QuadBar™ with Air Assist

MODEL 4635

Simco-Ion's QuadBar™ Ionizer with Air Assist Model 4635 provides effective static charge control in a small format. The unique Quadropole emitter point configuration enables the ionizer to be as close as 3 inches (7.6 cm) to the product. The Model 4635's compact size is designed to fit easily into the tight confines of any process equipment. With its own independent air delivery system, the Model 4635 provides ionization where airflow is limited or unavailable.

The Model 4635 offers two air assist cartridge design options. Each utilizes a cross-channel air cartridge built around the emitter points that provides optimal air distribution with minimal field voltage. The Standard cartridge has sheathed emitter points, delivering the airflow around each emitter point and providing a protective sheath that extends cleaning periods. The Jet cartridge is designed to move high velocity ionized air through a center orifice to provide extremely fast discharge times. The Model 4635 ionizer can be powered with either 24 VDC directly to tool power, or 24 VAC using a transformer or the Model 4030 controller.

Features

- Air assist cartridge design with cross-channel air delivery; two cartridge design options

- Rotatable cartridge design

- Quadropole configuration with IsoStat technology

- Compact size

- Single Crystal Silicon emitter points

- Alarm output to FMS or process tool controller

Benefits

- Choice of a Standard cartridge with sheathed emitter point for extended cleaning periods or a high velocity Jet cartridge for extremely fast discharge times

- Allows positioning of air inlet line on either side or the end for installation flexibility

- Provides stable balance at distances as close as 3 in. (7.6 cm) from the product

- Small format fits into the tight confines of process equipment

- Semi standard for emitter point material provides ISO 14644-1 Class 1 or Class 2 cleanliness depending on input power

- Ensures immediate notification of catastrophic system failure"

Specifications

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Ion Emission	Steady-state DC
Emitter Points	Single Crystal Silicon standard, 2-3 year est. life (depending on process environment)
Cleanliness	ISO Class 1 when powered with 24 VDC; ISO Class 2 when powered with 24 VAC with transformer or Model 4030 Controller
Coverage Area	12 x 12 in. (30.5 x 30.5 cm) at a distance of 12 in. (measurements were taken with an airflow rate of 100 fpm using a charged plate monitor in accordance with EOS-ESD standard STM3.1 2000)
Air Supply	Clean dry air (CDA) or nitrogen
Airflow	0-25 lpm at a setting of 0-7 psi
Air Connection	0.15 in. (4 mm) OD tubing with 2 micron filter or better
Input Power	24 VAC ±5% @ 0.10A, 50/60 Hz, 2.4W; 24 VDC ±5% @ 0.025A, 0.6W (typ)
Indicators	Green LED indicates power; red LED indicates alarm
Ion Balance	±50V @ 6 and 12 in. (15.2 and 30.5 cm) directly under the emitter points
Discharge	Standard Cartridge <15 sec @ 12 in. (30.5 cm) directly under emitter points with 15 lpm (min) purging gas airflow; Jet Cartridge <6 sec @ 12 in. (30.5 cm) directly under emitter points with 15 lpm (min) purging gas airflow
Status Output	FMS Model 5090 interface with transformer or direct wire; Controller Model 4030 signal OK or system failure
Materials	ABS enclosure; polycarbonate air assist cartridges; mylar and stainless steel labels
Mounting	Can be mounted to any process tool or flowhood using 4 #6 screws
Daisy-chain	Up to 4 units when used with 14-1535 transformer; up to 16 units via Controller Model 4030
Operating Environment	Temperature 15-50°C (59-122°F) recommended; humidity 20-65% RH
Maintenance	Emitter point cleaning at monthly to quarterly intervals depending on environment; no adjustment or calibration required
Options	FMS Model 5090; Controller Model 4030, Transformer Model 14-1535
Dimensions	1.3H x 1.3W x 3.6L in. (3.3 x 3.3 x 9.1 cm) air connection elbow on the side, width is 1.92 in. (4.88 cm); air connection elbow on the end, width is x.xx in. (x.xx cm)
Weight	3.8 oz (108g)
Warranty	Two-year limited warranty
Certifications	CE cULus RoHS Compliant

Ordering Information

91-4635EU-X-Y	QuadBar, standard or jet insert, choice of air inlet location, cable included
-S	QuadBar, standard insert with sheathed emitter points
-J	QuadBar, jet insert with center orifice
-1	Air Inlet on Left Side
-2	Air Inlet on Center Front
-3	Air Inlet on Right Side
91-4030R	QuadBar Controller (powers up to 16 QuadBar); power cord req'd
25-20660	IEC Power Cable (US Plug), 7.6 ft (2.34m)
14-1535	Universal Transformer (powers up to 4 QuadBars); power cord incl
14-21108	DC Power Supply, 100-240 VAC input to 24 VDC output; power cord req'd
33-1720-6	AC Interconnect/Power Cable, 26 AWG, 6 ft
33-1721-6	DC Power Cable (QuadBar & #14-21106), 6 ft; no alarm output
33-1723-6	DC Power Cable (QuadBar & 24 VDC tool power), 6 ft, 1 connector/1 pigtail

Insert Cartridge & Air Line Location Options

1. Standard cross-channel cartridge with airflow sheath around the emitter points extends cleaning periods.

2. Jet cross-channel cartridge with center orifice produces high velocity for fast discharge times.

3. Air Line location choices #1, #2, or #3 as shown below.
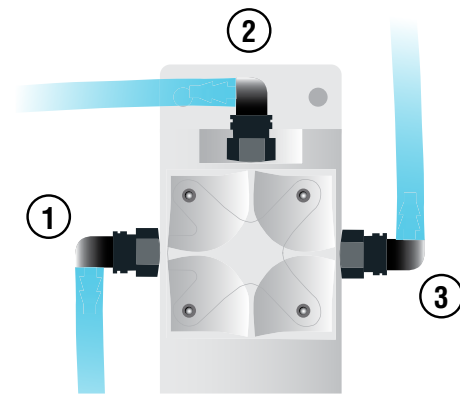
IsoStat Technology

Simco-Ion's IsoStat technology guarantees intrinsically balanced ionization and eliminates complicated feedback circuits. Ionizers incorporating this 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 to better protect sensitive product.

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