

# USE MANUAL

## SAFETY INFORMATION

The digital clamp meter has been designed according to IEC1010 ( 1 and IEC1010 ( 2 ( 032 concerning safety requirements for electrical measuring instruments and hand-held current clamps with double insulation overvoltage category 1000V CAT II 600V CAT III and pollution 2.

This meter complies with the requirements of the following European Community Directives:

89 / 336 / EEC (Electromagnetic Compatibility) and 73 / 23 / EEC (Low Voltage) as amended by 93 / 68 / EEC (CE Marking).

However, electrical noise or intense electromagnetic fields in the vicinity of the equipment may disturb the measurement circuit.

Measuring instruments will also respond to unwanted signals that may be present within the measurement circuit.

Users should exercise care and take appropriate precautions to avoid misleading.

### SYMBOL EXPLANATION



Important safety information, refer to the operating manual.

Dangerous voltage may be present.

Earth ground.

Double insulation (Protection class 1000V CAT II 600V CAT III).

### SAFETY PRECAUTIONS

Follow all safety and operating instructions to ensure maximum personal safety during the operation and to ensure the meter is used safely and is kept in good operating condition.

- Read the operating instructions thoroughly and completely before operating your meter.
- Pay attention to WARNINGS, which will inform you of potentially dangerous procedures. The instructions in these warnings must be followed.
- Always inspect your meter and test leads for any sign of damage or abnormality before every use. If any abnormal conditions exist (i.e. broken test leads, cracked cases, display not reading, etc.), do not attempt to take any measurements.

Do not expose the instrument to direct sunlight, extreme temperature or moisture.

- Never ground yourself when taking electrical measurements. Keep your body isolated from ground by using dry clothing, rubber shoes, rubber mat or any approved insulating material.
- You always are careful when working with voltages above 60V dc or 30V ac rms. Keep fingers behind the probe barriers while measuring.

To avoid damages to the instrument, do not exceed the maximum limits of the input values shown in the technical specification tables.

Never use the meter to measure voltages that might exceed the maximum allowable input value of any function.

## MAINTENANCE

- Never touch exposed wiring, connections or any live circuit when attempting to take measurements.
- Before opening the case, always disconnect test leads from all energized circuits. Never use the meter unless the back cover is in place and fastened completely.
- Do not use abrasives or solvents on the meter. To clean it using a damp cloth and mild detergent only.
- Qualified and trained service technicians should only perform calibration and repair of the meter.

## GENERAL DESCRIPTION

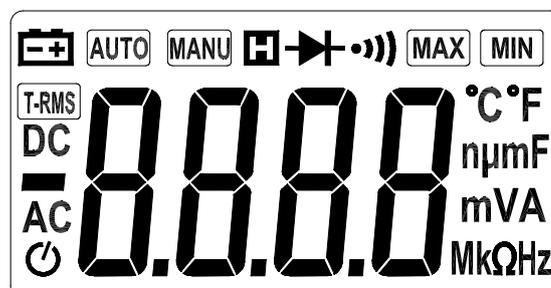
The meter is an autorange professional clamp meter with 5999 counts. For measuring DC and AC voltage, AC current, Resistance, Capacitance, Frequency, ADP, Diode, and Continuity Test with battery operated.

There is the AC measurement to be RMS or TRUE RMS about the meter. It is chosen as user buy.

Otherwise, there is a radius lamp near the clamp, It is lighted in measuring current.

## PANEL DESCRIPTION

1. Transformer jaws  
Pick up the AC current flowing through the conductor.  
Rotary switch
2. Rotary switch is used to select functions.  
HOLD button
3. When this button is pushed, the display will keep the last reading and “H” symbol will appear on



“COM” jack

- 7. This is negative (ground) input terminal for all measurements except current.

Connection is made to it using the black test lead.

- 8. RANGE button

Press this button to select auto and manual range. When a function with auto and manual mode is selected, the meter enters

autorange at first. To change to manual range, push this button once.

