ECOTROC® GEN
Nitrogen Generators

Rev 02_1023

Solutions for Generating Gaseous Nitrogen from Compressed Air

Individual and high-tech

KSI nitrogen generators of the **ECOTROC® GEN** series use the adsorption process to separate the nitrogen molecules from the oxygen molecules in the compressed air supplied. The resulting high-quality nitrogen is now ready for use in a wide variety of systems.

KSI Filtertechnik offers the right unit for every requirement: The standard scope of supply already includes the outlet section with pressure and flow regulator and a purity sensor. TPD control (Touch Premium Device) and APC (Automatic Purity Control) are optionally available. Nitrogen purities from 95.0% to 99.999% (Class 5.0) and volume flows (depending on the design) from 0.4 Nm^3/h up to 2,223 Nm^3/h are possible.

The ECOTROC® GEN Plus Effects +++

+ inlet filtration particle filter SMA 0.01 micron with pressure regulator included
+ output filtration dust filter DMF 1 micron incl. needle valve included
+ easy installation, plug & play
+ low maintenance, high quality components
+ continuous measurement of nitrogen purity
+ clear and advanced control panel (TPD)
+ stainless steel piping
+ efficient process

Options

- Compressed air processing
- Automatic purity monitoring with flow & consumption sensor
- Dew point sensor compressed air
- Dew point sensor nitrogen
- SIEMENS SIMATIC S7 with 7 inch touch control panel incl. remote control
- Uninterruptible Power Supply for the Touch Control Panel
- Temperature sensor

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The KSI nitrogen generators of the **ECOTROC® GEN** series use the so-called **Pressure Swing** adsorption process. When flowing through a vessel filled with CMS (desiccant), the oxygen is removed from the clean compressed air by the desiccant. The remaining nitrogen molecules are directed into the product vessel, where they are now available for further use.

All KSI nitrogen generators of the **ECOTROC® GEN** series are equipped as standard with a pre-filtration (SMA) including inlet pressure regulator and outlet filter (dust filter of the DMF series) with a needle valve for volume flow adjustment.

The **ECOTROC® GEN** series is capable of producing nitrogen with a purity of 95% to 99.999% in an energy-efficient and thus cost-effective manner. This enables the production of more nitrogen with lower compressed air requirements. Depending on the design of the unit, a delivery rate of 0.4 Nm3/h up to 2.223 Nm3/h is achievable.

Features of this KSI product include simple design that allows plug-and-play installation. Continuous measurement of nitrogen purity ensures quality throughout. Low-maintenance operation is ensured by design measures and the use of quality components.

In the desorption process, the desiccant saturated with oxygen is regenerated by the pressure change process. The bound oxygen molecules are thus dissolved again and transported away.

All necessary components of the **ECOTROC® GEN** construction series are controlled by the **Touch Premium Device** control (TPD).

Control from any device with an Internet connection is thus also possible. Alternatively, the control unit is equipped with Modbus TCP and ProfiNet.

Thus, the Touch Premium Device control (TPD) is equipped with the most modern control technology and allows safe and convenient operation.

Please contact our sales department for further technical advice and design.

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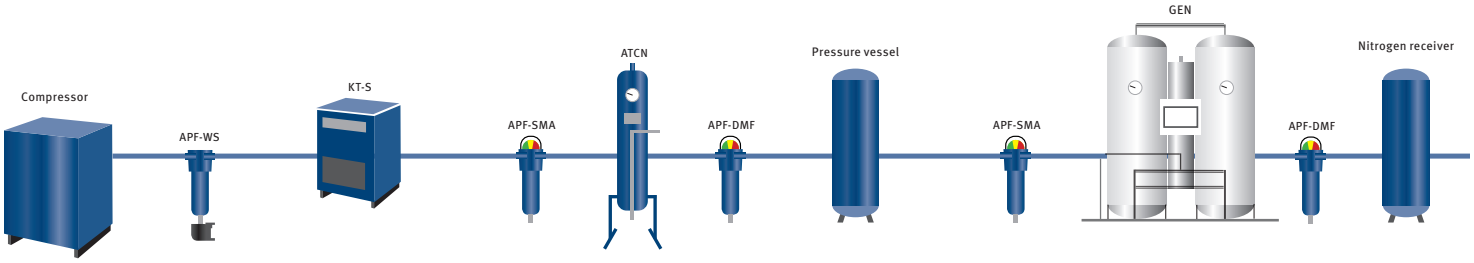
Typical installation of an ECOTROC® GEN nitrogen generator



Specifying air quality in accordance with ISO 8573.1:2010

Type	GEN-Series
Solid particles	Class 1
Water	Class 4
Oil	Class 1

Scope of Supply

Standard	
TPD 4“	SIEMENS SIMATIC S7 with 4“ touch panel
Inlet filtration	Submicrofilter SMA 0.01 micron and inlet pressure regulator
Outlet filtration	Dust filter DMF 1 micron, outlet pressure regulator and needle valve (flow regulator) for mounting to the product tank
Stainless steel piping	
Sensors	Purity sensor and outlet pressure sensor

