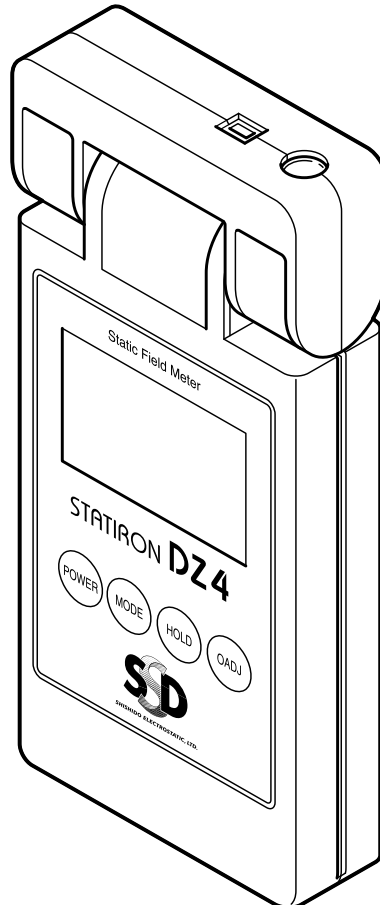


Static Field Meter STATIRON

DZ4-S2 (1 volt accuracy)



Thank you for purchasing the Statiron DZ4-S2. Please read this manual before using the product in order to fully understand its functions. Also make sure to store this manual so that it can be referred to in the future.

Functions

The static field meter Statiron DZ4 is a portable static electrical potential meter with digital readout, for measuring the electrical potential of charged objects.

When measuring fluctuating static electricity, you can temporarily hold an indicated value, and check maximum voltages in the MAX mode.

Characteristics

1. Enables you to measure surface potentials of charged bodies without coming into contact.
2. Enables you to take measurements in narrow locations by rotating the sensor head.
3. With the optional ion balance plate, you can carry out ionizer balance checks.

Safety Precautions

This device is a precision electrical instrument. For the sake of safety, be sure to follow the instructions described in this manual. ⚠ mark are precautions that must be followed in order to use the product safely.



Danger

This device does not conform to explosion-proof specifications. Do not install it in locations where flammable gases or solvents are handled, such as painting booths etc. Doing so may result in fire or explosion.



Caution

This device is a precision electrical instrument. Avoid installing it in wet, oily, hot, and humid locations. In particular, avoid locations of high humidity and condensation. There is a possibility of fire due to breakdown.

Installation

- Do not use this device in the following locations, as doing so may cause malfunctions.
 - Locations subject to high or low temperature, or high humidity
 - Dusty locations
 - Locations where the device may be exposed to organic solvents such as thinner
 - Locations where the device may be exposed to corrosive gas
 - Locations subject to flames or explosions
 - Locations subject to frequent vibrations
 - Locations subject to sudden changes in temperature or humidity
 - Locations subject to condensation
 - Locations where the device may be exposed to water or oil

Maintenance

- Regularly remove any built-up dirt etc. from the optional ion balance plate. Built-up dirt can cause insulation faults.
- Make sure to turn the main power of the device OFF before cleaning.

