



ESVM

High Voltage Electrostatic Voltmeter for ESD

Generator Voltage Verification

User's Manual



Revision 1.2 4/30/2021

- *Ultra high input impedance*
- *Ultra wide measurement range*
- *High precision and high linearity*
- *Fast and stable response*

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I. OVERVIEW

ESVM is a high voltage meter that has the properties of high input impedance, high accuracy, high resolution (1V), and wide measurement range (0V~ $\pm 100\text{kV}$). The input impedance is $100\text{G } \Omega$ and has no effect on the object being measured. ESVM is mainly used for measuring high voltage, especially for ESD generators with high resistance. It is suitable for measurement and calibration of high voltage of CRT-type monitors, electrostatic guns, static high voltage meters, and non-contact electrostatic voltmeters.

II. FEATURES

- *High input impedance - $100\text{G } \Omega$*
- *Wide measurement Range: 0V~ $\pm 100\text{kV}$*
- *High precision and high linearity*
- *High stability: 0.1% (after a warm-up of 20 minutes)*
- *Battery / AC powered*
- *Concealed high voltage input, safer for high voltage measurement*

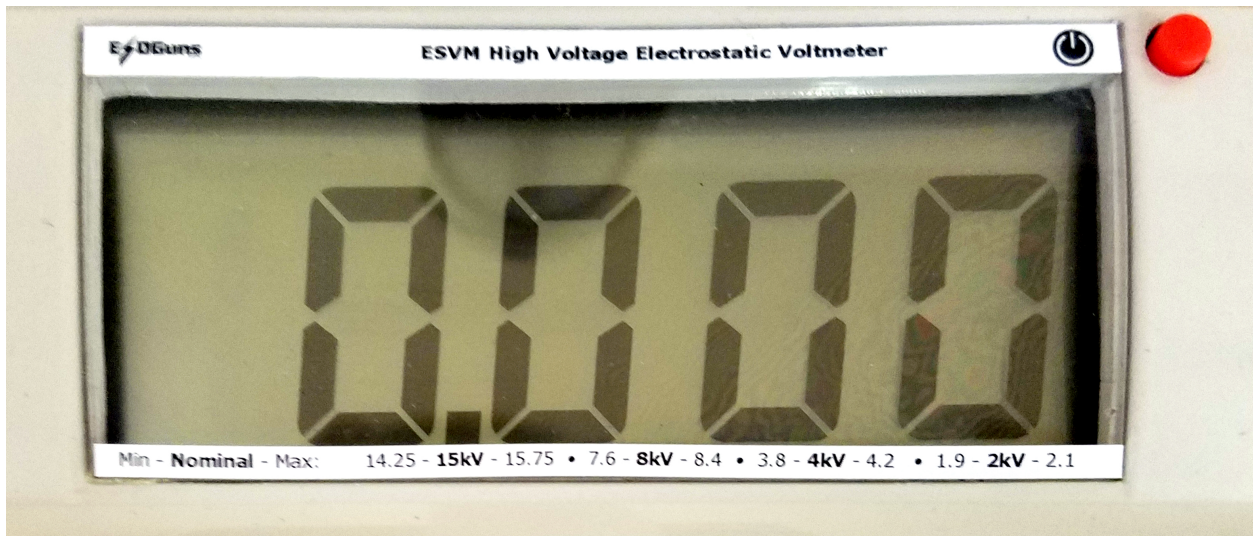
III. SPECIFICATIONS

Measurement ranges	1~20kV, 10~100kV with automatic range selection
High accuracy	$\pm 1\%$, ± 2 counts
Input impedance	$\geq 100\text{G } \Omega$
Display	4½ digit LCD
Resolution	10V , 1V
Power supply	AC 100-240V or 9V battery
Size	21cm (length) x 16cm (width) x 40cm (height)
Weight	2kg

