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Magic Series Modular Nitrogen Generator

PSI Magic Series Nitrogen Generators utilize Pressure Swing Adsorption (PSA) technology to continuously produce high-purity nitrogen from clean, dry compressed air.

PSI generator features with dual-chamber columns made from high-strength aerospace aluminum extrusion, filled with high-density Carbon Molecular Sieve (CMS), and connected through upper and lower manifolds, creating an efficient dual-bed system.

Clean, dry compressed air enters the bottom of the “online” bed through the intake manifold and flows upward through the Carbon Molecular Sieve. During this process, oxygen and other trace gases in the compressed air are preferentially adsorbed, while the remaining nitrogen passes through the support bed and exhaust manifold into a buffer tank. It then goes through a dust filter installed at the outlet of the buffer tank before being sent to the nitrogen generator for purity monitoring.

After a preset time, the control system automatically switches the bed positions. One bed is always online generating nitrogen, while the other bed is in regeneration. During the regeneration process, the oxygen collected by the Carbon Molecular Sieve is released into the atmosphere. Additionally a small portion of the nitrogen at the outlet expands back into the bed to accelerate the regeneration process.

PSI Magic Series Nitrogen Generators provide an ideal nitrogen solution for various industrial applications with outstanding performance and reliable operation.

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Features & Advantages

- **Convenient Gas Supply**

Can produce gas 24 hours a day, eliminating the production stoppage risk caused by the depletion of gas cylinder supply.

- **High Purity**

PSI Magic series modular nitrogen generator can meet nitrogen purity requirements ranging from 95% to 99.999%.

- **Space Saving**

Magic series nitrogen generator features a compact design and occupies less space, with its size and weight being less than half of traditional twin-tower nitrogen generators. It can be installed in narrow spaces, saving valuable area.

- **Safe and Reliable**

Eliminates all risks associated with transporting and storing nitrogen cylinders or liquid nitrogen.

- **Easy Operation and Maintenance**

Equipped with a touch screen PLC for visual, user-friendly operation that requires only simple training to get started.

- **Modular Design**

PSI Magic series' unique modular construction means that extra columns can be easily added if more nitrogen demand increases.

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Technique Parameters

Model	Rated flow rate	Nitrogen Purity in outlet (& Maximum Oxygen Content)											
		99.999%	99.995%	99.99%	99.98%	99.95%	99.90%	99.50%	99%	98%	97%	96%	95%
		10ppm	50ppm	100ppm	200ppm	500ppm	0.10%	0.50%	1%	2%	3%	4%	5%
PMN109	Nm³/h	0.9	1.7	2	2.5	3	3.6	5.2	5.8	9.3	8.3	9.5	10
PMN209	Nm³/h	1.8	3.4	4	5	6	7.2	10.4	12	15	16.7	19	21
PMN309	Nm³/h	2.7	5.1	6	7.5	9	10.8	15.6	17	22	25	29	31
PMN115	Nm³/h	2.5	3.6	4.5	5	5.7	6.6	9.5	10.5	13	15.2	17.5	19
PMN215	Nm³/h	5.1	7.2	8.9	10	11.4	13.2	18.9	21	26	30.3	35	38
PMN315	Nm³/h	7.7	10.8	12.6	15	17.1	19.8	28.4	32	40	45.5	52	56
PMN415	Nm³/h	10.2	14.4	16.8	20	22.8	26.4	37.8	42	53	60.6	69	75
PMN515	Nm³/h	12.7	18.1	21.0	25	30.3	33	47.2	52.5	66	75.7	86.5	94
PMN615	Nm³/h	15.3	21.6	25.2	30	34.2	39.6	56.7	63	79	90.9	104	113
PMN715	Nm³/h	17.8	25.2	29.4	35	39.9	46.2	66.1	73.5	92.5	105	121	131
PMN815	Nm³/h	20.4	28.8	33.6	40	45.6	52.8	75.6	84	106	121	138	150
PMN816	Nm³/h	21.8	30.8	35.9	42.7	48.7	56.4	80.7	89.7	113	129	147	160
PMN1015	Nm³/h	23.5	33.1	38.6	46	52.4	60.7	86.9	97	121	139	159	173
PMN1016	Nm³/h	25.1	35.3	41.2	49.1	55.9	64.8	92.8	103	129	148	170	184
PMN1215	Nm³/h	27.2	38.4	44.9	53.3	60.9	70.5	100.9	112	141	162	184	200
PMN1216	Nm³/h	29.0	41.1	47.8	56.9	65.2	75.3	107.6	119	150	173	196	213

Correction factor for inlet temperature CFT

Inlet temperature °C	5	10	15	20	25	30	35	40	45	50
CFT	0.80	0.90	0.94	1.00	1.00	0.98	0.95	0.90	0.85	0.72

Correction factor for inlet pressure CFP

Inlet pressure (barg)	6	7	8	9	10-16
CFP	0.88	1.00	1.10	1.20	1.20

Actual flow rate=Selected rated flow rate x CFT x CFP

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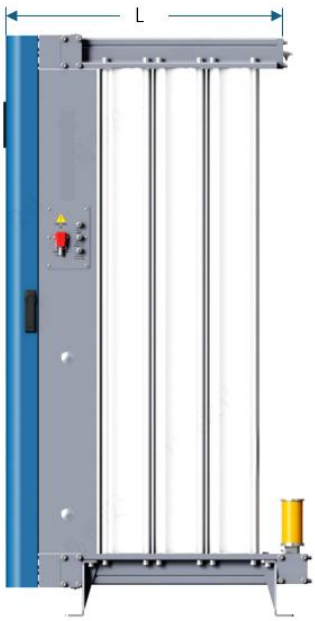
Other Technique Information

Dimension & Weight



Model	Height(H) mm	Width (W) mm	Length(L) mm	Weight Kg
PMN109	1218	400	584	144
PMN209	1218	400	752	202
PMN309	1218	400	919	260
PMN115	1818	400	584	180
PMN215	1818	400	750	269
PMN315	1818	400	916	358
PMN415	1818	400	1082	447
PMN515	1818	400	1248	536
PMN615	1818	400	1414	625
PMN715	1818	400	1580	714
PMN815	1818	400	1746	803
PMN816	1918	400	1746	843
PMN1015	1818	400	2078	981
PMN1016	1918	400	2078	1031
PMN1215	1818	400	2410	1159
PMN1216	1918	400	2410	1219

Inlet Parameter

Inlet air quality	ISO 8573-1:2010 Class 2.2.2
Inlet pressure range	5-13 barg

Electrical Parameter

Power supply	100-240VAC 1Ph 50/60Hz
Power consumption	80 W
Fuse	**3.15A**

Port Connection

Air inlet	G1/2
N2 buffer inlet	G1
N2 buffer outlet	**G1/2**
N2 outlet	G1/2

Ambient Parameter

Ambient Temperature	5-50°C (41-122°F)
Humidity	50%@40°C (80% Max≤31°C)
Protection	**IP20/NEMA 1**
Altitude	<2000m (6562ft)
Noise	<80 dB(A)

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