VOLTAGE DETECTOR
MODEL LV-1

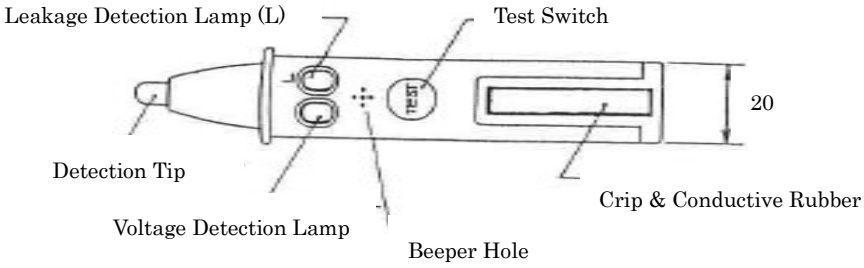
INSTRUCTION MANUAL

Thank you very much for selecting our voltage detector model LV-1.
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. SPECIFICATIONS

Model No.:	LV-1 (for low voltage only)
Voltage Range:	On the cover of wire/AC 50~600V (50/60Hz) On the bare terminal/AC 0~300V (50/60Hz)
Isolation Resistance:	Over 10MΩ by DC 500V insulation tester. (between detecting tip and clip)
Withstanding Voltage:	AC 1500V/1 min. between detection tip and clip.
Min. Responsible Voltage: (to the ground)	Sensitivity adjustable. (initial adjustment = AC 40V with detecting tip in contact with insulated wire)
Operating Indications:	Visual/Intermittent flashing red light for the both of voltage detection and isolation defect. Audio/Intermittent beeper sound.
Power Supply:	Alkaline button cell LR-44 x 2 pcs.
Size & Weight:	20(W) x 129(H) x 19.5(D) mm, approx.30g
Accessories:	Batteries (LR-44) x 2, Alligator Clip x 1, Manual x 1.

2. Outer Structure



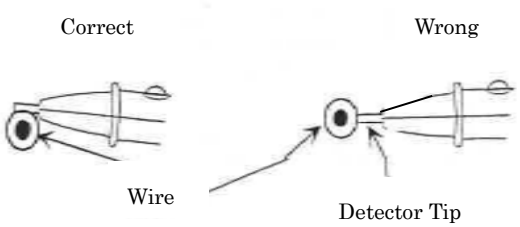
3. Method of Use

* BEFORE VOLTAGE DETECTION

1) Check if there are no damage nor unusualness on the instrument.
2) Push test switch and check if the lamp and the peeper are correctly working.
   ("L" lamp will turn on a light for approx. 2 seconds after pushing test switch)
3) Test the instrument by making detector tip touch to the circuit already known.
   (Test switch is just for checking batteries).
4) Check if the sensitivity of the instrument is suitable for the circuit to be detected.
   (Refer to ADJUSTMENT OF SENSITIVITY later mentioned)
5) Check if the clip is set into the body firmly.

* VOLTAGE DETECTION

Hold the grip firmly and make the detector tip contact to the object correctly.
(Grasp the side faces without touching the conductor rubber part of clip)

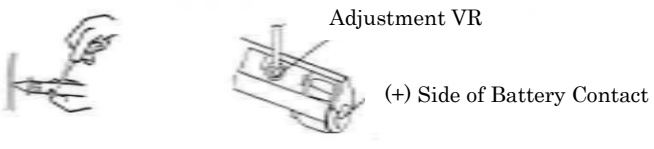


* CAUTION OF VOLTAGE DETECTION

1) This instrument is only for the use of AC low voltage circuit.
   Never use to the circuit with more than AC 600V.
   When detecting bus bar or bare terminal, do not use to the circuit with more than AC 300V to the earth.
2) The instrument may work on without touch, nearby high voltage circuit (distance within 2m). Also, if the sensitivity is set too high, the instrument may work on just influenced by static electricity.
3) In case of two wires or three wires, they normally have one grounding wire and the instrument will not work on to such grounding wire. Make voltage detection to every wire in this case.
   When the sensitivity of the instrument is not suitable for the circuit to be detected, it may work on even to the grounding wire.
4) Cannot detect the wire completely covered by the insulated materials.
   The instrument may work on to the metal pipe or case which is not grounding to the earth.
5) Do not use the instrument in the rain.
6) When detecting the bare terminal, the instrument may work on even to the earth terminal sometimes up to the condition of circuit voltage.

