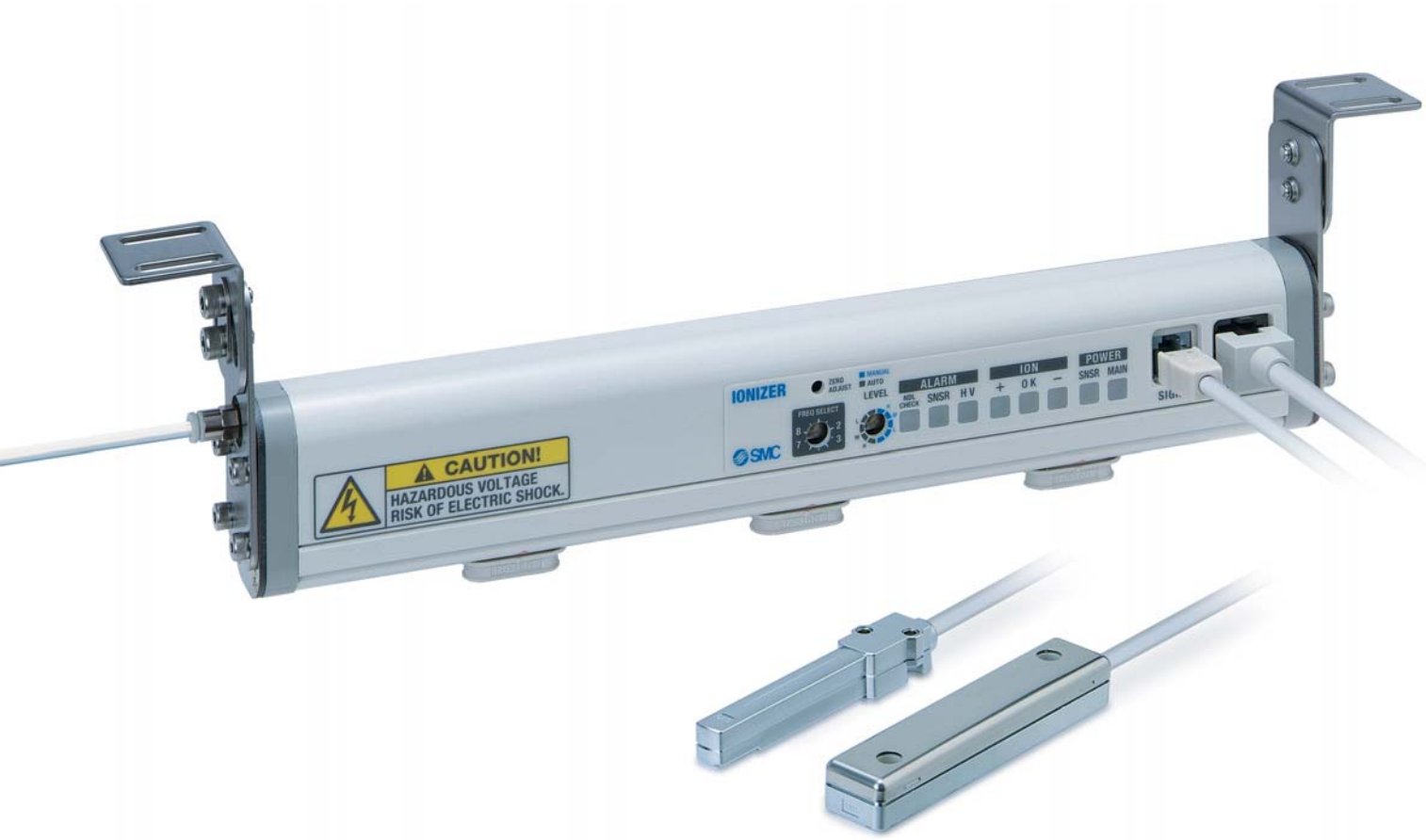
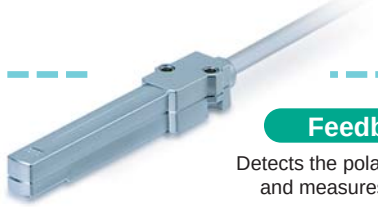
EMC-Ionizer-01A-UK



Ionizer
Series IZS31

- Removal of electrostatic charge in fractions of a second
- DC based ion generation technology with three different emission modes
- Controller is integrated into the ionizer bar
- Two types of electrostatic sensors are available
- Air purge feature allows static elimination up to 2 m away from the bar
- Low power consumption of less than 5 W
- Available in bar lengths from 300 to 2300 mm

