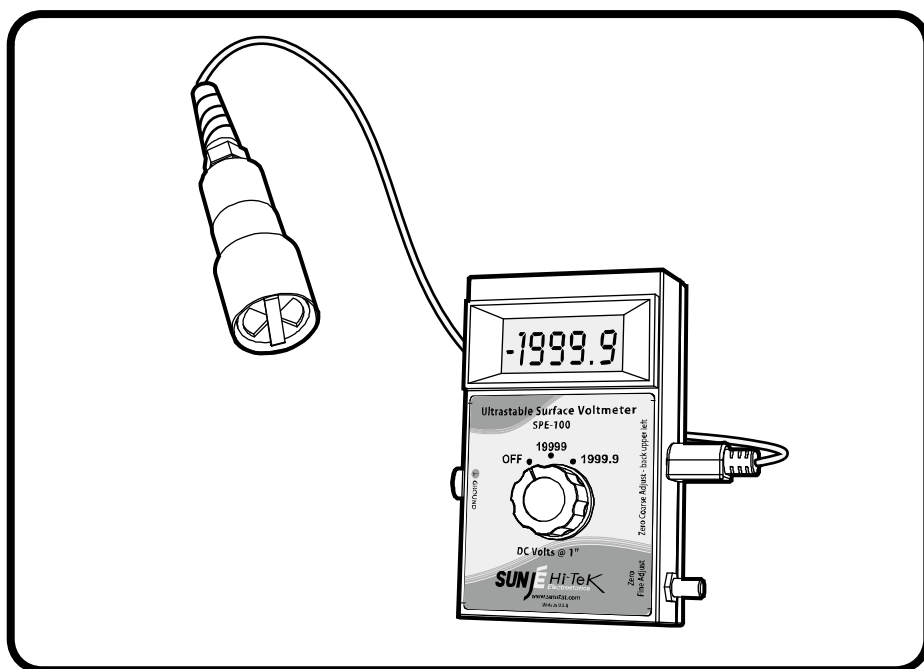


# Instruction Manual

## Ultrastable Surface Voltmeter (SPE-100)

- ☒ English  
☐ Korean  
☐ Japanese  
☐ Chinese (Simplified)  
☐ Chinese (Traditional)



**SUNJE** Hi-Tek  
Electrostatics

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## 1. Please make sure you read before use

- Thank you for choosing Ultrastable Surface Voltmeter SPE-100 of Sunje Hi-Tek.
- This product has been designed and manufactured to be used as the part for the electronics industry.
- Please read this manual before you treat the SPE-100.
- Keep the product manual at hand so that you can refer to it anytime and anyplace.
- We cannot be responsible for improper installation and operation.



### The matters of safety

- It may fail to function properly if someone drops or any misuse of the product.
- Please connect to Ground for precise measurement.
- 9V Battery only. (rectangular shaped battery)
- Do not separate or renovate it personally.

## 2. Overview and Main Characteristics



SPE-100 is a non-contact static voltage measurement sensor. Therefore you can measure the static voltage without contact charged object.



It can measure surface voltage in range of  $\pm 19.999[\text{kV}]$ .



SPE-100 has high sensitive sensor that enables to measure static voltage of charged object by 1V in range of  $\pm 19.999[\text{kV}]$ .



It measures static voltage of charged object accurately and speedy  
(error range  $\pm 2\%$ , Sampling Speed 0.5 sec.)



Static voltage sensor is separable, so it works in various environments. Also, it has rotating stabilizer that enables for stable data measuring and long-term fixed measuring.

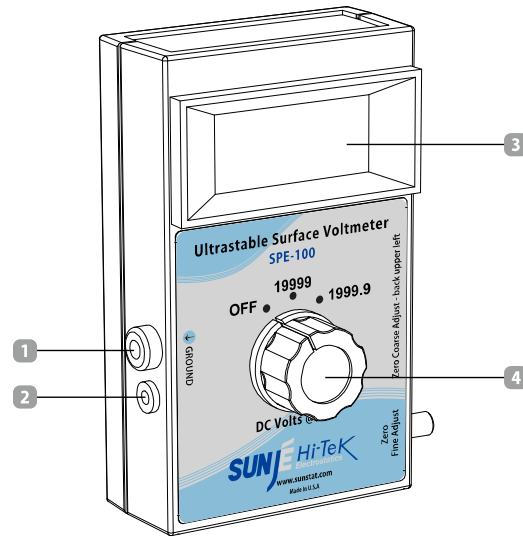


It is possible to monitor static voltage externally by signal output function.

### 3. Components Description

#### 3.1 Measurement equipment body

##### ■ Front / Left side



##### 1. Ground

This is an earth connecting socket. You must connect it before you measure.

##### 2. Output Connector

Please connect Output Cable provided with the product to send output signal outside.  
(output range  $\pm 19.999[\text{kV}]$ , reduction ratio 1:1000)

##### 3. Electrostatic indicating LCD

This is measured static voltage display LCD. Measurement range is  $\pm 19.999[\text{kV}]$ .

