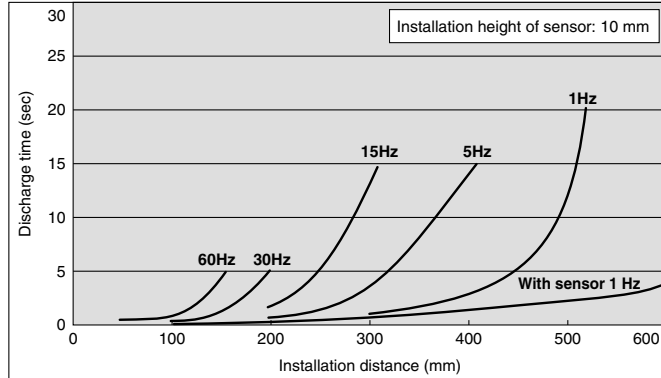


Static electricity Removal Characteristics

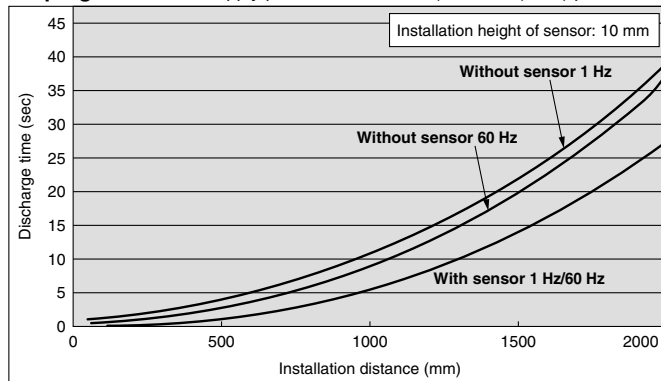
Note) Static electricity elimination features are based on data from using a charged plate (size: 150 mm x 150 mm, capacitance: 20 pF) as defined in the U.S. ANSI standards (ANSI/ESD, STM3, 1-2000). Use this as a guideline for model selection only because the value varies depending on the material and/or size of the subject.

1) Installation distance and discharge time (Discharge time from 1000 V to 100 V)

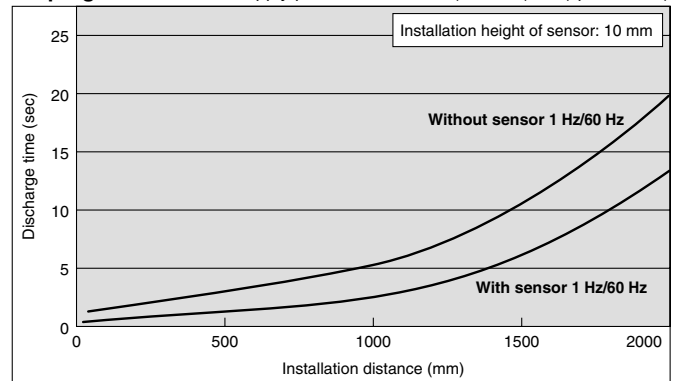
Air purge: No



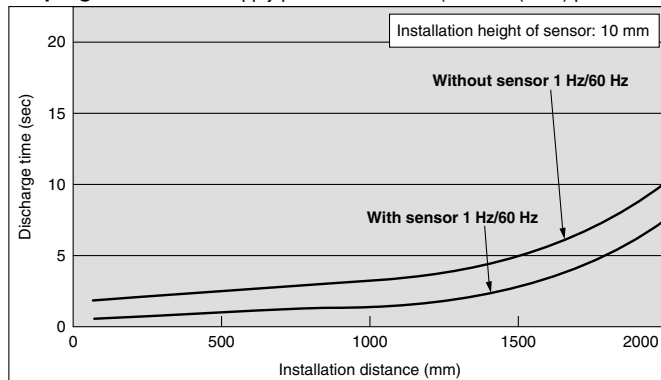
Air purge: Yes Supply pressure: 0.05 MPa (3.5 ℓ /min (ANR) per nozzle)



