



And see the gain

"The invisible enemy". "The unseen". These are just a few ways to call and define static electricity.

Unfortunately, static is not like an air leakage that you can hear. Static is indeed invisible, but its effects can certainly be seen. In our visits to customers premises, no matter if they are big, medium or small production plants, we often encounter many locations suffering from the effects of static. Plastic tubes actually levitating, plastic wraps all twisted, or very unstable packaging processes due to clinging bottles.

Unfortunately in many occasions, unseen means untackled. Luckily, static can be solved in a very quick, easy and efficient way: with an ionizer.

Implementing an ionizer does not imply complicated installation or maintenance. Basically, you must simply find the right one, plug it in, and forget about annoying unplanned stops, messy products or jolts. Simplicity & effectiveness: that is the motto of our product range.

With SMC's Ionizers you will:

 Forget about product rejections, futile maintenance hours and machine downtime provoked by static electricity – plug it in and see the benefits right away

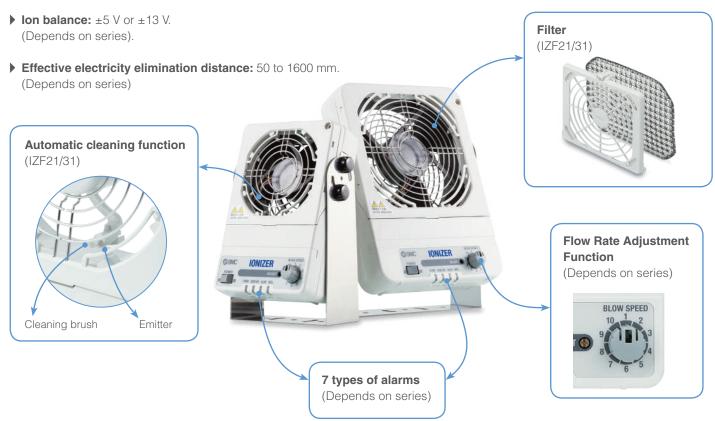
- Optimize the quality of your process – the installation of the appropriate solution will increase production speed and improve output quality in a simple way.
- Create a safe environment for your workers – eliminate jolts produced by static.
- Guarantee getting the proper antistatic solution – a wide range for measurement, removal and control of static electricity is at your disposal.

If only all problems could be solved so easily.

Simplicity & effectiveness: that is the motto of our product range.

General specifications

IZF Series



IZS40/41/42 Series

- ▶ **Ion balance:** ±30 V (±25 V IZS42).
- ▶ Effective electricity elimination distance: 50 to 2000 mm.
- Voltage application method: DC, AC, Sensing AC and Dual AC.

(Depends on series)

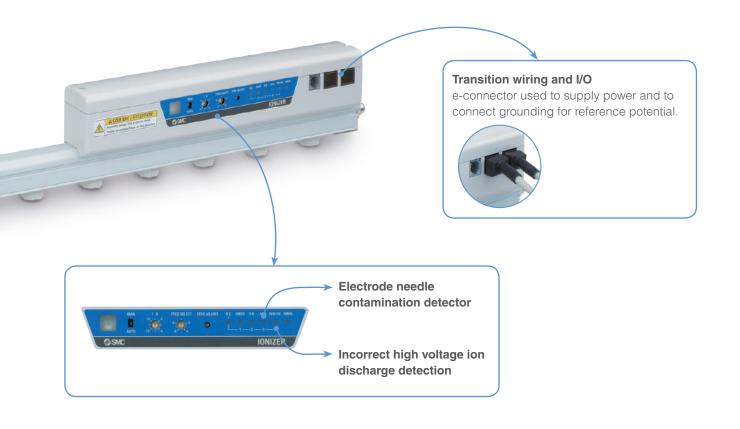


substrate

IZN10 Series Ion balance: ±10 V or ±15 V. (Depends on series and sizes). Electrode needle contamination detector Effective electricity elimination distance: 20 to 500 mm.

