

Modulated Pulse AeroBar®

MODEL 5645EM (METAL-FREE)

SIMCO ION™
An ITW Company



Simco-Ion, Technology Group's latest Modulated Pulse (MP) Technology Ionization Bar is now available with Low Profile Single-Crystal Silicon Emitter Nozzles. This improves performance and reduces overall height to 2.6" (65.3 mm) for space-constrained applications. The 5645EM (Metal-Free) MP Bar is designed to provide balanced ionization performance for semiconductor back-end advanced packaging and test applications, and front-end ultra-clean applications where exposed metallic surfaces are not permitted, with fast discharge times, low swing voltages, and precise balance.

The 5645EM (Metal-Free) MP Bar meets the Extended ISO Class 1* level for particles down to 10 nm, exceeding ISO 14644-1 Class 1 cleanliness. It is available in 14 lengths, from 350 to 2350 mm. Shorter bars (<600 mm) feature 50 mm nozzle spacing to improve ion distribution in close-up applications.

FEATURES

- ✓ $<\pm 20V$ balance
- ✓ Extended ISO Class 1* (10 nm particles) cleanliness with Metal-free design "EM"
- ✓ Centralize power and control with widely adjustable MP Control software
- ✓ FMS connection, alarms, power, and communications are located on the same end of the bar


BENEFITS

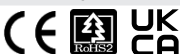
- ✓ Provides control on ESD protection with precise and stable balance
- ✓ Compatible with all wafer technology nodes where "No Metal" applications required
- ✓ Eliminating manual adjustment at the installed location
- ✓ Designed for overall ease of use and long maintenance cycles

* 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.

invisible problems

visible results™
Tackling Static & Particulate Contamination

Model 5645EM (Metal-Free)	
Voltage Input	24 VDC \pm 10%, 0.7A (max) by one of the following: – 24 VDC tool's power line – Simco-Ion P/N 33-25625 24 VDC Power Converter – Simco-Ion 5601 Power Distribution Box for max 8 bars system
Discharge	15 sec (typ) with no air-assist measured @ 24" (61.0 cm) below AeroBar center
Balance	< \pm 20V
Ion Emission	Modulated Pulse (MP) Technology
Emitter	Point: Single-crystal Silicon Voltage: 13.5 kV peak-to-peak (max) Frequency: 0.3-60 Hz Pitch: 50 mm spacing (350/450/600 mm lengths only); 75 mm spacing between nozzles on all other lengths
Cleanroom Class	ISO 14644-1 Class 1 & Extended ISO Class 1
LED Indicator	Green steady NORMAL operation, green flashing STANDBY, red ALARM
Bar Setting	Adjustment made remotely via MP Control Software; no manual adjustment on the bar
Air Supply	Input: Optional Clean Dry Air (CDA) or Nitrogen Flow: OpenJet 45 psi max gas pressure, 1-3.5 lpm/nozzle Connection: 8 mm tubing (OD) bulkhead, one-touch fitting, no daisy-chain capability
Ozone	<0.05 ppm
EMI	Below background level
Operating Env	15-35°C (59-95°F); 30-60% RH, non-condensing
Enclosure	ABS chassis, conductive rail on the outside of the bar
Dimension	2.6"H x 1.3"W x 13.8/17.7/23.6/33.5/39.3/45.3/51.2/57.1/63.0/69.0/74.8/80.7/86.6/ 92.5"L (6.5 x 3.4 x 35/45/60/85/100/115/130/145/160/175/190/205/220/235 cm)
Certification	

Model 5601 Power Distribution Box	
Input Voltage	24 VDC for each bank of 4 bars; 5.6A total (0.7A max/port) by 24 VDC tool's power line or Simco-Ion P/N 14-21241 Power Supply
LED Indicator	Green POWER, yellow COMMUNICATION, red ALARM, blue USB
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 bar)
Dimension	1.27"H x 6.95"L x 3.64"W (3.22 x 17.65 x 9.23 cm) with flange
Weight	0.94 lb (0.43 kg)
Certification	

Design Features

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

Enhanced Cable Management: Locating the power/communication and air supply connections all on the same side allows for better control of the cables and planning.

Simple Installation with MP Control Software

Model 5645EM 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.



Ordering Information

91-5645EM-xxxx-LPU-01	Model 5645EM (Metal Free) Bar
33-5601-03	Model 5601 Power Distribution Box with Ethernet Port for 8 bars max, 24 VDC
14-21241	24 VDC Power Supply for Model 5601 Power Distribution Box (per AeroBar) ¹
92-5635-001	AeroBar MP Remote Serial Adapter Kit (includes RJ-45 splitter, USB to serial adapter, RJ-45 to DB9 adapter)
33-25625	24 VDC Power Converter with Power/Signal Junction Box Kit ¹
25-0540-xx	CAT-5 with RJ-45 Ethernet Cable in xx = 6, 10, 15 ft lengths, white (from Model 5645 bar to Model 5601 or p/n 33-25625)
91-5635-SW-Vx.x	MP Control Software Version x.x

xxxx = Bar Length (350/450/600/850/1000/1150/1300/1450/1600/1750/1900/2050/ 2200/2350 mm).
1. IEC power cord required, contact Sales Services for detail

Simco-Ion, Technology Group

1141 Harbor Bay Parkway
Suite 201
Alameda, CA 94502

+1 (800) 367-2452 (in USA)

+1 (510) 217-0460

salesservices@simco-ion.com

www.simco-ion.com/technology

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