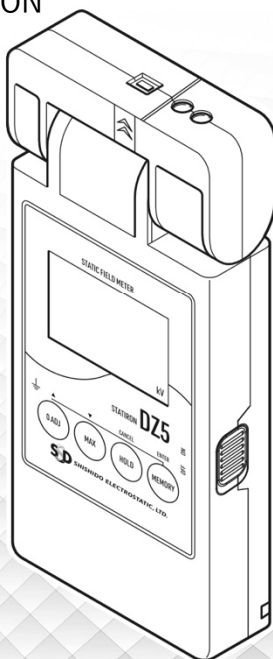


Instruction Manual



Static Field Meter STATIRON

DZ5



Thank you for choosing the Statiron DZ5 static field meter. Please read this manual thoroughly before use to ensure safe and correct operation.

Keep this manual for future reference.

■ Functions

The Statiron DZ5 is a handheld, digital-display static electrical potential meter for measuring the potential of charged objects without contact.

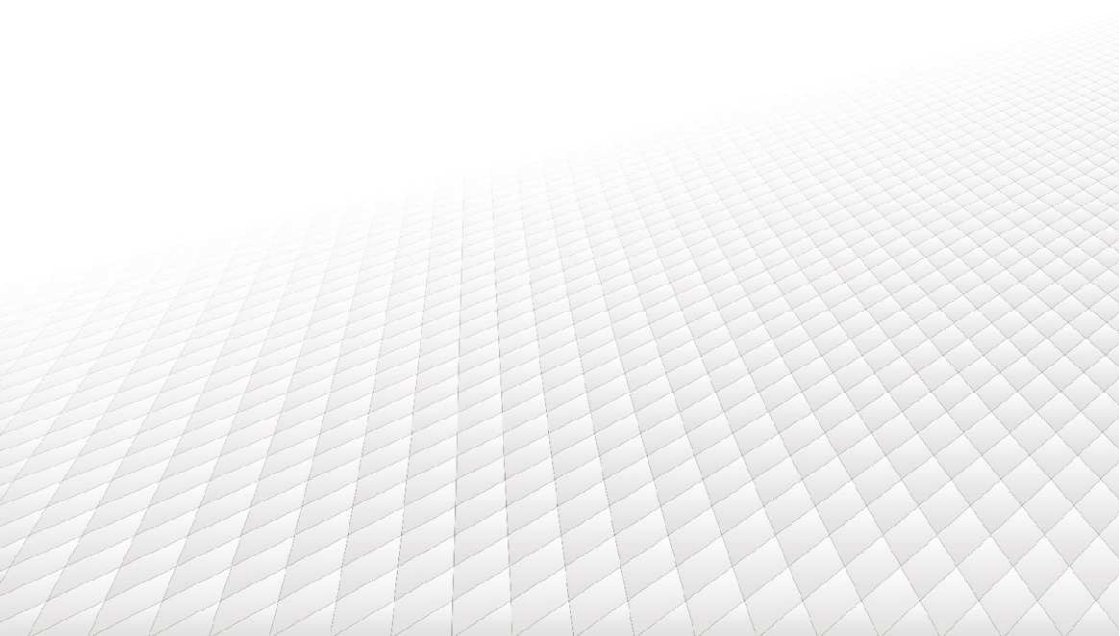
It can measure the surface potential of charged objects without contact.

■ Features

1. Rotatable sensor head allows measurements in confined spaces.
2. HOLD function and MAX mode enable you to retain a value or check the maximum voltage of fluctuating static electricity.
3. Built-in memory lets you store measured values.

SHISHIDO ELECTROSTATIC, LTD.

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1. Safety Precautions

This device measures objects that may be at high voltage. For your safety, be sure to follow all instructions in this manual. Items marked with caution symbols are particularly important for safe use.



Danger

This device is not explosion-proof. Do not use it in locations where flammable gases or solvents are handled (e.g., paint booths). Risk of fire or explosion.



Caution

Avoid using the device in wet, oily, hot, or humid environments. Especially avoid areas of high humidity or condensation.

