CompAir

Ultra-high purity

Modular nitrogen generators

Nitrogen purity 95% to 99.999%

CNP Series

CompAir

Continuous source of high purity on-site nitrogen gas

Nitrogen is a dry, inert gas which is used in many commercial and industrial applications to improve quality or where oxygen may be harmful to the product or processes.

With traditional methods of gas supply such as liquid or bottled nitrogen, users are often responsible for hidden costs such as rental fees, refill and delivery surcharges, order processing charges as well as environmental fees.

Nitrogen generators begin with clean, dry compressed air to create a continuous supply of high purity nitrogen. Generating nitrogen in-house is a cost-effective and reliable alternative to the use of cylinder or liquid nitrogen across a wide range of applications.

Multi-bank design

The unique multi-bank design (CN2009P to CN2168P) enables additional generators to be added in the future as demand increases and provides redundancy for ease of maintenance. Your CNP Series nitrogen generator can grow with your company.

> Taking control of a nitrogen supply in this way, rather than relying on a third party, can reduce costs considerably

When you purchase a CNP Series nitrogen gas generator you can expect:

- New sleek design
- Larger HMI screen with multilingual electronic control system
- Upgraded zirconia oxygen analyser
- Upgraded internal stainless steel pipework with increased diameter and reduced complexity
- Reversible inlet and outlet blocks
- Durable laser cut symbols providing multilingual clarity
- Increased standard pressure rating to 12 barg
- Nitrogen quality certified to food grade E941 standard
- Payback typically between 6 to 24 months
- Easy installation with minimum cost and disruption
- Easier service capability
- User has complete control fulfilling nitrogen gas demand
- Generate as little or as much nitrogen gas as needed at a fraction of delivered gas cost

Features are your benefits

Guaranteed performance

- 100% function and performance factory tested
- ASSURE warranty

Rapid return on investment

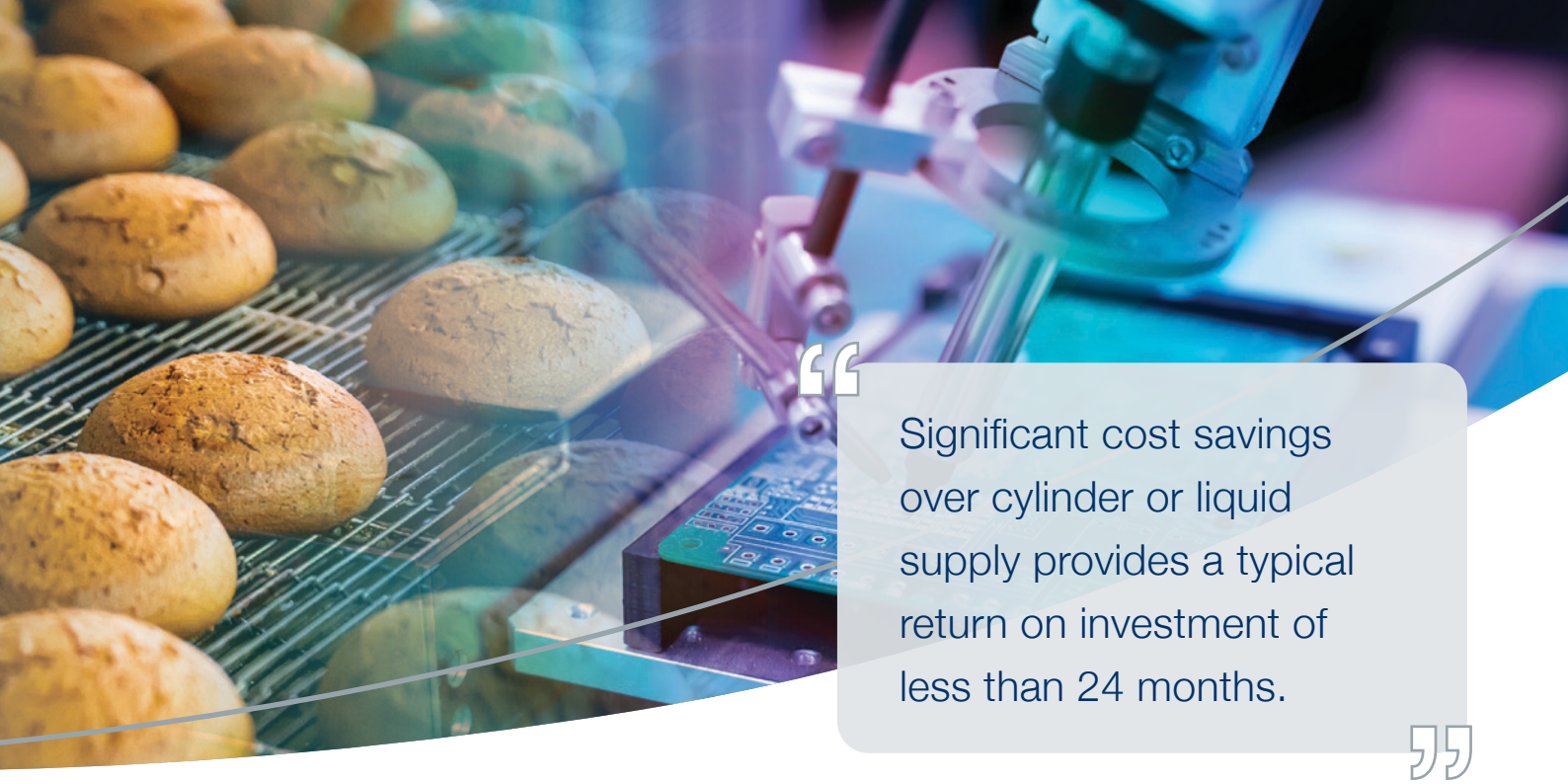
- Significant cost savings over cylinder or liquid supply provides a typical return on investment of less than 24 months
- Ecomode energy savings control reduces energy consumption during periods of low demand

