## **Fan Type Ionizer**



## **Thinnest and Fastest**



## Slim design

			[mm]
Model	Thickness (Depth)	Width	Height
IZF21	40	104	155
IZF31	40	144	195

■ Offset voltage (Ion balance) :±5 V

Series IZF

## **Extensive rapid static neutralisation**<sup>\*</sup>



\* When neutralising static electricity from 1000 V to 100 V at a distance of 300 mm from the workpiece (front surface). When air flow of IZF31 is maximum.



## **Extensive Rapid Static Neutralisation**





At maximum flow rate, with adjustable louver/largest angle



At maximum flow rate, with adjustable louver/smallest angle



## Extensive static neutralisation area can be covered with adjustable louver. Option





## **Rapid static neutralisation**

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

## **Stable Static Neutralisation Performance, Easier Maintenance**

## The emitters life is almost doubled with averaging function.



#### **Averaging Function**

The life of the emitters is almost doubled by switching the polarity of the applied high voltage every time the power is supplied hence averaging the wear level of the emitters. \* Compared with the IZF10.

#### Built-in sensor constantly monitors offset voltage.

Automatic balance adjustment function achieves stable offset voltage and reduces adjustment time.



due to emitters contamination when the ionizer is



Constantly monitors offset voltage by use of a sensor. Prevents reduction of offset voltage performance due to emitters contamination when the ionizer is used for a long period of time. Balance adjustment trimmer can provide offset voltage adjustment suitable for the installation environment.



## Stable Static Neutralisation Performance, Easier Maintenance

## Emitter contamination can be reduced by automatic cleaning function.

Cleaning arms are installed inside. Emitter cleaning is started by external input or operation button.



## **Contamination of the emitters** can be detected.

Emitter contamination level is constantly monitored. When maintenance is required, the user is alerted by a signal output and the LED turning ON.



## Emitter cartridge is easily replaceable. (No tools are required.)





Emitter cartridge



Emitter cartridge drop prevention





Option

Emitter cartridge retaining screw M3 x 12 1 pc. (Provided by customer)

**GSMC** 

## Flow Rate Adjustment Function

Flow rate is adjustable in 10 steps using the flow rate adjustment dial. The flow rate adjustment dial is removable to prevent unexpected changes of adjustment.

Flow Rate Adjustment Range														
Madal		Flow rate adjustment level												
Model	1	2	3	4	5	6	7	8	9	10				
IZF21	400	500	600	700	800	900	1100	1400	1700	1800				
IZF31	1300	1700	1900	2300	2500	2700	3200	3700	4200	4400				



## 7 types of alarms are provided.





Option

7 Automatic cleaning failure

# LED indicator can be checked from 2 directions!



Prevents ingress of lint and foreign matter to the motor and possibility of short-circuit between emitters!

**Filter** 



## **Application Examples**

Static neutralisation on a conveyor Static neutralisation in a narrow space



Neutralising static electricity on molded goods Improves detachability of molded goods from a die.



Neutralising static electricity from packing films Prevents the filled substance from adhering to the packing film and reduces packing mistakes.



Neutralising static electricity on PET bottles Trip-resistance during conveying/Prevents adhesion of dust.



Neutralising static electricity on film molded goods Sticking and scattering prevention on a conveyor



Neutralising static electricity from parts feeder Prevents clogging.



**SMC** 

Neutralising static electricity from films Prevents winding failure./Prevents adhesion of dust.



Static neutralisation on packaging materials made from polystyrene foam. Darkening due to dust adhesion prevented



Neutralising static electricity on an electric substrate Prevents element disruption due to discharge, and adhesion of dust.



#### Compact fan type with simple functions Series IZF10 Page 18

- Compact design (H x W x D): 80 mm x 110 mm x 39 mm
- Weight: 280 g
- 2 types of fans available

Rapid static neutralising fan: Discharge time (Static neutralisation time)\*
1.5 s (When neutralising static electricity from 1000 V to 100 V at a distance of 300 mm from the workpiece (front surface))

OLow-noise fan: 48 dB(A) (Measured at a distance of 300 mm from the workpiece), Rapid static neutralising fan: 57 dB(A)

Offset voltage (Ion balance)\*: ±13 V

 With alarm Incorrect high voltage, Emitter dirt detection
\* Based on EN 61340-5-1:2007 standards