Installation location

- Do not use the device in the following locations.
 - high/low temperature or high humidity
 - dusty areas
 - where organic solvents are present near flames/explosions
 - where corrosive gases are present
 - near flames/explosions
 - subject to vibration
 - sudden temperature/humidity changes
 - condensation
 - where water/oil can splash

Handling

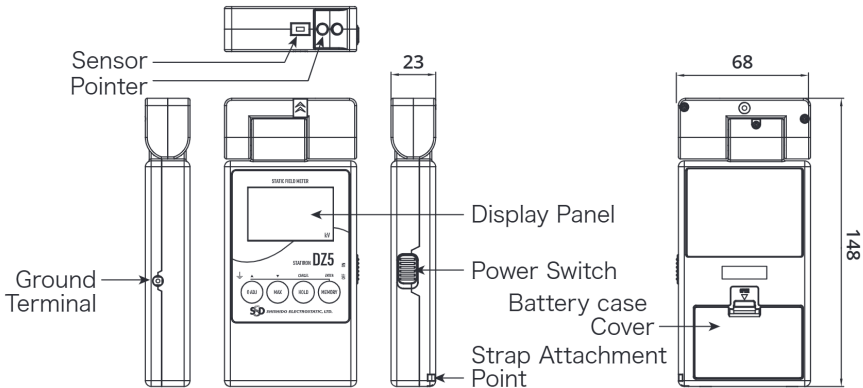
- Always connect the earth (ground) wire to the specified terminal. Accurate measurements are impossible without grounding.
- Measure from the proper distance from the charged object to ensure accuracy.
- Do not touch the sensor section or insert foreign objects.
- Do not blow ionized air directly into the opening.
- Do not apply pressure to the LCD display.
- Do not disassemble or modify the device.
- This device may affect medical equipment such as hearing aids or pacemakers.
- Do not insert foreign objects into the device. It may cause short circuits or electric shock.
- Even when the power is OFF, the battery will discharge gradually. Remove the battery if the device will not be used for a long period.
- If you notice abnormal odor/sound, smoke, or excessive heat, turn off the power immediately and contact your distributor.
- Do not drop or subject the device to shock.
- Do not peel off the nameplate or caution labels.
- Do not perform operations not described in this manual.

2. Package Contents / Names of Parts

Before first use, make sure all of the following items are included

- **Instruction Manual / Warranty (this document)**
- **Main unit**
- **Earth wire (Model: ODP-GNDCAL) × 1**
- **AA batteries × 2**

body



button

① **OADJ** **button**

Sets the current value to zero during normal measurement. In memory screens, moves the 「*」 cursor upward.

② **MAX** **button**

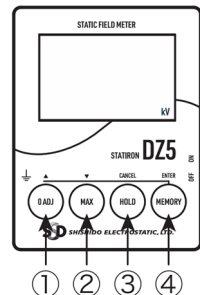
Enables peak hold during normal measurement. Press again in MAX screen to return to measurement. In memory screens, moves the 「*」 cursor downward.

③ **HOLD (CANCEL)** **button**

Holds the currently displayed value. Press again to return to measurement. In memory screens, returns to the measurement mode screen.

④ **MEMORY (ENTER)** **button**

Enters MEMORY mode. Select "Yes" and press ENTER to record.



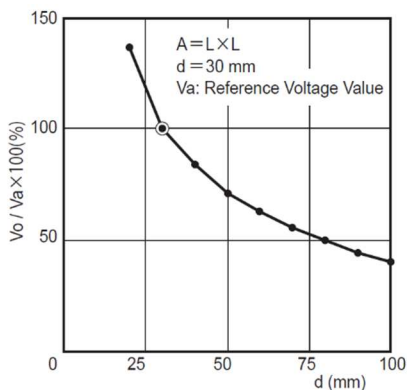
3. Measurement Precautions

Grounding

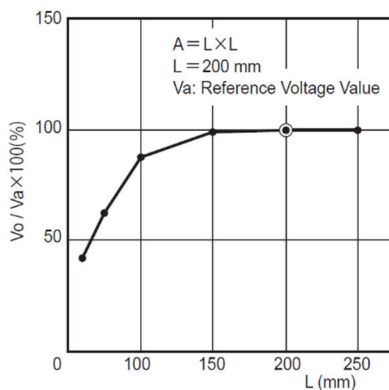
If your body is charged or high accuracy is required, ground the earth terminal of the main unit. When a large charge is expected, be sure to ground the unit to prevent failure due to discharge.