##### 4. Mode Select Knob

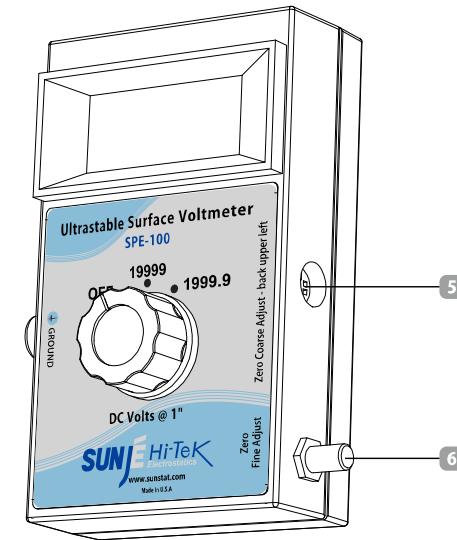
Knob can be set up in three steps.

First step (**OFF Mode**): Turn off.

Second step (**19999 Mode**): It can measure in range of  $\pm 19999[\text{V}]$  in 1V unit.

Third step (**1999.9 Mode**): It can measure in range of  $\pm 1999.9[\text{V}]$  in 0.1V unit.

##### ■ Front / Right side



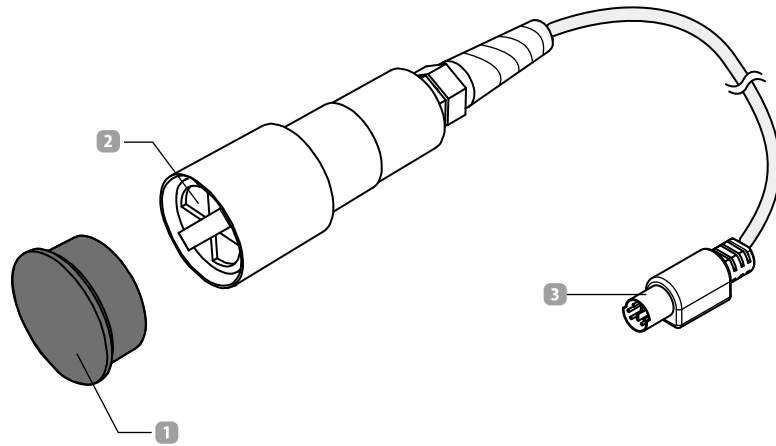
##### 5. Sensor Connector

This connector is to connect static voltage sensor.

##### 6. 0V adjustment knob

This knob is for adjustment to 0V when first using it. Please adjust it by turning left and right.  
(possible range:  $\pm 15\text{V}$ )

### 3.2 Static Voltage Sensor



#### 1. Sensor Cap

The sensor cap is for adjust offset. Please cap securely in place over the end of the probe.  
Please remove Sensor Cap before measure.

#### 2. Static Voltage Sensor

This is static voltage of charged object measuring sensor. Please keep this sensor away from any particles.

#### 3. Sensor Connector

Please connect to sensor connector of main body. The length of sensor cable is 90cm (standard).  
Optional 400cm length or extension cable is available for user's measuring circumstance.

#### ※ Sensor Cable Length

- Standard Cable : 90cm
- Extension Cable(Optional) : 400cm

## 4. Operating Method

### 4.1 How to use static voltage measurement instrument

#### 1) Grounding product

Please connect a ground wire to SPE-100 for accurate measurement.

#### 2) 0V adjustment

If grounded, set up the Mode Select Knob to 1999.9, and apply black sensor cap (conductive plastic) at the tip of probe. Then, start adjust it by turning adjustment knob left and right until it displays 0000.00.

#### 3) Measurement

Separate the sensor cap after setting up the knob in 19999 or 1999.9 Modes depending on the environment.  
And read the display while keeping the distance between charged object and static voltage sensor in 1 in. (25.4mm)

## 5. Specifications

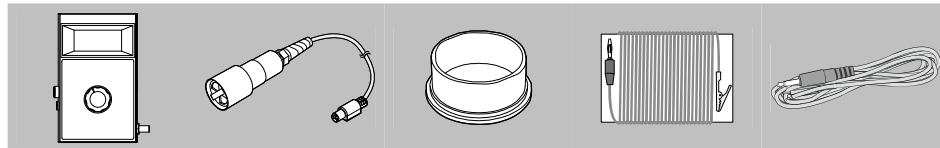
The specification values are listed below: specifications are subject to change without notice.

| Category                            | Descriptions                              |                             | Remarks                   |
|-------------------------------------|-------------------------------------------|-----------------------------|---------------------------|
| Model                               | SPE-100                                   |                             |                           |
| Range / Resolution at 1"            | 0 to ±19.999[kV] / 1V                     |                             |                           |
|                                     | 0 to ±1.9999[kV] / 0.1V                   |                             |                           |
| Accuracy                            | ±2% of reading                            |                             |                           |
| Capacitance (to ground) of Sensor   | 60 nF                                     |                             |                           |
| Sensitivity if used to sense charge | 0.1V or 1V, depending on range            |                             |                           |
| Drift                               | Less than 0.5 V (1 year period)           |                             | at 25.4mm(1 Inch)         |
| Sampling Speed                      | 0.5 sec                                   |                             |                           |
| Environmental                       | 0℃ to 40℃(30°F to 110°F) 0-85% RH         |                             |                           |
| Size                                | Static Voltage Sensor                     | 72(H) X 31(Diameter) [mm]   |                           |
|                                     | Body                                      | 75(W) X 122(H) X 50(D) [mm] |                           |
| Weight                              | 330 g                                     |                             | without battery           |
| Battery                             | 9 Volt Alkaline / "Low Battery" indicator |                             | included                  |
| Cable Length                        | 90 cm standard AT cable                   |                             | special option :<br>400cm |
| Warranty                            | 1Year                                     |                             |                           |

## 6. The List of Accessories

Please check the components (modification, breakdown, etc.) when you receive SPE-100.

