



Modulated Pulse AeroBar® with Feedback Control

MODEL 5645

Simco-Ion's latest Modulated Pulse (MP) Technology ionization bar is now available with active feedback/control through the Novx monitoring and feedback system. The 5645 MP bar is designed to provide industry-leading balanced ionization performance for semiconductor back-end advanced packaging and test applications and front-end demanding ultra-clean applications for fast discharge time, low swing voltages, and precision balance. This advanced technology enables AeroBar mounting within 150 mm of the wafer. Precision adjustment combined with ultra-clean silicon emitter points, the 5645 MP bar exceeds ISO 14644-1 Class 1 cleanliness and meets the Extended ISO Class 1* level for particles down to 10 nm.

When installed with the Novx monitoring and feedback system, the 5645 can maintain precise balance better than $\pm 5V$. The bar can easily adjust and fine-tune voltage, frequency, and balance to meet environmental and product sensitivity requirements. Model 5645 MP bar is available in 14 lengths, from 350-2350 mm.

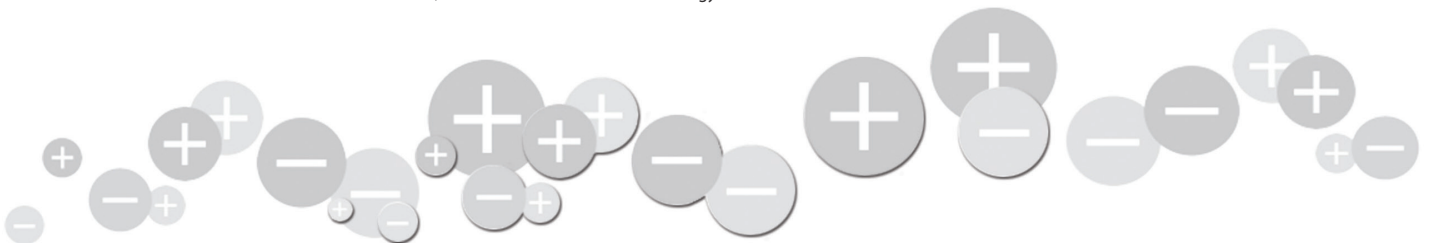
Features



- $\pm 5V$ with Novx monitoring and feedback system
- ISO 14644-1 Class 1 and Extended ISO Class 1 with SCSi emitter; ISO 14644-1 Class 3 with Ti emitter
- Centralize power and control with widely adjustable software
- Sensor input, FMS connection, alarms, power and communications are located on the same end of the bar

Benefits

- Provides the active feedback/control on ESD protection with precise and stable balance
- Compatible with all device technology nodes
- Eliminating manual adjustment at the installed location
- Designed for overall ease of use and long maintenance cycles

* Extended ISO Class 1: An extrapolation of ISO 14644-1 down to 0.01 micro (10 nm) particles, measured with a condensation nucleus counter (CPC). For more information, visit www.simco-ion.com/technology/resources for our technical notes on Extended ISO Class 1.



Model 5645 AeroBar	
Input Voltage	24 VDC $\pm 10\%$, 0.7A (max)
Balance	$< \pm 5V$, Novx System; $< \pm 5V$, Novx Inside; $< \pm 20V$, Standalone
Discharge	15 sec (typ) with no air-assist measured @ 24" below AeroBar center
Ion Emission	Modulated Pulse (MP) technology
Emitter Voltage	13.5 kV peak-to-peak, max
Emitters	Single Crystal Silicon (SCSi) and Titanium (Ti)
Frequency	0.3-60 Hz
Pitch	50 mm spacing (350/450/600 mm lengths only) 75 mm spacing between nozzles on all other lengths
Cleanliness	SCSi Emitters: Meets ISO 14644-1 Class 1 and Extended ISO Class 1 Ti Emitters: Meets ISO 14644-1 Class 3
Bar Settings	Adjustment made remotely via software controlled; no manual adjustment on the bar
LED Indicators	Green steady NORMAL OPERATION, green flashing STANDBY, red ALARM
Air Connection	8 mm tubing (OD) bulkhead, one-touch fitting; no daisy-chain capability
Air Supply	Optional Clean Dry Air (CDA) or nitrogen (N_2)
Airflow	Optional Open Jet 45 psi max gas pressure, 1-3.5 lpm/nozzle thru 8 mm OD one-touch fitting
Ozone	< 0.05 ppm
EMI	Below background level
Operating Env	Temperature 15-35°C (59-95°F); Humidity 30-60% RH, non-condensing
Enclosure	ABS chassis, stainless steel rail on the outside of the bar
Dimensions	3.1"H x 1.3"W x 14/18/24/34/39/45/51/57/63/69/75/81/87/93"L (14 lengths available) (78 x 34 x 350/450/600/850/1000/1150/1300/1450/1600/1750/1900/2050/2200/2350 mm)
Certifications	pending
Model 5601 Power Distribution Box	
Input Voltage	24 VDC for each bank of 4 bars; 5.6A total (0.7A max/port)
Communication	Ethernet (RJ-45) to/from PC; individual bar standby inputs
Alarm Output	Relay closure to ground, max 24 VDC @ 100 mA, normal OpenCoded
Output	8 RJ-45 ports (1 for each 5635 bar)
LED Indicators	Green PWR, Yellow COM, Red ALM, Blue USB
Weight	0.94 lbs (0.42 kg)
Dimensions	1.2"H x 6.3"L x 3.6"W (31 x 160 x 92 mm)
Certifications	 