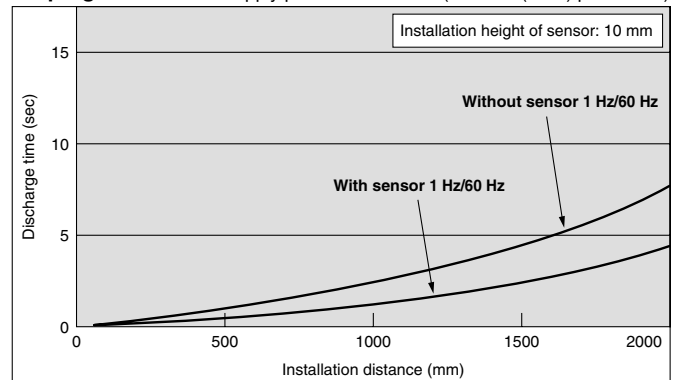
Air purge: Yes Supply pressure: 0.1 MPa (7 ℓ /min (ANR) per nozzle)



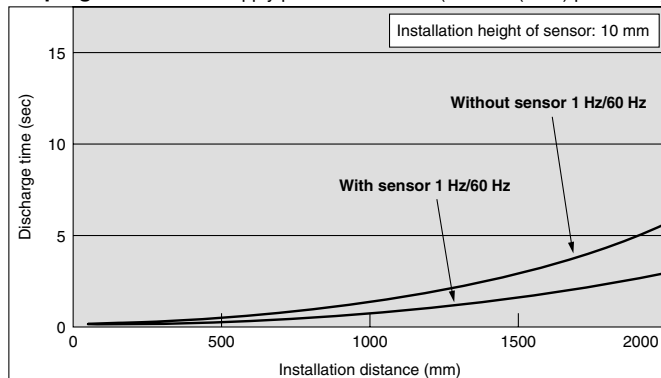
Air purge: Yes Supply pressure: 0.3 MPa (14 ℓ /min (ANR) per nozzle)



Air purge: Yes Supply pressure: 0.5 MPa (20 ℓ /min (ANR) per nozzle)



Air purge: Yes Supply pressure: 0.7 MPa (30 ℓ /min (ANR) per nozzle)

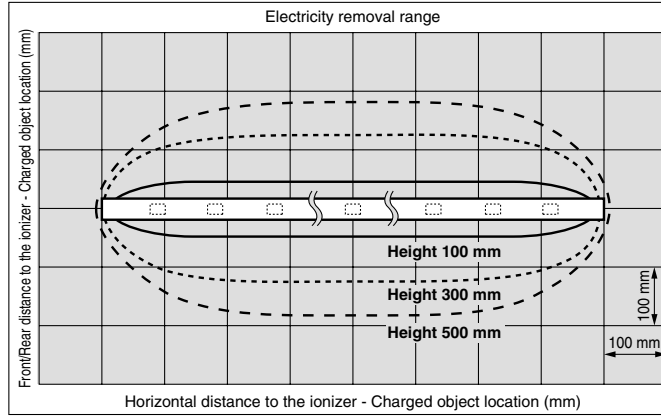


Static electricity Removal Characteristics

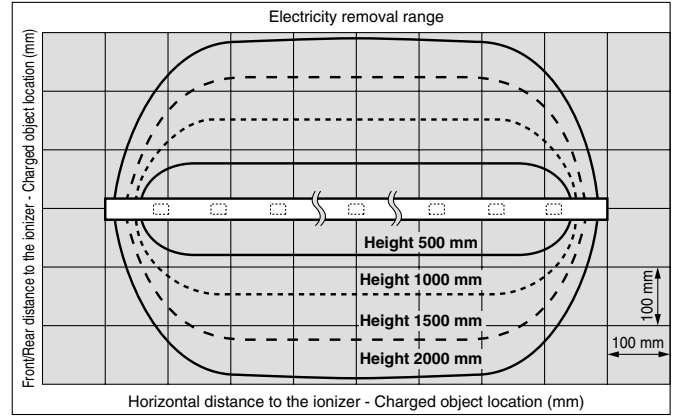
Note) Static electricity elimination features are based on data from using a charged plate (size: 150 mm x 150 mm, capacitance: 20 pF) as defined in the U.S. ANSI standards (ANSI/ESD, STM3, 1-2000). Use this as a guideline for model selection only because the value varies depending on the material and/or size of the subject.