5

# IZF21/31

# CONTENTS

## Series IZF21/31 Series IZF10







#### • Fan Type Ionizer *Series* IZF21/31

Technical Data/ Static Neutralisation Performance

1) Installation Distance and Discharge Time	Page 7
2 Static Neutralisation Range	Page 8
How to Order	Page 9
Accessories	Page 10
Accessories Sold Separately	Page 10
Specifications	Page 11
Functions and Indications	Page 11
Alarm	Page 11
Wiring ·····	Page 12
Wiring Circuit ·····	Page 12
Operation Chart	Page 13
Dimensions	Page 14

#### • Fan Type Ionizer Series IZF10

Technical Data/ Static Neutralisation Performance

1 Installation Distance and Discharge Time	Page 18
2 Static Neutralisation Range	Page 18
How to Order	Page 19
Accessories	Page 19
Accessories Sold Separately	Page 19
Specifications	Page 20
Functions and Indications	Page 20
Alarm	Page 20
Wiring	Page 21
Wiring Circuit ······	Page 21
Operation Chart	Page 22
Dimensions	Page 23
	-

Specific Product Precautions ------ Page 24



## Series IZF21/31 Technical Data



## Static Neutralisation Performance

Note) Static neutralisation performance is based on data using charged plate (size: 150 mm x 150 mm, capacitance: 20 pF) as defined in the EN 61340-5-1:2007 standars. Use only as a guideline for model selection because the value varies depending on the material and/or size of objects.

#### ①Installation Distance and Discharge Time (Discharge time from 1000 V to 100 V)



#### IZF21-S (With automatic cleaning unit)



#### IZF21-U (With filter)



#### IZF31 20 Discharge time [s] 15 Air flow level: 1 10 Air flow level: 10 5 0 0 200 400 600 800 1000 1200 1400 1600 Installation distance [mm]

#### IZF31-S (With automatic cleaning unit)







## Technical Data Series IZF21/31

Note) Static neutralisation performance is based on data using charged plate (size: 150 mm x 150 mm, capacitance: 20 pF) as defined in the EN 61340-5-1:2007 standars. Use only as a guideline for model selection because the value varies depending on the material and/or size of objects.

#### Static Neutralisation Performance

#### **2 Static Neutralisation Range**



















**SMC** 







Installation distance [mm]

IZF

## Fan Type Ionizer Series IZF21/31

C E RoHS





## Series IZF21/31

#### Specifications

			17504 D		17504 0					
	Model		IZF21-P		IZF31-P					
	meder	NPN	PNP	NPN	PNP					
Maximum ai	r flow	1800	l/min							
Applied volt	age	±5 kV								
lon generati	on method		Corona dise	charge type						
Method of a	pplying voltage		DC	type						
Offset voltage	ge (Ion balance) <sup>Note)</sup>		±5	5 V						
Power supp	ly voltage		24 VDC	2±10 %						
Current con	sumption	0.9 A c	or less	1.3 A	or less					
Input	lonizer stop signal	Connect with 0 V	Connect with +24 V Voltage range: 19 VDC to	Connect with 0 V	Connect with +24 V Voltage range: 19 VDC to					
signal	Cleaning input signal	Current consumption: 5 mA or less	power supply voltage Current consumption: 5 mA or less	Current consumption: 5 mA or less	power supply voltage Current consumption: 5 mA or less					
Output	Maintenance signal	Maximum load current: 100 mA Residual voltage: 1 V or less	Maximum load current: 100 mA	Maximum load current: 100 mA Residual voltage: 1 V or less	Maximum load current: 100 mA					
signal	Error signal	(Load current: 100 mA) Maximum applied voltage: 26.4 VDC	(Load current: 100 mA)	(Load current: 100 mA) Maximum applied voltage: 26.4 VDC	(Load current: 100 mA)					
Ambient ten	nperature		Operating: 0 to 50 °C	Stored: -10 to 60 °C						
Ambient hu	midity		Operating, Stored: 35 to 80	0 % RH (No condensation)						
Material			Case: ABS/PBT/Stainles	s steel Emitter: Tungsten						
Impact resis	tance	100 m/s <sup>2</sup>								
Applicable s	tandard/directive		CE (EMC directi	ve: 2014/30/EC)						

