



DIGITAL CLAMP METER

MODEL : 72-AUTO/72T-AUTO



1 INSTRUCTION MANUAL

1. SPECIFICATIONS

1.1 General Specification

- Display** ■ 3½ digit liquid crystal display (LCD) with a maximum reading of 4000 counts.
- Polarity** ■ Automatic, positive implied, negative polarity indication.
- Overrange** ■ (OL) or (-OL) is displayed.
- Zero** ■ Automatic.
- Low battery indication** ■ “ ” is displayed when the battery voltage drops below the operating level.
- Measurement rate** ■ 3 times per second, nominal.
- Operating Environment** ■ 0°C to 50°C at < 70% relative humidity.
- Storage Temperature** ■ -20°C to 60°C, 0 to 80% R.H. with battery removed from meter.
- Accuracy** ■ Stated accuracy at 27°C ± 5°C, <75% relative humidity.
- Power** ■ Two 1.5V ‘AAA’ Size Battery
- Battery life** ■ 200 hours typical
- Dimensions** ■ 185 x 65 x 28mm (approx.)
- Weight** ■ 170gms including battery (approx.)
- Accessories** ■ Pair of test leads x 1, Instruction manual x 1, 1.5V battery (installed) x 2, Carrying Case x 1, (K type thermocouple upto 260°C for 72T-AUTO only) x 1
- Maximum Jaw Opening** ■ 25mm

1.2 Electrical Specification

Accuracies are ± (% reading + number of digits) at 27 ± 5°C and humidity of less than 75% RH.

AC CURRENT (Auto Ranging) 50-60Hz

Range	Accuracy	Overload Protection
40A	±(2.5% rdg + 5 dgt)	400A AC Max. for 1 minute
400A		

DC VOLTAGE (Auto Ranging)

Range	Accuracy	Overload Protection
600V	±(0.8% rdg + 3 dgt)	600V DC / AC rms

AC VOLTAGE (Auto Ranging) 50-60Hz

Range	Accuracy	Overload Protection
600V	±(1.2% rdg + 3 dgt)	600V DC / AC rms

RESISTANCE (Auto Ranging)

Range	Accuracy	Overload Protection
40MV	±(1.2% rdg + 3 dgt)	250V DC / AC rms

Frequency (Auto Ranging)

Range : 10Hz, 100Hz, 1000Hz, 10KHz, 100KHz, 1000KHz, 10MHz

Accuracy : ± (0.5% rdg + 2 dgt)

Sensitivity : Approx 0.7V

Overload Protection : 250V DC / AC rms

Continuity Check

Threshold Level : 40V Approx.

Response Time : 1m Sec. Approx.

Open Circuit Voltage : 0.4V Approx.

Indication : ‘’ is displayed on LCD and buzzer sounds at continuity.

Diode Test

Measurement Current : 1.0 ± 0.6 mA Approx.

Open Circuit Voltage : 1.6V Approx.

Capacitance (Auto Ranging) (72T-AUTO only)

Range : 5nF, 50nF, 500nF, 5µF, 50µF, 200µF.

Accuracy : ± (3% rdg + 2 dgts)

Overload Protection : 250V DC / AC rms

Temperature (72T-AUTO only)

Range : -20°C to 750°C

Accuracy : ± (3% rdg + 5 dgts)

Resolution : 1°C

Sensor : K type thermocouple

2. OPERATION

Before taking any measurements, read the safety information section. Always examine the instrument for damage, contamination (excessive dirt, grease, etc.) and defects. Examine the test leads for cracked or frayed insulation. If any abnormal conditions exist do not attempt to make any measurements.

AUTO POWER OFF (APO)

The meter will be switch off if no range switch or key is used for approx 15 minutes.

FUNCTION BUTTON

The Button is used for select V / / / (72T-AUTO only) range.

HOLD BUTTON

Press Hold button to toggle in and out of Hold mode, In the Hold mode, the “” annunciator is displayed.

REL BUTTON

Press “REL” button to toggle in and out of “REL” mode. In this mode

the "REL" annunciator is displayed and the respective range is active only. This function is available for DCV, ACV, Current, Resistance & Capacitance. In Capacitance "REL" acts as a "REL zero".

NOTE : Use "REL" button to enter the relative mode, the "REL" annunciator turn on, zero the display and store the displayed reading as a reference value.

2.1 Current Measurements

1. Set the Range switch to the "A" range.
2. Press the trigger to open transformer jaws, clamp onto one conductor only and release trigger. Jaws should be completely closed. Read the current directly on the display. It is recommended that the conductor be placed at the center of the closed jaws for maximum accuracy (Fig. - 1).



Fig. 1

2.2 Voltage Measurements (AC or DC)

1. Connect the red test lead to the "VV" jack and the black test lead to the "COM" jack.
2. Set the Range switch to the desired Voltage type (AC or DC)
3. Connect the test leads to the device or circuit being measured.
4. For DC, a (-) sign is displayed for negative polarity; positive polarity is implied.

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"OL" is displayed with both lead connections, the junction is open. If a low reading (less than 1000) is obtained with both lead connections, the junction is shorted internally or (if junction is measured in a circuit) the junction is shunted by a resistance less than 1KV. In the latter case the junction must be disconnected from the circuit in order to verify its operation.