1) Static electricity removal range / Ionizer depth direction

Air purge: No

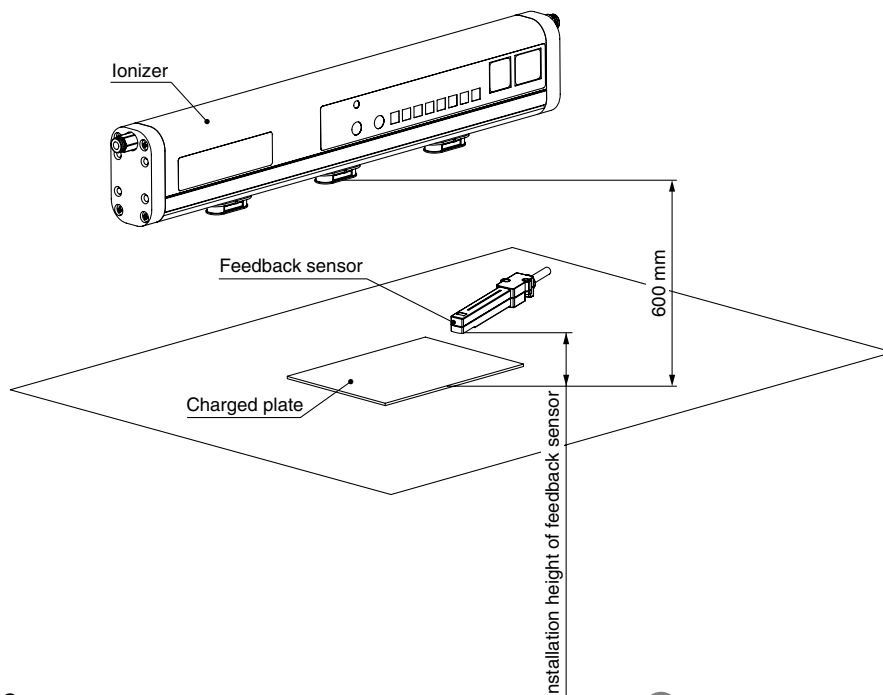
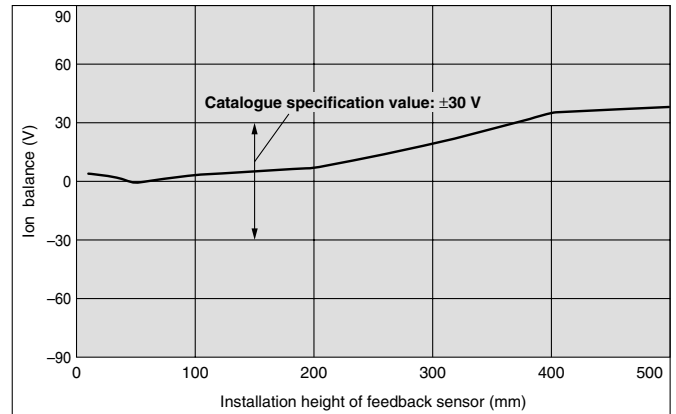
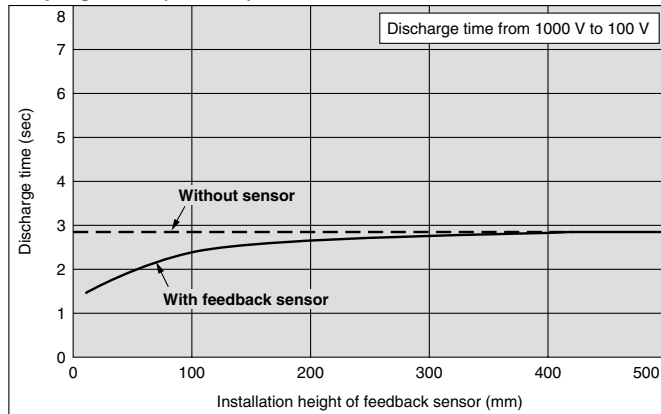


Air purge: Yes (0.05 MPa to 0.7 MPa)



2) Installation height of feedback sensor and discharge time / Ion balance

Air purge: Yes (0.1 MPa)



