SIMCO ION™
An ITW Company

Ionization Solutions

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Extreme Temperature Ionization System

MODEL 4612 PRECISION IONIZER
MODEL 4062E CONTROLLER
MODEL 550 SENSOR

Simco-Ion, Technology Group's Extreme Temperature Ionization System provides <±10V balance in extreme environments from -58°F to 302°F (-50°C to +150°C). The 4612 Ionizer, along with its 4062e Controller and 550 Extreme Temperature Sensor, use closed-loop control to ensure the ionizer's output is balanced at the critical location—the product location itself.

The compact size of the 4612 Precision Ionizer, 4062e Controller and 550 Sensor are the perfect answer to maintain tightly-controlled ionization in small test chambers with active robotics moving parts under extreme environments. The 4612 Precision Ionizer uses high voltage DC technology with tungsten emitters so it can be used in ISO 14644-1 Class 4 cleanliness environments.

Features

- Operates in temperatures as high as 302°F (150°C) and as low as -58°F (-50°C)
- Balance control of better than <±10V standard meets the new stringent requirements for S20.20
- Manual gain adjustment capability
- Sensor Model 550 measures balance at the device location
- Optional feedback control using Novx Active Sensor with the Novx 3362

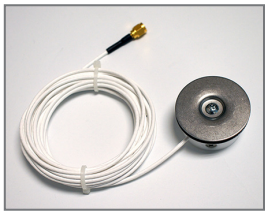
Benefits

- Eliminates static charge in extreme environments that cannot sustain any other static elimination method
- Self-balancing ionization eliminates calibration in the tight confines of the test chamber
- Adjust sensitivity to hold a steady balance over a wide range of air velocity and sensor distances
- Ensures that balance is maintained at the target where it matters, not just at the ionizer itself
- Eliminates the need for two sensors for process monitoring

Model 4612	
Input Voltage	±6.5 kV max, supplied by Model 4062e Controller
Discharge[1]	10 sec (depending on environment) @ 12″ (30.5 cm) with 100 fpm gas velocity (±1000-100V)
Balance	±10V (typ) around initial setpoint
Ion Emission	Steady-state DC Technology
Emitters	Tungsten
Cleanroom Class	ISO 14644-1 Class 4
Air Supply	Input: Clean Dry Air or Nitrogen with minimum purity 99.99% Flow: 100 fpm (min) velocity past Ionizer Temperature: 302°F (150°C) max
Operating Env	-58°F to 302°F (-50°C to +150°C) max; 30-60% RH, non-condensing
Alarm	Low input voltage; HV output fault; sensor signal too variable/noisy and/or out of range
FMS	Relay contact, rated ±24 VDC @ 0.2A, max 4-20 mA Current output
Mounting	4612-210 Ionizer: (2) M4 holes, 4612-526 Ionizer: (4) M4 holes
Enclosure	4612 Ionizer: PEEK; 550 Sensor: PTFE and Stainless Steel
Dimension	4612-210 Ionizer: 8.27″L x 0.83″W x 0.65″H (21.0 x 2.1 x 1.65 cm) 4612-526 Ionizer: 20.7″L x 0.83″W x 0.65″H (52.6 x 2.1 x 1.65 cm) 550 Sensor: 1.75 dia x 0.88″H (4.45 x 2.24 cm)
Weight	4612-210 Ionizer: 0.75 lb (0.34 kg) 4612-526 Ionizer: 1.125 lb (0.51 kg) 550 Sensor: 0.30 lb (0.136 kg) including cables
Warranty	Two-year limited warranty
Certification	
Model 4062e Controller	
Voltage	Input: 24 VDC ±5% @ 1.0A (optional external power supply to convert from 100-240 VAC to 24 VDC) Output: ±6.5 kV max, peak-to-peak
Load Current	<100 µA
LED Indicator	Green POWER, red ALARM (indicates instability or HV power failure)
Control	Balance adjust
Connection	RJ-11 connector for 24 VDC input; two HV connectors; RJ-9 connector for FMS output (relay closure & 4-20 mA); SMA connector for sensor (not for 4612-NS version)
Operating Env	50-95°F (10-35°C); 30-60% RH, non-condensing
Mounting	(2) M4 holes
Enclosure	Stainless Steel
Dimension	7.91″L x 3.64″W x 2.26″H (20.1 x 92.5 x 5.74 cm)
Weight	2.4 lb (1.09 kg)
Warranty	Two-year limited warranty
Certification	

1. Tested in accordance with ANSI/ESD STM3.1.

Ionizer Balance Control



The 4062e Controller, when paired with the 550 Sensor and 4612 Precision Ionizer, will provide balance within ±10V, following industry-standard ANSI/ESD STM3.1-2015 protocols in a steady-state environment. Changes in temperature, humidity, air composition, and/or moving mechanical components in the area will temporarily impact balance. The use of the 550 Remote Sensor and closed-loop control provides the fastest, most accurate corrections for such changes.

Balance Control & Decay Test Option

The standard Novx 3362 with its standard sensor's, can replace the 550 Sensor to monitor and control the extreme temperature. Using the Novx 3362 with the feedback control kit, will allow active feedback and control.

Gain Control

Model 4062e Controller with enhanced external gain control provide manual adjustment to hold a steady balance over a wide range of air velocity and sensor distances.

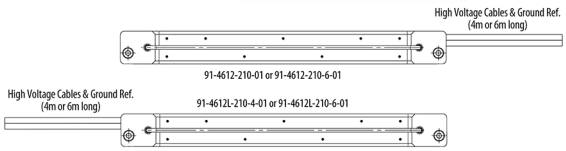
Compact Controller

The 4062e Controller is a physically small unit, to allow it to be mounted almost anywhere inside a tool within a few meters of the Precision Ionizer itself.

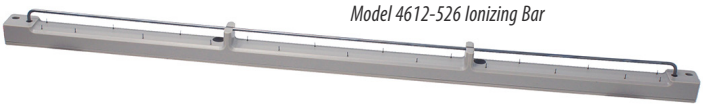
Ordering Information

91-4062e-02	4062e Controller
91-4062e-NS-02	4062e Controller, no Sensor Input
91-4612-210-01	4612-210 Ionizer with 4m cable
91-4612-210-6-01	4612-210 Ionizer with 6m cable
91-4612L-210-4-01	4612-210 Ionizer with 4m left side cable
91-4612L-210-6-01	4612-210 Ionizer with 6m left side cable
91-4612-526-01	4612-526 Ionizer with 4m cable
91-4612-526-6-01	4612-526 Ionizer with 6m cable
33-0550-4M-01	550 Sensor
33-1920-01	Tungsten emitter wires replacement (9)
33-1921-01	Tungsten emitter wires replacement (21)
33-2462-01	Novx 3362 to 4062e Feedback Control Kit
33-5701-01	24 VDC Power Supply (IEC power cord required, contact Sales Services for detail)

Model 4612-210 Ionizing Bar



Model 4612-526 Ionizing Bar



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