Note) Based on EN 61340-5-1:2007 standards

#### **AC Adapter Specifications**

Input voltage	100 to 240 VAC, 50 / 60 Hz
Output voltage	24 VDC
Output current	1.9 A max
Ambient temperature	0 to 40 °C, Stored: –20 to 65 °C
Ambient humidity	Operating, Stored: 5 to 95 % RH (No condensation)
Weight	375 g (including AC cable, connector)
Applicable standard/directive	CE/cUL

#### Weights

	IZF21	IZF31
Body	430 g	605 g
Bracket	146 g	220 g
Automatic cleaning unit	96 g	127 g
Louver	33 g	58 g
Filter	15 g	26 g

#### **Functions and Indications**

No.	Name	Panel display	Туре	Description		
1	Power supply switch	POWER	Switch	Turns the ionizer ON/OFF.		
2	Power supply indicator	PWR	LED (Green/Red)	Green lights up when the power supply is ON. Green flashes if the power supply is abnormal. Red flashes if the CPU is abnormal.		
3	Static neutralisation operation/Incorrect high voltage indicator	ION/HV	LED (Green/Red)	Green lights up when static neutralisation is operated Red lights up if incorrect high voltage is detected Red flashes if the CPU is abnormal.		
4	Error indicator	Error indicator ALM		Red lights up if fan motor failure or automatic cleaning failure is detected. Red flashes if the CPU is abnormal.		
5	Maintenance indicator	NDL	LED (Green/Red)	Green lights up when emitters require cleaning. Green flashes when automatic cleaning is performed. Red fashes if emiter catridge mounting failure a vCPU failure is delacted.		
6	Balance adjustment	ADJUST	Trimmer	Adjusts offset voltage (ion balance).		
7	Air flow adjustment	BLOW SPEED	Rotary switch	Adjusts air flow with fan.		



#### Alarm

Alarm name	Output signal LED		LED (Flashes at 1 Hz)	lonizer operation after alarm generated	Description	Action to reset alarm
Power supply failure	Error signal OFF (B contact)	—	PWR (Green)	Stop	Connected power supply voltage is outside of specification.	Reset automatically.
Incorrect high voltage	Error signal OFF (B contact)	ION/HV (Red)	—	Stop	If an abnormal high voltage discharge occurs.	Input the ionizer stop signal or supply power again.
Fan motor failure	n motor failure Error signal OFF (B contact) ALM (Red)		—	Stop	Incorrect ionizer operation due to foreign matter in fan motor	Input the ionizer stop signal or supply power again.
CPU failure	Error signal OFF (B contact)	_	PWR (Red) ION/HV (Red) ALM (Red) NDL (Red)	Stop	CPU error due to noise etc.	Supply power again.
Excess current on output circuit	Error signal OFF (B contact) Maintenance signal OFF (A contact)	—	—	Continue	If excess current is present on the output circuit and protection circuit is activated.	Reset automatically.
Maintenance warning	Maintenance signal ON (A contact)	NDL (Green)	_	Continue	When static electricity neutralisation performance is reduced due to contamination, wear or damage to emitters.	Input the ionizer stop signal or supply power again.
Emitter cartridge mounting failure	Error signal OFF (B contact)	NDL (Red)	—	Stop	Emitter cartridge is not mounted.	Supply power again.
Automatic cleaning failure	Error signal OFF (B contact)	ALM (Red)	NDL (Red)	Stop	Error during automatic cleaning operation	Supply power again.



## Fan Type Ionizer Series IZF21/31

**Technical Data** 

IZF21/31

#### Wiring

Pin no.	Cable colour	Signal name	Signal direction	Description	
B1	Brown	+24 VDC	IN	Connect the neuron supply to operate the ionizer	
A2 B2	Blue	0 V	IN	Connect the power supply to operate the ionizer.	B1
A3	Green	F.G.	_	Ground terminal with 100 $\Omega$ or less to use it as a reference electric potential for ionizer.	
В3	Yellowish green	lonizer stop signal	IN	Signal input to turn ON/OFF the ventilation with fan and ion generation. NPN type: To stop fan and ion generation, connect to 0 V. (It operates when disconnected) PNP type: To stop fan and ion generation, connect to +24 VDC. (It operates when disconnected)	
A4	Grey	Cleaning signal	IN	When an automatic cleaning unit is fitted, cleaning of the emitters will start.	
B4	Yellow	Maintenance signal	OUT (A contact)	Turns ON when cleaning due to emitter contamination and/or replacement due to wear is required or when automatic cleaning is being performed (when an automatic cleaning unit is fitted). Turns off during output circuit over current error.	
A5	Purple	Error signal	OUT (B contact)	Turns OFF if power supply failure, incorrect high voltage, fan motor failure, CPU failure, excess current on the output circuit, emitter cartridge mounting failure, or automatic cleaning failure (for product with automatic cleaning function) is detected. (ON when there is no problem)	A1 🗪 A5
B5	White	_	_	_	

