



Point of Use Ionizing Blower

Model 6422e/6422e-AC

User's Manual

About ION Systems

ION Systems develops, manufactures, and markets system solutions to manage electrostatic charge. As the world's largest provider of electrostatics management products and services, ION Systems improves its customers' business results by providing a total solution to their electrostatic discharge and electromagnetic interference challenges. ION Systems is a wholly-owned subsidiary of Illinois Toolworks, and is located in Alameda, California. For more information about ION Systems visit www.ion.com or call 800-367-2452. ION Systems is ISO 9001 and ANSI ESD S20.20 certified.

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Contents

1 Description	1
1.1 Point of Use Ionizing Blower	2
1.2 About IsoStat Technology	3
1.3 Performance	4
1.4 Power Requirements	5
2 Setup & Operation	7
2.1 Box Contents	8
2.2 Blower Placement	9
2.3 Power Connections	12
2.4 FMS Connection	15
2.5 Turning on the Blower	17
2.6 Alarms	18
3 Maintenance	19
	20
3.2 Cleaning the Chassis	21
3.3 Cleaning the Emitter Points	22
3.4 Auto-Clean System	23
4 Specifications	25
5 Warranty & Service	27

1

Description

- 1.1 Point of Use Ionizing Blower
- 1.2 About IsoStat Technology
- 1.3 Performance
- 1.4 Power Requirements

1.1 Point of Use Ionizing Blower

The Point of Use Ionizing Blower Model 6422e is a compact ionizing Blower that controls static discharge in areas where static build-up can cause contamination, ESD, material-handling problems, or microprocessor lock-up. The internal emitter points are electrostatically shielded to eliminate field-induced charging. Steady-state DC ion emission provides fast discharge with low airflow, allowing less disturbance of delicate product.

The Model 6422e has a red alarm indicator LED on the front of the chassis. The eight-pin terminal strip on the back of the unit provides a 4-20 mA current loop and relay output connection to your facility monitoring system (FMS) in addition to the 24 VDC input connection, see **Figure 2. Back of Model 6422e**



Figure 1. Front of the Model 6422e



Figure 2. Back of Model 6422e

1.2 About IsoStat Technology

The 6422e Blower's internal emitter points are electrostatically shielded to eliminate field-induced charging. Steady-state DC ion emission provides fast discharge with low airflow for less disturbance of delicate product.

Ionizers incorporating IsoStat technology never need calibration and require very little maintenance. IsoStat is based on a law of physics, Conservation of Charge, which states that charge cannot be created or destroyed in an isolated system. By isolating the ionizer's emitter points from ground, IsoStat ensures equal numbers of positive and negative ions.

1.3 Performance

The 6422e Blower will reduce a static charge of $\pm 1,000V$ down to $100V$ in approximately four seconds at a distance of 1 ft. (30.48 cm). See Table 1 for typical discharge times as determined by distance. Distance is measured from the front center of the Blower. Ionization balance is better than $\pm 20V$ at 1 ft. (30.48 cm).

Distance	Discharge Time
1 ft (30.48 cm)	4 seconds*
2 ft (61 cm)	10 seconds
3 ft (91.44 cm)	19 seconds

Table 1. Performance

* Testing was performed with a charge plate monitor in accordance with ionization standard ANSI/ESD STM3.1-2000 of the ESD Association.

Four-second discharge at one foot distance is when operating Blower with AC power. Discharge time at one foot when operating Blower with DC power is five seconds.

1.4 Power Requirements

The maximum power requirement for the Model 6422e is 6W. Three different power supplies are available as options for the Blower, providing 24 VDC or 24 VAC. The fourth power source is 24 VDC from your process equipment using the terminal block and eight pin connector on the rear of the Blower.

ION Systems offers three power supplies for use with this product:

- Transformer (p/n 14-1320) for use with 120 VAC/60 Hz systems
- Transformer (p/n 14-1330) for use with 230 VAC/50 Hz systems
- Both 14-1320 and 14-1330 transformers provide the Blower with appropriate 24 VAC
- AC/DC universal power supply (p/n 14-1322) for use with 120/240 VAC 50/60 Hz provides the Blower with 24 VDC power.

Caution: The use of improper input voltage may result in poor performance or damage to the unit.

Damage caused to the power supply from operation in an environment that exceeds the specified limits will void the warranty.