- Tungsten

- Silicon.



Static electricity elimination equipment lineup

		Features	lon generation method	Ion balance [V]	Flow rate [I/min]
Bar type ic	nizer, IZS series				
IZS40		- Effective and efficient in the rapid elimination of static - Built-in, high accuracy and feedback		±30	
IZS41	- tan 11	sensors - Energy saving and high speed de-ionizing cartridges - Low maintenance electrode cartridges - Electrostatic removal from flat surfaces	high speed ges electrode cartridges al from flat surfaces		300 (High-speed) ¹⁾ 156 (Energy saving) ¹⁾
IZS42		and remote surfaces - Suitable for applications in all industries		±25	
Fan type ic	onizer, IZF series				
IZF10			Corona discharge	±13	IZF10: 660 IZF10L: 460
IZF10R		- Compact and lightweight - Flow rate adjustment function - Electrostatic removal in the atmosphere around a work piece - Operates without the need of a compressed air supply - Suitable for applications in all industries		±13	190 to 800
IZF21/31				±5	IZF21: 400 to 1800 IZF31: 1300 to 4400
Nozzle typ	e ionizer, IZN series				
IZN10	ONE COMPANY	- Slim design - Built-in power supply substrate - Energy saving and large flow nozzles - Removal from a small work piece or total electrostatic removal in confined spaces. Suitable for dust removal Suitable for applications in all industries	Corona discharge	±10 (Energy saving) ±15 (Large flow)	5 to 45 (0.1 MPa)

¹⁾ These values have been calculated with a bar length of 1120 mm and an inlet pressure of 0.3 MPa (relative pressure).

Effective electricity elimination distance [mm]	Discharge output [kV]	Power supply voltage	Temperature range [°C]	Electrode material	Others
50 to 2000	±7	24 VDC ±10 %	0 to 40	Tungsten Silicon	- Transition wiring (up to 8 units) - Remote control - High charge error - Electrode needle contamination detector - Ion balance adjustment - I/O signals (PNP/NPN) - LED indicators - Electrode cartridge drop prevention function - Drop prevention cover - Electrode needle cleaning kit
					- Non-standard bar length
300 to 1200	±5	24 VDC ±10 %	0 to 50 (Operation) -10 to 60 (Storage)	Tungsten	- Built-in emitter cleaner (Option) - Fan air filter (Optional) - Power supply failure alarm - Incorrect high voltage alarm - Fan motor failure alarm - CPU failure alarm - Maintenance alarm - Emitter cartridge mounting failure alarm - Automatic cleaning failure alarm - Electrode needle cleaning kit
50 to 1600					- Electrode needle cleaning kit
					- 360° turnable nozzle - External switch input function (2
20 to 500	±2.5	24 VDC ±10 %	0 to 55	Tungsten Silicon (Available as special)	inputs): Detection of pressure drop of compressed air Energy saving with electrostatic sensor Electrode needle cleaning kit

Bar type ionizer IZS40/41/42 Series



3 solutions for fast and effective static removal



Main features

▶ Standard type Series IZS40

Simple operation: Only power ON/OFF required.

▶ Feedback sensor type Series IZS41

Feedback sensor enables the rapid elimination of static electricity.

- Energy saving run mode
- Continuous neutralisation run mode.

▶ Dual AC type Series IZS42

Reduced potential amplitude: 25 V or less.

lon balance: ±30 V

▶ Reduction of adjustment and maintenance time using an auto balance sensor:

- Built-in type (standard): The sensor is installed within the ionizer body and may be mounted anywhere
- High accuracy type (option): "Ion balance adjustment at external signal input" or "Ion balance adjustment at any time" can be selected.
- Setting ionizer with remote control: can recognize and control up to 16 ionizers through address setting
- ▶ Low maintenance electrode cartridges
- ▶ Transition wiring may be used