Fits any application

- Maximum design operating pressure of 16 barg available design quality
- **Mass flow controller** - ensures correct application pressure and flow
- **Integral oxygen analyser** - continuously measures and guarantees gas quality
- **Purity guarantee valve** - automatically ensures gas meets desired specifications
- **Remote monitoring** - enables connection to proprietary remote management and generator control systems

Easy to install

- The compact design allows installation in spaces too small for twin tower generator systems safe and reliable
- Eliminates the safety hazards of transporting and storing pressurised gas cylinders or liquid nitrogen easy to maintain
- Innovative piston valves significantly reduce maintenance schedules and minimise downtime
- Environmentally friendly
- Reduces carbon footprint by eliminating gas delivery to your facility



> Significant cost savings over cylinder or liquid supply provides a typical return on investment of less than 24 months.

How it works

The technologically advanced CompAir nitrogen generator operates on the Pressure Swing Adsorption (PSA) principle to produce a continuous uninterrupted stream of nitrogen gas from clean dry compressed air. Dual chamber extruded aluminium columns are filled with Carbon Molecular Sieve (CMS). Joined via an upper and lower manifold, the high density filled columns produce a dual bed system. After a pre-set time the control system automatically switches the beds. One bed is always online generating nitrogen while the other is being regenerated.

During regeneration, the oxygen that has been collected in the CMS stage and the moisture that has been collected in the optional integrated dryer stage are exhausted to atmosphere. A small portion of the outlet nitrogen gas is expanded into the bed to accelerate the regeneration process.

A Clean compressed air enters the inlet into CNP Series unit where the inlet valves direct the flow to either the left or right column sets

B After passing through the inlet valve, the compressed air enters one side of the manifold under the extruded columns

C The compressed air then flows up through the Carbon Molecular Sieve (CMS) beds where oxygen and other trace gases are preferentially adsorbed and allows the nitrogen to pass through

