

**ISO-TECH ICM39
CLAMP MULTIMETER
INSTRUCTION MANUAL**

INTRODUCTION

1-1 Unpacking and Inspection

Upon removing your new Clamp Meter from its packing, you should have the following items:

1. Clamp Meter.
2. Carrying Case.
3. Instruction manual.

1-2 Meter Safety

Terms as Marked on Equipment

- # **ATTENTION** — Refer to manual
- 1 **DOUBLE INSULATION** — Protection Class II.
- " **DANGER** — Risk of electric shock.



Symbols in this Manual


This symbol indicates where cautionary or other information is found in the manual.

- Battery

1-3 Front Panel

Refer to Figure 1 and the following numbered steps to familiarize yourself with the meter's front panel controls .

- 1. Digital Display** — The digital display has a 3 3/4 digit LCD readout (maximum reading 3999) plus auto polarity, decimal point, •, DC ' , AC % and  from slipping off the hand while in use.
- 2. Drop-Proof Wrist Strap** — Prevents the instrument  from slipping off the hand while in use.
- 3. ON/OFF Key** — Turn ON/OFF the instrument.
- 4. Hz Key** — Select the Frequency mode by pressing , press again back to initial function of current mode.
- 5. DCA AUTO Zero Key** — Auto compensate the residual magnetism by pressing this key.
- 6. DC/AC Key** — Change the current function between DCA and ACA by pressing.

- 7. Trigger** — Press the lever to open the transformer jaws. When the pressure on the lever is released, the jaws will close again.
- 8. Peak Hold Key** — To hold the peak measured value.  The annunciator is displayed upon pressing this key.
- 9. Transformer Jaws** — Designed to pick up the AC current flowing through the conductor.

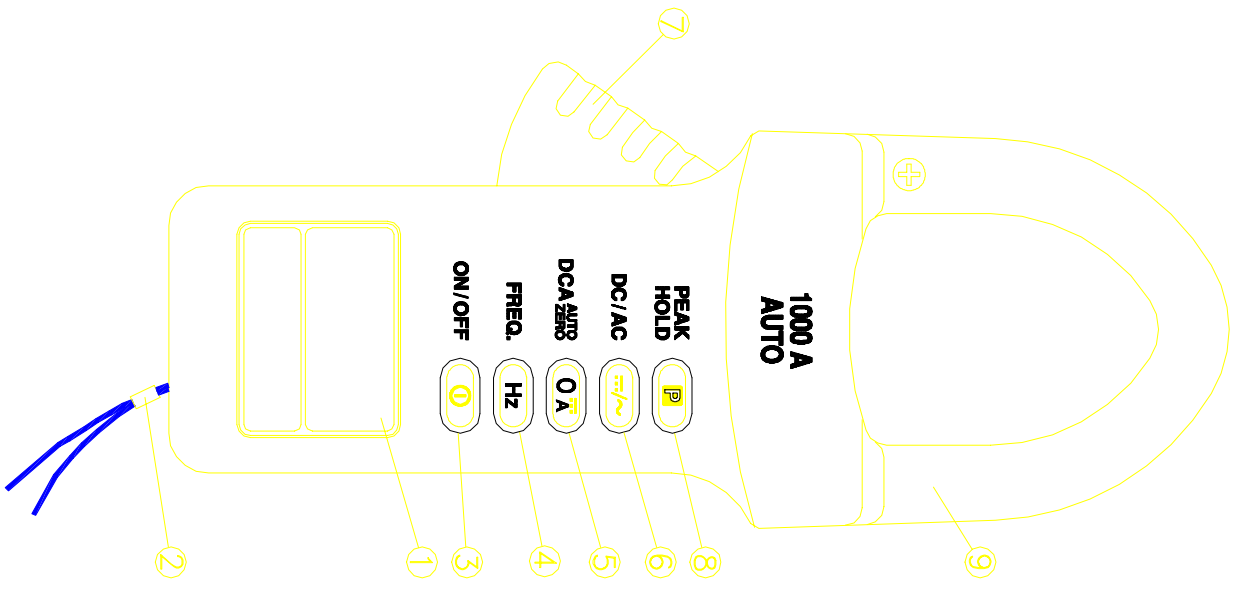


Figure 1

SPECIFICATIONS

2-1 General Specifications

Display	: 3 3/4 Digital Liquid Crystal Display (LCD) with a maximum reading of 3999.
Polarity	: Automatic polarity indicated.
Overrange Indication	: “OL” or “OL” indicated.
Range	: Autoranging.
Measuring Rate	: 2 times per second nominal.
Position Error	: +/- 1% of Reading.
Type Of Sensing	: Hall effect sensing for AC and DC.
Low Battery Indication	: “ • “ is displayed when the battery voltage drops below the operating voltage.