Selected part numbers

Part number	Characteristics	Bar Length [mm]	Input Signal	Output Signal	Operating Range [mm]
IZS40-340-06B		340			
IZS40-400-06B		400			
IZS40-460-06B		460			
IZS40-580-06B		580			
IZS40-640-06B		640			
IZS40-820-06B •	Plug & Play	820	_	_	
IZS40-1120-06B	r lug & r lay	1120			
IZS40-1300-06B		1300			
IZS40-1600-08B		1600			- 50 ~ 2000
IZS40-1900-08B		1900			
IZS40-2320-08B		2320			
IZS40-2500-08B		2500			
IZS41-340P-06B		340		2 x PNP	
IZS41-400P-06B		400			
IZS41-460P-06B		460			
IZS41-580P-06B		580			
IZS41-640P-06B		640			
IZS41-820P-06B	Applicable for feedback	820	2 x PNP		
IZS41-1120P-06B	sensor	1120	2.7.1.11		
IZS41-1300P-06B		1300			
IZS41-1600P-08B		1600			
IZS41-1900P-08B		1900			
IZS41-2320P-08B		2320			
IZS41-2500P-08B		2500			

Stocked items

Part number	Characteristics	Bar Length [mm]	Input Signal	Output Signal	Operating Range [mm]
IZS42-340P-06B		340	2 x PNP	2 x PNP	50 ~ 2000
IZS42-400P-06B •		400			
IZS42-460P-06B		460			
IZS42-580P-06B •		580			
IZS42-640P-06B		640			
IZS42-820P-06B •	Potential amplitude	820			
IZS42-1120P-06B	reduction specification	1120			
IZS42-1300P-06B		1300			
IZS42-1600P-08B		1600			
IZS42-1900P-08B		1900			
IZS42-2320P-08B		2320			
IZS42-2500P-08B		2500			

Accessories

Part number	Description
IZS30-M2	Electrode needle cleaning kit
IZS41-RC	Remote control
IZS41-CF02 •	Transition wiring cable (2 m)
IZS40-NT	High speed de-ionizing cartridge (tungsten)
IZS40-NJ	Energy saving - type de-ionizing cartridge (tungsten)
IZS40-E3 •	Electrode cartridge drop prevention cover for 3 electrodes
IZS40-E4 •	Electrode cartridge drop prevention cover for 4 electrodes
IZS40-E5 •	Electrode cartridge drop prevention cover for 5 electrodes
IZF10-CG2EU	AC Adapter for IZS40
IZS41-CG2EU	AC Adapter for IZS41/42
IZS40-BE	End bracket
IZS40-BM ●	Intermediate bracket
IZS31-DF	Feedback sensor
IZS31-DG ●	Auto balance sensor

¹⁾ Incl. 3 m power supply cable and bracket.
2) Non-standard bar length available upon request, with –X10 option.

Fan type ionizer





Fast static removal in your hands





IZF21/31 Series main features

- ▶ Extensive and rapid static neutralisation
- lon balance: ±5 V
- > Optional adjustable louver to adjust the static neutralisation area
- Improved performance and easier maintenance through several functions and features:
 - Functions: averaging function, automatic balance adjustment function, optional automatic cleaning function, flow rate adjustment function
 - Tool-less replaceable emitter cartridge
 - Optional filter to prevent the entry of foreign matter to the motor and to avoid short-circuit between emitters.
- Modular, compact and slim design

Selected part numbers

Stocked items

Part number	Flow rate [I/min]	Input/Output
IZF21-P	400 to 1800	DND
IZF31-P ●	1300 to 4400	PNP

- 1) Included 3 m power supply. AC adapter, bracket, automatic cleaning unit, louver and filter not included.
- 2) NPN option available upon request.

