltage approx. 1.5V

Overload protection: 250V DC or AC rms

2.2.7 Frequency

Range	Accuracy	Resolution
10Hz	$\pm(0.1\%rdg+3dgt)$	0.01Hz
100Hz		0.1Hz
1KHz		1Hz
10KHz		10Hz
100KHz		100Hz
1MHz		1KHz

Sensitivity: sine wave 0.6V rms

Overload protection: 250V DC or AC rms

3. OPERATION

3.1 DC and AC Voltage Measurement

- 1) Connect the black test lead to "COM" socket and red test leads to the "VΩ Hz" socket.
- 2) Set the selector switch to desired "V" position.
- 3) Press "SELECT" key to select "DC" or "AC" measurement mode..
- 4) Measure the voltage by touch the test lead tips to the test circuit where the value of voltage is needed.
- 5) Read the measured value from the LCD panel.

3.2 DC /AC Current Measurement

- 1) Set the selector switch to desired "A" position.
- 2) Select DC or AC current measurement mode by the "SELECT" key.
- 3) In the DC current measurement , first pushing "0" key to zero Adjusting.
- 4) Clamp the Jaws around the **one** conductor to be measured.
- 5) Read the result from the LCD panel. The arrow in the Jaw indicates the direction of positive current flow.

3.4 Resistance Measurement

- 1) Connect the black test lead to "COM" socket and red test leads to the "VΩ Hz" socket.
- 2) Set the selector switch to desired "Ω" position.
- 3) Connect tip of the test leads to the points where the value of the resistance is needed.
- 5) Read the result from the LCD panel.

Note:

- 1) .When take resistance value from a circuit system, make sure the power is cut off and all capacitors need to be discharged.
- 2) .Under the Low Resistance Range, the Users are requested to short the meter probes to get the resistance of test leads, which is needed to deduct from this measurement.

3.5 Diode and Continuity Check

- 1) Connect the black test lead to "COM" socket and red test leads to the "VΩ Hz" socket.
- 2) Set the selector switch to desired "→)))" position.
- 3) Press "SELECT" key to select the Diode or continuity check mode.

- 4) Connect the test leads across the diode under measurement, display shows the approx. forward voltage of this diode.
- 5) Connect the test leads to two point of circuit, if the resistance is lower than $70\Omega \pm 30\Omega$, the buzzer sounds.

3.6 Frequency measurement

- 1) Connect the black test lead to "COM" socket and red test leads to the "VΩ Hz" socket.
- 2) Set the selector switch to "Hz" position.
- 4) Connect the probe across the source or load under measurement.
- 5) Read the result from the LCD panel.

3.7 Data Hold

On any range, press the "DH" key to lock display value, and the "DH" sign will appear on the display, press it again to exit.

3.8 Relative measurement

Press the "REL/ZERO" key, you can measure the relative value and "REL" sign will appears on the display, the auto range mode be changed to manual range mode. Press it again to exit relative measurement and "REL" sign disappears, but you can not go back to auto range mode.

Notice: Not relative measurement function for DCA range! It is to zero Adjusting function.

3.9 Manual range and Auto ranging

The Meter has both manual and auto range options. In the auto range mode, the Meter selects the best range for the input detected. This allows you to switch test points without having to reset the range. You can override auto ranging by selecting the range manually. The Meter defaults to the auto range mode in measurement functions that have more than one range. When the Meter is in the auto range mode, "AUTO" sign is displayed.

To enter and exit the manual range mode:

1. Press "RANGE" Key
Each press of "RANGE" Key increments the range. When the highest range is reached, the Meter wraps to the lowest range.

2. To exit the manual range mode, press and hold "RANGE" key for two seconds.

4. Battery replacement

- 1) When the battery voltage drop below proper operation range, the "⚡" symbol will appear on the LCD display and the battery need to changed.
- 2) Before changing the batteries, set the selector switch to "OFF" position. Open the cover of the battery cabinet by a screwdriver.
- 3) Replace the old batteries with the same type battery.
- 4) Close the battery cabinet cover and fasten the screw.

5. MAINTENANCE

- 1) Before open the battery door, disconnect both test lead and never uses the meter before the battery door is closed.
- 2) To avoid contamination or static damage, do not touch the circuit board without proper static protection.
- 3) If the meter is not going to be used for a long time, take out the battery and do not store the meter in high temperature or high humidity environment.
- 4) When take current measurement, keep the cable at the center of the clamp will get more accurate test result.
- 5) Repairs or servicing not covered in this manual should only by qualified personal.
- 6) Periodically wipe the case with a dry cloth and detergent. Do not use abrasives or solvents on the meter.