



Ioncell

Standard and In-Line Ionizer

INSTALLATION AND OPERATING INSTRUCTIONS

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1. SAFETY WARNINGS

PLEASE READ INSTRUCTIONS COMPLETELY BEFORE STARTING INSTALLATION

ALL INSTALLATION AND TROUBLESHOOTING OPERATIONS MUST BE PERFORMED BY QUALIFIED TECHNICAL PERSONNEL

This instruction manual uses symbols to identify dangerous situations as follows:



NOTE – Statements identified with NOTE indicate precautions necessary to avoid potential equipment failure.



CAUTION – Statements identified with CAUTION indicate potential safety hazards.

ATTENTION – Les déclarations identifiées avec ATTENTION indiquent des dangers potentiels pour la sécurité.



WARNING – Statements identified with WARNING indicate potential serious injury hazards.

AVERTISSEMENT – Les déclarations identifiées avec AVERTISSEMENT indiquent un risque de blessures graves.



NOTE – This equipment must be correctly installed and properly maintained. Adhere to the following notes for safe installation and operation:



WARNING – Fire Hazard

Keep the unit dry. Do not operate the unit in flammable or explosive environments.

AVERTISSEMENT – Risque d'incendie

Gardez l'appareil au sec. Ne pas utiliser l'appareil dans des environnements inflammables ou explosifs.



CAUTION – Electrical Shock Hazard

Turn off power supply before cleaning bar or performing any maintenance on the system. Electrical installation and repairs must be performed by a skilled electrical engineer according to the applicable national and local regulations. The equipment must be properly grounded. Grounding is required to ensure safe and proper operation and to prevent electrical shocks upon contact.

ATTENTION – Risque de choc électrique

Coupez l'alimentation électrique avant de nettoyer la barre ou d'effectuer un entretien sur le système. L'installation électrique et les réparations doivent être effectuées par un ingénieur électricien qualifié conformément aux réglementations nationales et locales en vigueur. L'équipement doit être correctement mis à la terre. La mise à la terre est nécessaire pour assurer un fonctionnement sûr et approprié et pour éviter les chocs électriques lors du contact.



CAUTION – Sharp Points

Risk of injury. Keep hands/fingers away.

ATTENTION – Points pointus

Risqué de blessure. Gardez les mains / doigts éloignés.

1. Read Instruction Manual completely before proceeding with installation or operation. Failure to follow instructions may result in damage to Ioncell ionizer or power supply.
2. The Ioncell ionizer, when operated with optional power supply, is to be connected to main electric source with included 3-wire line cord and grounded plug set. Do not remove electrical ground pin of the plug set.
3. A factory-qualified service technician must perform any required ionizer service or warranty repairs. Please contact Simco-Ion Customer Service at 215-822-6401 for information.

2. DESCRIPTION

The Simco-Ion Ioncell is a compact, steady state, bi-polar DC air ionizer designed for easy installation, and minimal maintenance. It provides powerful ionization through output tubes up to four feet in length. The single output tube also has the ability to be split, allowing the Ioncell to service multiple locations from a single ionization source. Options for Ioncell include:

- **Standard:** A fan for increased operating range
- **In-Line:**
 - A ring or air knife output applicator for custom applications
 - An airflow switch that automatically cuts off power when no airflow is present, so potential excess ozone production is eliminated

The ionizer can be powered by a universal input, low voltage power supply, or through a 24 VDC power bus in the host main circuit. Multiple Ioncells can be linked together from a single power supply, allowing up to 6 units to be daisy-chained.

Operation of the Ioncell is automatically regulated by built-in proprietary circuitry. A green light on the face of the ionizer indicates active condition. A red light will indicate if a fault condition has occurred. Mounting holes for the ionizer are provided within the integral base of the unit.

The in-line Ioncell is equipped for use with pressurized CDA only (clean dry air). Ioncell emitter points are general purpose Tungsten.

