

DAVIES MULLER CO.

PSA NITROGEN GENERATOR

On-site nitrogen generation for industrial applications



95–99.9995% nitrogen purity

1–2,000 Nm³/h published capacity range

Professional European representation and project support

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01 | Product Overview

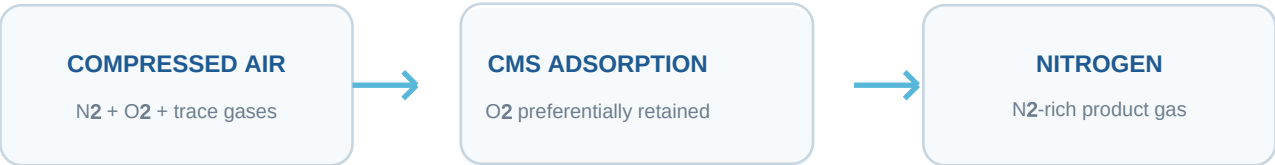
PSA nitrogen generation — reliable, on-site and fully automatic

Generate nitrogen where and when you need it

The PSA nitrogen generator separates nitrogen from compressed air using Carbon Molecular Sieve (CMS). Oxygen is preferentially adsorbed by the CMS while nitrogen passes through as the product gas. The cyclic pressure-swing process provides a continuous on-site nitrogen supply without dependence on delivered gas cylinders or liquid nitrogen logistics.

PURITY RANGE	CAPACITY	OPERATION
95–99.9995%	1–2,000 Nm³/h	Fully automatic

Core operating concept



The adsorption cycle alternates between pressurization/adsorption and regeneration/depressurization. This allows continuous nitrogen production with automatic valve sequencing and control.

Key advantages

- Low maintenance cost** Designed for continuous industrial operation with straightforward maintenance access.
- High nitrogen production** Broad flow range supports small installations through high-demand industrial systems.
- Low energy consumption** PSA separation avoids cryogenic liquefaction and is suited to decentralized supply.
- Fast start-up & automation** Automatic control enables rapid start-up and stable unattended operation.
- Easy installation & maintenance** Configurations can be engineered for practical plant integration.

02 | Technical Characteristics

Standard PSA configuration and published performance envelope

TECHNOLOGY	Pressure Swing Adsorption (PSA)
ADSORBENT	Carbon Molecular Sieve (CMS)
NITROGEN PURITY	95% to 99.9995%
N2 CAPACITY	1 to 2,000 Nm³/h
OPERATION	Fully automatic
O2 DISCHARGE PRESSURE	0–5.5 bar (normal, published)

Configuration flexibility

The generator can be engineered around the required nitrogen purity, flow rate, operating pressure and installation environment. Published configurations include compact cabinet/van-box arrangements, skid-mounted systems and containerized systems. The exact equipment package should be selected from the required process duty and site conditions.

Typical system integration

- Compressed-air pretreatment and filtration
- PSA adsorption vessels and automatic valve system
- Nitrogen outlet and product-quality monitoring
- Control cabinet / automatic sequencing
- Optional buffer storage and downstream pressure management

Note: values shown are published reference data. Final performance depends on purity, flow, feed-air quality, pressure, temperature and configuration.

03 | Capacity & Purity Range

Published capacity points for project selection

The published product range covers multiple purity grades and capacity points. The table below consolidates the available capacity steps shown in the product data.

Purity grade	1	5	10	20	30	40	50	100	120	150	200	500	800	1,000	2,000
95%	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
99%	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
99.5%	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
99.9%	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
99.99%	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
99.999%	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

High-purity capability

Published data also specifies an overall purity envelope up to 99.9995%.
Final purity/capacity combinations should be confirmed during technical selection.

How to specify your generator

- 1

Required nitrogen flow

Nm³/h at operating conditions
- 2

Required purity

e.g. 99%, 99.9%, 99.99%, 99.999%
- 3

Outlet pressure

Required delivery pressure and process pressure
- 4

Operating profile

Continuous, intermittent, peak demand and duty cycle
- 5

Site conditions

Indoor/outdoor, ambient conditions, footprint and utilities

● indicates published capacity points; it does not imply that every purity grade is available at every capacity without engineering confirmation.

04 | Applications & Project Support

A practical nitrogen source for diverse industrial duties



FOOD & PACKAGING

Modified-atmosphere packaging, preservation and oxidation control.



ELECTRONICS

Inert-gas environments for manufacturing and sensitive processes.

LASER CUTTING

Nitrogen supply for cutting and metal fabrication applications.

OIL & GAS

Tank inerting, gas displacement and explosion-risk reduction duties.

CHEMICAL INDUSTRY

Tank blanketing, inerting and pipeline purging.

METAL PROCESSING

Heat-treatment and controlled-atmosphere applications.

Why on-site nitrogen generation?

- **Supply independence** Reduce reliance on cylinder deliveries or liquid-nitrogen logistics.
- **Continuous availability** Generate nitrogen at the point of use according to process demand.
- **Scalable capacity** Select from compact systems through large industrial flow rates.
- **Process integration** System configuration can be adapted to the pressure, purity and site requirements.

European project interface

Davies Muller Co. provides the European point of contact for product enquiries, technical discussions, application review and project coordination. Share your required nitrogen flow, purity, pressure and operating conditions to receive a suitable configuration proposal.

LET'S DISCUSS YOUR NITROGEN NEED

European representative & project contact

Davies Muller Co.

EUROPEAN REPRESENTATIVE

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FOR A QUOTATION

Please provide:

- Required N2 flow
- Purity target
- Outlet pressure
- Application / duty

Technical data in this catalogue is compiled from published nitrogen-generator product information and is subject to final technical confirmation for the selected configuration.