IV. OPERATION

A. POWERING ON THE METER

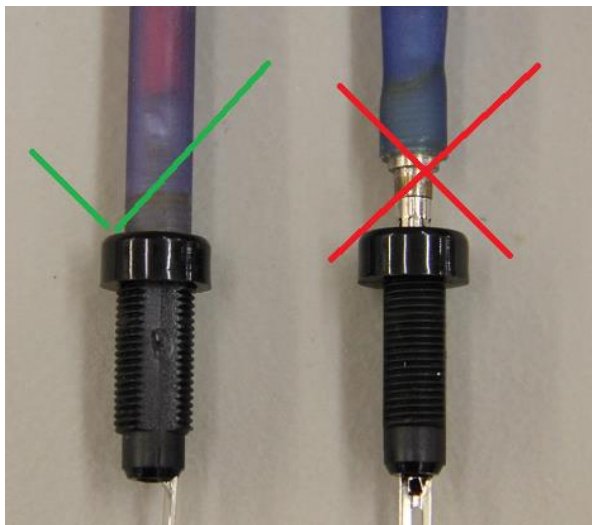
The display should read 0.000kV.



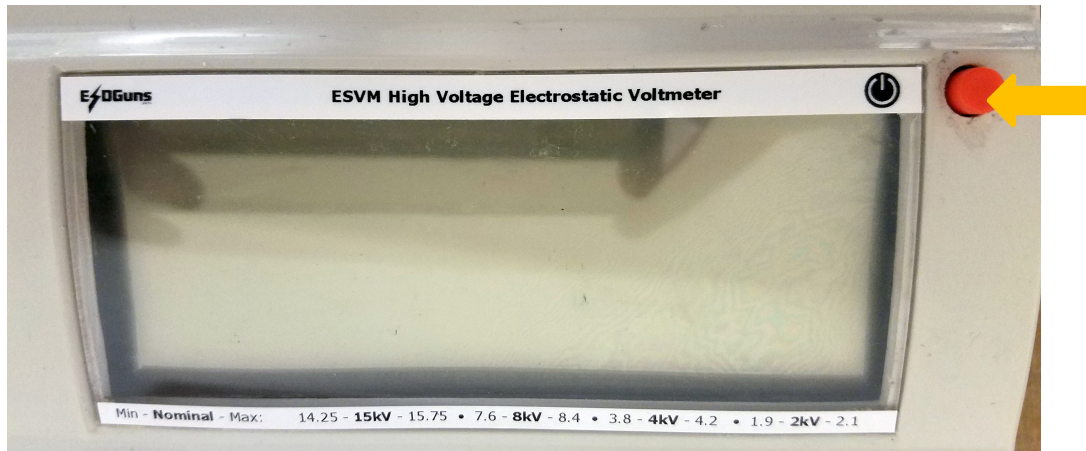
B. CONNECTING THE INSTRUMENT TO THE OBJECT UNDER TEST:

Grounding is very critical. The ground refers to the ground, the system ground, and the earth.

Attention: If the measured voltage is higher than 20kV, be sure to plug the high voltage cable into the high voltage meter to prevent the discharge from exposed metal. Make sure the plug is fully inserted and that no metal part of the male plug is exposed. When high voltage cables are used, the instrument will work safely even if the voltage is over 100kV. (We do not recommend test voltages over 100kV. Higher voltage requirements can be customized)



C. TURN THE POWER OFF WHEN THE MEASUREMENT IS COMPLETED TO CONSERVE BATTERY POWER



D. REPLACE THE BATTERY

Replace the battery when its voltage is not sufficient to drive the LCD display. The battery compartment can be found on the bottom of the base.

V. APPLICATIONS

A. ESD GENERATOR, ELECTROSTATIC GUN, AND ELECTROSTATIC SIMULATOR CALIBRATION

According to the IEC standard, set the ESD generator (electrostatic gun) to air discharge mode. Then, insert the discharge head of the electrostatic gun to the test input of the ESVM and read the displayed voltage directly.



B. ELECTROSTATIC VOLTMETER CALIBRATION

Refer to the specifications for ESVM electrostatic voltmeter calibration or contact technical support at ESD Guns.

VI. ATTENTION

Safety is always important, especially when measuring high voltage. Measurement accuracy will be affected if the instrument surface is dusty. Denatured alcohol can be used to clean the surface. If the measured voltage is higher than 20kV, be sure to plug the high voltage cable fully into the high voltage meter to prevent discharge from exposed metal.

VII. CALIBRATION

Calibration needs to be performed by a professional lab. Contact ESD Guns for approved labs to use.