If you find malfunction, modification or breakdown, please contact to our service center.



### Body

**SPE-100**

1ea

### Static Voltage Sensor

**SVS-PE-1-001**

1ea /  
90cm(Standard)  
400cm(Optional)

### Sensor Cap

**SSC-PE-1-001**

1ea

### Ground Cable

**SGC-PE-2-001**

1ea / 4.8m

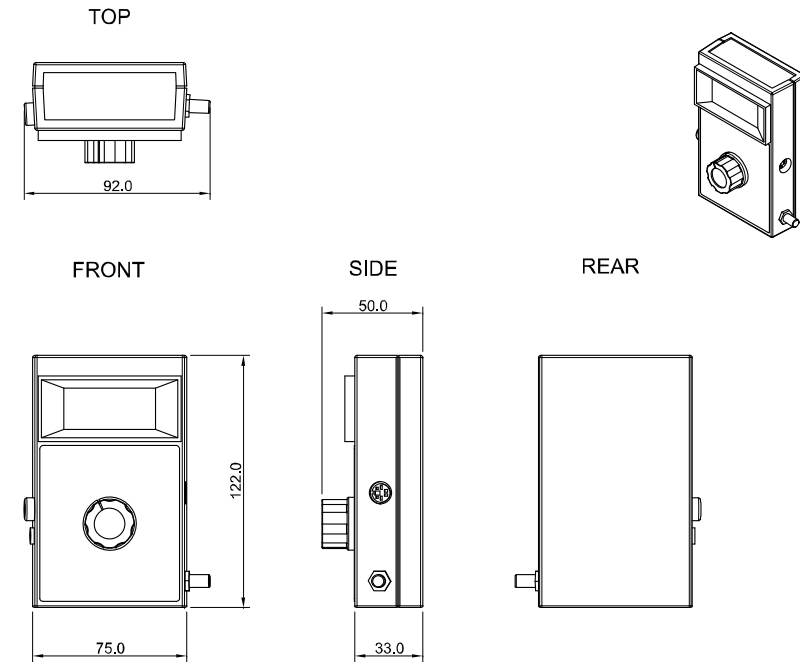
### Output Cable

**SOC-PE-1-001**

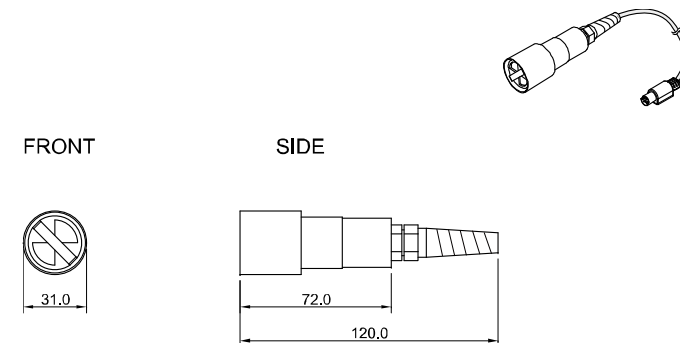
1ea / 1.8m

## 7. External Dimension

### 7.1 Measurement equipment body



### 7.2 Static Voltage Sensor



## 8. Warranty

### 8.1 Warranty Period

The warranty period of the product is for one year after the purchase of the product.

### 8.2 Warranty Scope

In case failure due to the problem of the product occurs during the above warranty period, after-sales service is provided free of charge. However, failures due to the following conditions are excluded from the scope of warranty.

- Failures due to inappropriate conditions, environments, handling, and usage not conforming to the descriptions in the user's manual and the specifications attached separately.
- Failures not due to our product's defects but due to the designs of customer's equipments or software.
- Failures due to modification or change by user's own will.
- Failures that are determined to have been prevented if consumables described in the user's manual, etc. had been maintained or replaced correctly.
- Failures due to external causes including disasters such as fire, earthquake and flood, and abnormal voltage.

The scope of warranty is valid within warranty period. We are not responsible for the secondary damage (equipment breakdown, opportunity loss, profit loss, etc.) due to our product's failure.

### 8.3 Application scope of product

This product has been designed and manufactured as a product for general industrial use. Therefore, this product can not be used for the purpose related to atomic power generation, aviation, railway and medical equipments that have great influence on human life or properties. However, customers can apply our products to the above mentioned purposes after they fully understand the specifications of the product through consultation with us.

## 9. Contacts in the event of Repair and Failure

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