#### **Wiring Circuit**



## Series IZF21/31

## Operation Chart Operation Chart 1

						Oper	ation			Power sup	oly failu	ıre	Incorrect high voltage	Fan motor fai	ure	CPU failur	re
		Display	Status	Powe	r		lonizer s	stop i	nput	P	ower	м	Power Note 1)	Power	lote 1)	Powe	er
		,			UFF			N	UFF	Error		N				Error	UN
	Power supply switch	POWER	ON OFF								1						
Input	lonizer stop signal	_	ON OFF				ļ]										
	Cleaning signal	_	ON OFF														
put	Error signal	_	ON OFF														
Out	Maintenance signal	_	ON OFF														
	Power supply (Green)	DWD	ON OFF						_		1 Hz						
	Power supply (Red)	PWR	ON OFF														lz
tors	Static neutralisation operation (Green)		ON OFF														
indica	Incorrect high voltage (Red)	ION/HV	ON OFF														lz
LED	Error (Red)	ALM	ON OFF														łz
	Maintenance (Green)		ON OFF														
	Maintenance (Red)	NDL	ON OFF														lz
	lon		ON OFF													1	
	Fan Note 2)		ON OFF														

#### **Operation Chart 2**

				Excess current on output circuit	Maintenance warning	Emitter cartridge mounting failure	Automatic cleaning	g
		Dieplay	Statue	Power	Power Note 1)	Power	Note 5)	Power
		Display	Status	OFF ON Error	Warning Note 3)	ON OFF ON Not mounted		OFF ON
	Power supply switch	POWER	ON OFF					
Input	lonizer stop signal	_	ON OFF					
	Cleaning signal	_	ON OFF				50 ms or more 50 ms or	more
put	Error signal	_	ON OFF	Note 4)				
Out	Maintenance signal	_	ON OFF	Note 4)				
	Power supply (Green)	DWD	ON OFF					
	Power supply (Red)	PWR	ON OFF					
ators	Static neutralisation operation (Green)		ON OFF					
indica	Incorrect high voltage (Red)		ON OFF					
LED	Error (Red)	ALM	ON OFF					
	Maintenance (Green)	NDI	ON OFF				Л_Л_Л HzЛ_Л H	z
	Maintenance (Red)		ON OFF				Л	∏_1 Hz
	lon		ON OFF					
	Fan Note 2)		ON OFF					

Note 1) Incorrect high voltage, fan motor failure, and maintenance warning can also be released by the ionizer stop signal after resolving the error.
Note 2) Fan rotation stops gradually because of its rotational inertia.
Note 3) Ensure the power supply is turned off before clearing errors or cleaning emitters. If an alarm continues to be generated even after cleaning, the emitters may be worn out or damaged. If wear or damage to the emitters is detected, replace the emitter cartridge with a new one.
Note 4) When excess current flows to the error signal or maintenance signal, the signal will be turned OFF to protect the output circuit.
Note 5) The cleaning time is approximately 2 seconds.











143

## Series IZF21/31

#### Dimensions

#### IZF31-P-



Bracket IZF31-P-□B□□



Fan Type Ionizer Series IZF21/31



Г

**SMC** 

**•** 

(155)

Ē

16

## Series IZF21/31

#### Dimensions

## Power supply cable IZS41-CP



#### IZF21-CG2 (without AC cable)



## Series IZF10 Technical Data

## Static Neutralisation Performance

Note) Static neutralisation performance is based on data using charged plate (size: 150 mm x 150 mm, capacitance: 20 pF) as defined in the EN 61340-5-1:2007 standars. Use only as a guideline for model selection because the value varies depending on the material and/or size of objects.