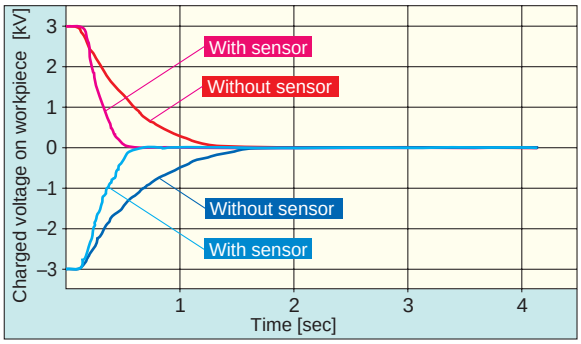


Feedback sensor

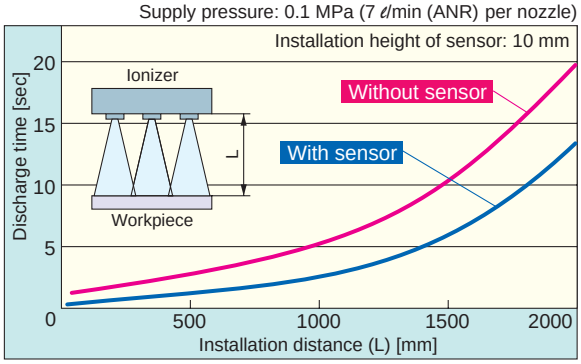
Detects the polarity of a discharged object and measures the charged voltage.

Rapid elimination of static electricity by using a feedback sensor

- The speed of static electricity removal has been increased by reading the workpiece's electrostatic potential with the feedback sensor and then continuously emitting ions of a reverse polarity.



Supply pressure: 0.1 MPa (7 ℓ/min (ANR) per nozzle)



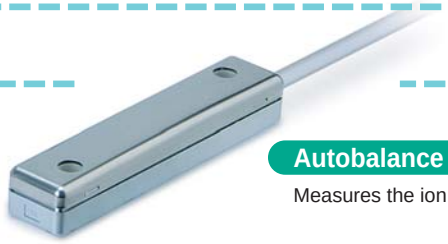
- Operation mode after static electricity removal (ion balance: within ±30 V) can be selected.

Energy saving mode: Stops generating ions after static electricity removal to reduce power consumption. Air consumption can also be reduced by switching a pneumatic valve with the static electricity removal completion signal.

Note) The pneumatic valve must separately be procured.

Continuous static electricity removal mode: After static electricity removal, the ionizer changes to pulse DC operation and continues to remove static electricity to make it approach 0 V even if the ion balance is below 30 V.

Mode	Ion emission waveform
Sensing DC Energy saving mode	+ / – Stop
Sensing DC Continuous static electricity removal mode	+ / –
Pulse DC	+ / –
Image of positively charged object	Static electricity removal completed

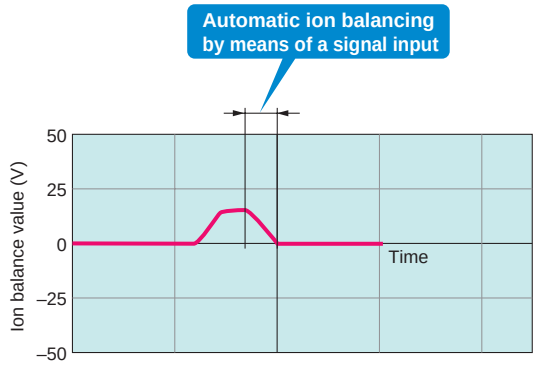


Autobalance sensor

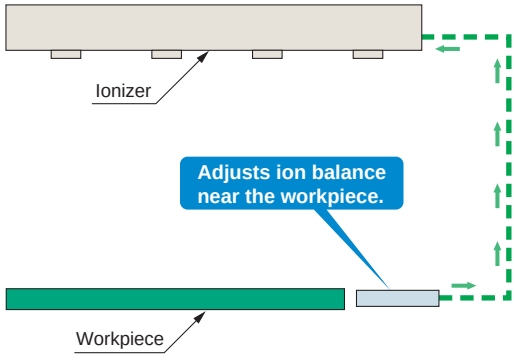
Measures the ion balance condition.

Automatic ion balance adjustment and reduction in ion balance adjustment man-hours by using an autobalance sensor

In the pulse DC mode, the ion balance can be automatically adjusted using an autobalance sensor.