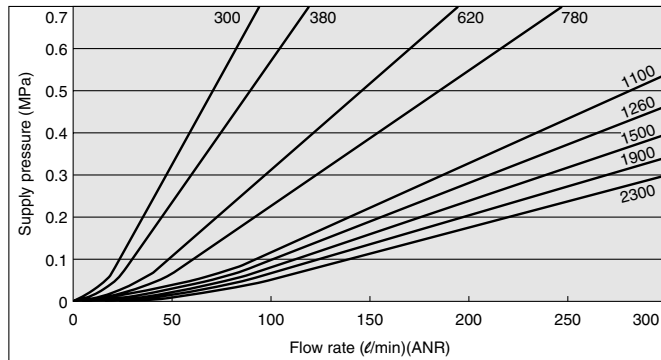
Series IZS31

Technical Data 3

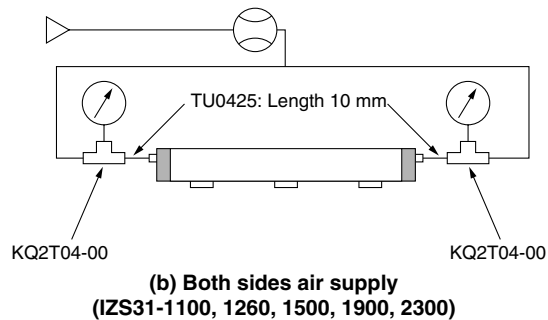
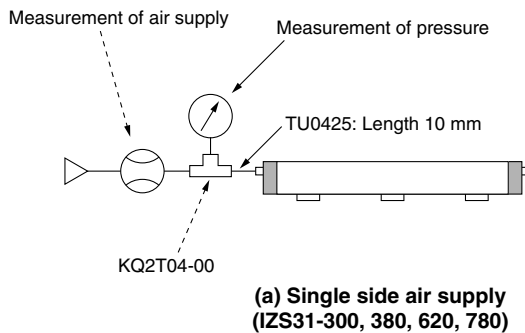
Static electricity Removal Characteristics

Note) Static electricity elimination features are based on data from using a charged plate (size: 150 mm x 150 mm, capacitance: 20 pF) as defined in the U.S. ANSI standards (ANSI/ESD, STM3, 1-2000). Use this as a guideline for model selection only because the value varies depending on the material and/or size of the subject.

4) Flow rate — pressure characteristics

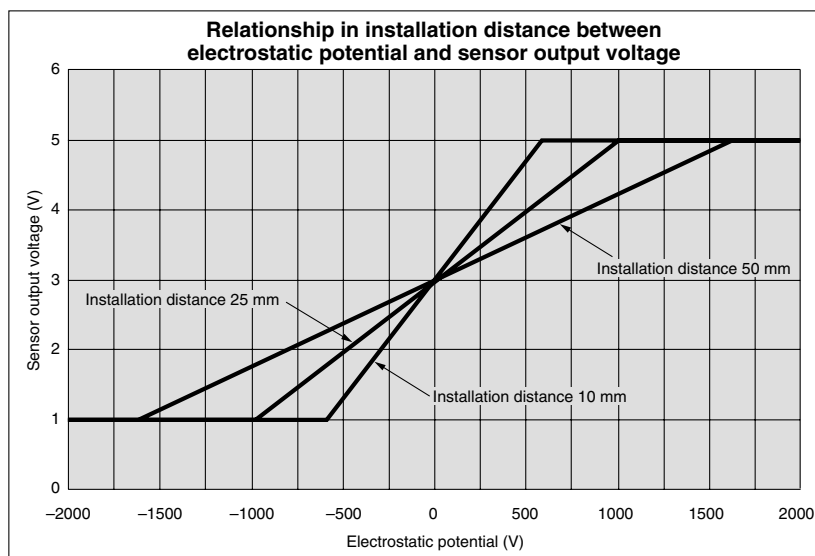


How to measure



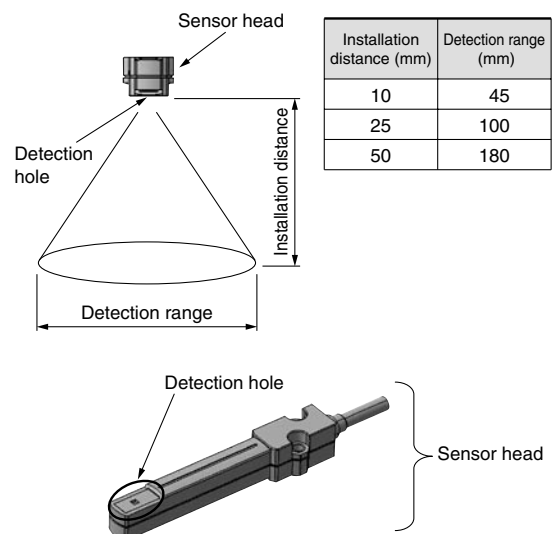
Sensor Monitor Output (When feedback sensor is used)

Note) The installation distance in the figure refers to the distance from the object undergoing static electricity removal to the electrostatic sensor.