#### ①Installation Distance and Discharge Time (Discharge time from 1000 V to 100 V)



#### **2 Static Neutralisation Range**





**Technical Data** 

## Fan Type Ionizer Series IZF10





#### Accessories (for Individual Parts)



IF.

IZF10

#### Specifications

Model		IZF10-L-LL	IZF10-P-LL				
Air flow	660 l/min	460 l/min	660 l/min	660 l/min			
Ion generation method		Corona dise	charge type				
Method of applying voltage		DC	type				
Applied voltage		±5	kV				
Offset voltage (Ion balance) Note)		Within ±13 V					
Power supply voltage		24 VDC	±10 (%)				
Power consumption	6.1 W or less	3.7 W or less	6.6 W or less	4.8 W or less			
Switch output	NPN open collector outpu Maximum load current: 80 Residual voltage: 1 V or lo Maximum load voltage: 2	it ) mA ess (Load current: 80 mA) 5.4 VDC	PNP open collector outpu Maximum load current: 80 Residual voltage: 1 V or le	t mA ss (Load current: 80 mA)			
Ambient temperature		Operating: 0 to 50 °C, Stored: -10 to 60 °C					
Ambient humidity	Operating, Stored: 35 to 80 % RH (No condensation)						
Material	Case: ABS/Stainless steel, Emitter: Tungsten						
Weight	280 g (With bracket: 360 g)						
Applicable standard/directive	CE (EMC directive: 2004/108/EC)						

Note) Based on EN 61340-5-1:2007 standards

#### AC Adapter (IZF10-CG1/IZF10-CG2)

Input voltage	100 to 240 VAC, 50 / 60 Hz			
Output voltage	24 VDC			
Output current	1 A max			
Ambient temperature	0 to 40 °C, Stored: –20 to 65 °C			
Ambient humidity	Operating, Stored: 10 to 90 % RH (No condensation)			
Applicable standard/directive	CE/cUL			

#### **Functions and Indications**

No.	Name Type		Description			
1	Power supply switch	Switch	Turns the ionizer ON/OFF.			
2	Power supply indicator	LED (Green/Orange)	Turns ON (Green) when the power is supplied. Turns ON (Orange) if a high voltage error or excess current on the output is detected.			
3	Error indicator	LED (Red)	Turns ON if an abnormal discharge continues for 100 ms or more.			
4	Maintenance indicator	LED (Green)	Turns ON when emitters require cleaning.			
5	Balance adjustment	Trimmer	Adjusts offset voltage (ion balance).			
6	Connector	e-con	Connects the power supply, F.G., and output.			



#### Alarm

Alarm name	Note) Output	LED	lon generation during alarm	Fan rotation during alarm	Description	Action to reset alarm
Excess current on output circuit	Turns OFF if error occurs.	POWER (Orange)	Continue	Continue	If excess current is present on the output circuit and protection circuit is activated.	Supply power again.
Incorrect high voltage	Turns OFF if error occurs.	POWER (Orange) ALARM (Red)	Stop	Continue	If an abnormal high voltage discharge continues for 100 ms or more.	Supply power again.
Maintenance warning	—	NDL (Green)	Continue	Continue	When static neutralisation performance is reduced due to contamination, wear or damage to emitters.	—

Note) NPN/PNP open collector output



## Series IZF10

#### Wiring

Number stamped on connector	Signal name	Description	Number stamped
1	+24 VDC	Connect the newer supply to operate the ionizer	on connector
2	0 V	connect the power supply to operate the tonizer.	C C C C C C C C C C C C C C C C C C C
3	F. G.	Ground terminal to use it as a reference electric potential for ionizer.	
4	Error signal	Turns OFF if any of the errors below occur (normally ON). · If an abnormal high voltage discharge continues for 100 ms or more. · If excess current is present on the output circuit.	