Accessories

Part number		Description		
IZF21	IZF31	Description		
IZF21-NT ●	IZF31-NT	Emitter cartridge		
IZS41	-CP •	Power supply cable (3 m)		
IZS41	-CPZ •	Power supply cable (10 m)		
IZF21	-CG2EU	AC adapter (with AC cord)		
IZF21	-CG2 •	AC adapter (without AC cord)		
IZF21-HW	IZF31-HW	Adjustable louver		
IZF21-B1 •	IZF31-B1 ●	Bracket		
IZF21-HS	IZF31-HS	Automatic cleaning unit		
IZF21-FL	IZF31-FL	Air suction side filter: filter		
IZF21-FU ●	IZF31-FU	Air suction side filter: filter + filter holder		
IZF21-M3 IZF31-M3		Cleaning arm (for automatic cleaning unit)		
IZS30)-M2 •	Cleaning kit		
IZS30	-M1 •	Adjustment screwdriver		

IZF10/10R Series main features

▶ Rapid static neutralisation

▶ Two types available (IZF10):

Fast elimination of static electricity type: 1.5 seconds

deionising time.

Low noise fan type: 48 dB(A).

▶ Flow rate adjustment function (IZF10R)

lon balance: ±13 V

▶ Alarm functions: high-voltage error, electrode needle contamination detector

Selected part numbers

Stocked items

Part number Nozzle type		Flow rate [I/min]	Output
IZF10-P	Rapid deionising type	660	
IZF10-LP	Low noise type	460	PNP
IZF10R-P	_	190 to 800	

¹⁾ Power supply cable (3 m) included. AC adapter, bracket and e-connector not included.

Accessories

Part n	umber	Description	
IZF10	IZF10R		
IZF10-CP	IZF10R-CP	Power supply cable (3 m)	
IZF10-CPZ	IZF10R-CPZ	Power supply cable (10 m)	
IZF10-CG2EU IZF10R-CG2EU		AC adapter (with AC cord)	
IZF10-CG2 ● IZF10R-CG2		AC adapter (without AC cord)	
IZF10)-B1 •	Bracket	
IZF10-A1	IZF10R-A1	Cartridge case	
ZS-28-C ● —		E-con connector	
IZS30-M2 •		Cleaning kit	
IZS30-M1 ●		Adjustment screwdriver	

²⁾ NPN option available upon request.



Efficient local static removal



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Main features

- ▶ Different nozzles to adapt several applications Available either as IZN10 (standard type) and IZN10-X367 (with right angles and 360° rotation): Energy saving static electricity elimination nozzle. High flow static electricity elimination nozzle.
- ▶ Ion balance: ±10 V (Energy saving), ±15 V (Large flow)
- ▶ Compact and slim design

- With built-in power supply substrate
- ▶ Easy maintenance: electrode needle contamination detector with easy replacement of the cartridge
- ▶ Mounting variations: direct mount, bracket mount
- External switch input function (2 inputs). Switch output: PNP/NPN.

Selected part numbers

Stocked items

Part number Nozzle type		Port size	Output specification	
IZN10-01P06 ● Energy saving static electricity elimination nozzle				
IZN10-02P06 •	High flow rate nozzle			
IZN10-11P06 •	Rc1/8 female threads for piping	Ø 6 (metric size)	PNP	
IZN10-01P06-X367	Energy saving static electricity elimination nozzle			
IZN10-02P06-X367	High flow rate nozzle			

¹⁾ Included 3 m power supply cable.

Accessories

Part number	Description
IZN10-B1 •	L Bracket
IZN10-B2	Pivoting bracket
IZN10-B3	Din rail mounting bracket
IZN10-CP	Power supply cable (3 m)
IZN10-CPZ	Power supply cable (10 m)
IZN10-NT	Electrode needle assembly
IZS30-M2 •	Electrode needle cleaning kit

²⁾ NPN option available upon request.

Desktop duster box – ZVB Series



- ▶ Integration of three processes static neutralisation, dust removal and dust collection in a single box by using nozzle type ionizers
 - Efficient static neutralisation with a diffusion-type nozzle
 - Dust removal with dedicated nozzles for the air blow
 - Dust collection with a maintenance-free pneumatic dust collector.
- ▶ Ion balance: ±10 V
- ▶ Use of emitters that are easy to remove, replace and clean
- ▶ Optional photoelectric sensor reflecting plate for automatic workpiece detection.