Measuring Distance Adjustment

The electric field strength varies depending on the distance between the charged object and the sensor. The DZ5 is calibrated at a distance of 30 mm using a 200 mm square metal plate as the simulated charged object. Adjust the distance to 30 mm during measurement. Align the two red LED rings projected on the object so that they overlap. If you must measure at a different distance, correct the value using the reference diagram.



(Figure 1) Relationship between measurement distance d and the surface potential meter reading V_o



(Figure 2) Relationship between the size A (side length) of the charged object (square) and the surface potential meter reading V_o

Do not move closer if the displayed voltage exceeds 19.99 kV even before reaching the specified 30 mm distance. Approaching too close may cause discharge and damage the device.



Caution

Approaching the measuring instrument too closely to the charged object may result in electrical discharge, posing a safety hazard and potentially causing equipment failure.

Influence of Charged Object Size

The measured potential changes with the field strength concentrated on the sensor electrode and the size of the charged object. If the object is smaller than the calibration plate (200 mm square), the error increases. Use the correction graph as a rough guide.

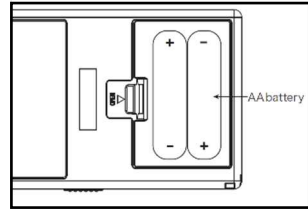
Influence of Other Objects / Charged Particles

Nearby objects may reduce the displayed value. Either correct the value considering the field shape or move other objects away. Strongly charged objects can generate charged particles/ionic space; if particles adhere to the electrode, errors occur.

4. Preparation & Measurement Procedure

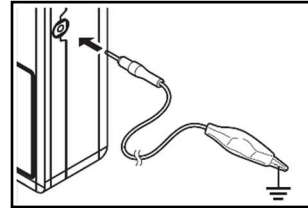
1. Insert the batteries.

Remove the battery box cover and install two AA batteries.



2. Connect the earth wire firmly to the earth terminal and to a grounded body.

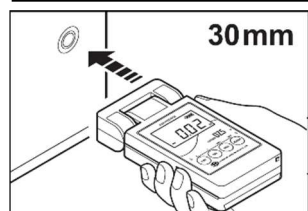
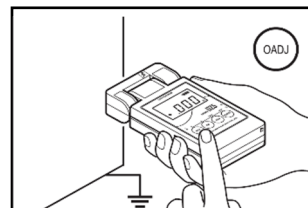
Insert the earth wire firmly into the terminal. Do not connect the clip directly to the grounded body. Proper grounding of the terminal is essential for accurate measurement.



Measurement of static electricity

1. Turn the power ON.
2. Point the sensor to a grounded object and press the 0ADJ button to zero the display.
3. Set the distance between the sensor head and the object to 30 mm.

The point where the two LED circles overlap indicates 30mm.



4. Normal screen

The current measured value is displayed.



5. HOLD

Retains the displayed value. Press again to return to normal measurement.



6. MAX

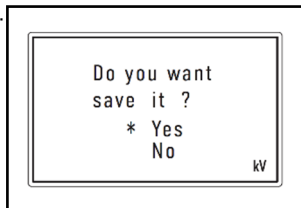
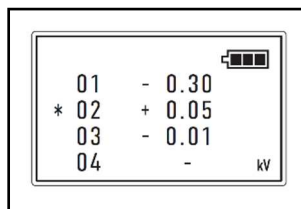
Retains the maximum measured value.
Press again to return to normal measurement.



7. MEMORY

Press the MEMORY button
to record the displayed value.