Achtung: Die Verwendung unzulässiger Eingangsspannung kann zu schlechter Leistung und Beschädigung des Gerätes führen. Schäden an der Stromversorgung, verursacht durch Betrieb unter Bedingungen außerhalb der spezifizierten Grenzwerte, fallen nicht unter die Garantiebestimmungen.

2

Setup & Operation

- 2.1 Box Contents
- 2.2 Blower Placement
- 2.3 Power Connections
- 2.4 FMS Connection
- 2.5 Turning on the Blower
- 2.6 Alarms

Box Contents

- 120 VAC transformer (#14-1320)
- 230 VAC transformer (#14-1330)
- AC/DC universal power supply (#14-1322)

If you ordered an AC/DC universal power supply (#14-1322), you will have one of the following plug adapters:

- US wall outlet adapter (p/n 18-0285)
- UK wall outlet adapter (p/n 18-0286)
- Europe wall outlet adapter (p/n 18-0287)
- Australia/China wall outlet adapter (p/n 18-0288)

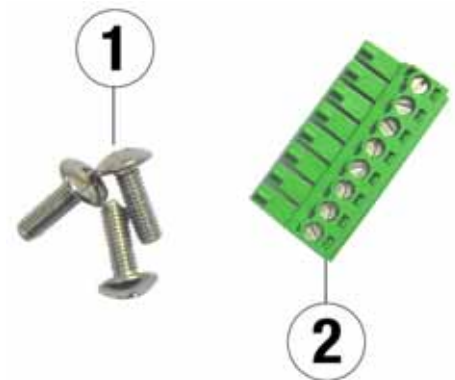


Figure 3. Mounting Screws and 8-pin Terminal Block

Do not use this Blower in an explosive environment. Poorly maintained ionizers could produce electric arcs at the emitter points and lead to detonation in an explosive environment.

Verwenden Sie dieses Gebläse nicht in explosionsgefährdeten Bereichen. Schlecht gewartete Ionisatoren können an den Emitter-Punkten Lichtbögen erzeugen und in explosiver Umgebung eine Explosion auslösen.

Table 1 Performance

Keep grounded objects away from the ionized airstream to avoid the possibility of increased offset voltages.



Figure 4. Model 6422e with U-bracket



Figure 5. U-bracket Holes for Mounting



Figure 6. U-bracket Side T-knob for Tilt Adjustment

Do not use screws longer than 12mm to attach brackets to the threaded inserts in the sides of the Blower.

Verwenden Sie zum Anschrauben von Halterungen an den seitlich am Gebläse (Blower) befindlichen Gewindeeinsätzen keine Schrauben, die länger als 12mm sind.

Power Supply Connection

1.4 Power Requirements

AC/DC Adapter Connection

knob for Tilt Adjustment Figure 6. U-bracket Side T-



Figure 7. Push the Adapter into the AC/DC Power Supply

Connection to Process Equipment Power

22 AWG and 16 AWG.

When wiring the Blower directly to a 24 VDC source, observe the maximum voltage and power requirements for the unit (24 VDC [$\pm 10\%$], 400 mA DC maximum) and polarity.

Use a small flatblade screwdriver to secure cables stripped 1/4 in. (6.3 mm) into the terminal block. See **Figure 8. Flatblade Screwdriver Securing Connecting Cables**

Pins	State
	24 VDC return
7	+24V
6-1	Not used on Model 6422

Table 2. Model 6422e DC Power on Pins 7,8

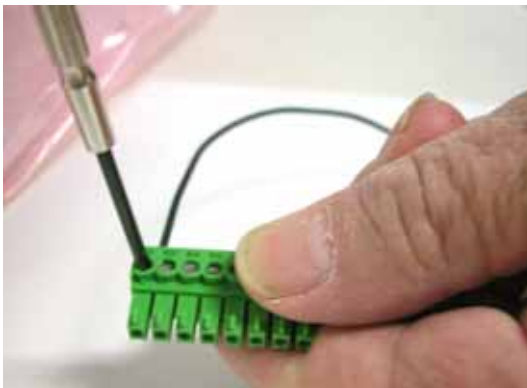


Figure 8. Flatblade Screwdriver Securing Connecting Cables

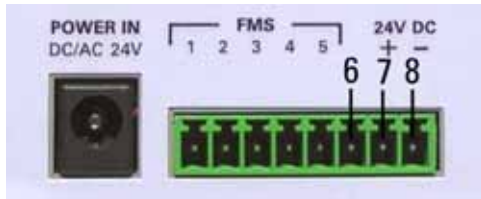


Figure 9. Terminal Block

Damage to the product as a result of improper wiring connections or failure to heed maximum voltage limits will not be covered by the warranty.