The ion balance is not affected by the height of installation or any disturbance interference since the ionizer is designed to adjust the ion balance near the autobalance sensor.



- The autobalance sensor may be connected only when adjusting the ion balance.

How to Order

Ionizer **IZS31 – 780 P – □□**

Bar type
With: Tungsten electrode needles
3 m power supply cable

Bar length

Symbol	Bar length
300	300 mm
380	380 mm
620	620 mm
780	780 mm
1100	1100 mm
1260	1260 mm
1500	1500 mm
1900	1900 mm
2300	2300 mm

Output

P	PNP output

Sensor

-	Without sensor
F	With feedback sensor
G	With autobalance sensor

Bracket
(End bracket, Centre bracket)

-	Without bracket
B	With bracket Note)

Note) The number of centre brackets differ depending on the bar length.

Please contact SMC for details regarding NPN output, different electrode needle material and different power supply cable lengths.

Specifications

Ionizer model		**IZS31-□P** (PNP specification)
Ion generation method		Corona discharge type
Method of applying voltage		Sensing DC, Pulse DC, DC
Output for emitting electricity		±7000 V
Ion balance Note 1)		±30 V
Air purge	**Fluid**	Air (Clean and dry)
	Operating pressure	0.7 MPa or less
	Connecting tubing O.D.	ø4
Power supply voltage		24 VDC ±10%
Current consumption	**Sensing DC mode**	200 mA or less (While standing by: 120 mA or less)
	Pulse DC mode	200 mA or less (When sensor is not used: 170 mA or less)
	DC mode	170 mA or less
Input signal	**Emission of static electricity is suspended.**	Contact input signal with no voltage
	Maintenance	
Output signal	**Static electricity removal is completed.**	Max. load current: 100 mA Residual voltage: 1 V or less (At load current 100 mA)
	Maintenance output	
	Irregularity	
	Sensor monitor output Note 2)	Voltage output 1 to 5 V (Connect a 10 kΩ or larger load.)
Effective discharge distance		50 to 2000 mm (Sensing DC mode: 200 to 2000 mm)
Operating ambient temperature, Operating fluid temperature		0 to 50°C
Operating ambient humidity		35 to 80%Rh (With no condensation)
Material		Cover of ionizer: ABS, Electrode needle: Tungsten
Vibration resistance		Durability 50 Hz Amplitude 1 mm XYZ each 2 hours
Shock resistance		10 G
Compliance with overseas standards / directives		CE (EMC directive: 89/336/EEC, 92/31/EEC, 93/68/EEC, 2004/108/EC, Low voltage directive: 73/23/EEC, 93/68/EEC)

Note 1) For the case where air purge is performed between a charged object and an ionizer at a distance of 300 mm.
Note 2) For cases where the potential of a charged object is measured using a feedback sensor, the relationship between the potential being measured, the sensor monitor output voltage and the detection range of the sensor will vary depending on the sensor's installation distance.

Number of Electrode Cartridges and Weight

Bar length (mm)	300	380	620	780	1100	1260	1500	1900	2300
Number of electrode cartridges	3	4	7	9	13	15	18	23	28
Weight (g)	470	530	720	850	1100	1220	1410	1730	2040

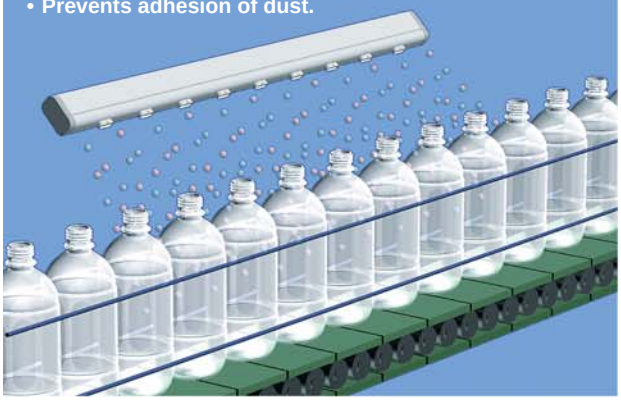
Sensor

Sensor model	**IZS31-DF** (Feedback sensor)	**IZS31-DG** (Autobalance sensor)
Operating ambient temperature	0 to 50°C	
Operating ambient humidity	35 to 80%Rh (With no condensation)	
Case material	ABS	ABS, Stainless steel
Vibration resistance	Durability 50 Hz Amplitude 1 mm XYZ each 2 hours	
Shock resistance	10 G	
Weight	200 g (Including cable weight)	220 g (Including cable weight)
Installation distance	10 to 50 mm (Recommended)	—
Compliance with overseas standards / directive	CE (EMC directive: 89/336/EEC, 92/31/EEC, 93/68/EEC, 2004/108/EC, Low voltage directive: 73/23/EEC, 93/68/EEC)	

