

# NITROGEN GENERATOR

## N-GEN (PSA nitrogen generator)

### DESCRIPTION

The N-GEN nitrogen 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, 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 NG nitrogen generators use two molecular sieve beds, which alternatively switch between the adsorption and the regeneration phase.



### 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 processing

### TECHNICAL SPECIFICATIONS

Operating pressure	6 –10 barg
Operating temperature (feed air)	5°C to 35 °C (ambient up to 40°C)
Dew point (at ambient pressure)	<-40°C
Voltage, Frequency	110–230 V / 50–60 Hz
Power consumption	<120 W
Sound level	75dB(A)
Protection class (controller)	IP 65
Compressed air quality (inlet)	Class 1.4.1 acc. to ISO 8573-1 (0,1um ; 3°C ; <0,01mg/m3/h)
Filters (inlet + outlet)	Included

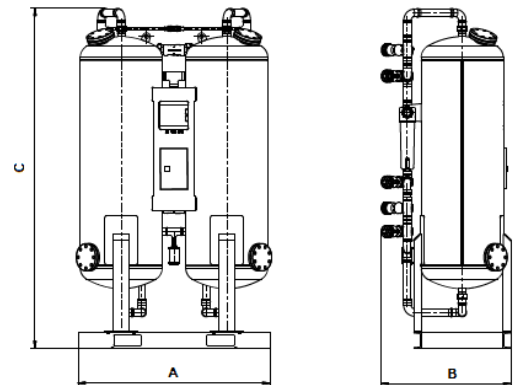
### MATERIALS

Columns, construction, support	Carbon Steel
Column inner protection	/
Column and construction protection	Epoxy powder painted
Valves	Brass, aluminium
Fitting, screws, plugs	INOX, brass, steel (zinc coated)
Outside protection	Epoxy powder painted
Adsorbent	Carbon molecular sieve (CMS)

**SIZES**

Model	Connection [inch]		Length A [mm]	Width B [mm]	Height C [mm]	Mass [kg]	Volume* [l]
	IN	OUT					
N-GEN 03	½"	½"	635	530	1650	110	11,5
N-GEN 05	½"	½"	635	530	1650	130	19,9
N-GEN 10	½"	½"	685	530	1650	190	33,3
N-GEN 15	½"	½"	795	545	1655	230	53,0
N-GEN 20	1"	½"	795	585	1920	295	66,3
N-GEN 25	1"	½"	845	660	1975	410	93,8
N-GEN 35	1"	½"	1040	780	2005	585	148,0
N-GEN 50	1"	½"	1040	795	2250	740	192,0
N-GEN 65	2"	½"	1150	795	2335	835	245,9
N-GEN 100	2"	1"	1425	945	2480	1260	512,9
N-GEN 150	2"	1"	1650	1100	2550	1590	570,0
N-GEN 200	2"	1"	1805	1160	2615	1905	778,3
N-GEN 250	2"	1"	2020	1190	2780	2430	952,0
N-GEN 300	3"	2"	2255	1280	2780	2810	1298,2
N-GEN 400	3"	2"	2720	1470	2880	3640	1695,6

\* per column



**PERFORMANCE**

Model	INLET PRESSURE [barg]	DISCHARGE PRESSURE [barg]	RESIDUAL OXYGEN [vol. %]						
			3	2	1	0,5	0,1	0,01	0,001
			RESIDUAL NITROGEN [vol. %]						
			96,00	96,97	97,87	98,17	98,47	-(1)	-(1)
			RESIDUAL ARGON [vol. %]						
			1,00	1,03	1,13	1,33	1,43	-(1)	-(1)
			TOTAL INERT GAS PURITY [vo.%]						
			97	98	99	99,5	99,9	99,99	99,999
<b>N-GEN 03;</b> N2 flow [Nm3/h]	7,5	6,3	5,23	4,27	3,62	3,00	1,99	0,99	0,61
Feed air consumption [Nm3/h]			13,4	12,2	11,4	10,4	8,4	6,1	5,5
<b>N-GEN 05;</b> N2 flow [Nm3/h]	7,5	6,3	9,0	7,4	6,2	5,2	3,4	1,7	1,1
Feed air consumption [Nm3/h]			23,2	21,0	19,7	18,0	14,5	10,5	9,5
<b>N-GEN 10;</b> N2 flow [Nm3/h]	7,5	6,3	15,2	12,4	10,5	8,7	5,8	2,9	1,8
Feed air consumption [Nm3/h]			38,9	35,3	33,0	30,2	24,3	17,6	15,9
<b>N-GEN 15;</b> N2 flow [Nm3/h]	7,5	6,3	24,1	19,7	16,7	13,8	9,2	4,6	2,8
Feed air consumption [Nm3/h]			61,8	56,1	52,5	48,0	38,6	28,0	25,3
<b>N-GEN 20;</b> N2 flow [Nm3/h]	7,5	6,3	30,2	24,6	20,9	17,3	11,5	5,7	3,5
Feed air consumption [Nm3/h]			77,3	70,3	65,6	60,1	48,3	35,1	31,6