Schäden am Produkt infolge unsachgemäßer Verdrahtung oder wegen unterlassener Beachtung von maximal zulässigen Spannungen werden nicht durch die Garantie abgedeckt.

FMS Connection



Pin Function(s)	Pin	Description
24 VDC process equipment power	8	24 VDC return (Ground)
	7	+24V
	6	Do not use
4-20 mA current loop	5	- Current loop (Ground)
	4	+ Current loop
Relay connections	3	Open for active alarm
	2	Relay common
	1	Closed for active alarm

	Normal State	Alarm State	No Power
4-5 (Current Loop)	4 mA (OK)	20 mA (Alarm)	0 mA (brownout)

Table 4. FMS Output States

2.5 Turning on the Blower

2.6 Alarms

Caution:

Achtung:

Blower. Nicht autorisierter Service führt zum Erlöschen der Garantie und kann zu zusätzlichen Reparaturkosten führen.

3

Maintenance

3.3 Cleaning the Emitter Points

3.4 Auto-Clean System

Recommended Cleaning Materials:

- Cleanroom-compatible cleaning cloths (polyester cloth is recommended).
- Cleanroom-compatible swabs.
- Cleaning solution of 50% IPA (electronic-grade isopropanol)/ 50% de-ionized water.

Moisten a cloth with the IPA solution. Wipe off any dirt that may have accumulated on the unit.

Cleaning the Emitter Points

Ziehen Sie vor der Durchführung von Wartungsarbeiten an Emitter-Punkten den Netzstecker aus dem Ionisator. Lassen Sie die Hochspannungs-Stromversorgung eine Minute entladen.

contact ION Systems Technical Support (techsupport@ion.com) for information.

Auto-Clean System

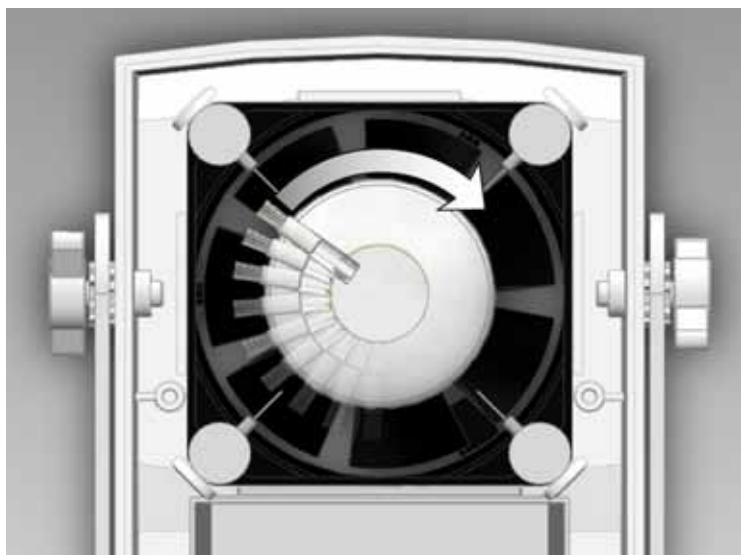


Figure 11. Auto-Clean System

The automatic Emitter Point Cleaner can not be temporarily or permanently removed or de-activated; it is an integral part of the blower.

4

Specifications

Model 6422 Blower

Power Input 24 VDC ($\pm 10\%$), 6W max or 24 VAC ($\pm 10\%$), 50/60 Hz, 6W max

Output Voltage

Ion Emission

Emitter Points Tungsten wire; internally shielded

Discharge 1000-100V, <4 sec @ 1 foot with either 24 VAC or 24 VDC

Airflow

Ozone

Indicators Green power on LED; red alarm LED

Connectors

Operating Temp 10-35°C (50-95°F)

Humidity

Mounting

Dimensions

Weight

Certifications



14-1320 Transformer

Input Voltage

Output Characteristics

Temperature

Operating Humidity

Short Circuit Protection

Dimensions

Weight

Certifications



14-1330 Transformer

Input Voltage

Output Characteristics

Temperature

Operating Humidity

Short Circuit Protection

Dimensions

Weight

Certifications



14-1322 AC/DC Adapter

Input Voltage

Output Characteristics

Temperature

Operating Humidity

Short Circuit pProtection

Dimensions

Weight

Certifications



5

Warranty & Service

Notes

Notes

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