



Technical data

NITROSWING® nitrogen production flow - m3/h¹⁻²
Nitroswing runs from 7 to 13 bar, nitrogen pressure up to 11 bar

| | | | | | | | | | |
|-------------------------------|---------|---------|---------|---------|--------|--------|--------|--------|--------|
| Gas Purity | 99.999% | 99.995% | 99.99% | 99.95% | 99.90% | 99.50% | 99.00% | 98.00% | 97.00% |
| Residual O2 | 10 ppm | 50 ppm | 100 ppm | 500 ppm | 0.1% | 0.5% | 1% | 2% | 3% |
| NS-7 1 module ³ | 2.5 | 3.0 | 4.0 | 5.5 | 6.5 | 9.0 | 10.7 | 13.0 | 14.0 |
| NS-14 2 modules | 5.0 | 6.5 | 8.0 | 11.0 | 12.0 | 18.0 | 21.3 | 26.0 | 28.0 |
| NS-21 3 modules | 7.0 | 9.5 | 11.5 | 16.0 | 19.0 | 26.5 | 31.8 | 39.0 | 42.0 |
| NS-28 4 modules | 9.5 | 12.5 | 15.0 | 21.0 | 25.0 | 35.0 | 42.1 | 52.0 | 56.0 |
| NS-37 5 modules | 12.0 | 15.5 | 19.0 | 25.5 | 31.0 | 44.0 | 52.4 | 64.5 | 69.0 |
| NS-42 6 modules | 14.0 | 19.0 | 22.5 | 31.5 | 37.0 | 52.0 | 62.6 | 77.0 | 83.0 |
| NS-49 7 modules | 16.0 | 21.5 | 26.0 | 35.5 | 43.0 | 60.5 | 72.7 | 89.0 | 96.0 |
| NS-56 8 modules | 18.5 | 24.5 | 30.0 | 42.0 | 49.0 | 69.0 | 82.7 | 101.0 | 109.0 |

Other configurations available
¹ Inlet pressure 7.5 bar
² Indicative flows
³ One module is composed of 2 molecular sieves columns

Nitrogen & Oxygen
Generators

- PSA
- DS-PSA
- V-PSA
- Membrane



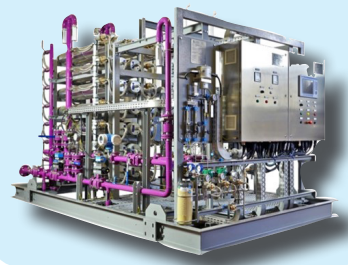
Feed Air Units



Medium & High
Pressure Gas Boosters



Engineered Packages



NITROSWING®
MODULAR PSA NITROGEN GENERATOR

Up to 99,999% nitrogen
From 2.5 to 109 m3/h



Why produce nitrogen on-site?



- Proven savings
- No more logistic constraints
- Full safety
- No more heavy bottles to handle
- continuous analysis



Nitrogen available 24/7: continuous unattended production
Instant production on-demand: no more supply chain failure

NOVAIR

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SYSTEMS

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NOVAIR

- Patented PSA process
- High efficiency
- Compact & flexible
- Remote access capability
- Lowest nitrogen cost

MODULAR PSA NITROGEN GENERATOR NITROSWING



NOVAIR was founded in 1977 in France and is specialized in the design and manufacturing of air & gas separation, treatment and compression solutions.

Member of Groupe NOVAIR, NOVAIR Noxerion Gas Systems focuses on all aspects of the production of dry compressed air and its non-cryogenic separation for on-site generation of nitrogen and oxygen. With customized systems, we help our customers to reduce their operating costs and increase their autonomy.

With our experience of large industrial projects, we are able to take up the most ambitious challenges, in accordance with the most demanding engineering standards.



NOVAIR headquarters are located near Paris in France and we are operating in over 100 countries through a wide network of certified local distributors

NOVAIR presents the new generation of NITROSWING® modular PSA generators. NITROSWING® is the result of years of research and development offering the highest standards in terms of efficiency, flexibility and reliability :

- Unprecedented energetic efficiency
- Increased purity stability
- Instant optimal working conditions
- Easy instruments upgrade

The generators can produce nitrogen with a residual oxygen content ranging from 10ppm to 3.0 vol%.

