

Handheld Electrostatic Meter



Easy-to-use handheld electrostatic meter



○ Rated charge amount range: ± 20.0 kV

○ Minimum display unit: **0.1** kV (± 1.0 to ± 20.0 kV)

0.01 kV (0 to ± 0.99 kV)



- Compact & Lightweight: 85g (excluding dry cell batteries)
- Peak & Bottom display function
- Zero clear function
- Auto power-off function
- LOW battery indicator
- Backlight for reading in the dark

Series **IZH10**

Handheld Electrostatic Meter Series *IZH10*



How to Order

IZH 10-

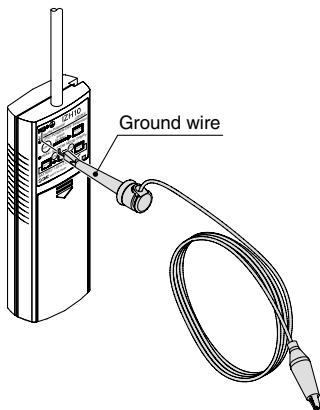
● Option

-	None
H	High-voltage measuring handle

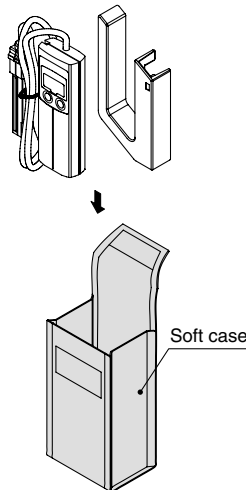
Accessories and Options / Part Numbers for Individual Parts

* The ground wire and soft case are attached to the IZH series.

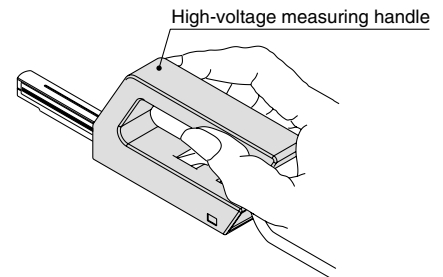
Ground wire (1.5 m) / Accessories IZH-A-01



Soft case / Accessories IZH-B-01



High-voltage measuring handle / Option IZH-C-01



Specifications

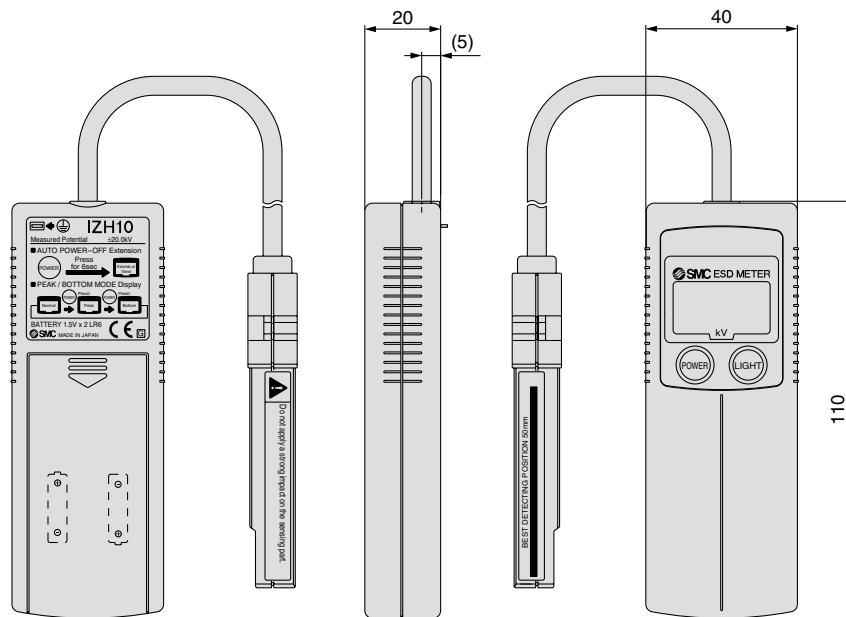
Model		IZH10
Rated charge amount range		±20.0 kV
Minimum display unit		0.1 kV (±1.0 kV to ±20.0 kV), 0.01 kV (0 to ±0.99 kV)
Measurement distance		50 mm (between sensor part and measured target)
Power supply <small>Note 1)</small>		DC 1.5 V 2A alkali dry cell battery, 2 pcs (continuous use for 15 hours or more, see <small>Note 2)</small>)
Display accuracy		±5% F.S. ±1 digit
Environmental resistance	Enclosure	IP40
	Operating temperature range	Operating: 0 to 40°C, Stored: -10 to 60°C (with no freezing or condensation)
	Operating humidity range	Operating/Stored: 35 to 85% R.H. (with no condensation)
	Impact resistance	100 m/s ² in X, Y, Z directions 3 times each (de-energised)
Vibration resistance		10 to 150 Hz at amplitudes and accelerations smaller than 1.5 mm and 98 m/s ² , respectively, in X, Y and Z directions (2 hours each) (de-energised)
Material		Display part: PC/ABS Sensor part: ABS
Weight		85 g (excluding dry cell batteries)
Standards		CE marking
Accessories		Ground wire, Soft case

