

Handheld Electrostatic Meter

Operation Manual



IZH10

Thank you for purchasing an SMC IZH10 Series Handheld Electrostatic Meter. Please read this manual carefully before operating the product and make sure you understand its capabilities and limitations. Please keep this manual handy for future reference.

To obtain more detailed information about operating this product, please refer to the SMC website (URL <http://www.smcworld.com>) or contact SMC directly.

Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of "Caution", "Warning" or "Danger". They are all important notes for safety and must be followed in addition to International standards (ISO/IEC) and other safety regulations.

- Caution:** CAUTION indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
- Warning:** WARNING indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
- Danger:** DANGER indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

Operator

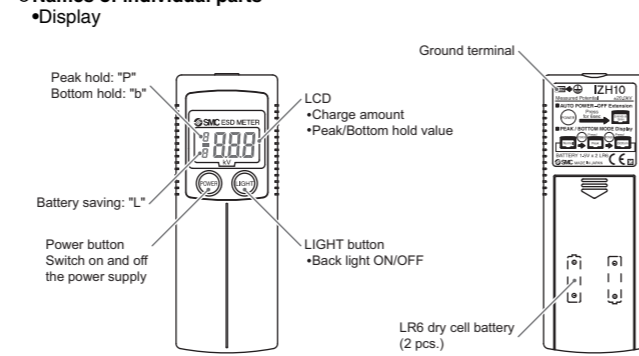
- ◆ This operation manual is intended for those who have knowledge of machinery using pneumatic equipment, and have sufficient knowledge of assembly, operation and maintenance of such equipment. Only those persons are allowed to perform assembly, operation and maintenance.
- ◆ Read and understand this operation manual carefully before assembling, operating or providing maintenance to the product.

Safety Instructions

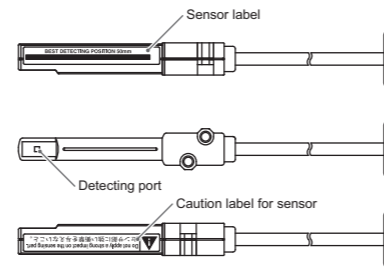
Warning	
■ Do not disassemble, modify (including change of printed circuit board) or repair.	An injury or failure can result.
■ Do not operate outside of the specification.	Fire, malfunction or damage can result. Please use it after confirming the specification.
■ Do not operate in an atmosphere containing flammable or explosive gases.	Fire or an explosion can result. The product is not designed to be explosion proof.
Caution	
■ Avoid strong impact on the product	Do not drop, hit or apply excessive shock to the product while handling. It can cause failure.
■ Do not contact the sensor with the measured target.	It can cause failure.
■ Do not handle with wet hands.	This can cause electric shock.
■ Provide grounding to ensure safety and accurate measurement.	Improper grounding of the ground wire can cause electrical charge to build up at the sensor and ground terminal of the product and discharge to the user.

Summary of Product parts

Names of individual parts



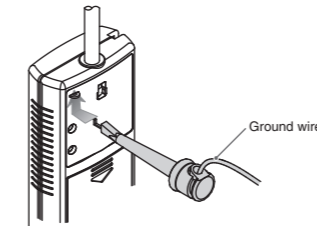
Sensor



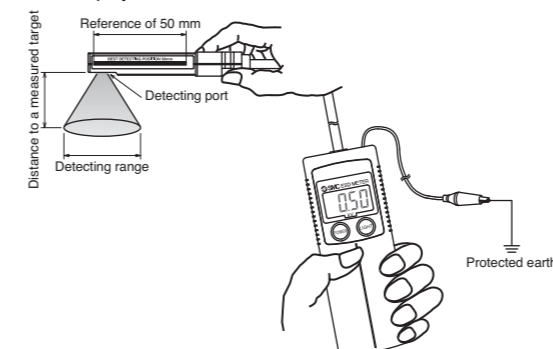
Setting / Adjustment

Procedure

1. Insert the batteries.
2. Connect the ground wire. Connect the ground wire to a point suitable for connection to an external protective earthing system. The position for attaching the ground wire to the Handheld meter is shown below.

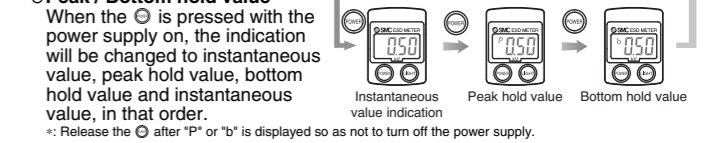


3. Press the \ominus button.
4. Move the sensor closer to the position 50 mm away from the measured target. Gradually bring the sensor closer to the measured target from a distance, and stop measurement immediately if the displayed value indicates overflow (HHH) or underflow (LLL). (The target has a high charged potential that is highly dangerous. The measured value does not change even if the distance is shortened.)
5. Check the display.



*: The detecting range of the sensor is 180 mm (at a detection distance of 50 mm).

Peak / Bottom hold value



When the \ominus is pressed with the power supply on, the indication will be changed to instantaneous value, peak hold value, bottom hold value and instantaneous value, in that order.
*: Release the \ominus after "P" or "b" is displayed so as not to turn off the power supply.

• **Peak hold value**
The maximum charged potential and "P" are displayed. The maximum charged potential is continuously detected and updated from when the peak hold is started. If the value over the held maximum charged potential is detected, the display will change.

• **Bottom hold value**
The minimum charged potential and "b" are displayed. The minimum charged potential is continuously detected and updated from when the bottom hold is started. If the value under the held minimum charged potential is detected, the display will change.

