

Instruction Manual Guide

Electrostatic Field Meter

(SL3)



Bondline Electronics
Unit 4 Rivermead Industrial Estate,
Rivermead Drive, Swindon, Wiltshire,
SN5 7EX

Description

Electrostatic Field Meter is an accurate and compact device used for location and measuring static charge potentials. This pocket-sized field meter uses a non-contacting, chopper type field sensor with "sample and hold" metering and ranging light mechanism to ensure accurate and consistent measurements. Powered by a 9V battery. (Includes carrying pouch).

Features

- Pocket-size convenience.
- Sample and hold measurement modes.
- Distance ranging lights.
- Conductive case and ground snaps.
- Digital display.
- 9 volt battery powered.
- Analog output.
- Designed for use in ionized areas.

Measurement Modes

The field meter features both SAMPLE and HOLD measurement modes that allow measurements to be made in places that would be difficult to reach or see with other instruments. A set of ranging lights ensure accurate and repeatable measurement. No range switching is required as the digital display covers the range of 0 to + 19.99 kilovolts. An analog output jack provides a 1 volt output corresponding to a 10 kilovolt reading on the meter display. The circuitry has been designed to make accurate measurements in areas using air ionization.

Operation

1) Controls: The model SL3 field meter has a slide switch for ON/OFF and a push button switch for modes. The ZERO knob can be turned to the left or right to change the zero settings of the display.

2) Turning the meter on and off: Push the slide switch actuator into its upper (ON) position. The display will come on. To turn the meter OFF, slide the switch down to its lower (OFF) position. The display should now turn off.

3) Battery check: After turning on the power to the meter, check the display and make sure that the lower battery indicator BAT is not showing on the display. If the BAT indicator is lit, replace the battery as described below before using the meter.

4) Zero the meter: Turn on the meter with the ON/OFF switch. Put the meter in the SAMPLE mode (up position). Place the meter 1 inch from a GROUNDED metal surface. If necessary, adjust the ZERO control until the display reads zero.

IMPORTANT: The SL3 is built in a conductive case that provides the ground reference for the measuring circuit. For accurate measurements and zeroing, ensure that the person holding the meter is grounded or discharged by touching ground, or that the meter is grounded using the ground snap on the rear of the case.

5) Take a reading: Place the meter 1 inch from the object to be measured. The distance is measured from the stainless steel front panel to the surface of the object. The meter now displays a reading of the electrostatic field in kilovolts-per-inch.

NOTE: In the SAMPLE position, the RANGE LIGHTS are on. The RANGING LIGHTS are provided to help you place the meter at the correct distance from an object. The lights are factory adjusted to produce a concentric ring bulls-eye pattern on a flat, opaque surface 1 inch from the front edge of the meter. This can most easily be seen by aiming the meter at a sheet of white paper.

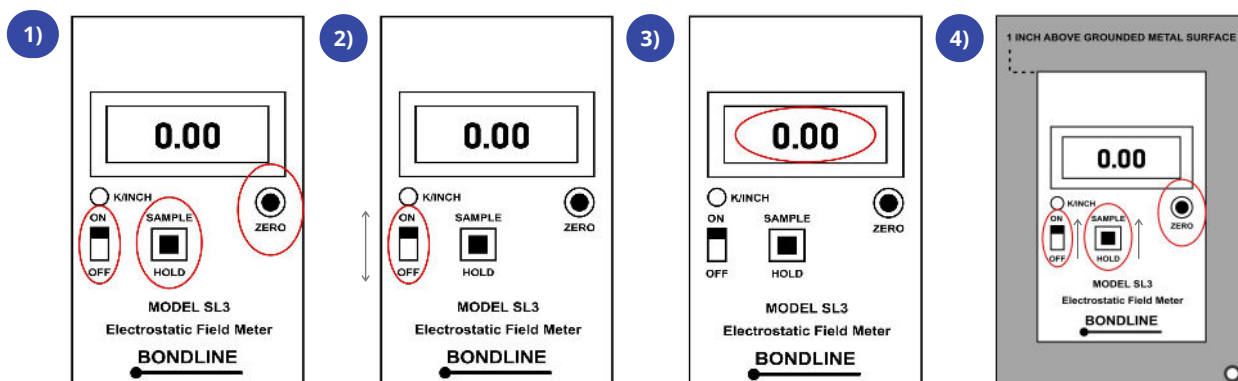
6) Hold a reading: With the meter in position 1 inch from the object being measured, press the push-button so that it latches in the lower or HOLD position. This freezes the reading on the display and allows the meter to be moved to a position where it can be more easily read or saved for later reference. When the meter is in the HOLD position, the word HOLD will appear in the display.