Application Examples

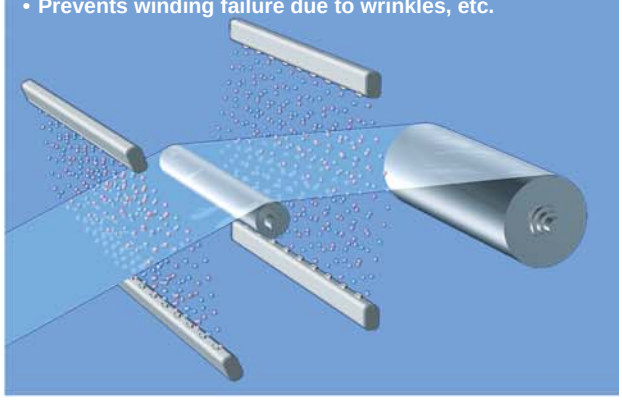
Eliminating static electricity on PET bottles

- Trip-resistance during conveying.
- Prevents adhesion of dust.



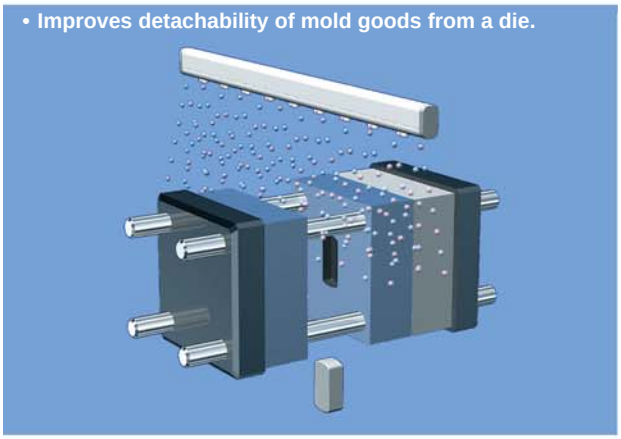
Eliminating static electricity on film

- Prevents adhesion of dust.
- Prevents winding failure due to wrinkles, etc.



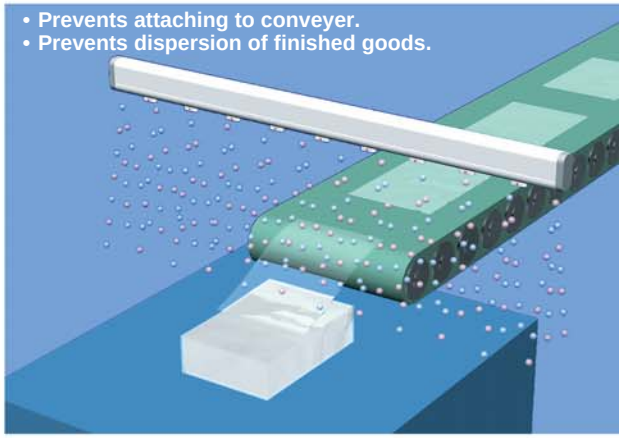
Eliminating static electricity on molded goods

- Improves detachability of mold goods from a die.



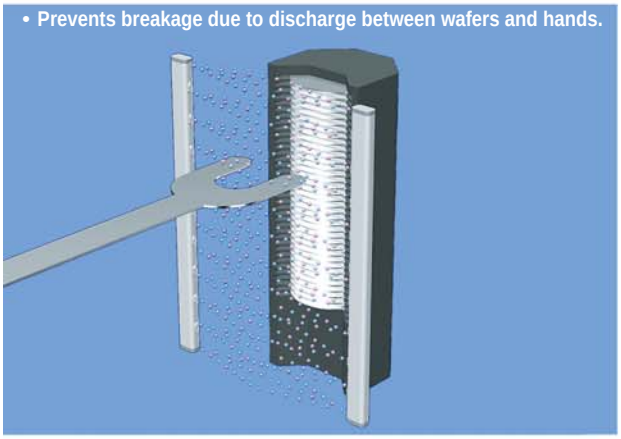
Eliminating static electricity on film molded goods

- Prevents attaching to conveyer.
- Prevents dispersion of finished goods.