Optional	
TPD 7“	SIEMENS SIMATIC S7 with 7“ touch control panel incl. remote control
APC	Automatic purity control with flow and consumption sensor
UPS	Uninterruptible power supply for the touch control panel
S7 Modul	Analog input module for Siemens S7 with 4 inch TCP for up to 8 additional sensors
ET-Sens	Dew point sensor for compressed air
N2-Sens	Dew point sensor for nitrogen
	Compressed air pressure sensor

Recommended upgrade for the food & beverage and pharmaceutical industries	
TPD 7“	SIEMENS SIMATIC S7 with 7“ touch control panel incl. remote control
APC	Automatic purity control with flow and consumption sensor
ET-Sens	Dew point sensor for compressed air
FES stainless steel sterile filter	Sterile filter for germ and bacteria free compressed air
Gas-Sens	Measuring point for gas quality

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GEN 10 - 150

Type	Purity	95%	97%	98%	99%	99.5%	99.9%	99.95%	99.99%	99.995%	99.999%
GEN-10	Capacity Nm³/h	4.68	3.74	3.28	2.81	2.33	1.56	1.29	0.73	0.58	0.41
	Comp. air factor	2.00	2.20	2.40	2.70	2.90	3.40	3.70	4.80	5.30	6.30
	Comp. air Nm³/h	9.36	8.23	7.86	7.58	6.75	5.32	4.77	3.49	3.10	2.57
	Product vessel (l)	100	100	100	100	100	100	100	100	100	100
	Comp. air vessel (l)	100	100	100	100	100	100	100	100	100	100
GEN-20	Capacity Nm³/h	13.10	10.29	8.42	6.55	5.99	4.02	3.31	1.87	1.50	1.05
	Comp. air factor	2.00	2.20	2.40	2.70	2.90	3.40	3.70	4.80	5.30	6.30
	Comp. air Nm³/h	26.20	22.64	20.21	17.69	17.37	13.68	12.26	8.98	7.96	6.60
	Product vessel (l)	100	100	100	100	100	100	100	100	100	100
	Comp. air vessel (l)	100	100	100	100	100	100	100	100	100	100
GEN-30	Capacity Nm³/h	25.26	22.46	18.71	14.97	12.64	8.49	6.99	3.95	3.17	2.21
	Comp. air factor	2.00	2.20	2.40	2.70	2.90	3.40	3.70	4.80	5.30	6.30
	Comp. air Nm³/h	50.53	49.41	44.91	40.42	36.66	28.88	25.87	18.96	16.81	13.94
	Product vessel (l)	100	100	100	100	100	100	100	100	100	100
	Comp. air vessel (l)	100	100	100	100	100	100	100	100	100	100
GEN-40	Capacity Nm³/h	45.66	39.96	34.25	28.54	23.54	15.82	13.02	7.36	5.91	4.12
	Comp. air factor	2.00	2.20	2.40	2.70	2.90	3.40	3.70	4.80	5.30	6.30
	Comp. air Nm³/h	91.33	87.90	82.19	77.06	68.27	53.78	48.18	35.31	31.31	25.96
	Product vessel (l)	150	150	150	150	150	150	150	150	150	150
	Comp. air vessel (l)	270	270	270	270	270	270	270	150	150	100
GEN-50	Capacity Nm³/h	63.44	52.87	47.58	37.01	33.84	22.73	18.72	10.57	8.49	5.92
	Comp. air factor	2.00	2.20	2.40	2.70	2.90	3.40	3.70	4.80	5.30	6.30
	Comp. air Nm³/h	126.88	116.31	114.20	99.92	98.12	77.29	69.25	50.75	45.00	37.30
	Product vessel (l)	270	270	270	270	270	270	270	270	270	270
	Comp. air vessel (l)	500	500	500	500	500	500	500	270	270	150
GEN-60	Capacity Nm³/h	122.95	109.29	95.63	75.14	62.18	41.77	34.39	19.43	15.60	10.88
	Comp. air factor	2.00	2.20	2.40	2.70	2.90	3.40	3.70	4.80	5.30	6.30
	Comp. air Nm³/h	245.91	240.44	229.51	202.87	180.31	142.03	127.25	93.26	82.69	68.55
	Product vessel (l)	500	500	500	500	500	500	500	500	500	500
	Comp. air vessel (l)	720	720	720	720	720	720	720	500	500	200
GEN-70	Capacity Nm³/h	176.85	157.20	131.00	98.25	82.53	58.95	51.09	25.94	23.19	17.03
	Comp. air factor	2.00	2.20	2.40	2.70	2.90	3.40	3.70	4.80	5.30	6.30
	Comp. air Nm³/h	353.70	345.84	314.40	265.28	239.34	200.43	189.03	124.50	122.89	107.29
	Product vessel (l)	720	720	720	720	720	720	720	720	720	720
	Comp. air vessel (l)	1000	1000	1000	1000	1000	1000	1000	720	720	500
GEN-80	Capacity Nm³/h	280.02	248.90	199.12	161.79	125.99	89.99	78.00	39.60	35.40	26.00
	Comp. air factor	2.00	2.20	2.40	2.70	2.90	3.40	3.70	4.80	5.30	6.30
	Comp. air Nm³/h	560.03	547.59	477.89	436.82	365.38	305.98	288.58	190.07	187.61	163.79
	Product vessel (l)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	Comp. air vessel (l)	1500	1500	1500	1500	1500	1500	1500	1000	1000	500