Feedback sensor detection range

The relationship between the installation distance of the electrostatic sensor and the detection range is as follows:



Ionizer

Series IZS31



How to Order



Ionizer

IZS31 - 780 [] [] [] - [] [] - []

Bar type

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

Electrode needle material

-	Tungsten
C	Silicon
S	Stainless steel

Output

-	NPN output
P	PNP output

Power supply cable

-	With power supply cable (3 m)
Z	With power supply cable (10 m)
N	None

Made to Order

Refer to the below table.

Sensor

-	Without sensor
F	With feedback sensor
G	With autobalance sensor

Bracket

(End bracket, Center bracket)

-	Without bracket
B	With bracket (Note)

Note) The number of center brackets differ depending on the bar length. (Refer to the below table.)

Number of brackets

Bar length (mm)	End bracket	Center bracket
300, 380, 620, 780		None
1100, 1260, 1500	With 2 pcs.	With 1 pc.
1900, 2300		With 2 pcs.

Made to Order (Refer to page 23 for details.)

Ionizer / Series IZS31

Symbol	Contents	Specifications
X10	Non-standard bar length (80 mm-pitch)	460, 540, 700, 860, 940, 1020, 1180, 1340, 1420, 1580, 1660, 1740, 1820, 1980, 2060, 2140, 2220
X14	Model with electrode cartridge security cover	The main unit is shipped fitted with an electrode cartridge security cover available as an option.
X15	Model with 40 mm-pitch electrode cartridges	This model comes fitted with electrode cartridges arranged at a 40 mm-pitch (standard pitch: 80 mm). Note) Maximum bar length is 1260 mm. The air purge nozzles are arranged at an 80 mm-pitch.

Power supply cable

How to Order	Contents / Specifications										
IZS31 - CP [] - X13 Power supply cable full length <table> <tr> <th>Symbol</th><th>Cable full length</th></tr> <tr> <td>01</td><td>1 m</td></tr> <tr> <td>02</td><td>2 m</td></tr> <tr> <td>19</td><td>19 m</td></tr> <tr> <td>20</td><td>20 m</td></tr> </table>	Symbol	Cable full length	01	1 m	02	2 m	19	19 m	20	20 m	Model with made-to-order power supply cable Available in 1 m increments from 1 m to 20 m. Note 1) 11 mm or longer power supply cables are not CE Marking-compliant. Note 2) Use standard power supply cables for 3 m and 10 m lengths.
Symbol	Cable full length										
01	1 m										
02	2 m										
19	19 m										
20	20 m										

Special Individual Specifications (Contact an SMC sales representative.)

· Change in the direction of access to power supply cable

The direction of access to the power supply cable is changed to the right-hand side of the main unit.

Note) The power supply cable is connected directly to the main unit. A connector is not used.

Accessories

Feedback sensor / IZS31-DF



Autobalance sensor / IZS31-DG



Power supply cable

- IZS31-CP (3 m)
- IZS31-CPZ (10 m)



Electrode cartridge

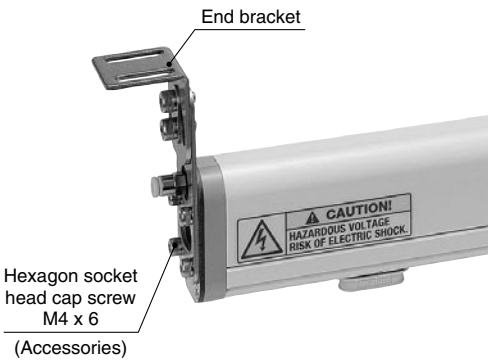
- IZS31-NT (Material: Tungsten)
- IZS31-NC (Material: Silicon)
- IZS31-NS (Material: Stainless steel)



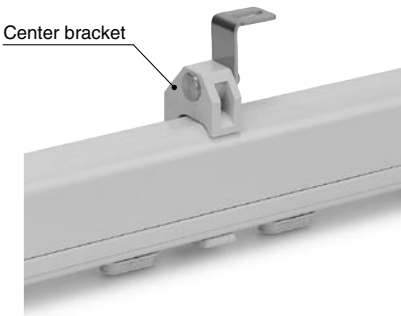
Bracket

Note) The model number is for a single bracket.

