

NITROSWING® NS-84

PSA Modular Nitrogen Generator



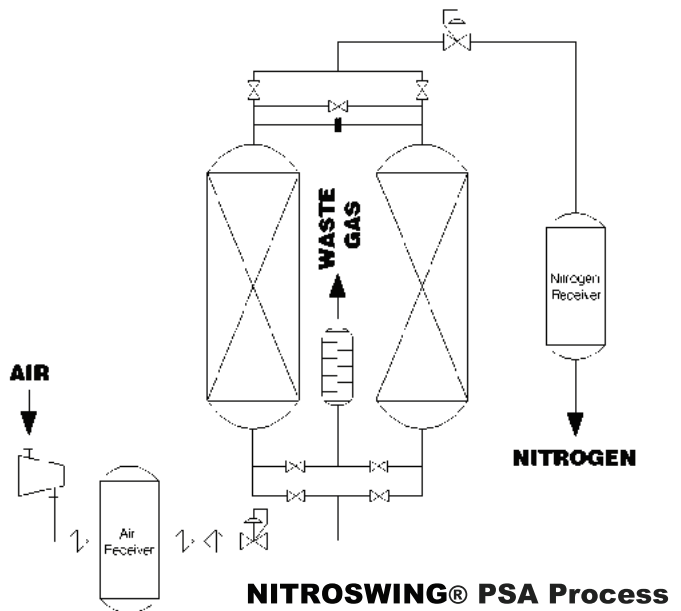
Key features

- Adsorber Module(s) in Anodised Aluminium
- Set of External Feed Air Filters
- Pneumatic Valves
- Internal Piping in Stainless Steel 316
- Maintenance-free Exhaust Silencers
- Air Flow Regulation
- Local Instrumentation
- Control System with Siemens SIMATIC® colour 7" Touch Screen
- Operator Interface and Data logging
- Standard Profinet Industrial Ethernet Interface Nitrogen Pressure Transmitter for Optimal Monitoring and Automated Idle-Mode

The NITROSWING® NS-84 generators set consists of a main generator and a second PSA generator called Dual Bank. The Dual Bank generator is driven via a multi-pole cable connection from the master NITROSWING® generator.

The Nitrogen Production Process

The NITROSWING® generators extract the available nitrogen in the ambient air from the other gases by applying the Pressure Swing Adsorption (PSA) technology. During the PSA process, compressed and cleaned ambient air is led to a molecular sieve bed, which allows the nitrogen to pass through as a product gas, but adsorbs other gases. The sieve releases the adsorbed gases to the atmosphere, when the outlet valve is closed and the bed pressure returns to ambient pressure. Subsequently the bed will be purged with nitrogen before fresh compressed air will enter for a new production cycle. In order to guarantee a constant product flow, the NITROSWING® nitrogen generators use modules of two molecular sieve beds, which alternatively switch between the adsorption and the regeneration phase. Under normal operating conditions and with correct maintenance the molecular sieve beds will have an almost indefinite lifetime.



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

Industrial Applications

- Blanketing of Chemicals and Pharmaceuticals
- Gas Assisted Injection Moulding (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 & Beverage Processing and Packaging

Performance of NITROSWING® PSA Nitrogen Generator NS-84

Oxygen Content		10 ppm		50 ppm		100 ppm		500 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	7.5	10	7.5	10
	psig	110	145	110	145	110	145	110	145	110	145	110	145	110	145	110	145	110	145
Product Flow rate ⁽¹⁾	m ³ /h	27.8	32.4	37.2	43.8	45	54.4	63	77.8	74	89	104	126	125	143	154	175	165	190
	scfm	17.6	20.5	23.5	27.7	28.4	34.4	39.8	49.1	46.7	56.2	65.7	79.6	79	90.3	97.3	111	104	120
Product Pressure	bar(g)	6	8	6	8	6	8	6	8	6	8	6	8	6	8	5.8	7.8	5.7	7.7
	psig	87	116	87	116	87	116	87	116	87	116	87	116	87	116	84	113	83	112
Feed Air Consumption ⁽¹⁾	m ³ /h	181	204	218	252	218	260	224	252	234	266	272	324	294	354	322	396	322	388
	scfm	114	129	138	159	138	164	141	159	148	168	172	205	186	224	203	250	203	245
Min. Air / N2 Receiver ⁽²⁾	litre	550	600	550	550	650	750	750	900	800	950	950	1100	1000	1150	1150	1300	1200	1350
	gallon	149	162	149	149	176	203	203	243	216	257	257	297	270	311	311	351	324	365
Dew Point ⁽³⁾	°C/°F	≤-40 / -40																	
Sound Level L _{eq}	dB(A)	< 75																	

- (1) Definition of m³ refers to atmospheric conditions 20 °C, 1013 mbar and dry basis.
 Indicated flow rates are valid for operation of the generator at atmospheric conditions 20 °C / 68 °F, 1013 mbar / 14.7 psi and 60% RH.
- (2) Smaller receiver volumes might result in lower product pressures. Please contact manufacturer for details.
- (3) Dew point at atmospheric pressure

Feed Air Requirements

Supply Pressure	6.0 / 10.0 87 / 145	bar(g) psig
Supply Temperature	5 / 45 41 / 113	°C °F

Power Requirements

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

Min. Air Quality⁽⁴⁾ Class 0.4.0 to ISO 8573.1

Conformity & Certifications

2014/68 EU	(PED – Cat. 1, Mod. H)
2014/30/CE	(Electromagnetic Compatibility)
2006/42/CE	(Machinery Directive)
2014/35/CE	(Low Voltage Directive)

(4) Feed air quality at air filter outlet. Improper feed air quality may cause damage to the nitrogen generator not covered under warranty

Connections

Feed Air Inlet	G 1"
Nitrogen Send	G ½"
Nitrogen Return ⁽⁵⁾	G 1"
Nitrogen Outlet ⁽⁵⁾	G 1"

Dimensions (mm/in)

	L	W	H	Weight (kg/lb)	
Master	520/20	1867/73.5	1422/56	806	1777
Dual Bank	520/20	1867/73.5	1202/47.3	763	1682

(5) Only in case of on-board installation of a residual oxygen analyser and/or a product flow meter.

Installation Requirements

Well ventilated and weather protected environment with ambient temperatures between +5 °C / +41 °F and +45 °C / +113 °F. Classified areas excluded.

Product protected by international patents

Nr. EP2047897A1, EP2047897B1, EP2052769A1, EP2052769B1

Peripheral Equipment & Options

- Dual Bank Unit(s)
- Feed Air Unit
- Supporting Frame for Air Filters
- Oxygen Analyser with Zirconium-Oxide Sensor
- Electronic Product Flow Meter
- Feed Air / Product Moisture Analyser
- Feed Air / Product Temperature Transmitters
- Nitrogen Sterile Filters
- Telemetry for Remote Monitoring
- Nitrogen Booster & Cylinder filling System

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