Note 1) 2A alkali dry cell batteries are not included, and must be acquired separately.

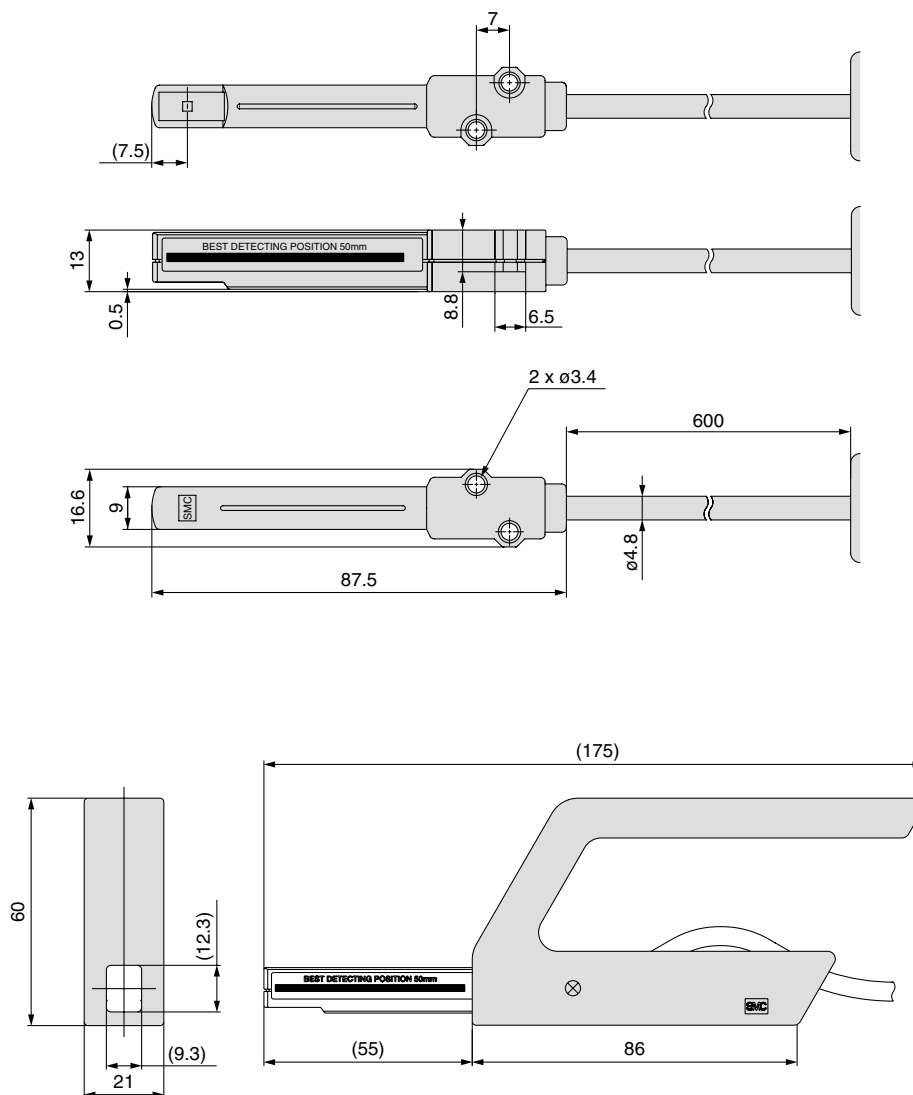
Note 2) When new alkali dry cell batteries are used at ordinary temperature.