3. SPECIFICATIONS

Input Voltage	Power Supply: Universal, 100-240 VAC, 50/60 Hz (24 VDC, 1.6A output) Ioncell: 24 VDC, 0.1A (0.17A with optional fan)			
Output Voltage	±4500 VDC, 5µA, Steady State			
Offset Voltage	±50V			
Enclosure	White Polycarbonate (UL 94V-0 flammability rating)			
Alarm Output	TTL level alarm output			
Indicators	Green, POWER ON; Red, FAULT			
Mounting	Integral mounting flanges accept four (4) #4 or #6 [M3 or M4] screws (not supplied)			
Emitter Pins	Four (4), Tungsten			
Operating Temp	32-122°F [0-50°C]; non-condensing			
Dimensions	Standard: 1.25"H x 1.3"W x 4.5"L [32 x 33 x 115 mm] In-Line: 2.5"H x 1.3"W x 4.5"L [64 x 33 x 115 mm]			
Weight	5.2 oz [145g]			
Gas Input	In-Line: 45 psi [3.1 bar] max; clean dry air only			
Gas Flow	In-Line: 0.8 scfm @ 5 psi to 3.2 scfm @ 45 psi [23 l/m @ 0.34 bar to 92 l/m @ 3.1 bar]			
Airflow	5 cfm [0.14 m ³ /min] with optional fan			
Discharge Time	Standard Ioncell: <15 seconds @ 6" [150 mm] to CPM plate 1000-100V Ioncell with optional fan: <10 seconds @ 12" [300 mm] to CPM plate			
	In-Line Ioncell with output tube: 1" [25 mm] to CPM plate, 1000-100V			
	Tube Length	30 psi [2.0 bar]	15 psi [1.0 bar]	5 psi [0.34 bar]
	6" [150 mm]	0.5 sec	0.8 sec	1.4 sec
	12" [300 mm]	0.8 sec	1.4 sec	2.2 sec
	18" [460 mm]	1.0 sec	2.1 sec	3.5 sec
	24" [610 mm]	1.8 sec	3.2 sec	5.2 sec
	36" [910 mm]	6.0 sec	6.8 sec	10 sec
48" [1220 mm]	9.5 sec	13 sec	22 sec	

4. INSTALLATION



CAUTION – Sharp Points

Risk of injury. Keep hands/fingers away.

ATTENTION – Points pointus

Risqué de blessure. Gardez les mains / doigts éloignés.



NOTE – Inspect shipping container and contents for visible damage. Report any damage directly to the carrier before attempting installation of unit.

The Ioncell ionizer is designed for fixed position mounting onto a secure equipment frame or partition surface. The flanged base of the ionizer may be used as a template, or see Figure 2 for complete dimensional information.

Prepare mounting surface with necessary mounting holes. Secure with #4 or #6 [M3 or M4] screw hardware as required. Mounting hardware is not supplied with unit.

Important mounting location requirement: The center of ionizer's emitter pin grid must have a minimum 3" spherical radius clearance to any adjacent equipment frame or wall surface. A clear line of sight is recommended to the area requiring static neutralization for best ionizer performance.



CAUTION – This product is intended to be supplied by a Listed AC Adapter or Power Unit marked “Class 2” or “LPS” and rated output 24 VDC, 1.7A.

ATTENTION – Ce produit est destiné à être alimenté par un adaptateur de courant alternatif ou transformateur listé “classe 2” ou “LPS” et avec une puissance nominale 24 VDC, 1.7A.

Optional fan assembly mounting and connections: Engage open end of fan assembly directly around emitter pin grid area of the ionizer, until it snaps into place. Secure fan assembly by placing fan locking bracket over base of fan assembly and tightening set screws (do not over tighten). Insert power lead connector of fan assembly into socket located in the top of ionizer enclosure. The black wire, pin 1 in the connector must be positioned towards the outside of ionizer enclosure. See Figure 2 for complete connection diagram.

After the ionizer mounting has been completed, connect power cable between ionizer and power supply. Secure power supply as necessary. Connect line cord from power supply to the main electric source. The green light on ionizer will indicate normal operation.

In-line Ioncell connections: An in-line manifold is mounted within the emitter pin grid area of ionizer. The in-line manifold allows for multi-tube configurations for locations which have been previously inaccessible for other ionizers. The input and output connectors both take 1/4" OD tubing. Insert tubing into connector and run tube to desired location, or, use a 2-way splitter to direct ionization to two different locations. For optimal performance, use shortest tube lengths possible. Excessive tube lengths will increase discharge times.



NOTE – Tubing must have the same inside diameter on both sides of the in-line manifold.