7" HMI for real time purity monitoring and automatic & unattended operation

Molecular sieve modules allowing on-site easy upgrade and featuring the patented FlatFlow® technology

Ergonomic design, for a minimum footprint



Pipe assembly classification

NITROSWING enerators are classified as pipe assembly : no pressure vessel directive applies to the molecular sieve modules allowing :

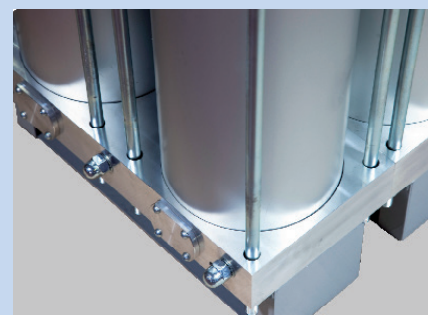
- more competitive costs
- simpler operation

FlatFlow® technology

The FlatFlow® technology allows a uniform distribution of gas flow over the entire molecular sieve; this patented technology ensures the highest efficiency of the adsorption process and the lowest air ratio, **resulting in the lowes operating cost.**

Product protected by international patents
n° EP2047897A1, EP2047897B1, EP2052769A1,
EP2052769B1

First class components



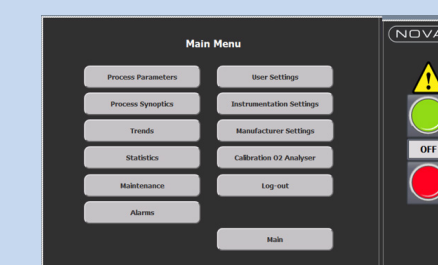
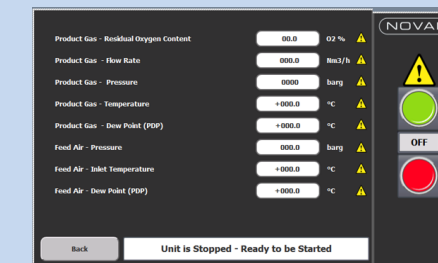
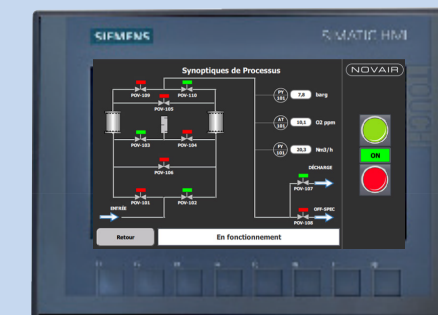
Detail of modular PSA aluminum banks, based on single modules concept.



Application of non-corrosive materials such as aluminum and stainless steel, for all process components



Allows the monitoring / remote control of the main process parameters and displays status messages such as gas purity and flow rate, totalized gas flow, total functioning hours and maintenance alerts.



HMI Siemens SIMATIC touchscreen series with colour touch screen

Patented Modular PSA Technology

NITROSWING® modular PSA generators implement a unique Pressure Swing Adsorption technology. Unlike twin-tower standard systems, NITROSWING® generators feature multiple modules of molecular sieve, each implementing an optimized patented PSA process.

- **Unlimited flexibility:** production capacity can be easily adjusted directly on site without any skilled personnel. Also, the zirconium analyzer requires no calibration.



- **Compact dimensions** for installations even in small spaces of your production facility. Allows airfreight.

- **Easy fleet management:** all NITROSWING® models feature the same components, allowing a limited spare part management and easy maintenance. It is also advantageous in case of generator upgrade.

- **Incorporates zirconium residual oxygen analyzer** requiring no calibration

The Dual Bank Concept



For large production capacities, a “Dual Bank” can be added, consisting in a second PSA nitrogen generator, without any PLC and power supply. The Master Dual Bank gets its power and control signals from the NITROSWING® PSA nitrogen generator through a single cable connection. One Master NITROSWING® PSA nitrogen generator can control up to three Dual Banks in parallel.