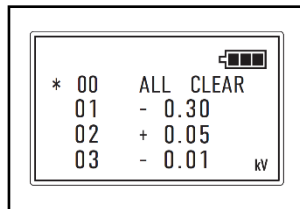
Move the “*” cursor with 0ADJ (▲) or MAX (▼)
and press MEMORY (ENTER) on the desired slot.
Confirm with “Yes”.



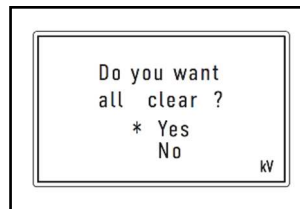
Data Clear

1. While holding the 0ADJ button, turn the power ON to enter the Data Clear screen.

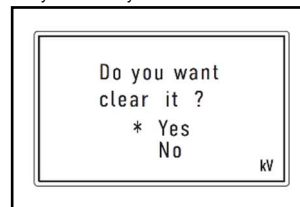
Move the "*" to the item to delete and press ENTER. Select "Yes" on the confirmation screen. You can clear ALL or clear by number.



- If ALL CLEAR is selected



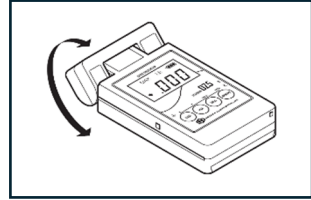
- If you select by number



5. Adjustment & Maintenance

Sensor Head Rotation

The sensor head can be rotated in 45° increments (total 180°). Stop rotation where it clicks. This allows easy measurement in confined spaces.



Battery Indicator

The remaining battery charge is displayed in the upper-right corner of the LCD. Replace the batteries when only one segment remains.



Error Display

The signal detection method is an oscillating chopper method.

If the sensor stops oscillating, an error screen appears and a beep sounds every second.

Turn the power off and on again. If the error persists, the sensor may be faulty. Contact your sales office.



6. Troubleshooting

If the device does not operate properly, the following causes may be considered.

The battery is not installed, or the polarity is reversed.	
Cause1	The battery is not installed, or the polarity is reversed.
Remedy1	Install the battery correctly.
Cause2	The battery is completely drained.
Remedy2	Replace with a new battery.

The display panel shows correctly but cannot be zeroed.	
Cause1	Zero point adjustment is incorrect.
Remedy1	Perform zero point adjustment again.
Cause2	Parts near the sensor are charged.
Remedy2	Wait until the charge attenuates.

The display does not change even when approaching a charged object.	
Cause1	A maximum value is being held in MAX mode.
Remedy1	Press the MAX button to cancel MAX mode.
Cause2	A measured value is being held.
Remedy2	Press the HOLD button to cancel HOLD mode.

7. Specifications

Signal detection method	Oscillating chopper method
Display refresh frequency	0.4 seconds
Measurable potential range	0.00 – ± 19.99 kV (resolution: 0.01 kV)
Continuous operating time	Approx. 25 hours (with alkaline batteries)
Measuring distance	30 mm
Distance adjustment	Red LED focusing method
Sensor head rotation angle	180° (stops every 45°)
Display	128 $\times$ 64 dot graphic
Polarity display	+ and –
Battery check	Remaining charge displayed on LCD
Power supply	AA batteries $\times 2$
Operating temperature / humidity range	5 – +40 °C, 20 – 70 %RH, non-condensing
Measuring accuracy	± 10 % rdg ± 2 digits
Dimensions (W $\times$ D $\times$ H)	68 mm $\times$ 23 mm $\times$ 148 mm (W $\times$ D $\times$ H)
Weight	Approx. 200 g (including batteries)

Warranty Warranty period : 1 year from date of delivery.

Product Name	Static Field Meter STATIRON DZ5		
Model	DZ5	Serial Number	
Delivery Date			Signature

1. This product has passed our inspection. If any malfunction or damage occurs under normal use due to our fault during the warranty period, we will repair it free of charge.
2. Repairs or replacements will be charged in the following cases :
 - Improper use or storage
 - Unauthorized repairs or modifications
 - Damage from fire, natural disasters, or other force majeure events
 - Any damage not caused by our company

For inquiries regarding this product, please contact our sales offices.

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