The performance data in Nm³/h refer to the reference conditions: 20 °C, 1013 mbar. With an inlet pressure of 7 barg and a resulting resulting nitrogen outlet pressure of 5 barg. The resulting differential pressure depends on the dimensioning of the product pressure vessel. The figures represent the minimum requirements. Larger product pressure vessel reduce the resulting differential pressure.

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Nitrogen Generators

GEN 10 - 150

Type	Purity	95%	97%	98%	99%	99,5%	99,9%	99,95%	99,99%	99,995%	99,999%
GEN-90	**Capacity Nm³/h**	394.97	338.54	288.39	225.70	152.92	114.05	97.17	54.91	48.98	40.08
	Comp. air factor	2.00	2.20	2.40	2.70	2.90	3.40	3.70	4.80	5.30	6.30
	Comp. air Nm³/h	789.94	744.80	692.14	609.38	443.47	387.76	359.52	263.56	259.62	252.49
	Product vessel (l)	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
	Comp. air vessel (l)	2000	2000	2000	2000	2000	2000	2000	1500	1500	720
GEN-100	**Capacity Nm³/h**	484.24	430.43	355.11	301.30	212.15	158.22	134.80	76.17	67.96	55.60
	Comp. air factor	2.00	2.20	2.40	2.70	2.90	3.40	3.70	4.80	5.30	6.30
	Comp. air Nm³/h	968.47	946.95	852.26	813.52	615.24	537.94	498.77	365.64	360.17	350.29
	Product vessel (l)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
	Comp. air vessel (l)	3000	3000	3000	3000	3000	3000	3000	2000	2000	1000
GEN-110	**Capacity Nm³/h**	757.94	645.65	505.29	449.15	300.29	223.95	190.81	107.82	96.19	78.70
	Comp. air factor	2.00	2.20	2.40	2.70	2.90	3.40	3.70	4.80	5.30	6.30
	Comp. air Nm³/h	1515.87	1420.43	1212.70	1212.70	870.85	761.43	705.99	517.55	509.81	495.82
	Product vessel (l)	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
	Comp. air vessel (l)	5000	5000	5000	5000	5000	5000	5000	3000	3000	1500
GEN-120	**Capacity Nm³/h**	960.05	821.38	693.37	533.36	366.31	273.19	232.76	131.53	117.34	96.01
	Comp. air factor	2.00	2.20	2.40	2.70	2.90	3.40	3.70	4.80	5.30	6.30
	Comp. air Nm³/h	1920.10	1807.03	1664.09	1440.08	1062.31	928.84	861.21	631.33	621.90	604.83
	Product vessel (l)	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
	Comp. air vessel (l)	5000	5000	5000	5000	5000	5000	5000	5000	5000	2000
GEN-130	**Capacity Nm³/h**	968.47	860.87	710.21	602.61	424.30	316.43	269.61	152.35	135.91	111.20
	Comp. air factor	2.00	2.20	2.40	2.70	2.90	3.40	3.70	4.80	5.30	6.30
	Comp. air Nm³/h	1936.95	1893.90	1704.51	1627.04	1230.48	1075.88	997.54	731.27	720.35	700.58
	Product vessel (l)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	Comp. air vessel (l)	500	500	500	500	500	500	500	500	500	500
GEN-140	**Capacity Nm³/h**	1515.87	1291.30	1010.58	898.29	600.58	447.90	381.62	215.64	192.38	157.40
	Comp. air factor	2.00	2.20	2.40	2.70	2.90	3.40	3.70	4.80	5.30	6.30
	Comp. air Nm³/h	3031.74	2840.85	2425.39	2425.39	1741.70	1522.87	1411.99	1035.09	1019.63	991.65
	Product vessel (l)	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
	Comp. air vessel (l)	720	720	720	720	720	720	720	720	720	720
GEN-150	**Capacity Nm³/h**	1920.10	1642.76	1386.74	1066.72	732.63	546.38	465.52	263.05	234.68	192.01
	Comp. air factor	2.00	2.20	2.40	2.70	2.90	3.40	3.70	4.80	5.30	6.30
	Comp. air Nm³/h	3840.21	3614.06	3328.18	2880.16	2124.62	1857.68	1722.42	1262.66	1243.80	1209.67
	Product vessel (l)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
	Comp. air vessel (l)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

The performance data in Nm³/h refer to the reference conditions: 20 °C, 1013 mbar. With an inlet pressure of 7 barg and a resulting resulting nitrogen outlet pressure of 5 barg. The resulting differential pressure depends on the dimensioning of the product pressure vessel. The figures represent the minimum requirements. Larger product pressure vessel reduce the resulting differential pressure.