A +5 VDC (TTL level) alarm output is provided for remote monitoring of the ionizer operating condition. ALARM+ goes high (+5 VDC) on alarm. See Figure 2 for complete connection diagram.

Optional Airflow Switch for In-line Ioncells: The airflow switch replaces the power cable between the ionizer and power supply. It includes two 1/4" tubing connectors, labeled "AIR INPUT" for the compressed air supply and "AIR OUTPUT" to be connected to the ionizer. The In-line Ioncell will switch power to the ionizer off when compressed air is not being fed to the assembly.

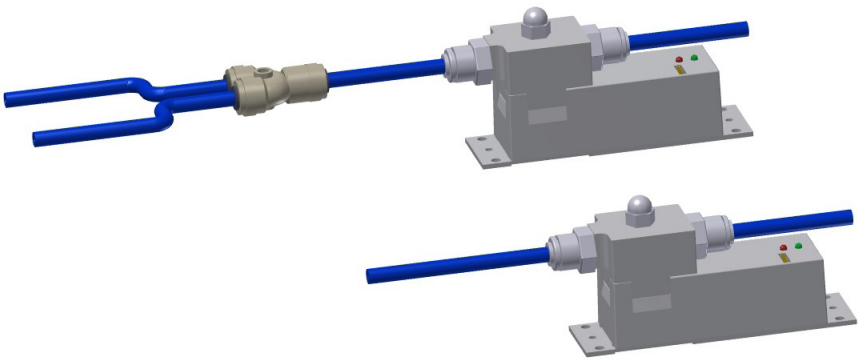


Figure 1. Output Tube Configurations (single and split)