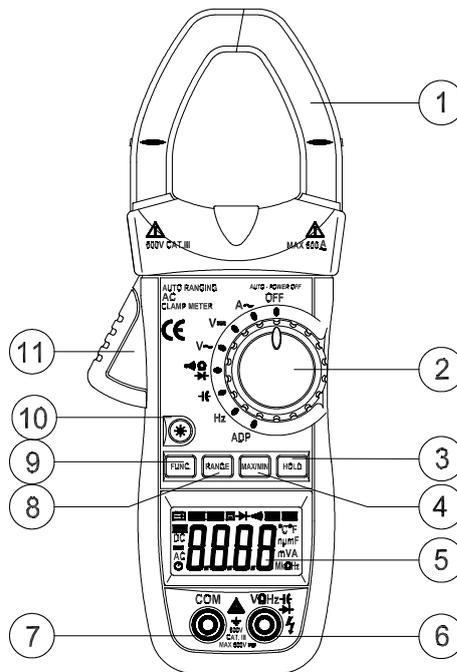
When the meter operates in manual ranging mode, push this button to change range to the higher one and hold this button for more than 3 seconds to return to auto range mode

FUNC button

- 9. Press this button to select ( or ) or  function. Different symbol of



- 10. Press this button to turn the light on. Press the button again is used to turn the light off. Just press it once more



## OPERATING INSTRUCTIONS

### DC VOLTAGE MEASUREMENT

1. Insert the black and red test leads into the COM and V(Hz input terminals respectively.
2. Set rotary switch at desired V  $\overline{\text{---}}$  position.  
Connect the test lead tips in parallel with the circuit to be measured. Be careful not to touch any electrical conductors.
3. The polarity of the red lead connection will be indicated along with the voltage value.
4. Read the measure result from the display.

### AC VOLTAGE MEASUREMENT

1. Insert the black and red test leads into the COM and V(Hz input terminals respectively.
2. Set rotary switch at desired V $\sim$  position.  
Connect the test lead tips in parallel with the circuit to be measured. Be careful not to touch any electrical conductors.
3. Read the measure result from the display.

### AC CURRENT MEASUREMENT

1. Set the rotary switch at desired A $\sim$  position.
2. Press the trigger to open transformer jaw and to clamp one conductor only, making sure that the
3. jaw is firmly closed around the conductor.  
Read the measure result from the display.

### RESISTANCE MEASUREMENT

1. Insert the black and red test leads into the COM and V(Hz input terminals respectively.
2. Set rotary switch at desired (  $\rightarrow \bullet \bullet \bullet$  ) position. Push FUNC. button to select (  $\bullet \bullet \bullet$  ).  
Connect the test lead tips in parallel with the resistance in the circuit being measured.
3. Read the measure result from the display.

#### NOTE:

1. If the resistance being measured exceeds the maximum value of the range or the input is not connected, an overrange indication "OL" will be display.
2. When checking in-circuit resistance, be sure the circuit under test has all power removed and that all capacitors have been discharged fully.

### CONTINUITY TESTING

1. Insert the black and red test leads into the COM and V(Hz input terminals respectively.  
Set rotary switch at desired (  $\rightarrow \bullet \bullet \bullet$  ) position.
2. Push FUNC. button to select  $\bullet \bullet \bullet$ ).
3. Connect the test lead tips in parallel with the resistance in the circuit being measured. If continuity
4. exists (i.e., resistance less than 40 $\Omega$ ) built – in buzzer will sound.

### DIODE TESTING

1. Insert the black and red test leads into the COM and V(Hz input terminals respectively.



1. The signal amplitude must also be greater than the sensitivity level.
2. Determine that the amplitude level of the signal to be measured is not greater than the input voltage limit (250V DC/AC rms.).

#### ADP MEASUREMENT

It is standby for user.

1. Insert the black and red test leads into the COM and V(Hz) input terminals respectively.
2. Set the rotary switch to ADP position.
3. DCV  $\leq$  600mV .