#### **Wiring Circuit**

### NPN output lonizer



## PNP output Ionizer



**SMC** 

#### **Operation Chart**

#### Timing Chart

Operation Excess current on output circuit Abnormal high voltage discharge Maintenance wa	irning 🖸					
Display Status Power ON OFF ON Excess OFF ON Abnormal OFF ON OFF current discharge	hnical					
Power supply switch - ON OFF -						
B CON ON   OFF OFF						
Power supply (Green)						
Description     POWER     ON	31					
Incorrect high voltage ALARM ON   OFF OFF	E2					
Maintenance (Green) NDL ON OFF						
Fan ON OFF						

Note) Ensure the power supply is turned off before clearing errors or cleaning emitters. If an alarm continues to be generated even after cleaning, the emitters may be worn out or damaged. If wear or damage to the emitters is detected, replace the emitters.

ta

## Series IZF10

#### **Dimensions**



(without AC cable)





### Series IZF Specific Product Precautions 1

Be sure to read this before handling. Refer to the back cover for Safety Instructions.

#### Selection

## **Marning**

1. This product is intended to be used with general factory automation (FA) equipment.

If considering using the product for other applications (especially those stipulated on Safety Instructions), please consult SMC beforehand.

2. Use this product within the specified voltage and temperature range.

Using outside of the specified voltage can cause a malfunction, damage, electrical shock, or fire.

3. This product is not explosion-protected.

Never use this product in locations where the explosion of dust is likely to occur or flammable or explosive gases are used. This can cause a fire.

## **Caution**

1. Clean specification is not available with this product.

#### Mounting

### **Warning**

1. Reserve an enough space for maintenance and wiring.

Install the product in consideration of the connector connection part and the emitter cartridge mounting part so that there is enough space for emitter maintenance, inspection and wiring. To avoid unreasonable stress applied to the connector mounting parts, bending of the cable should be more than the minimum bending radius. If the cable is bent in an acute angle or load is applied to the cable successively, it may cause a malfunction, broken wire or fire.

#### 2. Mount this product on a plane surface.

Mounting on an uneven surface will apply excess force to the frame or case, which leads to damage or failure. Do not drop the product or subject it to a strong impact. This may cause an injury or accident.

## 3. Avoid using in a place where noise (electromagnetic wave and surge) is generated.

If the product is used in an environment where noise is generated, it may lead to deterioration or damage of the internal elements. Take measures to prevent noise at its source and avoid power and signal lines from coming into close contact.

#### 4. Use a correct tightening torque.

If the screws are tightened in excessive of the specified torque range, it may damage the mounting screws, mounting brackets, etc. If the tightening torque is insufficient, the mounting screws and brackets may become loose.

5. Do not adhere tape or sticker onto the product body.

If the tape or sticker contains conductive adhesive or reflective paint, it is possible that due to the dielectric effect, charge could build up causing an electro-static discharge or electrical leakage.

6. Be sure to cut off the power supply before installing and adjusting the product.

Mounting

### **Caution**

1. Secure enough space on the rear side of the ionizer so that the air suction is performed with a fan.

This product ventilates with a fan motor. If there are obstacles such as wall on the rear side (air suction side) of the ionizer, the ventilation will be obstructed, decreasing the static neutralisation performance. Install the ionizer so that its rear surface is at least 20 mm (for IZF21) or 30 mm (for IZF31) away from the obstacles.

2. Be sure to check the effect of static neutralisation after installation.

The effect of the static neutralisation varies depending on the surrounding installation and operating conditions. Check the effect of the static neutralisation after installation.

3. When installing ionizers which operate in DC mode (one polarity, positive or negative) close together, they should be positioned at least 2 m away from each other.

When an ionizer is used close to the ionizer which operates in DC mode, separate them by at least 2 m. The offset voltage (ion balance) may not be adjusted by the built-in sensor due to the ions discharged from the ionizer which operates in DC mode.

Do not apply an excessive external force to the finger guard on the air suction side.

If an excessive external force is applied to the finger guard (including the filter holder) on the air suction side, it may be broken. Do not apply an external force of 50 N or more to the finger guard.

#### Wiring

### **Warning**

- 1. Before wiring, ensure that the power supply capacity is larger than the specification and that the voltage is within the specification.
- 2. To maintain product performance, the power supply shall be UL listed Class 2 certified by National Electric Code (NEC) or evaluated as a limited power source provided by UL60950.
- 3. To maintain the product performance, ground the product with an earth ground cable with a resistance of 100  $\Omega$  or less according to this catalogue.
- 4. Be sure to turn off the power supply before wiring (including attachment/detachment of the connector).
- 5. When applying the power supply, pay special attention to the wiring and/or surrounding environment until the safety is confirmed.
- 6. Do not connect or remove any connectors including the power supply, while power is being supplied. Otherwise, the ionizer may malfunction.
- 7. If the power line and high-pressure line are routed together, this product may malfunction due to noise. Therefore, use a separate wiring route for this product.
- 8. Be sure to confirm that there are no wiring errors before starting this product. Faulty wiring will lead to product damage or malfunction.



