



### Optional

Dew Point Sensor

### Features

- Simple structure, compact design, full automated operation
- Replaces manifold usage
- Touch Screen HMI for controlling the complete system
- HMI Screen for monitoring and visualizing the progress
- Rapid start-up and safety system
- Superior silencer design gives low noise levels during depressurization and purge
- Durable piston valves for long-life operation
- On demand production, low cost
- High performance
- \*The purity and capacity of nitrogen gas is designed to meet customer requirements (Nitrogen Purity 95%~99.999% is available)
- Minimum maintenance cost.

### PSA NITROGEN GENERATORS

Pressure Swing Adsorption (PSA) type Nitrogen Generation system that is used to separate and enrich Nitrogen from Oxygen employs CMS (Carbon Molecular Sieve) for adsorbent. Carbon Molecular Sieve (CMS) adsorbs Oxygen and Water Vapor molecules under certain pressure while allowing Nitrogen to pass through.

### The Nitrogen Generator is a Two-Bed Adsorber System

The Nitrogen Generator consists of two adsorber vessels filled with CMS, a valve assembly, air filters, main pressure regulator, and a product receiver tank. Clean and dry air is directed to one of the adsorber beds where oxygen and water vapor is adsorbed faster than nitrogen in the pore structure of the CMS, thus increasing the nitrogen purity of the product gas stream to the desired level (95-99.999% as required by customer). This product flows out from the top of the adsorber bed, through the valve and into the product receiver at a pressure slightly below the feed air pressure.

### Applications

Metal industry

Chemical industry

Plastic industry

Automotive Industry

Production process and storage of food

### Standard

Oxygen Analyzer / Nitrogen Purity Sensor  
 Flow Meter  
 Carbolescer with oil indicator  
 Nitrogen Generator/ Silencer  
 Basic Logo or Crouzet mini plc for modular type  
 Siemens HMI color touch screen for twin towers  
 Buffer Tank (Standard for MNG 10 to MNG 2050)  
 T Filters are standard in all models



Replaces Manifold Usage



Touch Screen HMI



Dew Point Sensor



Long Life Piston Valve



Air Filter

### Technical Specifications

Model	Free Nitrogen Delivery @ Following Purity Level (m <sup>3</sup> /h)								
	95%	97%	98%	99%	99.50%	99.90%	99.95%	99.99%	99.999%
VNG-PRO-140	32.1	26.8	24.6	16.9	13.7	10.6	9.7	5.2	3.1
VNG-PRO-185	42.8	35.7	32.8	22.5	18.4	14.1	12.9	7.0	4.1
VNG-PRO-225	52.5	43.7	40.2	27.6	22.5	17.3	15.8	8.5	5.0
VNG-PRO-360	83.4	69.6	63.9	43.9	35.7	27.5	25.1	13.6	8.0
VNG-PRO-475	110.4	92.1	84.6	58.0	47.3	36.4	33.2	18.0	10.6
VNG-PRO-640	149.3	124.4	114.4	78.5	63.9	49.3	44.9	24.3	14.3
VNG-PRO-700	171.0	142.5	131.0	89.9	73.2	56.4	51.5	27.9	16.4
VNG-PRO-810	189.9	158.3	145.5	99.8	81.3	62.7	57.1	30.9	18.2
VNG-PRO-1065	248.5	207.2	190.4	130.6	106.4	82.0	74.8	40.5	23.9
VNG-PRO-1300	304.0	253.4	232.9	159.8	130.2	100.3	91.5	49.5	29.2
VNG-PRO-1580	369.6	308.1	283.1	194.2	158.3	122.0	111.2	60.2	35.5
VNG-PRO-1750	407.7	339.9	312.3	214.3	174.6	134.5	122.7	66.4	39.1
VNG-PRO-1940	451.8	376.6	346.1	237.4	193.5	149.1	136.0	73.6	43.4
VNG-PRO-2610	610.8	509.2	467.9	321.0	261.6	201.6	183.8	99.5	58.6
VNG-PRO-3050	712.4	593.9	545.7	374.4	305.1	235.0	214.5	116.1	68.4
VNG-PRO-3660	853.9	711.9	654.2	448.8	365.7	281.8	257.0	139.1	82.0
VNG-PRO-4500	1053.3	878.1	806.9	553.6	451.1	347.6	317.0	171.6	101.1
VNG-PRO-5290	1234.4	1029.1	945.6	648.8	528.7	407.4	371.5	201.1	118.5
VNG-PRO-6100	1423.4	1186.6	1090.4	748.1	609.7	469.7	428.4	231.9	136.6
VNG-PRO-7340	1713.5	1428.5	1312.7	900.6	733.9	565.5	515.7	279.2	164.6
VNG-PRO-9060	2115.0	1763.3	1620.3	1111.6	905.9	698.0	636.5	344.6	203.0
VNG-PRO-10780	2516.2	2097.7	1927.6	1322.4	1077.7	830.4	757.3	410.0	241.5
VNG-PRO-12100	2826.2	2356.0	2165.0	1485.3	1210.4	932.6	850.5	460.5	271.3
VNG-PRO-14780	3451.7	2877.6	2644.8	1814.1	1478.4	1139.2	1038.8	562.4	331.3