#### SPECIFICATIONS

Accuracy:

$\pm\%$  of reading  $\pm$ number of least significant digits at 18°C to 28°C, with relative humidity up to 75%.

All specifications assume less than 1 year since calibration. Temperature coefficient:

0.1 $\times$ specified accuracy/ $^{\circ}$ C .

#### GENERAL

Maximum voltage:	1000V CATII 600V CATIII
Altitude:	2000m
Display:	LCD 5999 counts, Updates 2-3/sec
Ranging method:	Auto/manual range mode
Polarity indication:	"(" display for negative polarity

Overrange indication:	LCD will display "OL"
Low battery:	"  " will appears on LCD
Jaw capability:	40mm,Max conductor size
Power:	Battery 1.5V(3  Size AAA
Size:	225mm×86mm×32mm
Weight:	Approx. 330g
Operating:	5°C to 35°C
Storage temperature:	(10°C to 50°C

#### DC VOLTAGE

Range	Resolution	Accuracy
6V	1mV	( (0.8%of rdg +5 digits )
60V	10mV	
600V	0.1V	
1000V	1V	( (1.0%of rdg +2 digits )

Input Impedance: 10M(

Overload Protection: 1000V DC or 700V AC RMS

#### AC VOLTAGE

Range	Resolution	Accuracy
6V	1mV	( (1.2%of rdg +5 digits )
60V	10mV	
600V	0.1V	
700V	1V	

Input Impedance: 10M(

Frequency range: 40Hz to 400Hz

Overload Protection: 1000V DC or 700V AC RMS

#### AC CURRENT

Range	Resolution	Accuracy
600A	0.1A	( (2.5%of rdg +5 digits )
1000A	1A	( (3.0%of rdg +5 digits )

Frequency range: 50Hz to 60Hz

Overload Protection:

120% ranges for 60 seconds max

#### RESISTANCE

Range	Resolution	Accuracy
600	0.1	

6k	1	( ( 1.0% of rdg +3 digits )
60k	10	
600k	0.1k	
6M	1k	
60M	10k	( ( 5.0% of rdg +5 digits )

Overload Protection:

250V dc or rms, ac for all ranges

#### CAPACITANCE

Range	Resolution	Accuracy
600nF	0.1nF	( ( 4.0% of rdg +5 digits )
6uF	1nF	
60uF	10nF	
600uF	0.1uF	
1000uF	1uF	

Overload Protection:

250V dc or rms, ac for all ranges

#### FREQUENCY

Range	Resolution	Accuracy
40Hz	1Hz	( ( 0.1% of rdg +1digit )
600Hz	1Hz	
6kHz	1Hz	
60kHz	10Hz	
100kHz	0.1kHz	

Measurement range:

1V to 10V rms, 40Hz to 100kHz

#### ADP

Range	Resolution	Accuracy
600mV	0.1mV	( ( 3.0% of rdg +5 digits )

#### AUDIBLE CONTINUITY AND DIODE

Range	Description
	If continuity exists (about less than 40 $\Omega$ ), built-in buzzer will sound.
	Show the approx, Forward voltage of the diode.

#### AUTO POWER OFF

To extend the battery life, Auto Power Off function is provided. If no key operations of range changing happen about 10 minutes, the meter will be turned off automatically. To turn it on, pushing the FUNC. Button only.

#### REPLACING THE BATTERY

 **WARNING**

To avoid electrical shock or personal injury, remove the test leads and any input signals before replacing the battery. Replace only with same type of battery.

When the electrical tester displays the “” mark or the backlight be not very lit, the battery must be replaced to maintain proper operation. Use the following procedure to replacing the battery:

1. The Rotary Switch is used to select OFF. Disconnect test leads from any live source and remove the test leads from the input terminals.
2. Remove screws on the battery cover and open the cover.
3. Remove the exhausted battery and replace with three new 1.5V size AAA batteries.
4. Place battery cover and secure by a screw.

 **CAUTION**

Using this appliance in an environment with a strong radiated radio-frequency electromagnetic field (approximately 3V/m) may influence its measuring accuracy.