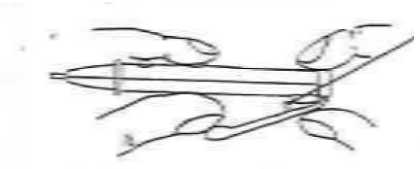
4. Adjustment of Sensitivity

1) Remove the clip from the body, keeping the detector tip touch to the cover of wire.
   Then, adjust sensitivity by turning VR (use small driver).
   In this case, you must touch to the (+) side of battery contact.
2) Turning to the right (HV) is getting sensitivity higher and to the left (LV) is getting lower.
3) The sensitivity is different depending on the wires to be detected.
   Use the same wire with voltage as one to be detected for the sensitivity adjustment.



* HOW TO REMOVE THE CLIP

Removing the lock, push out the clip to the upper side.



When putting clip into the body, insert the lock from the below side and push it until getting click sound of the lock.

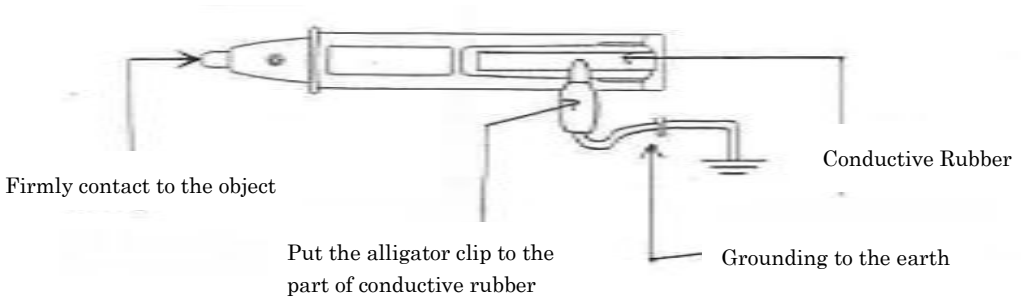
5. Indication of Leakage

Sometimes, the induction voltage appears on the metal pipe or case which are not grounding to the earth. In this case, you do not get electric shock by direct touch to them but when direct touching the circuit which has some insulation defect with the actual voltage, you may get electric shock.

The leakage indication lamp ("L" lamp) of this instrument will indicate the danger of electric shock, when the current with more than 10 μ A flows to the human body by making the detector tip touch to the flame of the circuit.

* CAUTION OF LEAKAGE DETECTION

1) This instrument catches the current to be flowed to the human body and the indication lamp lights on.
   When you wear the isolated boots, the "L" lamp may not turn on a light.
2) In the above case, the "L" lamp will light on if you touch the wall or floor by hand.
3) When the "L" lamp turns on a light, pay attention to the electric shock and do not touch the object by naked hand.
4) When detecting the bare terminal of the circuit with AC 200V~400V, the "L" lamp may light on sometimes but anything is not wrong.
   The "L" lamp will not turn on a light to the grounding terminal.
5) The conductive rubber of clip is in contact with the (+) side of internal battery contact. If they are not contacting, the "L" lamp will not work. So, install the clip to the body completely.
6) Detecting leakage is difficult sometimes, depending on the condition of the isolation of the human body. In such case, use the alligator clip in the following manner:



6. Installment/Replacement of Batteries

1) Remove the clip from the body.
   (Push out the batteries by using driver, etc. in case of replacement).
2) Confirm the polarity (+) (-) and then, put the batteries into the body.
   (In case of replacement, change the both two batteries at the same time).

* The battery consumption will get smaller when the sensitivity volume turns to “L” side.
  If you do not use the instrument, keep the volume at “L” left side.

7. Caution of Storage

1) Do not have the instrument wet by water, as it will cause defect.
2) During summer season, do not leave the instrument outside and also do not keep it at the place where the temperature becomes high, e.g. inside of the car, etc.
3) Keep the instrument inside of the house and at dry place without direct sunshine.
4) When you do not use the instrument for a long period, remove the batteries.
5) When using this instrument usually to the circuit with AC 300V~600V, do the self testing once a half year.

⚠ WARNING

* Before use, test the instrument at the circuit already known.
  It is not enough to check by test switch only.
* Before use, check the sensitivity of the instrument.
  It may cause wrong or unworkable detection.
* If you use this instrument to the circuit with more than AC 600V, it will cause the electric shock.
* When using the instrument, do not touch the tip part beyond slip stopper of the body.

WARRANTY

This instrument is sent out from our factory after the sufficient internal inspections but if you find any defect due to the fault in our workmanship or the original parts, please contact the dealer where you bought the instrument.

The warranty period is 12 months from the date of purchase and the instrument shall be repaired at free of charge, provided that we judge the cause of defect is obviously resulted from our responsibility.

MULTI MEASURING INSTRUMENTS CO.,LTD.
Akihabara Murai Bldg. 7F, 1-26 Kanda Sakuma-cho,
Chiyoda-ku, Tokyo, 101-0025 Japan
TEL : +81-3-3251-7016　FAX : +81-3-3253-4278
Home Page : http://www.multimic.com/
E-mail : multi@multimic.com