	95%	97%	98%	99%	99.50%	99.90%	99.95%	99.99%	99.999%
A/N Ratios	1.2	1.4	1.4	1.9	2.1	2.6	2.5	4.1	6.8

### Technical Specifications

Model	Air Demand @ Following Purity Level (m³/h)								
	95%	97%	98%	99%	99.50%	99.90%	99.95%	99.99%	99.999%
VNG-PRO-140	38.5	37.5	36.9	32.0	28.9	27.5	24.1	21.4	20.9
VNG-PRO-185	51.4	50.0	49.2	42.8	38.5	36.8	32.2	28.6	28.0
VNG-PRO-225	62.9	61.2	60.3	52.4	47.2	45.01	39.5	35.0	34.2
VNG-PRO-360	100.1	97.4	95.9	83.3	75.1	71.6	62.8	55.7	54.5
VNG-PRO-475	132.5	128.9	126.9	110.3	99.3	94.8	83.1	73.8	72.1
VNG-PRO-640	179.1	174.2	171.5	149.1	134.3	128.1	112.3	99.7	97.4
VNG-PRO-700	205.2	199.5	196.5	170.7	153.8	146.7	128.6	114.2	111.6
VNG-PRO-810	227.8	221.6	218.2	189.6	170.8	162.9	142.9	126.8	123.9
VNG-PRO-1065	298.2	290.1	285.6	248.2	223.5	213.2	187.0	166.0	162.2
VNG-PRO-1300	364.8	354.8	349.3	303.6	273.4	260.8	228.7	203.1	198.4
VNG-PRO-1580	443.5	431.4	424.7	369.1	332.4	317.1	278.1	246.9	241.3
VNG-PRO-1750	489.2	475.8	468.5	407.1	366.7	349.8	306.7	272.4	266.1
VNG-PRO-1940	542.1	527.3	519.1	451.1	406.3	387.6	339.9	301.8	294.9
VNG-PRO-2610	733.0	712.9	701.9	609.9	549.4	524.1	459.6	408.0	398.7
VNG-PRO-3050	854.8	831.4	818.5	711.4	640.6	611.1	536.3	476.0	465.1
VNG-PRO-3660	1024.7	996.6	981.3	852.7	768.1	732.7	642.5	570.5	557.4
VNG-PRO-4500	1263.9	1229.3	1210.3	1051.8	947.4	903.7	792.5	703.6	687.5
VNG-PRO-5290	1481.3	1440.7	1418.5	1232.6	1110.3	1059.1	928.7	824.6	905.8
VNG-PRO-6100	1708.1	1661.3	1635.7	1421.4	1280.3	1221.3	1071.0	950.9	929.2
VNG-PRO-7340	2056.2	1999.9	1969.0	1711.1	1541.2	1470.3	1289.2	1144.7	1119.2
VNG-PRO-9060	2538.0	2468.6	2430.5	2112.0	1902.4	1814.8	1591.3	1412.9	1380.7
VNG-PRO-10780	3019.4	2936.7	2891.4	2512.6	2263.2	2159.0	1893.1	1680.9	1642.5
VNG-PRO-12100	3391.5	3298.4	3247.5	2822.1	2541.9	2424.9	2126.3	1887.9	1844.8
VNG-PRO-14780	4142.0	4028.6	3967.2	3446.8	3104.6	2961.9	2597.0	2305.9	2253.2