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<b>N-GEN 25;</b> N2 flow [Nm3/h]	7,5	6,3	42,7	34,8	29,5	24,5	16,2	8,1	4,9
Feed air consumption [Nm3/h]			109,4	99,4	92,8	85,0	68,4	49,6	44,7
<b>N-GEN 35;</b> N2 flow [Nm3/h]	7,5	6,3	67,4	55,0	46,6	38,6	25,6	12,8	7,9
Feed air consumption [Nm3/h]			172,7	156,9	146,6	134,2	107,9	78,3	70,6
<b>N-GEN 50;</b> N2 flow [Nm3/h]	7,5	6,3	87,4	71,3	60,4	49,9	33,2	16,6	10,2
Feed air consumption [Nm3/h]			224,0	203,5	190,1	173,4	140,0	101,6	91,6
<b>N-GEN 65;</b> N2 flow [Nm3/h]	7,5	6,3	111,9	91,4	77,4	64,2	42,6	21,2	13,1
Feed air consumption [Nm3/h]			286,9	260,6	243,5	223,0	179,3	130,1	117,3
<b>N-GEN 100;</b> N2 flow [Nm3/h]	7,5	6,3	192,9	157,5	133,5	110,6	73,4	36,6	22,5
Feed air consumption [Nm3/h]			494,5	449,3	419,7	384,4	309,1	224,3	202,2
<b>N-GEN 150;</b> N2 flow [Nm3/h]	7,5	6,3	259,4	211,8	179,5	148,7	98,7	49,1	30,2
Feed air consumption [Nm3/h]			664,9	604,1	564,3	516,9	415,6	301,6	271,9
<b>N-GEN 200;</b> N2 flow [Nm3/h]	7,5	6,3	354,3	289,2	245,0	203,1	134,8	67,2	41,3
Feed air consumption [Nm3/h]			907,9	824,8	770,6	705,8	567,5	411,8	371,3
<b>N-GEN 250;</b> N2 flow [Nm3/h]	7,5	6,3	434,1	354,4	300,3	248,9	165,1	82,3	50,6
Feed air consumption [Nm3/h]			1112,6	1010,8	944,3	864,9	695,4	504,6	455,0
<b>N-GEN 300;</b> N2 flow [Nm3/h]	7,5	6,3	590,9	482,4	408,7	338,8	224,8	112,0	68,9
Feed air consumption [Nm3/h]			1514,3	1375,8	1285,3	1177,2	946,5	686,9	619,3
<b>N-GEN 400;</b> N2 flow [Nm3/h]	7,5	6,3	771,8	630,0	533,8	442,5	293,6	146,3	90,0
Feed air consumption [Nm3/h]			1977,9	1797,0	1678,8	1537,6	1236,3	897,1	808,9

<sup>(1)</sup> For concentrations at higher purity please contact manufacturer.

All flow rates valid for generator operation at ambient conditions 20 °C, 1.013,25 mbar and 60 % RH.

Performance +/- 5%.


## STANDARD EQUIPMENT

- Set of External Feed Air Filters
- Adsorber Vessels in Carbon Steel
- Long life Pneumatic and Solenoid Valves
- Internal Piping & Fittings zinc plated carbon steel
- Product Pressure Transmitters
- Nitrogen and Air flow Regulation
- Pressure Regulator
- Control System with SIEMENS PLC
- WebControl

## OPTIONAL EQUIPMENT

- Oxygen Analyser with Zirconium-Oxide Sensor
- Electronic Product Flow Meter
- Feed Air / Product Moisture Analyser
- Feed Air / Product Temperature Transmitters
- Nitrogen Sterile Filters
- Nitrogen Booster
- Nitrogen Cylinder Filling System
- Touch screen or Semi-Graphical Operator Interface

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	<p>Our quality management system is certified by BUREAU VERITAS in conformity with ISO 9001:2008 Reg. number: 200285</p>	
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