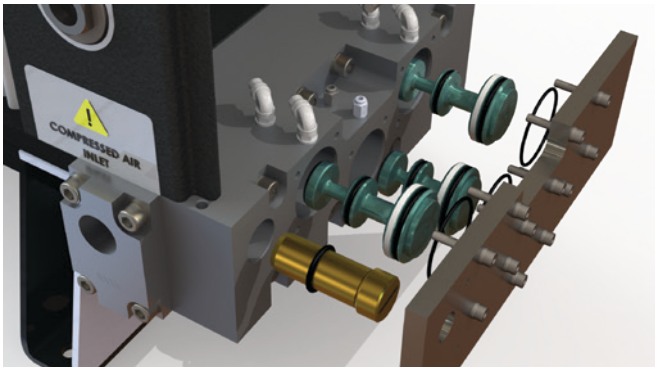
D The nitrogen gas then passes through the supporting bed layer with integrated filter into the outlet manifold before exiting through the outlet valves

E The N2 gas continues to the buffer vessel and buffer vessel filter before returning to the CNP Series unit for purity monitoring, flow and purity regulation

On-site nitrogen generation made easy

Reliable high performance valves

Inlet, outlet and exhaust are managed through unique integrated piston valves, which are designed for reliability, long service life and ease of maintenance. The generator also incorporates adjustable equalisation valves which smooth the column switch over, improve air/ N_2 ratios and extend CMS life.