Dimensions (Unit: mm)

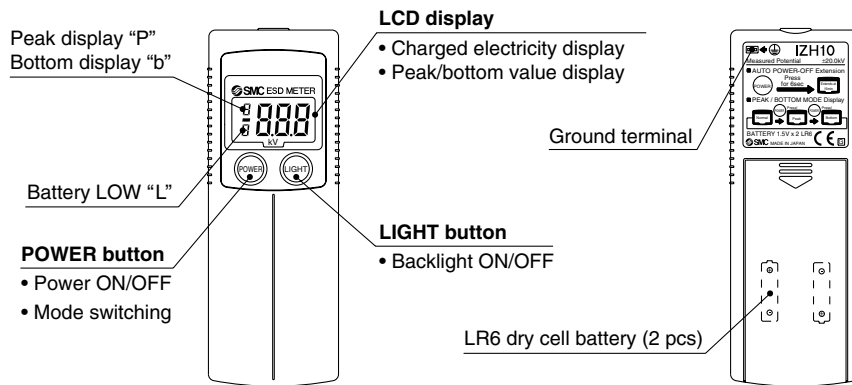
Display part



Sensor part



Names and Functions of Individual Parts



Function Details

A Peak/Bottom display function

The function constantly detects and updates the maximum and minimum electrostatic potential value and allows holding the display value.

B Reset function

The reading of the measured voltage can be adjusted to zero.
The reading can be corrected within $\pm 5\%$ of F.S. from the factory-set condition.

C LOW battery indicator

When the batteries are low it is displayed in two stages: "Battery LOW" and "Replace Battery".
The battery level is indicated by the flashing or lightening up of "L" on the display.

- "L" flashes: Prepare to replace batteries.
- "L" lights up: Replace batteries with new ones.

D Auto power-off function

If no button is operated for 5 min. or more while the power supply is on, the power supply will turn off automatically.
When the [POWER] button is pressed for 6 sec. or more with the power supply off, continuous operating time while no button is pushed will extend to 15 min.

E Light-up of backlight

The display can be easily seen in the dark.
The backlight will be turned on and off by every press of the [LIGHT] button.

F Displayed digit change function

The minimum display digit is changed for the charged potential between -0.99 kV to $+0.99$ kV.

Error Display


Error description	Error display	Condition
Zero clear error	Er 1	A charge over $\pm 5\%$ F.S. of default potential is applied to the sensor. * The indication lasts approx. 1 sec. and then measurement mode returns automatically. There will be a slight displacement, depending on the deviation of the sensor itself and ambient environment.
Sensor error	Er 2	The sensor breaks.
System error	Er 3	Internal display error.
Measurement error	HHH	A charge over the upper limit of the measured voltage range is applied to the sensor, or the distance to the measured target is outside of specified range.
	LLL	A charge over the lower limit of the measured voltage range is applied to the sensor, or the distance to the measured target is outside of specified range.
Cable breakage	—	A broken cable prevents accurate measurement. The charge amount can be detected, but it will not change the displayed value.





Series IZH10

Safety Instructions

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by a label of “**Caution**”, “**Warning**” or “**Danger**”. To ensure safety, be sure to observe ISO 4414 ^{Note 1)} and other safety practices.