### Series IZF Specific Product Precautions 2

Be sure to read this before handling. Refer to the back cover for Safety Instructions.

#### **Operating Environment/ Storage Environment**

## **M**Warning

- 1. Keep within the specified ambient temperature range.
- The specified ambient temperature range for ionizer is 0 to 50 °C, and for AC adapter is 0 to 40 °C. Avoid sudden temperature changes even within specified ambient temperature range, as it may cause condensation.

#### 2. Do not use this product in an enclosed space.

This product utilses a corona discharge phenomenon. Do not use the product in an enclosed space as ozone and nitrogen oxides exist in such places, even though in marginal quantities.

#### 3. Environments to avoid

Never use or store under the following conditions. These may cause a failure, fire, etc.

- a. Areas where ambient temperature exceeds the operating temperature range.
- b. Areas where ambient humidity exceeds the operating humidity range.
- c. Areas where abrupt temperature changes may cause condensation.
- d. Areas where corrosive gas, flammable gas or other volatile flammable substances are stored.
- e. Areas where the product may be exposed to conductive powder such as iron powder or dust, oil mist, salt, organic solvent, machining chips, particles or cutting oil (including water and any liquids), etc.
- f. Paths of direct air flow, such as air conditioners.
- g. Enclosed or poorly ventilated areas.
- h. Locations that are exposed to direct sunlight or heat radiation.
- Areas where strong electromagnetic noise is generated, such as strong electrical and magnetic fields or supply voltage spikes.
- j. Areas where the product is exposed to static electricity discharge.
- k. Locations where strong high frequency is generated.
- I. Locations that are subject to potential lightning strikes.
- m.In an area where the product may receive direct impact or vibration.
- n. Areas where the product may be subjected to forces or weight that could cause physical deformation.

#### Maintenance

### **Warning**

#### 1. Perform maintenance regularly and clean the emitters.

It is recommended to perform maintenance every week or when the maintenance (NDL) LED turns ON.

Check regularly if the product is operating with undetected failures or not. The maintenance must be performed by an operator who has sufficient knowledge and experience. If the product is used for an extended period of time with dust present on the emitters, the product's ability to neutralise static electricity will be reduced.

If the emitter becomes worn and the product's ability to neutralise static electricity is not restored after cleaning, replace the emitter cartridge.

## 2. Cleaning or replacing the emitters should never be performed while the power is supplied to the product.

Fan rotates due to inertial force even when power supply is stopped. Confirm that the fan does not move before performing cleaning or replacing the emitters.

Never perform cleaning or replacing the emitters when the product is energised. The fan rotation may cause injury. If the emitter is touched while the product is energised, it may

If the emitter is touched while the product is energised, it may cause an electric shock or accident.

#### 3. Do not disassemble or modify the product.

Disassembling or modifying the product may cause accidents such as electric shock, failure or fire. The product will not be guaranteed if it is disassembled and/or modified.

#### 4. Do not operate the product with wet hands.

Never operate the product with wet hands. It may cause electric shock or other accidents.

### -A Danger High Voltage-

This product contains a high-voltage generation circuit. When performing maintenance inspection, be sure to confirm that the power supply to the ionizer is turned off. Never disassemble or modify the ionizer, as this may not only impair the product's functionality but could cause an electric shock or electric leakage.

## **A**Caution

1. Do not drop, hit or apply excessive shock (100 m/s<sup>2</sup> or more) to the product when handling it.

Even if the ionizer body is not damaged, the internal components may be damaged, leading to a malfunction.