PLC/HMI controlled operation

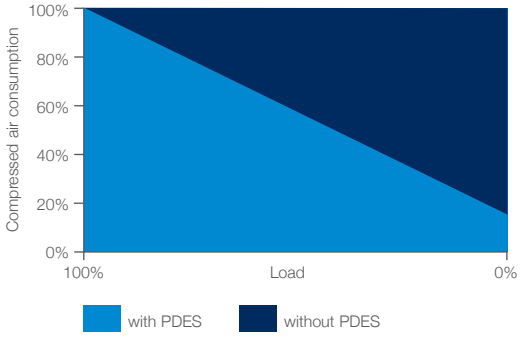
Each nitrogen generator is operated by a reliable PLC control system with digital and optional analog outputs for remote monitoring and alarm capabilities. The CNP Series provides the operator with continuous indication of column A, column B, Inlet air & N2 outlet pressures and features an easy to-operate touch screen graphical human-machine interface (HMI) which offers valuable information including:

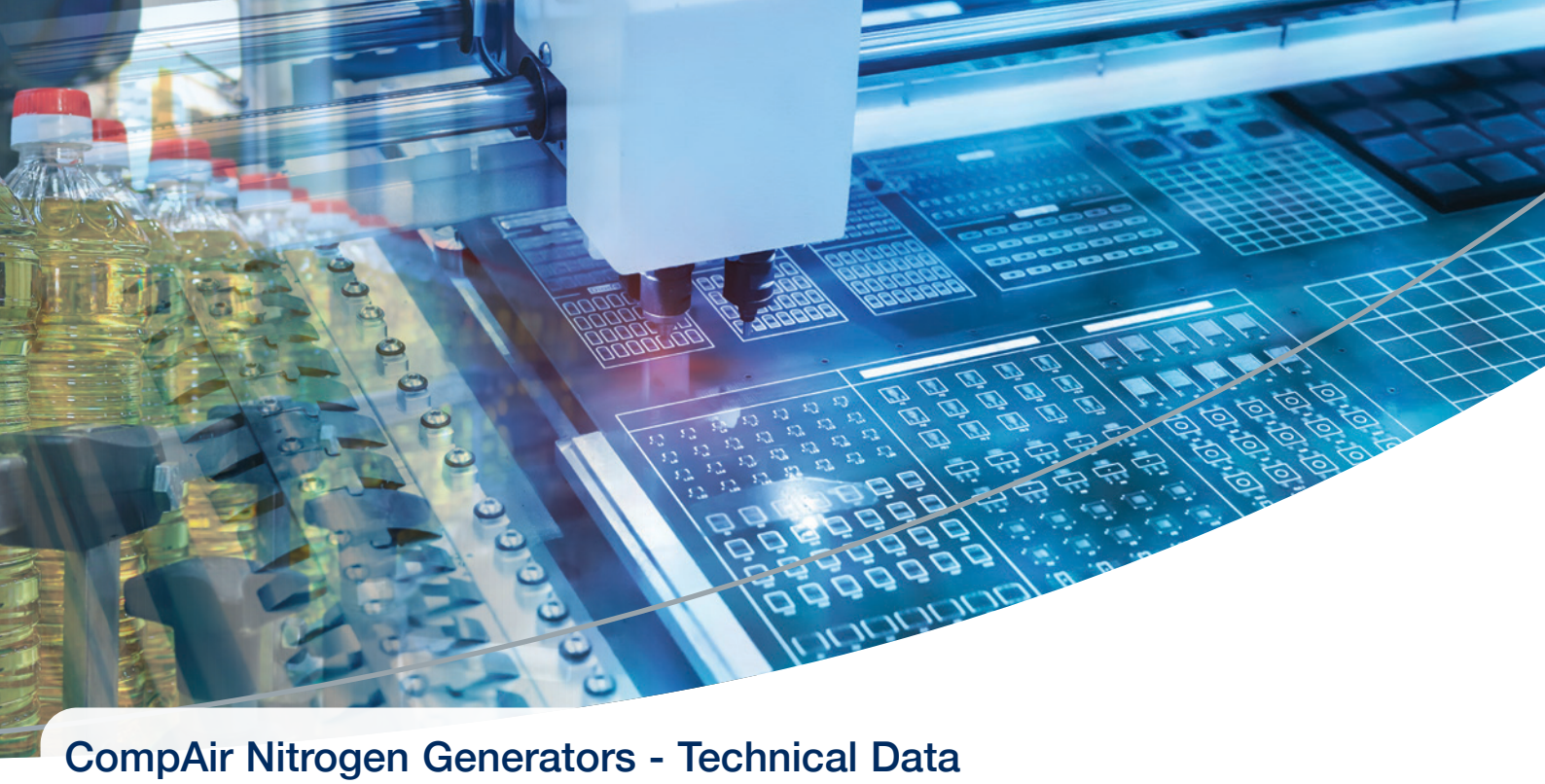
- Power on/off
- Inlet & outlet pressure
- Service required
- O_2 purity
- Run hours