Handling

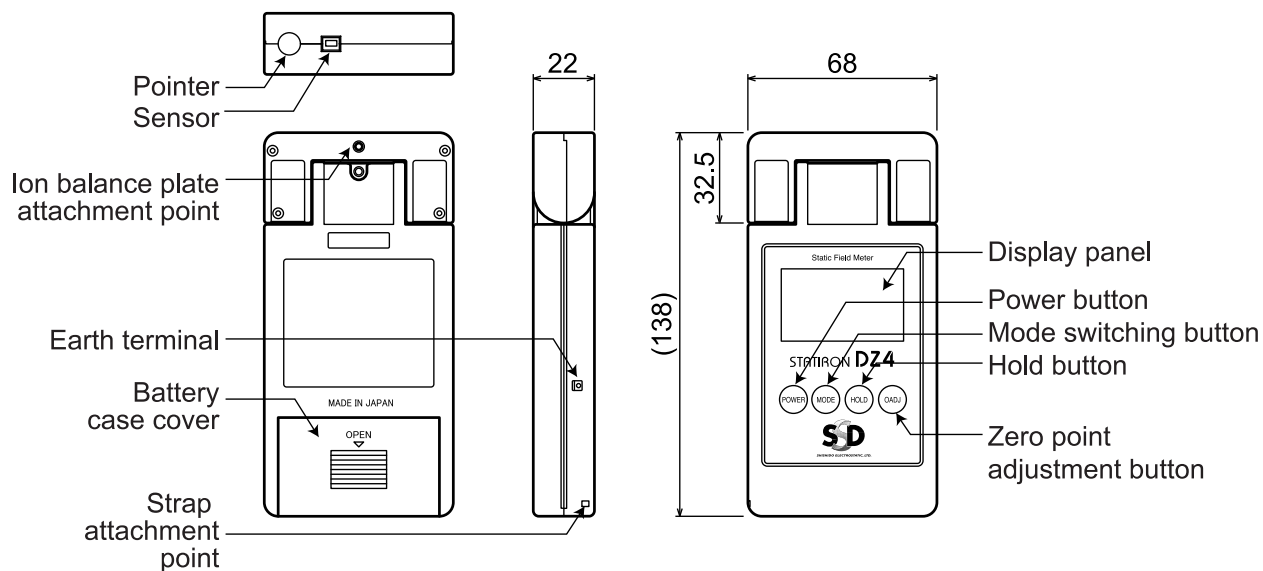
- Make sure to connect the earth wire to an appropriate place. Accurate measurements are not possible if the earth wire is not connected.
- To obtain accurate measurements, measure at an appropriate distance from the charged object.
- Do not touch or insert foreign materials into the sensor portion of this device.
- Do not blow ionized air directly into the opening of this device.
- Do not place heavy objects on the LCD display of this device.
- Do not disassemble or modify the device.
- The device may affect medical devices such as hearing aids or pacemakers.
- Do not insert any foreign objects into the device. Doing so may result in a short circuit or current leakage, and cause fire or electrocution.
- The battery discharges a small amount of electricity even when the device is turned off. If you do not intend to use this device for an extended length of time, remove the battery.
- If the device emits any abnormal odors or sounds, smoke, or heat, turn OFF the main power immediately, and contact your point of purchase. Failure to do so may result in fire or a short circuit.
- Do not remove name plates or labels.
- Do not do anything with the device that is not described in this manual.

Items Included With the Device

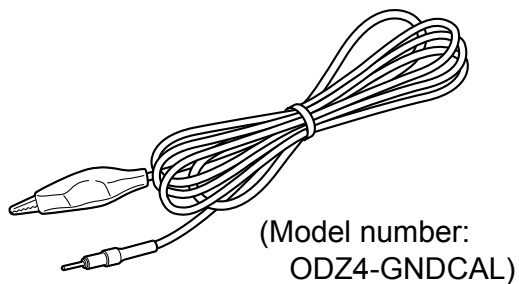
Confirm that the following items are included with the device before using it for the first time.

■ Instruction manual/warranty x 1 (this document)

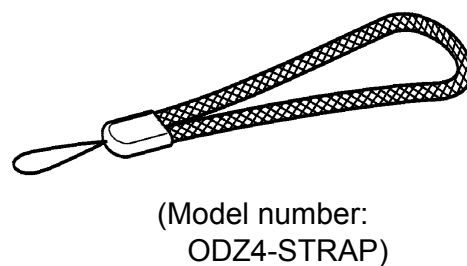
■ Main Device



■ Earth Lead (x 1)



■ Strap (x 1)



■ Battery (006P type 9V alkaline dry cell battery) x 1

■ Soft case (Model number: ODZ4-SFTCS) x 1

Important Points About Taking Measurements

Grounding

If the user's body retains an electrical charge, or highly accurate measurements are required, ground the earth terminal of this device. Also, if the charged object is expected to have a large charge, be sure to ground the device to avoid breakdown due to discharge.

Adjusting the Measurement Distance

If the distance is more than the recommended measuring distance of 10mm, and the displayed potential exceeds 1.999kV, do not move the meter any closer to the charge object.



Influence of other objects

If there are other objects near or behind the charged object, the displayed measurement is smaller than the actual potential. If this is the case, correct the measurement in light of the shape of the electrical field, or put as much distance as possible between the charged object being measured and other objects.

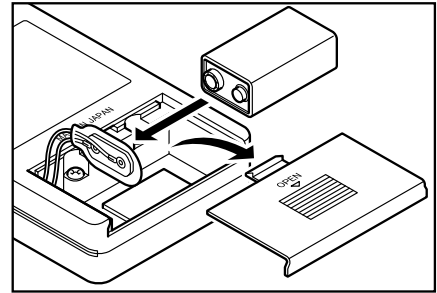
Influence of charged particles etc.