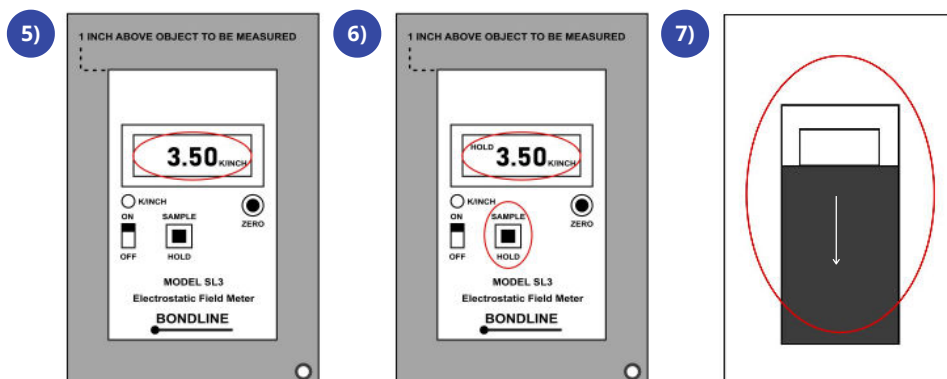
NOTE: In the HOLD position, the RANGING LIGHTS are off. When the push-button is returned to the SAMPLE position, the RANGING LIGHTS goes on and the word HOLD disappears from the display.

7) Battery replacement: To change the battery, slide open the battery compartment door on the back of the meter and remove the battery from the battery clip. Replace the battery with a fresh one and replace the battery compartment door. If the meter is to be stored for an extended period of time, disconnect and remove the battery.

8) Measurements accuracy: The accuracy of measurement is dependent on a stable ground reference and the 1 inch measuring distance as previously noted. It is also dependent on the aspect ratio, relating the size of the object to be measured to the measurement distance. This ratio should be at least three for best accuracy; i.e the object should be at least a 3 inch sq. when measuring at a 1 inch distance.

****Accurate measurements may be made at other measurements' distances by scaling the meter range and observing the proper aspect ratio. For example, at a measurement distance of three inches, multiply the meter reading by 3 to give a range of 0 to 59.97 kilovolts. For accuracy, the object being measured at this distance should be at least a 9 inch sq.**





Maintenance

The only maintenance necessary for the SL3 field meter is occasional changing of the 9V battery.

- 1) Slide off the battery compartment door on the rear of the unit.
- 2) Carefully remove the battery on the compartment, noting the routing of the battery clip wires, and detach the battery clip.
- 3) Replace with a 9V alkaline battery of the same type.
- 4) Carefully re-insert the battery in the compartment, routing the wires so that they don't interfere with the battery compartment door.
- 5) Slide the battery compartment door back into position.

Calibration

The SL3 is factory calibrated to an accuracy of better than 5%. No attempts should be made to re-calibrate the unit without factory authorisation. The accuracy of the measurements is dependent on stable ground reference and measurement at a precise 1" distance. The SL3 has a basic accuracy of +5% measured with 1000 volts on the plate.

Service

The SL3 has a warranty of two years from the date of the receipt or installation to be free from defects in material or workmanship. The liability of the supplier under warranty is limited to replacing or repairing any unit which is returned by the purchaser and which has not been subjected to misuse, neglect, repair and alternation or accident. In no event will the supplier be liable for the collateral or consequential damages.

CAUTION: THE SL3 IS A PRECISION ELECTRONIC INSTRUMENT. IT MUST NOT BE SUBJECTED TO EXTREMES OF SHOCK AND VIBRATION. DAMAGE TO THE FIELD SENSOR MAY RESULT FROM DROPPING THE UNIT FROM EXCESSIVE HEIGHT ONTO A HARD SURFACE. SUCH DAMAGE IS NOT COVERED BY THE WARRANTY.