

# Modular PSA Nitrogen Generators

## NITROSWING NS-5



### Typical Applications

- Blanketing of Chemicals and Pharmaceuticals
- Gas Assisted Injection Molding (GAIM)
- Heat Treatment of Ferrous & Non-Ferrous Metals
- Inerting of Flammable Liquids
- Laser Cutting
- Prevention of Dust Explosions
- Re-flow and Wave Soldering of PCBs
- UV-Curing of Coatings

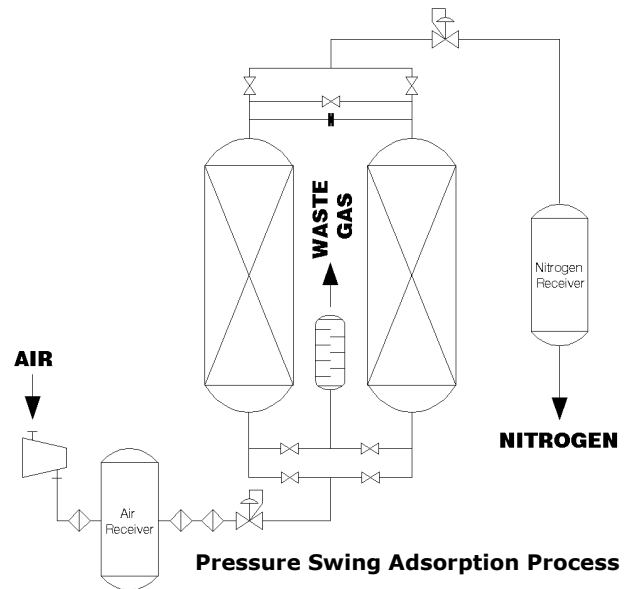
### Food Applications

NITROSWING® PSA nitrogen generators can be configured for use in food processing and packaging however, it is recommended to consult IGS before purchasing a generator for any food application.

### The Nitrogen Production Process

IGS Nitrogen PSA Generators separate nitrogen (N<sub>2</sub>) from compressed air utilizing pressure swing adsorption technology. Compressed air, which consists of approximately 21% oxygen and 78% nitrogen, is passed through a bed of carbon molecular sieve (CMS). The sieve preferentially adsorbs O<sub>2</sub> and moisture over N<sub>2</sub> allowing the N<sub>2</sub> to pass through as a product gas at pressure. While one of the towers is in the adsorption phase the other tower is regenerated by de-pressurizing at which time the sieve releases the adsorbed gases to the atmosphere and the cycle is then repeated.

A solid state programmable controller operates the process valves on an alternating cycle with built-in logic for automatic stop/start. Nitrogen flow and purity remain constant regardless of the peak usage demands. Under normal operating conditions and with correct maintenance the carbon molecular sieve will have an almost indefinite lifetime.



### Standard Components

- Feed Air Filters
- Adsorber Vessel Module(s)
- Pneumatic Valves
- Internal Piping & Fittings in SS316
- Exhaust Muffler
- Air and Nitrogen Pressure Regulation
- Local Instrumentation
- Control System with Allen-Bradley PLC
- Pressure Switch for Automated Idle-Mode

### Advantages

- Safety:  
Low Operating Pressures, no Hazardous Storage
- Economy:  
Low Operating Costs, Easily Expandable
- Convenience:  
Fully Automatic and Unattended Operation
- Reliability:  
Easy to Install and Maintain

# NITROSWING NS-5 Series Specifications & Performance

Oxygen Content		10 ppm		100 ppm		0.1 vol.%		0.5 vol.%		1 vol.%		2 vol.%		3 vol.%	
Feed Air Pressure	bar(g)	7.5	10	7.5	10	7.5	10	7.5	10	7.5	10	7.5	10	7.5	10
	psig	110	150	110	150	110	150	110	150	110	150	110	150	110	150
Product Flowrate <sup>(1)</sup>	Nm <sup>3</sup> /h	On Request		2.2	2.6	3.7	3.9	6.9	7.6	8.0	10.0	9.8	13.4	11.1	14.1
	scfh	On Request		84	99	142	150	265	292	308	387	378	517	427	543
Product Pressure	bar(g)	On Request		6	8	6	8	6	8	5.9	7.9	5.8	7.7	5.7	7.5
	psig	On Request		87	115	87	115	87	115	85	114	84	110	82	108
Feed Air Consumption	Nm <sup>3</sup> /min	On Request		0.20	0.23	0.24	0.25	0.32	0.35	0.31	0.40	0.35	0.48	0.37	0.47
	scfm	On Request		7.6	9	9.2	9.8	12.3	13.6	12.1	15.3	13.5	18.6	14.2	18.2
Min. Air / N <sub>2</sub> Receiver <sup>(2)</sup>	liter	On Request		150	200	200	200	200	200	200	250	250	300	350	350
	gallon	On Request		40	53	53	53	53	53	53	66	66	79	92	92
Dew Point <sup>(3)</sup>	°C / °F	-40 / -40													
Sound Level L <sub>eq</sub>	dB(A)	< 75													

(1) Flow rates at standard atmospheric conditions (20 °C / 70 °F, 1013 mbar / 14.7 psi and 60% RH.

(2) Smaller receiver volumes will result in lower product pressures. Please contact manufacturer for details.

(3) Dew point at atmospheric pressure.

## Feed Air Requirements

Compressor FAD Flow rate <sup>(4)</sup>	1.2 x Air Cons.
Min. Inlet Pressure	7.0/9.5 bar(g) 100/140 psig
Max. Inlet Temperature	+35 °C +95 °F
Min. Air Quality <sup>(5)</sup>	ISO 8573.1 Class 1.4.1

## Power Requirements

Power Supply	110–230 V / 50–60 Hz
Power Consumption	max. 0.3 kW

## Certifications

97/23/CE (Pressure Equipment Directive)  
98/37/CE (Machinery Directive)

(4) Increased compressor flow rate in order to compensate evt. compressor performance tolerance and ambient temperature fluctuations.

(5) Improper feed air quality may cause damage to the nitrogen generator not covered under warranty.

## Connections

Feed Air Inlet	G 1"
Nitrogen Return <sup>(6)</sup> / Outlet	G ½"
Off-Spec Connections <sup>(6)</sup>	G ½"

## Dimensions & Weights

L	W	H	Weight	
520	700	1,340	mm	210 kg
20	28	53	in.	463 lb.

(6) Only in case of on-board installation of oxygen analyzer and/or a product flow meter.

## Options

- Dual Bank Unit
- Oxygen Analyzer with Zirconium Oxide Cell
- Electronic Product Flow Meter
- Sterile Filters
- Telemetry
- Nitrogen Booster
- Nitrogen Cylinder Filling System

## Installation Requirements

Well ventilated and protected environment with temperatures between +41 °F / 5 °C + and +104 °F / +40 °C. Classified areas excluded.

## Generon IGS

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