Powerfully charged objects impose a charge on particles and create an ionic space. If charged particles etc. adhere directly to the electrode of the meter, measurement errors will occur. This phenomenon occurs when a large amount of fluff adheres to the charged object or large amounts of dust are in the vicinity.

Preparation

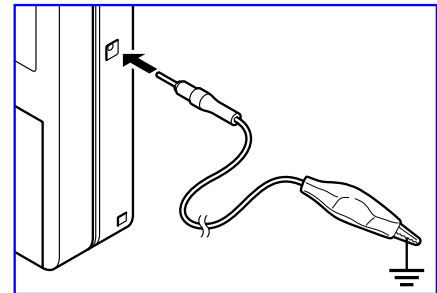
1. Insert the battery.

Remove the battery case cover and insert a 9 volt dry cell battery. Replace the cover carefully, taking care to keep the battery leads clear of the cover.



2. Connect the earth lead to the earth terminal, and reliably ground the earth lead.

Connect the earth lead securely to the terminal, and connect the clip on the end of the earth lead to a grounded object. To obtain accurate measurements, the earth terminal must be grounded.

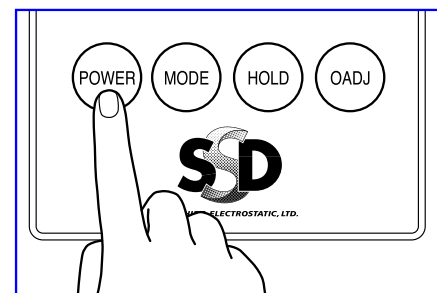


Measurement Procedure

Measuring Static Electricity

1. Turn the meter on.

Press the POWER button for more than one second, until you hear a beep.



2. Set the mode you want to use.

Each time you press the mode button, the meter scrolls through the modes in the order shown in the table on the right. To measure potentials, use the normal mode.

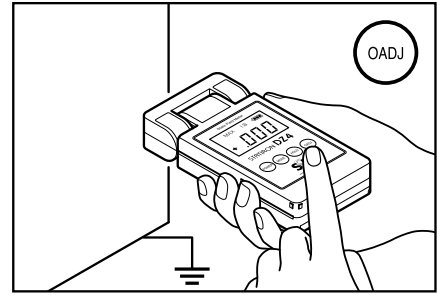
*This DZ4-S2 model is for 1 volt accuracy specification, you can't use standard mode "I.B MAX mode" and "I.B mode"

3. Zero point adjust the meter.

Point the sensor at a grounded object and press the 0 ADJ button.

NOTE

- Zero point adjustment is reset when you turn the meter off.

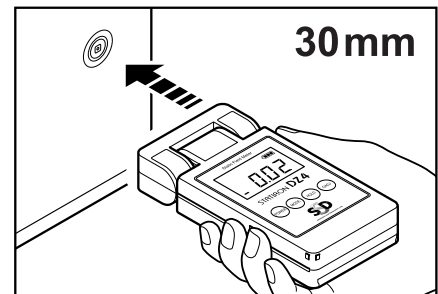


4. If you want to measure a maximum potential, use the MAX mode.

Refer to step 2 for how to set modes.

5. Point the sensor at the charged object, and gradually bring the meter closer to the object.

The distance between the sensor and the charged object should be 10mm.



NOTE

- If the recommended measuring distance of 10mm cannot be attained, do not bring the meter any closer if the potential displayed exceeds 1.999kV. Doing so may cause damage to the meter.
- If the display panel blinks "1", the charged voltage has exceeded the measurable range (over-range). If this occurs, stop measuring immediately, as this may cause damage to the meter.

6. The value on the display panel is the measurement result (unit: kV).

7. In normal mode, you can temporarily hold the measured value by pressing the hold button.

If you press the hold button again, the stored value is removed.

You cannot use the hold function in MAX mode.

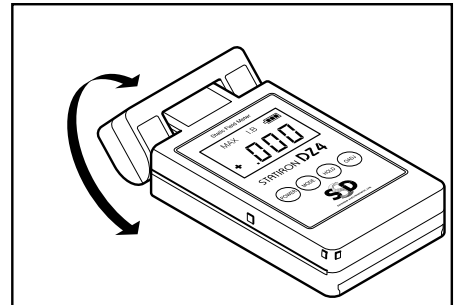
8. To turn the meter off, press the POWER button for more than 1 second.

Adjustment and Maintenance

Rotating the Sensor Head

You can rotate the sensor head of the meter. This enables you to easily take measurements in narrow locations etc. that were previously difficult to access.