2-2 Environmental Conditions:

Indoor use.

Maximum Altitude	: 2000 Meter
Installation Category	: IEC 1010 1000V CAT. III.
Pollution Degree	: 2
Operating Ambient	: 0°C ~ 50°C , <75%R.H.
Storage Temperature	: -20°C ~ 60°C, < 80% R.H.
Temperature Coefficient	: 0.2 x (Spec.Acc'y) / °, < 18° or > 28°.
Power Requirement	: ALKALINE 9V.
Battery Life	: 40 hours typical (Alkaline).
Max / Conductor Size	: 51mm diameter or 24 x 60mm busbar.
Size	: 240mm (W) x 106mm (L) x 40mm (D).
Weight	: 420 grams
Accessories	: Battery (installed), manual and carrying case.

2-3 Electrical Specifications

Accuracy is \pm (% reading + number of digits) at $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$, less than 75% R.H.

Range	Resolution	Accuracy	Overload Protection
0 ~ 100A	0.1A	\pm (2.9% reading + 8 digits)	AC/DC 2000A for 1 min.
100A ~ 400A	0.1A	\pm (1.9% reading + 5 digits)	
400A ~ 1000A	1A	\pm (2.9% reading + 5 digits)	

(2) ACA

Range	Resolution	Accuracy	Overload Protection
0 ~ 40A	0.1A	$\pm (1.9\% \text{ reading} + 8 \text{ digits})$	AC/DC 2000A for 1 min.
40A ~ 400A	0.1A	$\pm (1.9\% \text{ reading} + 7 \text{ digits})$	
400A ~ 1000A	1A	$\pm (2.9\% \text{ reading} + 5 \text{ digits})$	

Frequency response : 40Hz ~ 400Hz.

(3) Frequency Counter : Auto-ranging (0 ~ 10KHz for “Hz“ range)

Range	Resolution	Accuracy	Overload Protection
4KHz	1Hz	$\pm (0.5\% \text{reading} + 5 \text{digits})$	AC / DC 2000A for 1 min.
10KHz	10Hz		

Min. Input Frequency : 20Hz

Sensitivity : 6A r.m.s. (10A r.m.s. for 1KHz ~ 10KHz)

(4) Auto Power Off

The meter will automatically shut itself off after approximately 30 minutes after power on.

(5) Peak Hold

Range	Resolution	Accuracy	Overload Protection
LOW	0.1A	± (3.0%reading + 10digits)	AC / DC 2000A for 1 min.
HIGH	1.0A		

OPERATION

This instrument has been designed and tested in accordance with IEC Publication 1010, Safety Requirements for Electronic Measuring Apparatus and has been supplied in a safe condition. This instruction manual contains some information and warnings which have to be followed by the user to ensure safe operation and to retain the instrument in safe condition.

3-1 Precautions and Preparations for measurement

1. Make sure that the battery is properly connected.
2. The instrument should only be operated between 0 •• 50• and at less than 75% R.H.
3. Do not use or store this instrument in a high temperature or high humidity environment and do not store the unit in direct sunlight.
4. Do not replace battery with power on condition.
5. If the unit is not to be used for a long period of time, remove the battery.
6. Do not forget to turn off after use.
7. If the meter is used near equipment that generates electro-magnetic interference , the display may be unstable or indicate incorrect measurement values.

THIS INSTRUMENT MUST NOT BE USED ON UNINSULATED CONDUCTORS AT A VOLTAGE
GREATER THAN 600V ac.dc.

3-2 AC Current Measurement

1. Set the clamp meter to ACA mode by pressing DC / AC key.
2. Press the trigger to open the transformer jaws and clamp one conductor only, make sure that the jaw is firmly closed around the conductor, then read the reading from digital display.