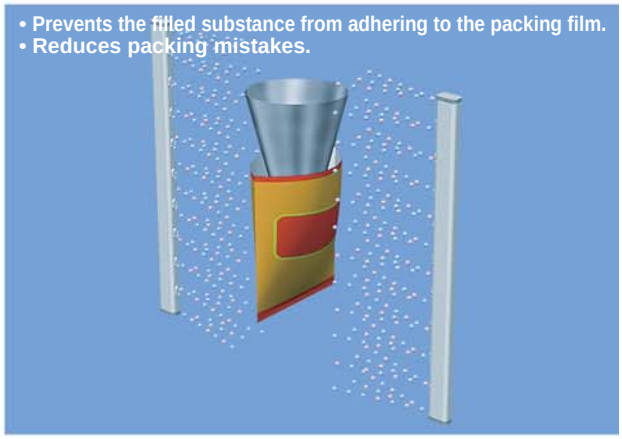
Eliminating static electricity during wafer transfer

- Prevents breakage due to discharge between wafers and hands.



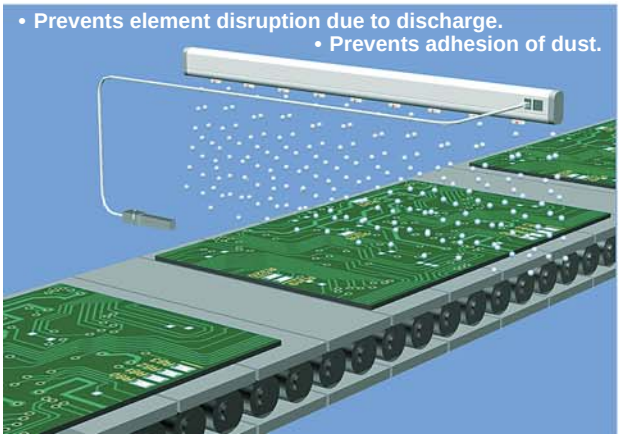
Removal of static electricity from packing films

- Prevents the filled substance from adhering to the packing film.
- Reduces packing mistakes.



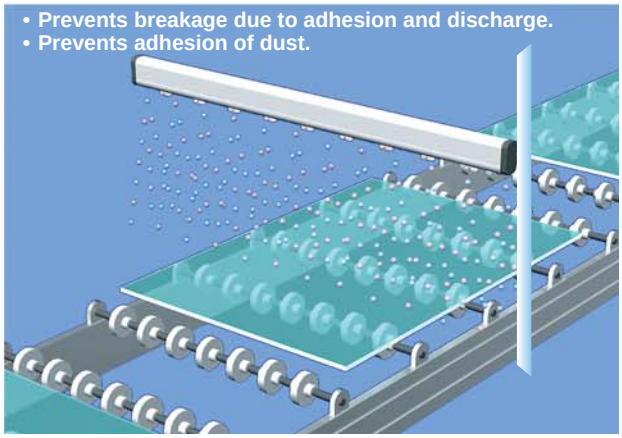
Eliminating static electricity on an electric substrate

- Prevents element disruption due to discharge.
- Prevents adhesion of dust.



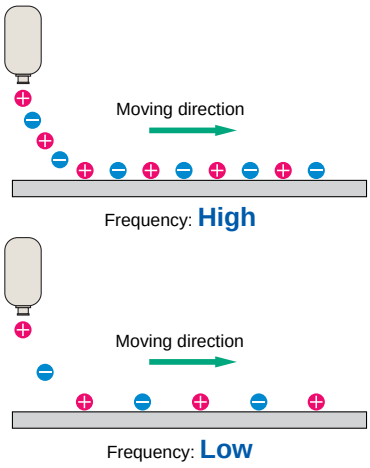
Eliminating static electricity on a glass substrate

- Prevents breakage due to adhesion and discharge.
- Prevents adhesion of dust.



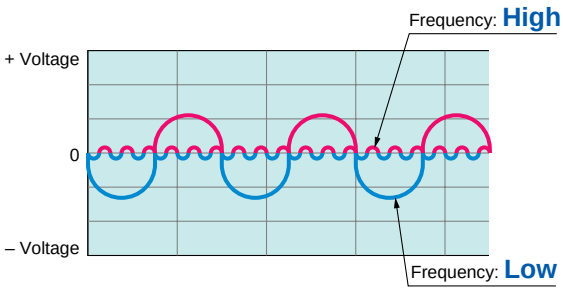
Ion generation frequency: Max 60 Hz

- Ions are discharged at high density on to workpieces moving at high speed.