Ordering Information

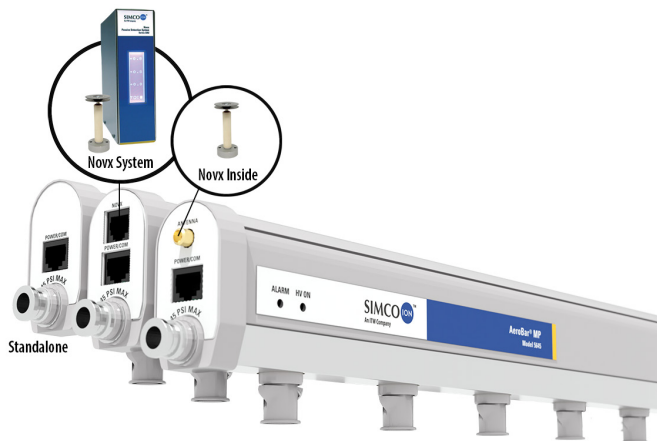
91-5645-xxx-yy-Q0U3Ø	Model 5645 Bar, Standalone Version, Silicon
91-5645A-xxx-yy-Q0U3Ø	Model 5645 Bar, Novx Inside with SMA connector, Silicon
91-5645N-xxx-yy-Q0U3Ø	Model 5645 Bar, Novx System with RJ-11 connector, Silicon
91-5645-xxxx-yy-Q0C3Ø	Model 5645 bar, Standalone version, Titanium
91-5645A-xxxx-yy-Q0C3Ø	Model 5645 bar, Novx Inside version with SMA connector, Titanium
91-5645N-xxxx-yy-Q0C3Ø	Model 5645 bar, Novx System version with RJ-11 connector, Titanium
33-0504	Passive Sensor, 1.75" x 4" Tall with SMA-to-SMA Cable 5 ft/1.5m for Novx Inside
33-0521-5	Passive Sensor, 1.75" x 1" Tall with SMA-to-SMA Cable 5 ft/1.5m for Novx Inside
33-1620-xx	RJ-11 cable connecting to Novx 3352/3362 (xx = 6, 10, 20 ft length) for Novx System
33-25625	24 VDC Power Converter with Power/Signal Junction Box Kit
92-5635-001	AeroBar MP Remote Serial Adapter Kit (includes RJ-45 splitter, USB to serial adapter, RJ-45 to DB9 adapter)
33-5601-03	Model 5601 Power Distribution Box for max 8 bars, 24 VDC
14-21241	24 VDC Power Supply for Model 5601 Power Distribution Box
25-0540-xx	CAT-5 with RJ-45 Ethernet Cable in xx = 6, 10, 15 ft lengths, white (from 5645 bar to Model 5601 p/n 33-25625)
91-5635-SW-Vxx	MP Control Software for 5635 & 5645 standalone only "xx" indicates the latest version, V14 or greater

xxxx = bar length (350/450/600/850/1000/1150/1300/1450/1600/1750/1900/2050/ 2200/2350 mm).

yy = nozzle spacing (50 mm for 350, 450 & 600 mm bar length, all other are 75 mm).

$\pm 5V$ Balance Performance

For $\pm 5V$ balance performance, Model 5645 is available with Novx System or with Novx Inside. Both options operate with the Novx to detect and automatically correct the balance. With the sensor placed at the target area, feedback is sent to the Model 5645 AeroBar internal control system, ensuring that your target maintains a $\pm 5V$ or better balance at all times.



Design Features

Simplified Interface: 100% remote controlled allows ease of adjustments via centralized software control.

Enhanced Cable Management: Locating the power/communication, 24 VDC, and Novx connection all on the same side allows for better control of the cables and planning.

Flexibility: Optional use of CDA with push-to-connect coupling accommodates generic fittings such as quick disconnects, barbed, elbows and much more are all features to facilitate ease of use.

Air-Assist Option: For processes under weak laminar flow, the optional air-assist can help to accelerate ion delivery, providing faster discharge times and performance over longer distances.

Simple Installation with MP Control Software

Model 5645 AeroBar is quickly installed by simply plugging into a 24 VDC source. MP Control Software accommodates one bar or multiple bars (8 max). Users can fine-tune the control parameters through the easy-to-use MP Control software for installations where optimized balance, swing voltage and discharge times are desired. An alarm connection in the Signal and Power Junction Box enables a signal output for FMS monitoring.

Power Distribution Box

The optional Power Distribution Box Model 5601 with MP Control Software can communicate with and centralize power up to eight 5645 AeroBars.

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