End bracket / IZS31-BE



Center bracket / IZS31-BM



Note) The number of center brackets required, as listed below, depends on the bar length. Two end brackets are always required regardless of the bar length.

Bar length (mm)	Quantity	
	End bracket	Center bracket
300, 380, 620, 780	2 pcs.	None
1100, 1260, 1500		With 1 pc.
1900, 2300		With 2 pcs.

Series **IZS31**

Option

Electrode cartridge security cover

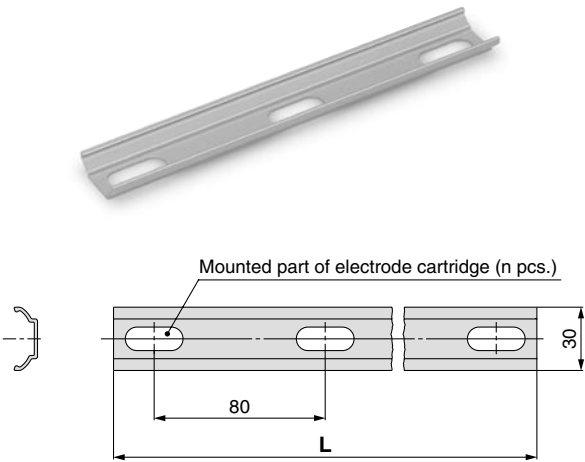
IZS31 – E **3**

● Number of fixed electrode cartridges

IZS31-E3	3
IZS31-E4	4
IZS31-E5	5

Number of required security covers

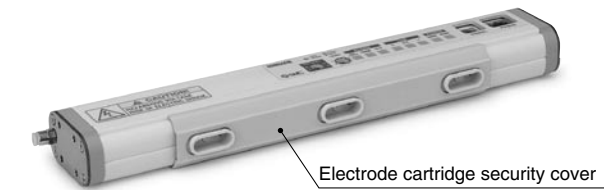
Bar length (mm)	Number of required security covers		
	IZS31-E3	IZS31-E4	IZS31-E5
300	1	—	—
380	—	1	—
620	1	1	—
780	—	1	1
1100	3	1	—
1260	1	3	—
1500	—	2	2
1900	1	5	—
2300	—	2	4



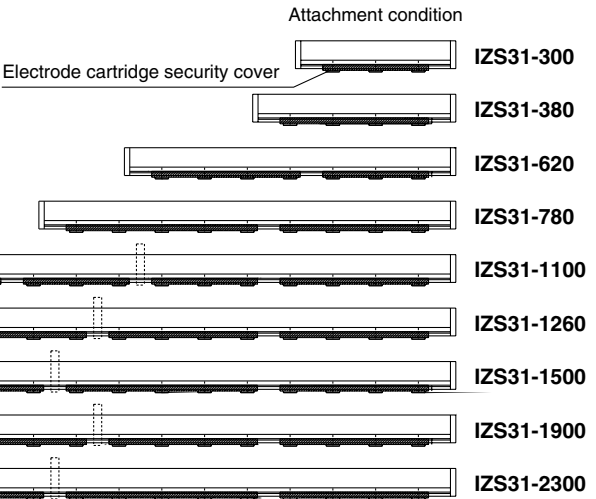
Part no	L
IZS31-E3	200
IZS31-E4	280
IZS31-E5	360

The model number requires the suffix “-X14” to indicate that the main unit is to be shipped fitted with an electrode cartridge security cover.

IZS31 **Standard part no.** – X14



When attached to the main unit



Screw driver for ion balance adjustment trimmer / IZS30-M1

Electrode needle cleaning kit / IZS30-M2



Specifications

Ionizer model		IZS31-□□ (NPN specification)	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 (Stainless electrode needle: ±100 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) Max. applied voltage: 28 VDC	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, Monocrystal silicon, Stainless steel	
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. Refer to page 3.

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)	

Construction

No.	Description
1	Ionizer
2	Electrode cartridge
3	One-touch fitting
4	End bracket
5	Center bracket
6	Feedback sensor
7	Autobalance sensor
8	Power supply cable