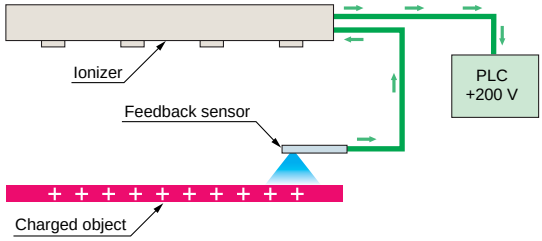
- This reduces the range of surface potential fluctuations for short installation distances after static electricity removal.

Note) The range of surface potential fluctuations varies depending on the object's material, etc.



Detects the electric potential difference and outputs an analogue voltage. (During sensing DC mode)

Outputs measured data at a 1 to 5 V level when a feedback sensor is used. By outputting the data to a PLC, etc., it is possible to control the static electricity.



Enhanced display functions

1. Visualisation of charging condition
   (During sensing DC mode)
2. Visualisation of ion balance
   (When pulse DC mode or autobalance sensor are used.)

Workpiece polarity	LED + OK –	Workpiece electric charged voltage
Positive		+400 V or higher
↑ Static electricity removal completed		+100 V to +400 V
		+30 V to +100 V
		Within ±30 V
		–30 V to –100 V
		–100 V to –400 V
↓ Negative		–400 V or lower

Light ON / Blinking at 4 Hz / Light OFF

Can continuously emit ions of a desired polarity. (During DC mode)

Can be used to remove static electricity from quickly-charged or high-potential workpieces or to electrostatically charge them.

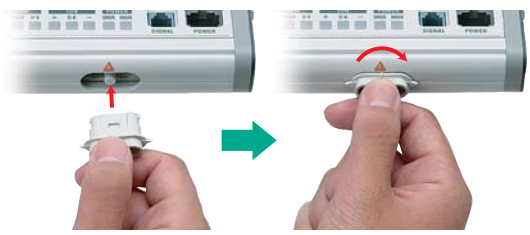
Dirt-detection on an electrode needle

Detects electrode needle dirt upon signal input and provides maintenance output signals, reducing maintenance man-hours.

Maintenance display LED light ON

Electrode cartridge drop prevention

- Locking by double-action



3 types electrode needle material

- Tungsten (Ion balance: ±30 V)
- Monocrystal silicon
  (Ion balance: ±30 V Applicable to environments sensitive to metal contamination)
- Stainless steel (Ion balance: ±100 V)

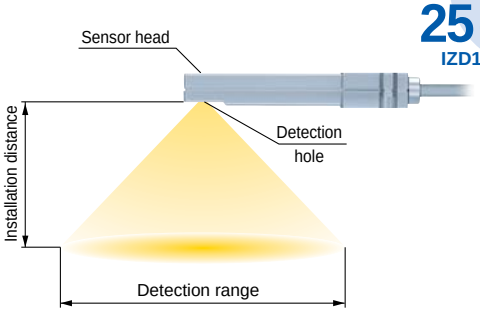
Related Equipment

Electrostatic Sensor
Series IZD10

Enables the “visualisation” of static electricity.

- ○ Analogue output: **1** to **5 V**
- ○ Measurement voltage range: ±**0.4 kV** (Installation distance **25 mm**)
  ±**20 kV** (Installation distance **50 mm**)
- ○ Dimensions: **17 mm** x **13 mm** x **88 mm**
- ○ Measurement range

Installation distance
10 to 50 mm
IZD10-110 (±0.4 kV)
25 to 75 mm
IZD10-510 (±20 kV)



Electrostatic Sensor Monitor
Series IZE11

Receives an output from the IZD10 electrostatic sensor to digitally display the electrostatic potential.

- ○ Output: Switch output x **2** + Analogue output
  (**1** to **5 V**, **4** to **20 mA**)
- ○ Minimum unit setting: **0.001 kV** (at ±0.4 kV)
  0.1 kV (at ±20 kV)
- ○ Display accuracy: ±**0.5%** F.S. ±**1 digit** or less
- ○ Detection distance correction function
  (adjustable in **1 mm** increments)
- ○ Supports two types of sensors
  (±0.4 kV and ±20 kV) through range selection

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