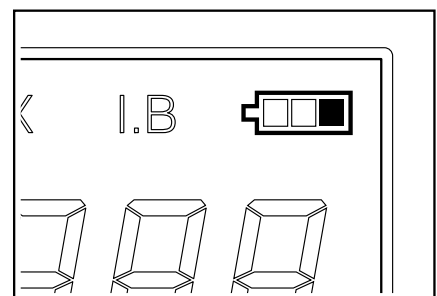
The sensor head rotates in 45° increments. When rotating the head, stop at angles where the sensor head clicks into place.



Battery Indicator

The remaining battery charge is displayed on the upper right of the display panel.

When the battery charge icon shows one unit left, replace the battery.

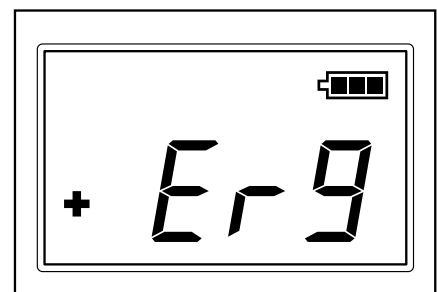


Error Display

The signal detection method of the meter is an oscillating chopper method.

If for some reason the sensor stop oscillating, an error message like that shown in the illustration on the right is displayed, and the meter emits a beeping sound every second.

If this occurs, restart the meter. If the error message continues to be displayed after restarting the meter a number of times, the sensor may be faulty. Contact the sales office where you purchased the product.



Troubleshooting

If the device does not operate correctly, it may be the result of one of the following.

The display panel is not active when the power is turned on.

Cause 1	The battery has not been installed, or the positive and negative terminals have been connected the wrong way around.
Remedy 1	Correctly install the battery.
Cause 2	The battery has been completely drained.
Remedy 2	Replace the battery with a new one.

The display panel displays correctly, but does not zero.

Cause 1	Zero point adjustment is incorrect.
Remedy 1	Perform zero point adjustment again.
Cause 2	Structural components close to the sensor are charged.
Remedy 2	Wait until the charge in the components has attenuated.

The display does not change even when approaching a charge object.

Cause 1	The meter is holding a maximum value in MAX mode or MAX I.B mode.
Remedy 1	Press the mode button to switch modes.
Cause 2	The meter is holding a measured value in normal mode or I.B mode.
Remedy 2	Press the hold button and start measuring again.
Cause 3	The sensor is faulty.
Remedy 3	If an error message is displayed or you cannot hear an oscillating sound from the sensor, the sensor must be replaced. Contact the sales office where you purchased the product.

Specifications

Signal detection method	Oscillating chopper method
Display refresh frequency	0.5 seconds
Measurable potential range	Normal mode: 0.00 - ± 1.999 kV (resolution: 0.001kV)
Continuous operating limit	Approximately 10 hours (with alkaline battery)
Measuring distance	10 mm (between object being measured and sensor)
Sensor head rotation angle	180° (stops every 45°)
Display	LCD display with built-in backlight
Polarity display	+ polarity/ - polarity display
Mode switching	Switch modes by pressing MODE button
Battery check	Remaining charge displayed in display panel
Battery	DC9V alkaline rectangular dry cell battery 006P
Operating temperature/ humidity range	0 - +40°C, 20 - 70%RH, non-condensing
Dimensions	68 mm x 22 mm x 138 mm (W x D x H)
Weight	Approximately 230g (including battery)

Warranty

Valid for: 1 year after delivery

Product name	Static Field Meter STATIRON		
Model	DZ4-S2	Serial number	
Date of Delivery			Inspection Stamp

1. If any malfunctions or damage occur to the product due to any of the following reasons, a charge will be incurred for repairing or replacing the product.
2. Malfunctions or damage occurring to the product due to misuse or improper storage.
 - Malfunctions or damage occurring to the product due to repairs or modifications conducted by a party other than SHISHIDO ELECTROSTATIC or a company specified by SHISHIDO ELECTROSTATIC.
 - Malfunctions or damage occurring to the product due to fire, natural disasters, or other acts of providence.
 - Other malfunctions or damage occurring to the product deemed not to be the responsibility of SHISHIDO ELECTROSTATIC.

For any queries relating to the product, contact the sales office where you purchased the product.

SHISHIDO ELECTROSTATIC, LTD. <http://www.shishido-esd.co.jp/>

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