



Tested for use with the
formlabs  printers



MINI SERIES

Nitrogen generator 5-50
for Formlabs Fuse 1+ 30W &
Nylon 11 Powder


ECOINERT

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SUCCESSFUL TRIALS AT formlabs GERMANY

The nitrogen generator Mini 5-50 with an integrated tank for purging has been tested in collaboration with Formlabs in Germany.

The Fuse 1+ 30W printer can produce parts in Nylon 11 Powder, a highly ductile material that can produce robust parts. Nitrogen is also recommended with other material, Nylon 11 CF Powder, a carbon fiber-filled, high-performance material is perfect for end-use applications that require high stiffness and can sustain repeated impacts and can be used with the printer Fuse 1+ 30W. Formlabs recommends using a nitrogen purge to prevent oxidation, with a flowrate of max. 1,2 Nm³/hr.

The task was perfectly fulfilled by the nitrogen generator 5-50, which has an output of 1,4 Nm³/hr at a purity ≥ 99,5 %, being connected to compressed air network of 6 bar(g).



NITROGEN ON-SITE EXTRACTION

In-house nitrogen production offers many advantages, especially in situations where a reliable and cost-effective access to nitrogen is required.



Cost savings

Forget expensive nitrogen cylinders and delivery costs! Producing your own nitrogen allows you to reduce costs considerably in the long term. Invest once and save in the long run.



Reliable availability

No more worries about supply bottlenecks or transport problems. With our technology, you always have a reliable source of high-quality nitrogen right on site.



No handling of cylinders

High pressure gas cylinders with 200 bar are not easy to handle and create a risk of work accident.



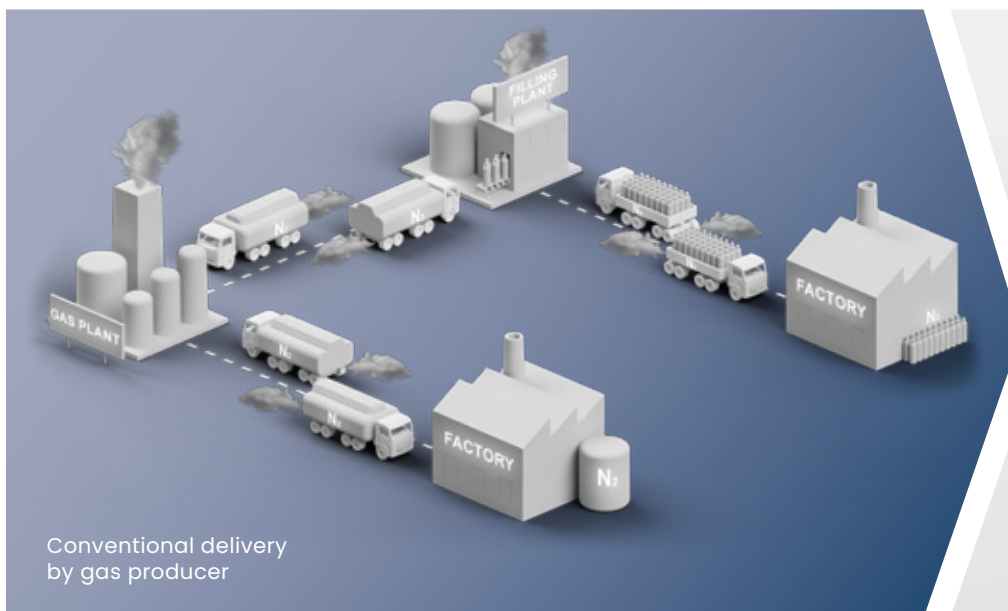
Environmental sustainability

Take responsibility for the environment! Producing your own nitrogen significantly reduces energy consumption and transport, resulting in a lower environmental impact.



Controlled quality

Our advanced technology ensures the production of the highest purity nitrogen. You can be sure that the nitrogen you extract meets the strictest quality standards and is free from impurities.



Conventional delivery
by gas producer



N₂-Generator solution:

On-site extraction of Nitrogen
from ambient air

NITROGEN GENERATOR MINI SERIES

On-site nitrogen production up to 99.9%

The ideal alternative to conventional gas supply. Flexible, cost-efficient and tailor-made for your industry. With the Mini Series nitrogen generator, you not only get high-quality nitrogen, but also a reliable and continuous nitrogen supply.