○ **Zero clear**
A displayed value can be adjusted to zero at measured charged potential in a range of $\pm 5\%$ F.S. of default potential. (There will be a slight displacement, depending on the deviation of the sensor itself and ambient environment of the sensor when the zero clear is performed.) When the \ominus and \ominus are pressed for 6 s. or more with the power supply on, the displayed value is reset to zero, and then the measuring mode is recovered automatically. Once the power supply is turned off, the offset value for zero clear is cleared.

○ **Back Light**
When the \ominus is pressed while the charged potential is displayed, the back light will turn on. Press the \ominus button again to turn off the back light.

○ **Battery low**
When the battery voltage becomes low "L" will be displayed. The display will vary depending on how much battery is left.

Display	Content
L	The batteries are low. Prepare to replace with new batteries.
(Flashing) L	The batteries are very low. Replace with new batteries immediately.

○ **Display resolution change**
The display resolution changes depending on the measured charged potential value.

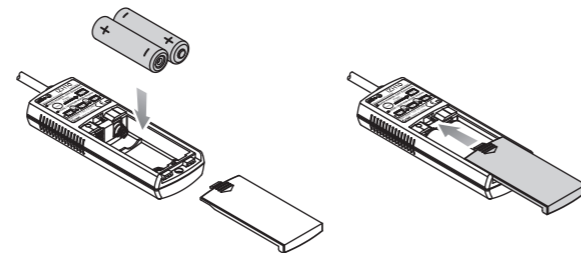
<Display example>

± 1 to ± 20 kV	Minimum display unit: 0.1 kV
0 to ± 0.99 kV	Minimum display unit: 0.01 kV

Assembly

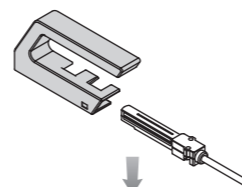
Insertion of batteries

Slide the cover of the case open to insert the batteries. Use 2 x AA (LR6) alkaline dry cell batteries. When inserting the batteries, pay attention to the polarities and insert them in the correct direction. After insertion, ensure the cover is closed correctly.

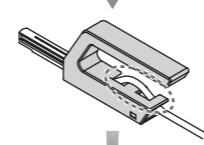


Mounting of the high voltage measuring handle (option)

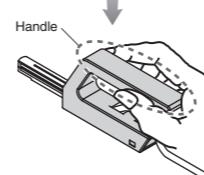
1. Insert the sensor into the handle in the direction shown.



2. Fix the cable to the handle as shown.



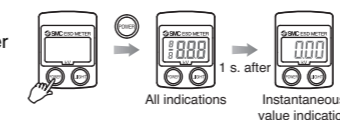
3. The assembly is complete and the handle is now ready for use.



Function settings

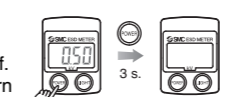
Power ON

When the \ominus is pressed with the power supply off, the power supply will be turned on. All indications are displayed for 1 s. after the power supply is turned on.



Power OFF

When the \ominus is pressed for 3 s. or more with the power supply on, the power supply will be turned off. Also, no button operation for a certain period will turn off the power supply. (For details, refer to Auto power-OFF function.) Turn off the power supply after using the product to keep the life of batteries as long as possible.



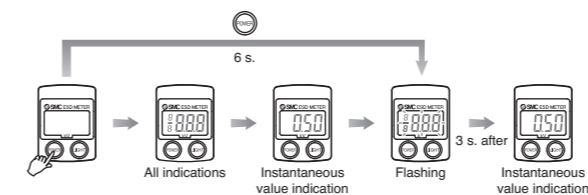
Auto power-OFF

If no button is pressed for 5 min. or more with the power supply on, the power supply will turn off automatically.



Auto power-OFF extension

When the \ominus is pressed for 6 s. or more with the power supply off, the continuous operating time with no button operation will extend to 15 min. (When this auto power-off extension is activated, indications on the display will keep flashing for 3 s.)



Troubleshooting

Error Indication

This function is to display error location and content when a problem or an error occurs.

Error Name	Error Display	Error Type	Troubleshooting Method
Zero clear error	Er 1	When zero clear was performed, a charge exceeding $\pm 5\%$ F.S. of the default zero point was present. After approx. 1 s. error display, the sensor returns to measurement mode. This time will depend on the deviation of the product itself and ambient environment during zero clear operation.	Return to a condition without charge, and retry zero clear operation.
Sensor failure	Er 2	The sensor is broken.	Stop using immediately and contact SMC.
System error	Er 3	Error in internal data.	Turn off the power supply once, and turn it on again. If the error persists contact SMC.
Measurement error	HHH	The charge has exceeded the upper limit of the measurable voltage range, or the measuring distance is not suitable.	Remove the charge until the value is within the measurable voltage range. Also, check the measuring distance.
	LLL	The charge has exceeded the lower limit of the measurable voltage range, or the measuring distance is not suitable.	Remove the charge until the value is within the measurable voltage range. Also, check the measuring distance.
Cable broken		The cable is broken and the product cannot measure correctly. The charge amount is detected, but not reflected in the displayed value.	Stop using immediately and contact SMC.

If the error cannot be reset after the above measures are taken, then please contact SMC.

Refer to the SMC website (URL <http://www.smcworld.com>) for more information about troubleshooting.

Specifications

Outline with Dimensions (in mm)

Refer to the product catalogue or SMC website (URL <http://www.smcworld.com>) for more information about the product specifications and outline dimensions.

SMC Corporation URL <http://www.smcworld.com>

Akihara UDX 15F, 4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN
Phone: +81 3-5207-8249 Fax: +81 3-5298-5362

Note: Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.
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