### Reference Conditions

Inlet Compressed Air Pressure	Outlet Nitrogen Pressure	Ambient Temperature	Inlet Air Dew Point	Purity
7.5 bar	6 bar	25°C	≤3°C	99.5%

### Technical Specifications

Model	RECOMMENDED BUFFER TANK VOLUMES (LITER)								
	95%	97%	98%	99%	99.50%	99.90%	99.95%	99.99%	99.999%
VNG-PRO-140	59	50	46	31	25	20	18	10	6
VNG-PRO-185	79	66	61	42	34	26	24	13	8
VNG-PRO-225	97	81	74	51	42	32	29	16	9
VNG-PRO-360	155	129	118	81	66	51	47	25	15
VNG-PRO-475	205	170	157	107	88	67	62	33	20
VNG-PRO-640	276	230	212	145	118	91	83	45	27
VNG-PRO-700	317	264	243	166	136	104	95	52	30
VNG-PRO-810	352	293	269	185	151	116	106	57	34
VNG-PRO-1065	460	384	353	242	197	152	139	75	44
VNG-PRO-1300	563	469	431	296	241	186	169	92	54
VNG-PRO-1580	684	571	524	360	293	226	206	112	66
VNG-PRO-1750	755	629	578	397	323	249	227	123	72
VNG-PRO-1940	837	697	641	440	358	276	252	136	80
VNG-PRO-2610	1131	943	867	594	484	373	340	184	109
VNG-PRO-3050	1319	1100	1011	693	565	435	397	215	127
VNG-PRO-3660	1581	1318	1211	831	677	522	476	258	152
VNG-PRO-4500	1950	1626	1494	1025	835	644	587	318	187
VNG-PRO-5290	2286	1906	1751	1201	979	754	688	372	219
VNG-PRO-6100	2636	2197	2019	1385	1129	870	793	429	253
VNG-PRO-7340	3173	2645	2431	1668	1359	1047	955	517	305
VNG-PRO-9060	3917	3265	3001	2059	1678	1293	1179	638	376
VNG-PRO-10780	4660	3885	3570	2449	1996	1538	1402	759	447
VNG-PRO-12100	5234	4363	4009	2751	2242	1727	1575	853	502
VNG-PRO-14780	6392	5329	4898	3359	2738	2110	1924	1041	614

Note: Vortex supplies buffer tank volumes for 99,0% and higher Nitrogen purities. For purities lower than 99,0%, it may be necessary to use an additional tank. (Buffer Tanks are standard for VNG 10 to VNG 2550)

### Correction Factor for VNG Series

Inlet Pressure (bar)	F1	Ambient Temp. (°C)	F2
5	0.68	5	0.85
5.5	0.73	10	1
6	0.79	15	1
6.5	0.88	20	1
7	0.90	25	1
7.5	1	30	0.91
8	1.04	35	0.82
8.5	1.08	40	0.74
9	1.15	45	0.6

To determine the nitrogen generator model in the reference conditions divide the nitrogen flow rate to the factors mentioned above.

