

MEMBRANE N2 GENERATOR

NM-GEN 75-500

(Membrane Nitrogen Generator)

DESCRIPTION

The NM-GEN membrane nitrogen generators extract the available nitrogen from the compressed air. Generator use hollow fiber membrane technology to separate nitrogen from other components in compressed air. The membrane uses the principle of selective permeation to produce purity nitrogen. Each gas has a characteristic permeation rate, which is a function of its ability to diffuse through a membrane. Oxygen is a fast gas and is selectively diffused through the membrane wall, while nitrogen is allowed to travel along the inside of the fiber, thus creating a nitrogen-rich product stream. The oxygen-enriched gas, or permeate, is vented from the membrane separator at atmospheric pressure. The driving force for the separation is the difference between the partial pressure of the gas on the inside of the hollow fiber and that on the outside. In the membrane separator, compressed air flows down the inside of hollow fibers. Fast gases—oxygen, carbon dioxide, and water vapor - and a small amount of slow gases, pass through the membrane wall to the outside of the fibers. They are collected at atmospheric pressure as the permeate. Most of the slow gases and a very small amount of the fast gases continue to travel through the fiber until they reach the end of the membrane separator, where the product nitrogen gas is piped to the application.



APPLICATIONS

- Blanketing of Chemicals and Pharmaceuticals
- Inerting of Flammable Liquids
- Laser Cutting
- Re-flow and Wave Soldering of PCBs
- UV-Curing of Coatings
- Food processing

TECHNICAL SPECIFICATIONS

| | |
|----------------------------------|---|
| Nitrogen pressure | 5– 24 barg |
| Operating temperature (feed air) | 35 °C to 55 °C |
| Dew point (at ambient pressure) | better than -50°C |
| Voltage, Frequency | 110–230 V / 50–60 Hz |
| Power consumption | <35 W |
| Sound level | 65 dB(A) |
| Protection class (controller) | IP 65 |
| Compressed air quality (inlet) | Class 1.X.1 acc. to ISO 8573-1 (0,1um ; bellow saturation ; <0,01mg/m3/h) |
| Inlet filter | Super fine coalescing and activated carbon |

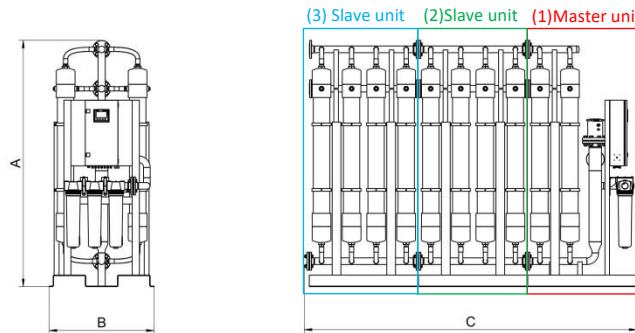
MATERIALS

| | |
|-------------------------------------|--|
| Membrane housing | Aluminium and (or) PA |
| Supporting frame | Carbon steel |
| Valves | Brass, aluminium |
| Flexible connection | Nylon |
| Fittings, Screws, plugs | INOX, brass, steel-zinc plated, PA |
| Outside protection (frame, cabinet) | Powder paint coated (Epoxy-polyester base) |

SIZES

| Model | Connection IN | Connection OUT | Purge Connection | Height A [mm] | Width B [mm] | Depth C [mm] | Mass [kg] | No. of membranes | No. of units |
|------------|---------------|----------------|------------------|---------------|--------------|--------------|-----------|------------------|-----------------|
| NM-GEN 75 | 2" | 2" | 2" | 2253 | 960 | 1050 | 291 | 3 | (1) Master unit |
| NM-GEN 100 | 2" | 2" | 2" | 2253 | 960 | 1050 | 310 | 4 | |
| NM-GEN 125 | 2" | 2" | 2" | 2253 | 960 | 2050 | 520 | 5 | |
| NM-GEN 150 | 2" | 2" | 2" | 2253 | 960 | 2050 | 539 | 6 | (2) Slave unit |
| NM-GEN 175 | 2" | 2" | 2" | 2253 | 960 | 2050 | 557 | 7 | |
| NM-GEN 200 | 2" | 2" | 2" | 2253 | 960 | 2050 | 576 | 8 | |
| NM-GEN 225 | 2" | 2" | 2" | 2253 | 960 | 2050 | 594 | 9 | |
| NM-GEN 250 | 2" | 2" | 2" | 2253 | 960 | 2050 | 613 | 10 | |
| NM-GEN 275 | 2" | 2" | 2" | 2253 | 960 | 2050 | 631 | 11 | |
| NM-GEN 300 | 2" | 2" | 2" | 2253 | 960 | 2050 | 650 | 12 | |
| NM-GEN 325 | 2" | 2" | 2" | 2253 | 960 | 3050 | 860 | 13 | (3) Slave unit |
| NM-GEN 350 | 2" | 2" | 2" | 2253 | 960 | 3050 | 879 | 14 | |
| NM-GEN 375 | 2" | 2" | 2" | 2253 | 960 | 3050 | 897 | 15 | |
| NM-GEN 400 | 2" | 2" | 2" | 2253 | 960 | 3050 | 916 | 16 | |
| NM-GEN 425 | 2" | 2" | 2" | 2253 | 960 | 3050 | 934 | 17 | |
| NM-GEN 450 | 2" | 2" | 2" | 2253 | 960 | 3050 | 953 | 18 | |
| NM-GEN 475 | 2" | 2" | 2" | 2253 | 960 | 3050 | 971 | 19 | |
| NM-GEN 500 | 2" | 2" | 2" | 2253 | 960 | 3050 | 990 | 20 | |