- Significant cost savings
- No ordering procedures, no rental invoices, contracts, no transport charges
- No use of dangerous high pressure gas cylinders
- No access problems due to truck deliveries
- Use at the point-of-use, no cost-intensive piping
- Environmentally friendly



Components of the MINI Series

- Electronic shut-off
- Integrated storage tank for initial purging
- High-performance membrane
- Digital display of nitrogen quality
- Differential pressure indicator
- Filter wear indicator
- Compact housing

Technical data

Nitrogen purity (adjustable)	99,5 – 99,9 %
Delivery quantity*	0,6 – 2,5 Nm ³ /h / 1-280 Cu.Ft./h
Inlet pressure	4 - 8,5 bar(ü) / 58 - 123 psi
Outlet pressure (adjustable)	Max. 1.5 bar / 21 psi below inlet pressure
Pressure dew point	≤-40°C / -40 F
Ambient temperature	Min. 5°C / 41 F - max. 45°C / 104 F
Internal storage size	50 ltr. / 190 gal
Size (H x W x D)	1120 x 600 x 390 mm / 21 x 44 x15 Cu.Ft.
Power supply	110 - 230 V, 50/60 Hz
Sound level dB(A)	<45
Weight	78 - 82 kg / 172 - 180 lb

*Depending on purity and inlet pressure.

Payback period for nitrogen generator

Comparison with*	Capacity utilisation			
	1.000 Hours/year	2.000 Hours/year	4.000 Hours/year	6.000 Hours/year
Bottles	0,5 Years	0,4 Years	0,3 Years	0,2 Years
Bundle	0,6 Years	0,5 Years	0,4 Years	0,3 Years
Gas tank	1,1 Years	0,9 Years	0,7 Years	0,6 Years



* values depending on hourly demand, purchase costs and purity of the nitrogen required in the application.



Delivery quantity and air requirement MINI 5-50

At an operating temperature of 25°C

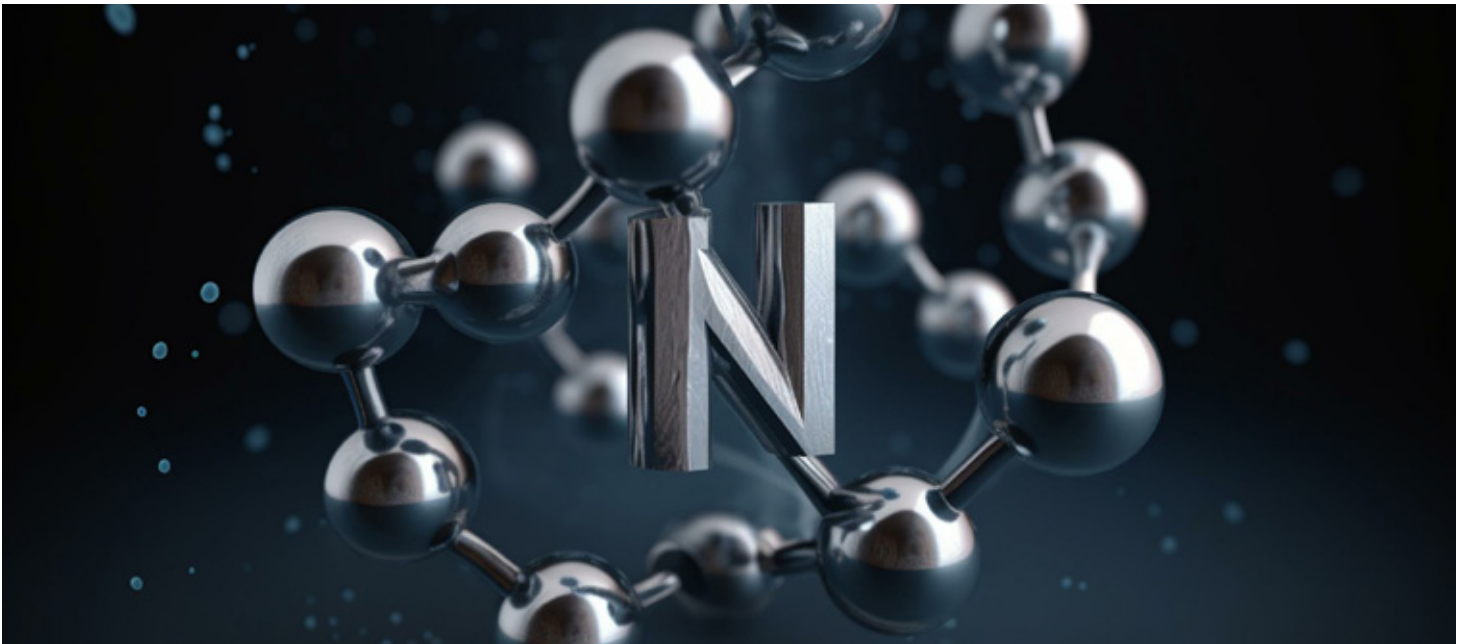
Type	Inlet pressure [bar(ü)]	Nm ³ /h	Residual oxygen content in the N ₂ gas						
			0,1%	0,5%	1%	2%	3%	4%	5%
5		Delivery quantity	0,6	1,0	1,4	1,8	2,2	2,6	3,1
		Air factor*	7,7	4,5	3,7	3,0	2,6	2,4	2,2
6		Delivery quantity	0,8	1,4	1,9	2,4	3,0	3,6	4,3
		Air factor*	7,1	4,2	3,4	2,9	2,5	2,3	2,1
7		Delivery quantity	1,0	1,8	2,4	3,1	3,9	4,7	5,5
		Air factor*	6,7	4,0	3,3	2,7	2,4	2,2	2,0
8		Delivery quantity	1,2	2,2	3,0	3,8	4,8	5,7	6,8
		Air factor*	6,3	3,8	3,2	2,6	2,3	2,1	2,0
9		Delivery quantity	1,4	2,5	3,5	4,5	5,6	6,8	8,0
		Air factor*	6,3	3,7	3,1	2,6	2,3	2,1	2,0