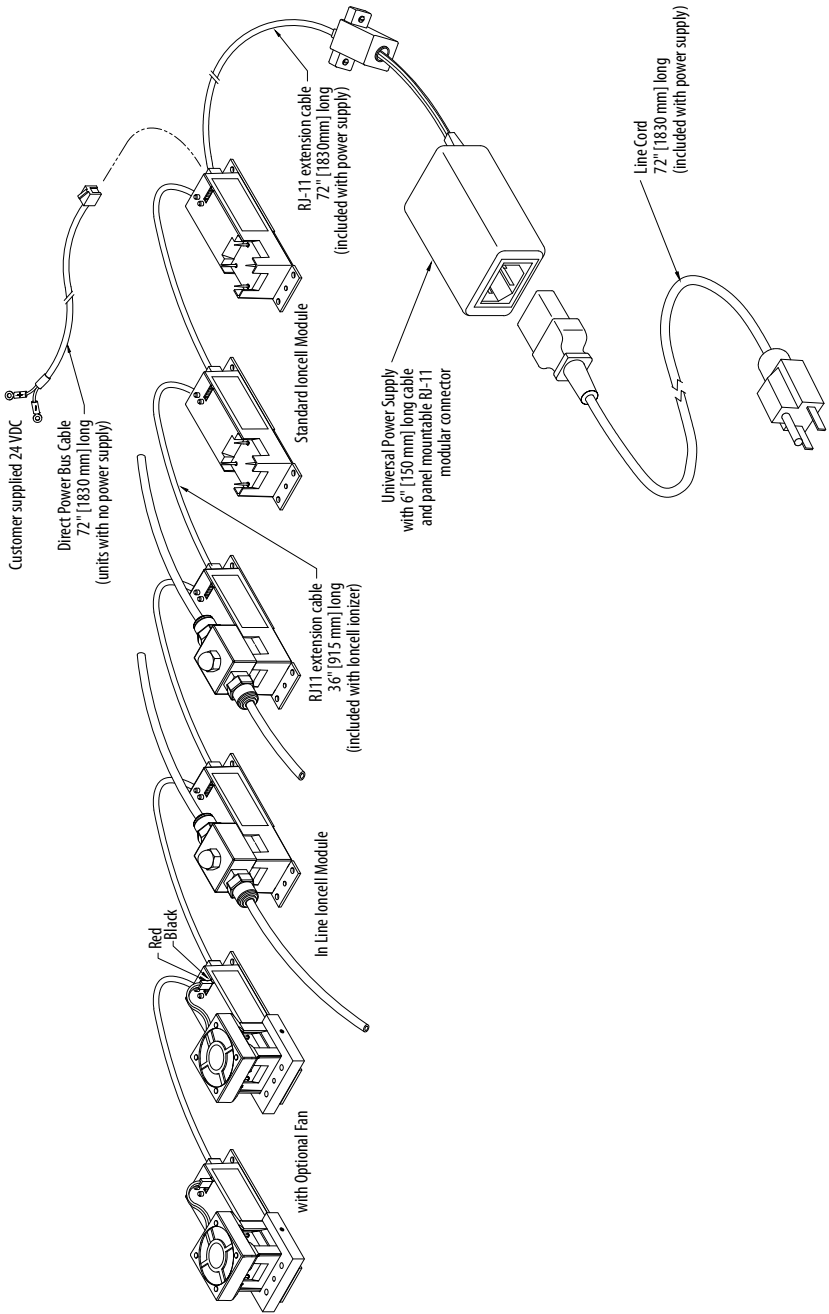


Figure 2. Up to 6 (six) loncells can be attached to one power supply

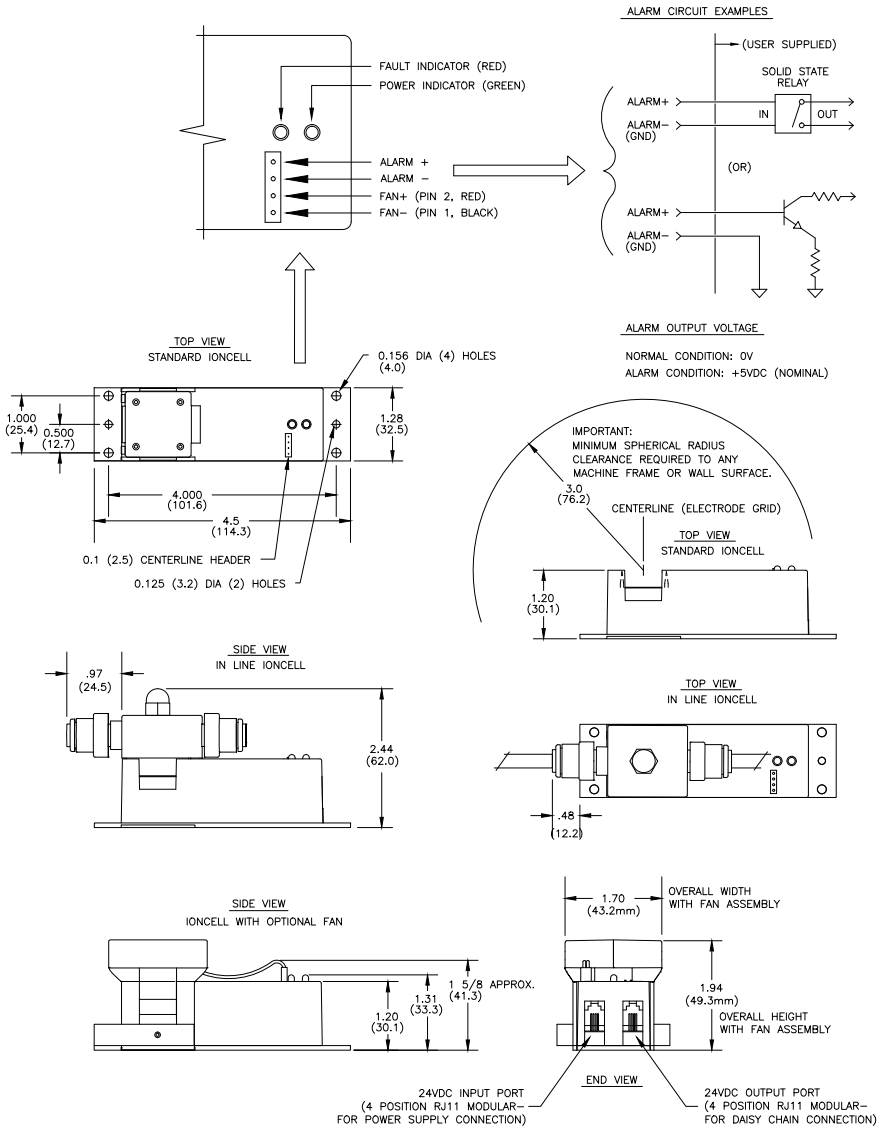


Figure 3. Dimensional Drawing

5. MAINTENANCE

The Ioncell ionizer is designed for calibration free operation with a minimum of maintenance and cleaning. There are no user serviceable parts within the ionizer. No attempt should be made to disassemble or repair defective products. Please contact Simco-Ion customer service for information concerning repair or replacement.



