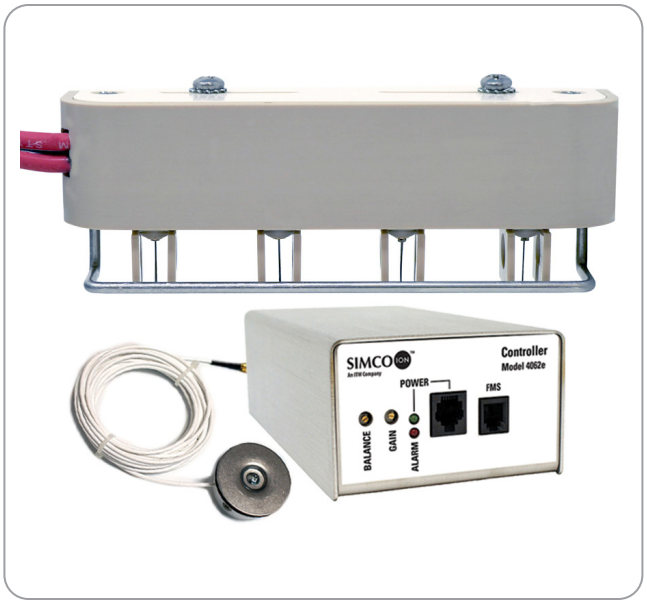

SIMCO ION™
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Ionization Solutions

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Extreme Temperature Ionization Mini System

MODEL 4612-114 MINI IONIZER
MODEL 4062E CONTROLLER AND MODEL 550 SENSOR

Simco-Ion's new 4612-114 Extreme Temperature Ionization Mini System is specifically designed to handle processes in extreme temperature but with significant space constraints. Only 114 mm, the 4612-114 Mini handles the extreme temperature -58°F to 302°F (-50°C to +150°C) while providing an excellent <±10V balance. This system can also use a closed-loop feedback controller to ensure the ionizer's output is balanced at the crucial product location.

The Extreme Temperature System is the ideal solution to maintain tightly controlled ionization in small test chambers with active robotics moving parts under extreme environments. Utilizing DC technology and with Tungsten or Silicon emitters, this system is suitable for ISO 14644-1 Class 6 cleanliness environments.

Features

- Mini size at 114 mm (4.5") in length
- 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
- Measures balance at the device location with the Model 4062e Closed-loop Feedback Controller and Model 550 Sensor
- Air-assisted kit available

Benefits

- Especially suited for small test chambers with space constraint process
- 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
- Ensures that balance is maintained at the target where it matters, not just at the ionizer itself
- Enhanced static charge neutralization at fast automation speeds in weak environment airflow

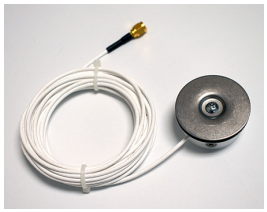
Model 4612-114 Mini Ionizer	
Input Voltage	±6.5 kV max, supplied by Model 4062e Controller
Balance	±10V (typ) around initial set point
Discharge[1]	10 sec (depending on environment)@ 12" (300 mm) with 100 fpm gas velocity (decay time for ±1000-100V)
Ion Emission	DC corona discharge
Cleanliness	ISO 14644-1 Class 6
Emitters	Tungsten or Single Crystal Silicon
Gas	Clean Dry Air or Nitrogen with a minimum purity of 99.99%
Gas Velocity	100 fpm (min) velocity past 4612-114 Ionizer
Gas Supply Temp	302°F (150°C) max
Operating Temp	-58°F to 302°F (-50°C to +150°C) max
Alarms	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	2 mounting slots are provided; methods vary depending on the environment
Enclosure	4612-114 Mini Ionizer: High Temp PEEK chassis; 550 Sensor: PTFE and Stainless Steel
Dimensions	4612-114 Mini Ionizer: 4.5"L x 1.53"H x 1.08"W (114 x 39 x 28 mm) 550 Sensor: 1.7 dia x 0.9"H (44 x 22 mm)
Weight	4612-114 Mini Ionizer: 0.75 lbs (0.34 kg); 550 Sensor: 0.3 lbs (0.14 kg) including cables
Certifications	Pending
Controller Model 4062e	
Input Voltage	24 VDC ±5% @ 1.0A to 4062 Controller (optional external power supply to convert from 100-240 VAC to 24 VDC)
Output Voltage	±6.5 kV max, peak-to-peak
Operating Env	50-95°F (10-35°C); 30-60% RH, non-condensing
Controls	Balance adjust
LED Indicators	Green POWER, red ALARM (indicates instability or HV power failure)
Connections	RJ-11 connector for 24 VDC input; two HV connectors; RJ-9 connector for FMS output (relay closure & 4-20 mA); SMA connector for antenna (not available in Model 4062e-NS)
Mounting	(2) M4 holes
Enclosure	Stainless steel
Dimensions	7.9"L x 3.6"W x 2.2"H (201 x 91.5 x 56 mm)
Weight	2.4 lbs (1.1 kg)
Warranty	Two-year limited warranty (4612-114 ionizer and 4062e controller)
Certifications	CE cULus RoHS KC UKCA

