

# HIGH VOLTAGE DETECTOR

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**Model 1**



**Model 2**

**INSTRUCTION MANUAL**

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# 1. Features

## (1) Telescopic, compact, and light weight

The Model 1 length is extendable from 230mm to 880mm ( $\pm 30$ mm). The device is light weight (146g), easy to handle, and handy to carry.

The Model 2 length is extendable from 354mm to 1005mm. The device is light weight (180g), easy to handle, and handy to carry.

## (2) High-voltage detection

The equipment, whether in stretched state is available for voltage detection in high-tension circuits (3.3kV, 6.6kV and 24kV) whether the wires involved are naked or insulated.

## (3) Low-voltage detection

The equipment can be used for voltage detection in low-tension circuits (80V ~ 600V) by holding the nameplate portion of the detecting head. Before-use check can easily be done by plugging in an AC 100V plug socket, without using a tester.

## (4) Easy to recognize indication

Intermittent lighting in red of a high intensity light-emitting diode and intermittent audible sound of an electronic buzzer are readily recognizable at a full daylight, noisy location.

## (5) Waterproof

The detecting head, being tightly enclosed, is free from any trouble due to dust, dirt, water or the like.

## 2. Ratings and Specifications

### **Working voltage range :**

H.V.: 3kV~24kV AC, hold grip portion to detect.

L.V.: 80V~600V AC, hold nameplate portion to detect.

**Frequency :** 50Hz / 60Hz

### **Operation Voltage (voltage to ground) :**

When detecting while holding grip portion: bare wire  
 $\varnothing 3\text{mm}$  contact 250V  $\pm$  50V AC O.C.wire,  $\varnothing 5\text{mm}$ ,  
contact 1000V AC  $\pm$  200 V AC.

When detecting while holding nameplate portion,  
contact 80V AC or below.

### **Operation distance :**

Distance at which operation starts when front metal is brought near  $\varnothing 5\text{mm}$  O.C. wire with grip portion held by hand.

Where 24kV /  $\sqrt{3}\text{mm}$  (voltage to ground) abt 20cm.

Where 6.6kV /  $\sqrt{3}\text{mm}$  (voltage to ground) abt 3cm.

Where 3.3kV /  $\sqrt{3}\text{mm}$  (voltage to ground) abt 1cm.

### **Dielectric Strength :**

Put high voltage on the parts listed below.

(a) Between Sensing tip ~ Grip portion :

50kV AC, 1 min (The detector has to be stretched)

(b) Between Sensing tip ~ Nameplate portion :

4kV AC, 1min.

### **Measure the insulation resistance :**

Measure the insulation resistance with the high voltage insulation tester. The areas we measure are the same as Dielectric strength test.

(a) Between Sensing tip ~ Grip portion :

1kV ( The detector has to be stretched )

The insulation resistance has to be more than 2000 MΩ.

(b) Between Sensing tip ~ Nameplate portion :

1kV The insulation resistance has to be more than 2000 MΩ.

### **Construction :**

Waterproof (detecting head impervious to water).

### **Leakage Current :**

Put high voltage on the parts listed below.

(a) Between Sensing tip ~ Grip portion :

50kV AC, 1 min ( The detector is in fully extended position )The leakage current has to be 100 μA or less than 100 μA.

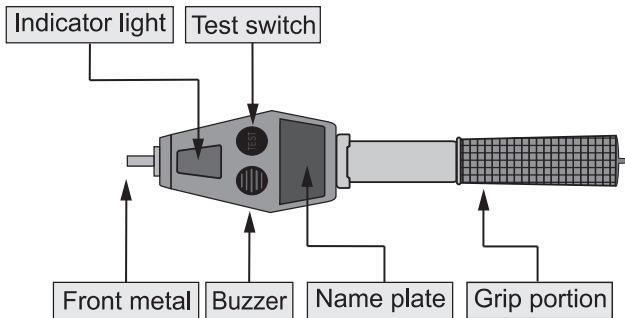
(b) Between Sensing tip ~ Nameplate portion :

4kV AC, 1min The leakage current has to be 100 μA or less than 100 μA

**Working temperature range :** -10 °C ~ +50 °C

**Battery :** DC 3V (CR2032) x 1

### 3. Construction



**Front metal :**

To be put in contact with wires, etc for voltage detection.