NOTE – All corona type ionizers form deposits on the emitter electrodes during normal service. Typical deposits appear as a white coating upon the pointed tip region of the electrode. Periodic cleaning of the pointed tips will maintain the performance and extend the life of the ionizer. Maintenance frequency will depend on the relative humidity and cleanliness of the location where the ionizer is operated.

Occasional cleaning of the ionizer housing may be accomplished with a clean cloth moistened with common glass cleaning solution.

The recommended emitter cleaning procedure is as follows:

1. Turn the ionizer off by disconnecting it from the electrical power source.
2. Simco-Ion recommends using the ITW-TEXWIPE model TX726, Crush Tube product for cleaning the emitter electrodes. (Follow ITW-TEXWIPE product instructions) A substitute method consists of a cleanroom swab saturated in a cleaning solution of isopropyl alcohol and de-ionized water.
3. Prepare the Crush Tube or swab for use. Insert it directly onto the point of the electrode (CAUTION: SHARP PINS, AVOID CONTACT), rotate slowly, and withdraw. Repeat this process until all visible deposited material has been removed.
4. Allow cleaning solution to dry completely before returning the ionizer to service.

6. PARTS AND ACCESSORIES

Parts		Part Number
Standard Ioncell Ionizer Kit with Power Supply, includes items 1, 3 below		4017139
Standard Ioncell Ionizer Kit (no Power Supply), includes items 2, 3 below		4017140
In-line Ioncell Ionizer Kit with Power Supply, includes items 1, 3, 5 below		4015281
In-line Ioncell Ionizer Kit (no Power Supply), includes items 2, 3, 5 below		4015477
Accessories		Part Number
Fan Assembly Kit (for Standard Ioncell)		5051983
6" Air Knife Applicator (for In-line Ioncell)		5051678
12" Air Knife Applicator (for In-line Ioncell)		5051679
6" Air Ring Applicator (for In-line Ioncell)		5051680
10" Air Ring Applicator (for In-line Ioncell)		5051681
Airflow Switch (for In-line Ioncell)		5051685
Item	Replacement Parts	Part Number
1	Universal Power Supply with 72" [1830 mm] Line Cord	5051677
2	Direct Power Cable, 72" [1830 mm] for user supplied 24VDC	5051688
3	Ioncell Interconnect Cable, 36" [915 mm]	4520764
4	Ioncell Interconnect Cable, 72" [1830 mm]	4520767
5	Tubing and Splitter Kit, for In-line Ioncell	5051683
6	Tungsten Electrode Replacement Kit	5051288

9. WARRANTY AND SERVICE

This product has been carefully tested at the factory and is warranted to be free from any defects in materials or workmanship. Simco-Ion will, under this warranty, repair or replace any equipment which proves, upon our examination, to have become defective within one year from the date of purchase.

The equipment being returned under warranty should be shipped by the purchaser to Simco-Ion, 2257 North Penn Road, Hatfield, PA 19440, transportation prepaid and insured for its replacement cost. Prior to returning any goods for any reason, contact Simco-Ion Customer Service at 215-822-6401 for a Return Authorization Number (RMA). This number must accompany all returned items.

This warranty does not apply when the equipment has been tampered with, misused, improperly installed, altered, has received damage through abuse, carelessness, accident, connection to improper line voltage, or has been serviced by anyone other than an authorized factory representative.

The warranty does not apply when Simco-Ion parts and equipment have been energized by other than the appropriate Simco-Ion power supply or generator, or when a Simco-Ion power supply or generator has been used to energize other than Simco-Ion parts and equipment. Simco-Ion makes no warranty, expressed or implied, nor accepts any obligation, liabilities, or responsibility in connection with the use of this product other than the repair or replacement of parts stated herein.

Information in this publication supersedes that in all previous published material. Specifications are subject to change without notice.

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