Selected part numbers

Part number	Static neutralisation space [mm] (width x depth)	Dimensions [mm] (width x depth)	Dust collector: exhaust flow rate [l/min]	Air consumption [I/min]	Ionizer: no. of mounted units
ZVB20-B	202 x 212	210 x 297	410 to 1580	420	1
ZVB40-B	392 x 298	400 x 384	820 to 3160	800	2

Accessories

Part number	Description		
ZVB-D3A	3 m exhaust duct hose		
ZVB-D1A	1 m exhaust duct hose		
ZVB-P1A	Dust collecting bag		
ZVB-AC1EU	AC adapter		
IZN10-NT-X325	Emitter		
AS2001F-06D-X678	Air blow adjustment needle valve		

Electrostatic sensor – IZD10 Series



- ▶ Potential measurement: ±20 kV (detected at a 50 mm distance), ±0.4 kV (detected at a 25 mm distance)
- Analogue output: the measured electrostatic potential is converted into a 1 to 5 V output that can be used with the electrostatic monitor IZE11
- ▶ Small and easy to mount.

Selected part numbers

Part number	Potential measurement	Output voltage
IZD10-110 •	±0.4 kV	1 to 5 V
IZD10-510 •	±20 kV	1 to 5 V

Electrostatic monitor – IZE11 Series



- ▶ Electrostatic sensor IZD10 monitor
- ▶ Output: switch output x 2 + analogue output (1 to 5 V, 4 to 20 mA)
- ▶ Supports two types of sensors: ±0.4 kV and ±20 kV
- ▶ Two colour display (red and green)
- ▶ Minimum unit setting: 0.001 kV (at ±0.4 kV), 0.1 kV (at ±20 kV)
- ▶ Display accuracy: ±0.5 %
- ▶ Connection by connector:
 - Connector for power supply / output
 - E-con connector: connector to sensor.

Selected part numbers

Stocked items

Part number	Input / Output	Connector cable for power supply/output	Connector for sensor connection
IZE112-LC	2 PNP + (1-5 V)	Yes	Yes
IZE113-LC	2 PNP + (4-20 mA)	Yes	Yes

Accessories

Stocked items

Part number	Description
ZS-28-A •	Connector cable for power supply/output (2 m)
ZS-28-B •	Bracket
ZS-28-C •	Connector for sensor connection
ZS-27-C •	Panel mount adapter
ZS-27-D •	Panel mount adapter + Front protective cover

Handheld electrostatic meter – IZH10 Series



- ▶ Portable sensor
- ► Compact and lightweight
- ▶ Rated charge amount range: ±20.0 kV
- ▶ Functions:
 - Peak & bottom display function
 - Zero clear function
 - Battery indicator
 - Backlight display

Selected part numbers

Stocked items

Part number	Option	
IZH10 ●	None	
IZH10-H ●	High-voltage measuring handle	

Accessories

Part number	Description
IZH-A-01	Ground wire, 1.5 m
IZH-B-01 •	Soft case
IZH-C-01 •	High-voltage measuring handle

¹⁾ IZH-B-01 and IZH-A-01 already attached to the IZH series.

Applications

Packing films

Prevents static electricity charging when opening bags and clinging on the inside of confectionary bags



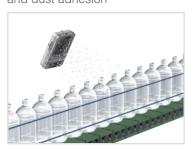
Rolls of films

Prevents dust adhesion and winding failure due to wrinkles



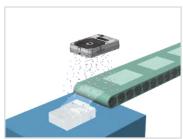
PET bottles

Prevents trip-resistance during conveying and dust adhesion



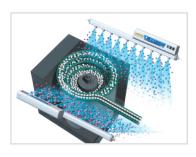
Film moulded goods

Prevents attaching to conveyer and dispersion of finished goods



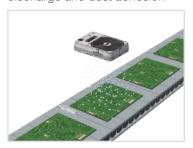
Parts feeder

Prevents clogging



Large electric substrates

Prevents element disruption due to discharge and dust adhesion



Films

Prevents dust sticking



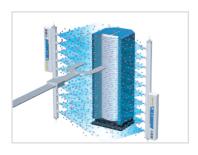
Packaging materials made from polystyrene foam