3-3 DC Current Measurement

1. Set the clamp meter to ACA mode by pressing DC / AC key.
2. Fully Compensate the residual magnetism by pressing DCA Auto Zero key.
3. For DC measurement, the reading is positive value when the current flows from the upper side to the lower side of the instrument as Figure 2.
4. Press the trigger to open the transformer jaws and clamp one conductor only, make sure that the jaw is firmly closed around the conductor, then read the reading from the digital display.

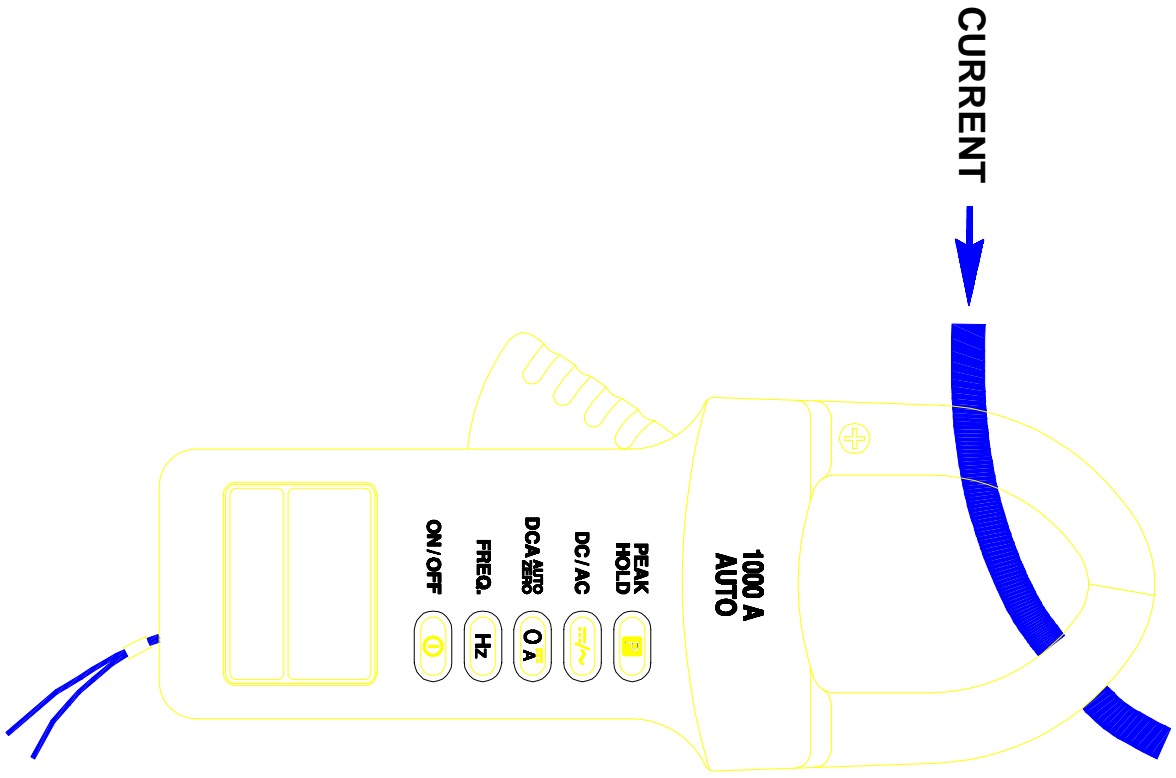


Figure 2

MAINTENANCE

- • # TO AVOID ELECTRICAL SHOCK REMOVE TEST LEADS BEFORE OPENING THE COVER.

General Maintenance

1. Repairs or servicing not covered in this manual should only be performed by qualified personnel.
2. Periodically wipe the case with a dry cloth and detergent do not use abrasives or solvents.

Battery Installation Replacement

This instrument is powered by a single alkaline 9V battery. Use the following procedure to replace the battery.

1. Turn the instrument power off.
2. Position the instrument face down and remove the two screws of the case bottom.
3. Unsnap the case bottom and remove the battery.
4. Install a new 9V battery and refit the case bottom.