#### ▲ 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)\*1), and other safety regulations.

- Caution indicates a hazard with a low level of risk ▲ Caution: н which, if not avoided, could result in minor or moderate injury. Warning indicates a hazard with a medium level of risk A Warning: which, if not avoided, could result in death or serious 1 injury. Danger indicates a hazard with a high level of risk ▲ Danger : which, if not avoided, will result in death or serious injury. A Warning
- 1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.
- Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.
- 2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced

- not service or attempt to remove product 3.Do and machinery/equipment until safety is confirmed.
  - 1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed
  - 2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully
  - 3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
- 4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.
  - 1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
  - 2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalogue.
  - 3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
  - 4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation

#### A Caution

1. The product is provided for use in manufacturing industries. The product herein described is basically provided for peaceful use in manufacturing industries

If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary If anything is unclear, contact your nearest sales branch

- \*1) ISO 4414: Pneumatic fluid power General rules relating to systems. ISO 4413: Hydraulic fluid power - General rules relating to systems. IEC 60204-1: Safety of machinery - Electrical equipment of machines. (Part 1: General requirements) ISO 10218-1: Manipulating industrial robots - Safety.
  - etc.

#### Limited warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements". Read and accept them before using the product.

#### Limited warranty and Disclaimer

- 1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, wichever is first.\*2) Also, the product may have specified durability, running distance or
- replacement parts. Please consult your nearest sales branch. 2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
- 3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products
  - \*2) Vacuum pads are excluded from this 1 year warranty. A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

#### **Compliance Requirements**

- 1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
- 2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed

#### A Caution

SMC products are not intended for use as instruments for legal metrology.

Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country. Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country

#### Safety Instructions Be sure to read "Handling Precautions for SMC Products" (M-E03-3) before using

#### SMC Corporation (Europe)

Austria	☎ +43 (0)2262622800	www.smc.at	office@smc.at	Lithuania	☎+370 5 2308118	www.smclt.lt	info@smclt.lt
Belgium	<b>*</b> +32 (0)33551464	www.smcpneumatics.be	into@smcpneumatics.be	Netherlands	<b>*</b> +31 (0)205318888	www.smcpneumatics.nl	info@smcpneumatics.nl
Bulgaria	🕿 +359 (0)2807670	www.smc.bg	office@smc.bg	Norway	🕿 +47 67129020	www.smc-norge.no	post@smc-norge.no
Croatia	<b>2</b> +385 (0)13707288	www.smc.hr	office@smc.hr	Poland	🕿 +48 222119600	www.smc.pl	office@smc.pl
Czech Republic	🕿 +420 541424611	www.smc.cz	office@smc.cz	Portugal	🕿 +351 226166570	www.smc.eu	postpt@smc.smces.es
Denmark	🕿 +45 70252900	www.smcdk.com	smc@smcdk.com	Romania	🕿 +40 213205111	www.smcromania.ro	smcromania@smcromania.ro
Estonia	<b>2</b> +372 6510370	www.smcpneumatics.ee	smc@smcpneumatics.ee	Russia	🕿 +7 8127185445	www.smc-pneumatik.ru	info@smc-pneumatik.ru
Finland	🕿 +358 207513513	www.smc.fi	smcfi@smc.fi	Slovakia	🕿 +421 (0)413213212	www.smc.sk	office@smc.sk
France	<b>2</b> +33 (0)164761000	www.smc-france.fr	promotion@smc-france.fr	Slovenia	<b>2 +386 (0)73885412</b>	www.smc.si	office@smc.si
Germany	🕿 +49 (0)61034020	www.smc.de	info@smc.de	Spain	🕿 +34 902184100	www.smc.eu	post@smc.smces.es
Greece	🕿 +30 210 2717265	www.smchellas.gr	sales@smchellas.gr	Sweden	🕿 +46 (0)86031200	www.smc.nu	post@smc.nu
Hungary	🕿 +36 23511390	www.smc.hu	office@smc.hu	Switzerland	🕿 +41 (0)523963131	www.smc.ch	info@smc.ch
Ireland	<b>2</b> +353 (0)14039000	www.smcpneumatics.ie	sales@smcpneumatics.ie	Turkey	🕿 +90 212 489 0 440	www.smcpnomatik.com.tr	info@smcpnomatik.com.tr
Italy	🕿 +39 0292711	www.smcitalia.it	mailbox@smcitalia.it	UK	🕿 +44 (0)845 121 5122	www.smcpneumatics.co.uk	sales@smcpneumatics.co.uk
Latvia	371 67817700	www.emely.ly	info@emely_ly				

SMC CORPORATION Akihabara UDX 15F, 4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN Phone: 03-5207-8249 FAX: 03-5298-5362 1st printing TT printing TT 00 Printed in Spain Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.