Prevents darkening due to dust adhesion



Wafer transfer

Prevents breakage due to discharge between wafers and hands



Conveyors

Eliminates static electricity in a narrow space



Resin molded goods

Improves detachability of moulded goods from a die



Lenses

Removes dust and prevents dust adhesion



IC chips

Prevents breakdown of electric parts and detachment failure



Small electric substrates

Prevents breakdown of electric parts



Desktop Duster Box Applications

Electronic components

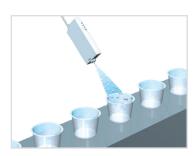


Lamp cover



Plastic cups

Removes dust clinging to cup interiors



Lamp covers

Eliminates dust clinging



Lens



Cosmetic case



Smartphone



Parts for home appliances



Antistatic products

SMC has a lineup of products that prevent from charging static electricity.

Tubing



- ▶ TAS/TAU Series Antistatic tubing
- ▶ TAU-X100 Series Antistatic coloured tubing.

Fittings



▶ KA Series – Antistatic one-touch fittings

Antistatic speed controller



▶ AS-X260 Series – In-line type/elbow type

Conductive vacuum pads





- ▶ ZP3 Series Conductive NBR/conductive silicon rubber
- ▶ ZP2 Series Conductive NBR/conductive silicon rubber
- ▶ ZP Series Conductive NBR/conductive silicon rubber.

Related product

SMC can provide all the equipment required to supply air to the ionizer.

By using the equipment as shown below you can decrease maintenance, prevent damage and also enjoy energy saving.

Recommended pneumatic circuit diagram



1 Air Dryer - IDFA Series

Decreases the dew point of compressed air.

Limits moisture generation which can lead to damage.



② Air Filter - AF-A Series

Eliminates solid foreign matter such as power particles in the compressed air.



③ Mist Separator - AFM-A Series

Eliminates oil mist which is difficult to eliminate with an air filter.



Digital Flow Switch – PF2A Series 2/3-Colour Digital Flow Switch – PFM Series

Decreases air consumption with flow control.



(5) Regulator - AR-B Series

Decreases air consumption by setting to an appropriate pressure.



6 Digital Pressure Switch - ISE30A Series

The pressure control prevents the ability of static electricity removal from being reduced in accordance with the reduction of air pressure.



Port Solenoid Valve – VX2 Series Pilot Operated 2 Port Solenoid Valve for Dry Air – VQ Series



® Speed Controller – AS-FS Series

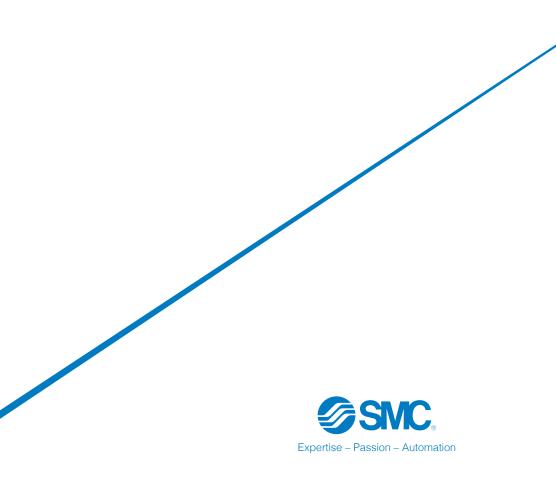
Regulates to the appropriate air volume depending upon the installation condition. Decreases the air consumption.



O Clean Air Filter – SFD Series

Built-in capillary element. Nominal filtration rating: 0.01 μ m. Adopted hollow fiber elements with over 99.99 % filtering efficiency do not contaminate workpieces.





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