2.5 Continuity Measurement

1. Connect red test lead to the "VV" jack and black test lead to the "COM" jack.
2. a) Set Range switch to the $\rightarrow \text{---} / \text{---} \leftarrow$ (72-AUTO)
b) Set Range switch to the $V / \rightarrow \text{---} / \text{---} \leftarrow / \text{---} \leftarrow$ (72T-AUTO)
3. Select Continuity range by using Function Button.

In the continuity test, the beeper sounds continuously, if the resistance is less than 40V.

2.6 NCV Check (ACV only)

Indicates presence of voltage in an electrical circuit or equipment without touching them.

1. Set Range switch to the NCV Range.
2. The NCV indicator flashing every 1-2 sec.
3. When the clamp jaw near to the object under test it detected voltage. The NCV LED is quickly flashing.
 - Detection against inwall outlet is possible.
 - In NCV range meter will be auto power off within 3 minutes, if no signals is obtained

2.7 Capacitance Measurement (72T-AUTO only)

1. Connect red test lead to the "VV" jack and black test lead to the "COM" jack.
2. Set Range switch to the $V / \rightarrow \text{---} / \text{---} \leftarrow / \text{---} \leftarrow$
3. Select "4F" Range by using function button.
4. Turn off power to the circuit under test.

2.3 Resistance Measurements

1. Connect red test lead to the "VV" jack and black test lead to the "COM" jack.
2. a) Set Range switch to the V range (72-AUTO)
b) Set Range switch to the $V / \rightarrow \text{---} / \text{---} \leftarrow / \text{---} \leftarrow$ (72T-AUTO)
3. Select resistance range by using function button (72T-AUTO).
4. If the resistance being measured is connected to a circuit, turn off power to the circuit being tested and discharge all capacitors.
5. Connect test leads across the resistance being measured. When measuring high resistance, be sure not to contact adjacent points even if insulated because some insulators have a relatively low insulation resistance, causing the measured resistance to be lower than the actual resistance.
6. Read resistance value on digital display. If a high resistance value is shunted by a large value of capacitance allow display to stabilize.

2.4 Diode Test

1. Connect the red test lead to the "VV" jack and black test lead to the "COM" jack.
2. a) Set the Range switch to the $\rightarrow \text{---} / \text{---} \leftarrow$ (72-AUTO)
b) Set Range switch to the $V / \rightarrow \text{---} / \text{---} \leftarrow / \text{---} \leftarrow$ (72T-AUTO)
3. Select Diode range by using Function Button.
4. Turn off power to the circuit under test.
5. Touch probes to the diode. A forward-voltage drop is about 0.6V (typical for a silicon diode).
6. If the digital display reads overrange "OL", reverse the lead connections. The placement of the test leads when the forward reading is displayed indicates the orientation of the diode. The red lead is positive and the black lead is negative. If overrange

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5. By using "REL" button get zero display.
6. Connect the test leads to the capacitor and read the capacitance directly from the display.

2.8 Frequency Measurement

1. Connect red test lead to the "VV" jack and black test lead to the "COM" jack.
2. Set Range switch to the Hz
3. Connect the test leads to the points of measurement and read the frequency from the display.

2.9 Temperature Measurement (72T-AUTO only)

1. Set range switch to °C position.
2. Connect the thermocouple "+, -" at VV and COM input terminals.
3. Touch the end of temperature probe to the area or surface of the object whose temperature is to be measured.

Important : To avoid heat damage to the meter keep it away from sources of very high temperature. The life of the temperature probe is also reduced. When subjected to very high temperature.

3. MAINTENANCE

WARNING : Remove test leads before changing battery or servicing.

Battery Replacement

Power is supplied by two 1.5V 'AAA' size battery or Equivalent.

The "⊕" appears on the LCD display when replacement is needed, To replace the battery, remove the screw from the battery cover and lift off the battery cover. Remove the batteries & replaced with new batteries.

4. SAFETY INFORMATION

The following safety information must be observed to ensure maximum personal safety during the operation of this meter:

1. Do not use the meter if the meter or test leads look damaged, or if you suspect that the meter is not operating properly.
2. This Clamp Meter is designed to take current measurements on circuits with a maximum voltage difference of 500VAC between any conductor and ground potential. Using the instrument for current measurements on circuits above this voltage may cause electric shock, instrument damage or damage to the equipment under test.

Before measuring current make certain the test leads are removed from the instrument.

3. The instrument is protected for overload upto 600 VAC for 1 minute. Do not take current readings on circuits where the maximum current potential is not known.

Do not exceed the maximum currents that this instrument is designed to measure.

4. Turn off power to the circuit under test before cutting, unsoldering, or breaking the circuit. Small amounts of current can be dangerous.
5. Use caution when working above 60V DC or 30V AC rms. Such voltages pose a shock hazard.
6. When using the probes, keep your fingers behind the finger guards on the probes.
7. Measuring voltage which exceeds the limits of the clamp meter may damage the meter and expose the operator to a shock hazard. Always recognize the meter voltage limits as stated on the front of the meter.



Certificate of Calibration

We hereby certify that this product has been calibrated and found to be in accordance with the applicable SPECIFICATIONS and STANDARDS.

Accuracies of the standard equipment used in this calibration are traceable to the National Standards.

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