1. Tested in accordance with ANSI/ESD STM3.1-2015.

Ordering Information

91-4612TL-114-4-01	4612 114 Ionizer with Tungsten emitter and 4m left side cable
91-4612TL-114-6-01	4612 114 Ionizer with Tungsten emitter and 6m left side cable
91-4612TR-114-4-01	4612 114 Ionizer with Tungsten emitter and 4m right side cable
91-4612TR-114-6-01	4612 114 Ionizer with Tungsten emitter and 6m right side cable
91-4612UL-114-4-01	4612 114 Ionizer with SCSi emitter and 4m left side cable
91-4612UL-114-6-01	4612 114 Ionizer with SCSi emitter and 6m left side cable
91-4612UR-114-4-01	4612 114 Ionizer with SCSi emitter and 4m right side cable
91-4612UR-114-6-01	4612 114 Ionizer with SCSi emitter and 6m right side cable
91-4062e-02	Controller 4062e for Closed-Loop Feedback with External Antenna
91-4062e-NS-02	Controller 4062e without Closed-Loop Feedback
33-4612AA-01	Air-assist Kit for 4612-114
33-0550-4M-01	550 Antenna
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)

Ionizer Closed-loop Feedback Control



The 4062e Controller, when paired with the 550 Sensor and 4612-114 Mini Ionizer, will provide balance to within ±10V, following industry-standard ANSI/ESD STM3.1-2015 protocols in a steady-state environment. Changes in temperature, humidity, air composition, and moving mechanical components in the area will temporarily impact balance. The 550 Sensor and closed-loop control provide the fastest, most accurate corrections for such changes.

Balance Control & Decay Test Option

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

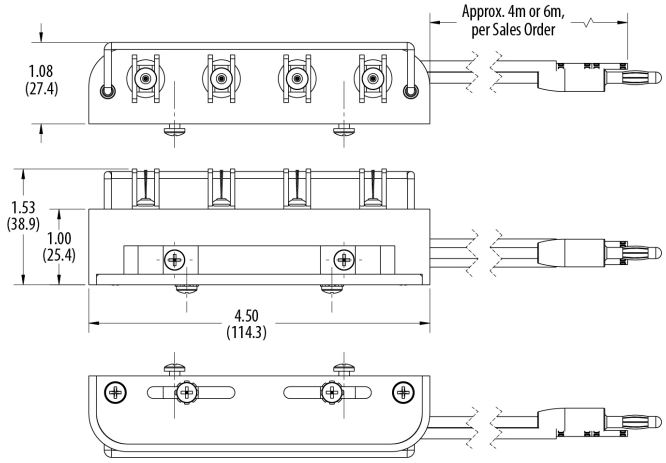
Gain Control

Model 4062e Controller with enhanced external gain control provides manual adjustment to hold a steady balance over a wide range of air velocity and sensor distances. (Gain Control is not available in without closed-loop feedback controller Model 4062e-NS).

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 Ionizer itself.

Dimensional Drawing (in/mm)



Note: The use of the air-assist kit feature will change the thickness from 1.08" (27.4 mm) to 1.46" (37.1 mm).

SIMCO ION™
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Simco-Ion, Technology Group
1141 Harbor Bay Parkway, Suite 201
Alameda, CA 94502
Tel: +1 (800) 367-2452 (in USA)
Tel: +1 (510) 217-0460
ioninfo@simco-ion.com
www.simco-ion.technology

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