**MINI
5-50**
Art.no.
RG400104

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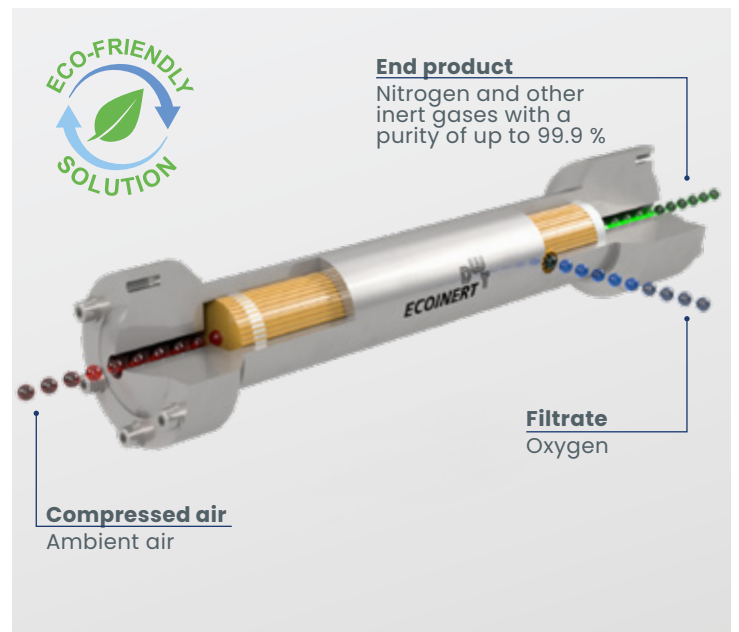
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MEMBRANE TECHNOLOGY 4.0

Our nitrogen generator uses the latest membrane technology to extract high purity nitrogen from the surrounding air.

Membrane technology is an innovative process and a highly modern, environmentally friendly and cost cost-efficient process for nitrogen recovery.



Functionality of the membrane technology

The nitrogen generator consists of an innovative membrane unit. The membrane consists of a special material with microscopic pores, which enable the targeted separation of nitrogen and oxygen. The air that is fed into the generator consists mainly of nitrogen (approx. 78 %) and nitrogen (approx. 78%) and oxygen (approx. 21%), plus 1% of other inert gases.

During operation, the compressed air is fed into the membrane unit. Due to the different diffusion velocities through the membrane, the oxygen molecules diffuse faster than the nitrogen molecules. This leads to the fact the majority of the oxygen and other gases are retained in the membrane unit, while the purer nitrogen is concentrated on the other side.



DWT COMPANY

is a medium-sized sales, production and service company in the industrial heart of Germany. The headquarter, warehouse, production and service centre are located in Bottrop. Since 1995, the export business has also been expanded and customers are now supplied in over 30 countries around the world.



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