**Test switch :**

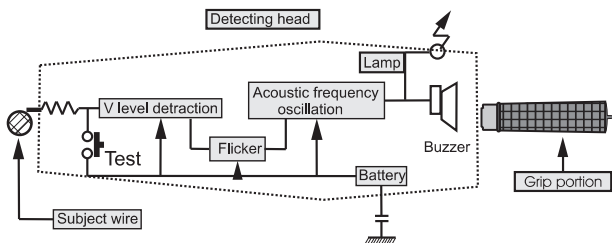
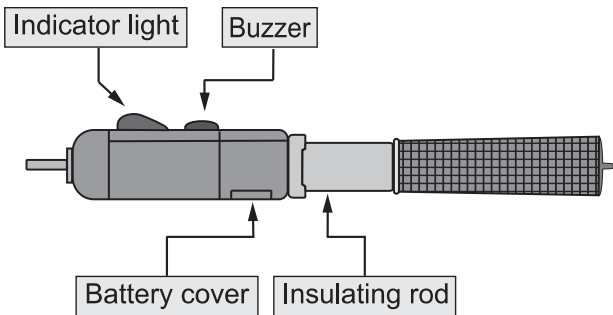
For checking to see that internal electronic circuit is in order.

**Nameplate portion :**

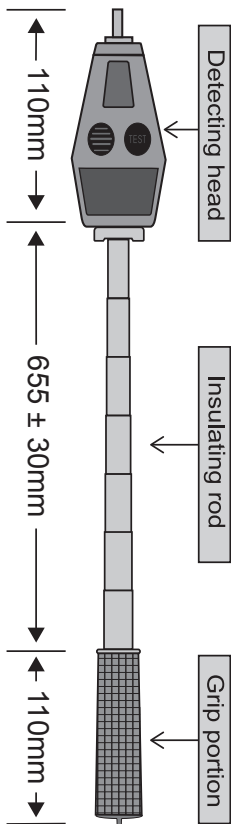
For L.V. detection, this portion is to be held by hand.

**Grip portion :**

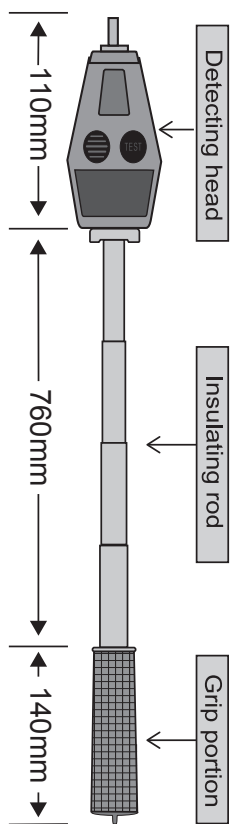
Don't touch any portion other than this during H.V. detection.



### Model 1



### Model 2





## 4. How to use

<b>Subject</b>	High Voltage Detection (in stretched state)	Low Voltage Detection
	Naked/Insulated wires 3.3kV 6.6kV 24kV AC	Naked live part 80~600V AC
<b>Method</b>	<p>Put the front metal in contact with the subject line to detect voltage, holding the grip portion.</p> <p><b>IMPORTANT !</b> Don't touch any portion other than grip!</p> <p>Please keep in your mind to wear high insulating gloves when you measure high voltage between 600V~24KV AC.</p>	<p>Put the front metal in contact with the subject line to detect voltage, holding the nameplate portion.</p>

## **5. Handling and Maintenance**

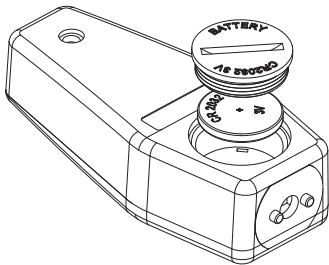
### **Before use for Voltage detection**

- (1) Check to see that nothing is wrong with the device in appearance and construction.
- (2) Switch on test switch to verify proper function of internal circuit.
- (3) If it is necessary at all to carry out voltage detection during rainfall, pay careful attention to the wet condition of the equipment surface. Discontinue use under constant, heavy rain.

### **Handling and Safekeeping**

- (4) Do not subject the equipment to shock caused by dropping or placing under heavy objects.
- (5) Do not wipe it with any chemicals.
- (6) Do not expose device to extreme heat.
- (7) Be sure to keep it clean at all times. And store in a location away from direct sunlight for safe keeping.
- (8) LED light is dim, audible sound is too low, or if the equipment does not operate, replace the battery.

- (9) Remove the battery cover and replace with a new battery. Ensure the polarities are correct, if (+)(-) polarities are reverse, the equipment can not be operated.



- (10) The battery is DC 3V (CR2032) x 1. If a battery of poor quality is used, the equipment may be damaged by liquid leak from the battery.

### **Testing and Maintenance**

- (11) Insulating performance (withstand voltage) test should be conducted periodically, i.e., once in every six months.
- (12) Check the voltage detecting performance of the device daily prior to use.