 **Caution** : Operator error could result in injury or equipment damage.

 **Warning** : Operator error could result in serious injury or loss of life.

 **Danger** : In extreme conditions, there is a possible result of serious injury or loss of life.

Note 1) ISO 4414 : Pneumatic fluid power --General rules relating to systems

Warning

1. The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.

Since the products specified here are used in various operating conditions, their compatibility for a specific pneumatic system must be based on specifications, post analysis and/or tests to meet the specific requirements. The expected performance and safety assurance will be the responsibility of the person who has determined the compatibility of the system. This person should continuously review the suitability of all items specified, referring to the latest catalogue information with a view to giving due consideration to any possibility of equipment failure when configuring a system.

2. Only trained personnel should operate pneumatically operated machinery and equipment.

Since the product generates high voltage, handling it incorrectly can be dangerous. Assembly, handling, and repair of pneumatics systems should be performed only by trained and experienced operators.

3. Do not service the machinery/equipment or attempt to remove components until safety is confirmed.

1. Inspection and maintenance of the machinery/equipment should only be performed after confirming that safety precautions such as grounding, electric shock prevention, and various other types of damage prevention have been taken.
2. When equipment is to be removed, confirm the safety process as mentioned above. Turn off the supply pressure for this equipment and exhaust all residual compressed air in the system.
3. Before the machinery/equipment is restarted, take measures to prevent short circuiting and others such electrical failures.

4. Avoid using the product in the following conditions or environments. However, if the product must be used in these conditions, please contact SMC first and be sure to take all necessary safety precautions.

1. Conditions and environments beyond the given specifications, or if the product is used outdoors.
2. Installation on equipment in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverages, recreation equipment, emergency stop circuits, clutch and brake circuits in press applications, or safety equipment.
3. An application which has the possibility of having negative effects on people, property, requiring special safety analysis.

■ Exemption from Liability

1. SMC is exempted from liability for any damages caused by earthquakes, fire for which SMC is not responsible for, actions by a third person, accidents, customer error with or without intention, product misuse, and any other damages caused by abnormal operating conditions.
2. SMC is exempted from liability for any accompanied damages, such as profit loss and discontinuation of business operation, caused by the operation or incompetency to operate our products.
3. SMC is exempted from liability for any damages caused by operations, which the catalogues and instruction manuals have not introduced, and operations outside of the specification range.
4. SMC is exempted from liability for any damages caused by malfunctions of our products when combined with other devices or software in which SMC is not involved in.



Series IZH10 Handheld Electrostatic Meter Precautions

Be sure to read this before handling. Refer to the back page 1 for Safety Precautions.

Handling Precautions

Warning

1. **Do not make any modifications (including exchanging the printed circuit board) to the product.**

It may cause human injuries and damage.

2. **Use the device in the specified range.**

Using it out of the specified range may result in fires, electric shock, or damage. Confirm the specifications before using.

3. **Measurement near high-voltage**

Avoid measuring near high-voltage exceeding specifications as it can be dangerous.

4. **Handling of ground wire**

Be sure to provide a ground wire to ensure safety and high-accuracy measurement when using the sensor.

Also, if the ground wire is not connected properly, the power is pooled in the sensor part and/or ground terminal, which can discharge to an operator's hand. Handle the sensor part and ground terminal carefully.

If grounding is not provided,

- Measurement accuracy gets worse.
- The sensor is charged and can discharge to an operator's hand.

5. **Do not apply strong impact.**

Do not drop, allow collision or apply excessive shock to the sensor when handling. It can result in damage of the sensor and accidents.

6. **Distance measurement is 50 mm. Use a display of label attached to the sensors as a guide.**

7. **The measurement of a part with a high-charge potential can be highly dangerous as it can cause a discharge to the user's hand.**

In this case, use a handle specific for measuring high-voltage, which is available as an option. Also, gradually bring the sensor part close to the measured target from a distance, and stop the measurement immediately when the displayed value overflows (HHH) or underflows (LLL). (A target with a high-charge potential is very dangerous. The measured value does not change even if the distance is shortened.)

Operating Environment

Warning

1. Handheld electrostatic meters are CE marked; however, they are not equipped with surge protection against lightning. Lightning surge countermeasures should be applied directly to the system components as necessary.
2. Handheld electrostatic meters do not have an explosion proof rating. Never use in the presence of an explosive gas as this may cause a serious explosion.



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