Communication

With a small software change, full communication protocols including modbus, profibus and other building management system connections can be achieved. This is via an RS485 or ethernet RJ45 port. There is an upgraded SD card recording the performance of the generator and that data can be downloaded to any PC for analysis. Purity dependent energy saving (PDES).

With the optional employment of 2 oxygen analysers, the PDES option allows additional energy saving to be attained by keeping the purity within a narrow band of the required value. This is achieved by elongating the adsorption cycle and consequently saving valuable compressed air and nitrogen consumed by the generator during column changeover.





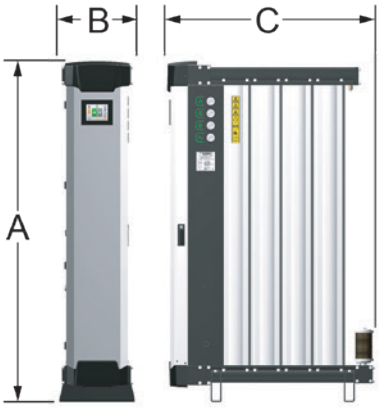
CompAir Nitrogen Generators - Technical Data

Nitrogen purity at the outlet (maximum oxygen content)*

Generator model	Rated outlet flow [1]	99.999%	99.995%	99.99%	99.975%	99.95%	99.9%	99.5%	99%	98%	97%	96%	95%	Dimensions (mm)			Approx. weight
		(10 ppm)	(50 ppm)	(100 ppm)	(250 ppm)	(500 ppm)	(0.10%)	(0.50%)	(1%)	(2%)	(3%)	(4%)	(5%)	A	B	C	(kg)
CN2009P	Nm³/h	0.9	1.7	2.0	2.5	3.0	3.6	5.2	5.8	7.3	8.3	9.5	10.3	1223	400	605	161
CN2017P	Nm³/h	1.8	3.4	4.0	5.0	6.0	7.2	10.4	11.6	14.5	16.7	19.0	20.6	1223	400	773	188
CN2026P	Nm³/h	2.7	5.1	6.0	7.5	9.0	10.8	15.6	17.3	21.8	25.0	28.5	30.9	1223	400	941	241
CN2032P	Nm³/h	5.1	7.2	8.9	10.0	11.4	13.2	18.9	21.0	26.4	30.3	34.5	37.5	1823	400	773	253
CN2047P	Nm³/h	7.7	10.8	12.6	15.0	17.1	19.8	28.4	31.5	39.6	45.5	51.8	56.3	1823	400	941	336
CN2063P	Nm³/h	10.2	14.4	16.8	20.0	22.8	26.4	37.8	42.0	52.8	60.6	69.0	75.0	1823	400	1109	418
CN2095P	Nm³/h	15.3	21.6	25.2	30.0	34.2	39.6	56.7	63.0	79.2	90.9	103.5	112.5	1823	400	1445	640
CN2126P	Nm³/h	20.4	28.8	33.6	40.0	45.6	52.8	75.6	84.0	105.6	121.2	138.0	150.0	1823	400	1781	748
CN2145P	Nm³/h	23.5	33.1	38.6	46.0	52.4	60.7	86.9	96.6	121.4	139.4	158.7	172.5	1823	400	2117	913
CN2168P	Nm³/h	27.2	38.4	44.9	53.3	60.9	70.5	100.9	112.1	141.0	161.8	184.2	200.3	1823	400	2453	1079
Air Factor		6.8	5.1	4.6	3.6	3.5	3.4	2.8	2.7	2.4	2.2	2.1	2.0				

Specifications	
Design operating pressure range	6 - 12 barg [2]
Design operating temperature range	5 - 50°C
Recommended operating temperature	5 - 25°C
Maximum inlet particulate	0.1 micron
Maximum inlet oil content	0.01ppm [4]
Recommended inlet dew point	-40°C PDP [3]
Supply voltage	100 - 240 VAC (50 or 60Hz)
Power rating	72W

Pressure correction factors [5]							
Inlet air pressure (barg)	6	7	8	9	10	11	12
Correction factor	0.88	1.00	1.10	1.20	1.30	1.40	1.50



CN2009P to CN2168P

Temperature correction factors [5]										
Inlet temperature (°F)	41	50	59	68	77	86	95	104	113	122
Inlet temperature (°C)	5	10	15	20	25	30	35	40	45	50
Correction factor	0.8	0.9	0.94	1.00	1.00	0.98	0.95	0.90	0.85	0.72

[1] At 7 barg inlet pressure and 20 - 25°C inlet temperature. For outlet flow at all other conditions refer to the correction factors above or contact CompAir

[2] 16 barg is available upon request. Consult factory

[3] For low purity applications only

[4] Including oil vapor

[5] To be used as a rough guide only. All applications should be confirmed by CompAir. Contact CompAir for sizing assistance

[6] Technical specifications subject to change without notice.

Global experience – truly local service

With over 200 years of engineering excellence, the CompAir brand offers an extensive range of highly reliable, energy efficient compressors, dryers and accessories to suit all applications.

An extensive network of dedicated CompAir sales companies and distributors across all continents provide global expertise with a truly local service, ensuring our advanced technology is backed up with the right support.

CompAir has consistently been at the forefront of compressed air systems development, culminating in some of the most energy efficient and low environmental impact compressors on the market today, helping customers achieve or surpass their sustainability targets.

CompAir compressed air product range

Advanced Compressor Technology Lubricated
- Rotary Screw
  > Fixed and Regulated Speed
- Piston
- Portable

Oil-Free
- Water Injected Screw
  > Fixed and Regulated Speed
- Two Stage Screw
  > Fixed and Regulated Speed
- Piston
- High Speed Centrifugal - Quantima®
- Rotary Scroll

Complete Air Treatment Range
- Filter
- Refrigerant and Desiccant Dryer
- Condensate Management
- Heat of Compression Dryer
- Nitrogen Generator

Modern Control Systems
- CompAir DELCOS Controllers
- SmartAir Master Sequencer
- iConn - Smart Flow Management

Value Added Services
- Professional Air Audit
- Performance Reporting
- Leak Detection

Leading Customer Support
- Custom Engineered Solutions
- Local Service Centres
- Genuine CompAir Parts and Lubricants

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