(1) Volume of 1 vessel



PERFORMANCE

Nitrogen flow capacity in Nm³/h at compressed air temperature 55°C and 9 barg

| Model | 99,5 % Purity | | 99 % Purity | | 98 % Purity | | 97 % Purity | | 96 % Purity | | 95 % Purity | | Heater power (W) |
|------------|---------------|--------|-------------|--------|-------------|--------|-------------|--------|-------------|--------|-------------|--------|------------------|
| | Inlet | Outlet | Inlet | Outlet | Inlet | Outlet | Inlet | Outlet | Inlet | Outlet | Inlet | Outlet | |
| NM-GEN 75 | 176,4 | 29,7 | 190,8 | 41,7 | 211,8 | 60,9 | 232,2 | 78,9 | 252,3 | 97,2 | 273,6 | 117,0 | 2400 |
| NM-GEN 100 | 235,2 | 39,6 | 254,4 | 55,6 | 282,4 | 81,2 | 309,6 | 105,2 | 336,4 | 129,6 | 364,8 | 156,0 | 2400 |
| NM-GEN 125 | 294,0 | 49,5 | 318,0 | 69,5 | 353,0 | 101,5 | 387,0 | 131,5 | 420,5 | 162,0 | 456,0 | 195,0 | 4800 |
| NM-GEN 150 | 352,8 | 59,4 | 381,6 | 83,4 | 423,6 | 121,8 | 464,4 | 157,8 | 504,6 | 194,4 | 547,2 | 234,0 | 4800 |
| NM-GEN 175 | 411,6 | 69,3 | 445,2 | 97,3 | 494,2 | 142,1 | 541,8 | 184,1 | 588,7 | 226,8 | 638,4 | 273,0 | 4800 |
| NM-GEN 200 | 470,4 | 79,2 | 508,8 | 111,2 | 564,8 | 162,4 | 619,2 | 210,4 | 672,8 | 259,2 | 729,6 | 312,0 | 4800 |
| NM-GEN 225 | 529,2 | 89,1 | 572,4 | 125,1 | 635,4 | 182,7 | 696,6 | 236,7 | 756,9 | 291,6 | 820,8 | 351,0 | 7200 |
| NM-GEN 250 | 588,0 | 99,0 | 636,0 | 139,0 | 706,0 | 203,0 | 774,0 | 263,0 | 841,0 | 324,0 | 912,0 | 390,0 | 7200 |
| NM-GEN 275 | 646,8 | 108,9 | 699,6 | 152,9 | 776,6 | 223,3 | 851,4 | 289,3 | 925,1 | 356,4 | 1003,2 | 429,0 | 7200 |
| NM-GEN 300 | 705,6 | 118,8 | 763,2 | 166,8 | 847,2 | 243,6 | 928,8 | 315,6 | 1009,2 | 388,8 | 1094,4 | 468,0 | 7200 |
| NM-GEN 325 | 764,4 | 128,7 | 826,8 | 180,7 | 917,8 | 263,9 | 1006,2 | 341,9 | 1093,3 | 421,2 | 1185,6 | 507,0 | 9600 |
| NM-GEN 350 | 823,2 | 138,6 | 890,4 | 194,6 | 988,4 | 284,2 | 1083,6 | 368,2 | 1177,4 | 453,6 | 1276,8 | 546,0 | 9600 |
| NM-GEN 375 | 882,0 | 148,5 | 954,0 | 208,5 | 1059,0 | 304,5 | 1161,0 | 394,5 | 1261,5 | 486,0 | 1368,0 | 585,0 | 9600 |
| NM-GEN 400 | 940,8 | 158,4 | 1017,6 | 222,4 | 1129,6 | 324,8 | 1238,4 | 420,8 | 1345,6 | 518,4 | 1459,2 | 624,0 | 9600 |
| NM-GEN 425 | 999,6 | 168,3 | 1081,2 | 236,3 | 1200,2 | 345,1 | 1315,8 | 447,1 | 1429,7 | 550,8 | 1550,4 | 663,0 | 12000 |
| NM-GEN 450 | 1058,4 | 178,2 | 1144,8 | 250,2 | 1270,8 | 365,4 | 1393,2 | 473,4 | 1513,8 | 583,2 | 1641,6 | 702,0 | 12000 |
| NM-GEN 475 | 1117,2 | 188,1 | 1208,4 | 264,1 | 1341,4 | 385,7 | 1470,6 | 499,7 | 1597,9 | 615,6 | 1732,8 | 741,0 | 12000 |
| NM-GEN 500 | 1176,0 | 198,0 | 1272,0 | 278,0 | 1412,0 | 406,0 | 1548,0 | 526,0 | 1682,0 | 648,0 | 1824,0 | 780,0 | 12000 |

For nitrogen flow capacity at other conditions please contact manufacturer.

Performance +/- 3%.

STANDARD EQUIPMENT

- Set of External Feed Air Filters
- Electric heater
- Supporting frame or cabinet
- Pressure regulator

- Internal Piping
- Nitrogen and Air flow Regulation

OPTIONAL EQUIPMENT

- Nitrogen Sterile Filters
- Nitrogen Booster

- Nitrogen Cylinder Filling System

INFORMATION IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE



Our quality management system is certified by BUREAU VERITAS in conformity with ISO 9001:2015
Reg. number: 200285