

Membrane Type Nitrogen Generator Beer 500CFM Purity 99% 300 Bar

Our Product Introduction

Basic Information

- Place of Origin: SUZHOU, CHINA
- Brand Name: SUMAIRUI GAS
- Certification: ISO9001, CE, BV, SGS, TUV, ASME, GOST,NB,NR ETC
- Model Number: OSM
- Minimum Order Quantity: 1 set
- Price: Negotiable
- Packaging Details: Exporting wooden case /Film packing
- Delivery Time: 30-45 days
- Payment Terms: L/C, T/T, Western Union, MoneyGram
- Supply Ability: 100 sets/months



Product Specification

- Application: Oil And Gas, Off Shore Projects
- Flow: 50-10000 Nm3/h
- Purity: 95%-99.9%
- Pressure: 300 Bar
- DP: -70 °C
- Material: Mild Steel/Stainless Steel
- Pipeline: Seamless Steel
- Certificates: ISO,CE, ASME, GOST,SGS
- Container: Customized
- Booster: Option
- Air Compressor: Oil Free Screwing Or Diesel Option
- Drive Type: Electricity/Diesel Drive
- Movable: Customized
- Working Duration: 24hrs Non-stop
- Type: Fully Automatic

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Product Description

Nitrogen generator membrane unit for sale with CE/ASME 500 CFM purity 99% 300 bar

How does membrane technology work?

Membrane nitrogen generators are based on a simple working principle. The main part of a membrane generator is the membrane module (+- 10cm in diameter), filled with small, hollow polymer fibers. First, dry, clean compressed air enters and due to the structure of these fibers parts of the air will flow to the outside of the fiber. This process is called permeation. During this process, water, oxygen and some of the argon exit through the membrane sides of the fibers. In the end, only nitrogen will remain. This is possible since different molecules permeate at different speeds. H₂O will permeate very quickly, oxygen takes a little longer. Argon and Nitrogen permeate rather slowly, meaning that they will remain in the fibers long after the H₂O and oxygen are gone (some of the Argon will permeate as well, but it would be inefficient to completely remove it from the air stream). Learn more about Nitrogen purity here. Because of the permeation through the fiber wall, an overpressure would occur inside the membrane housing. The fibers would clog and the permeation efficiency would be significantly lowered. To prevent that from happening there is an opening in the housing, the permeate vent, where these 'exhaust' gases (including H₂O, oxygen and Argon) can escape.

Nitrogen purity and requirements for the intake air

It is very important for the intake air to be clean and dry before it enters the membrane. If this is not the case, the shallow fibers will quickly clog. In order to prevent this from happening, correct air treatment of the feed air has to be installed. In some cases the needed filters and dryers will already be built into the generator itself. This would mean that, in some cases, no additional filters should be installed between the compressor and generator. The fibers of the membrane can handle water vapor without much problems. It is however very important that the air doesn't contain liquid water, since this will have a detrimental impact on the membrane. Therefore, it is required for a good water separation solution to be in place upstream the generator, a refrigerant dryer for example. Taking care of the intake air of the generator will protect the membrane and ensure a long lifetime. Take a look at a typical installation below.

Choosing between a Membrane and PSA generator

Since the air factor is generally lower in PSA generators, which results in lower operating costs, you might think that choosing between the two is an easy choice. However, there are some notable advantages to using a membrane generator. The first one being the simpler working principle of membrane generators, this affects maintenance costs and results in a smaller footprint of the installation. They also start up faster and are a lot quieter than PSA generators, who typically have to cope with their blow-off noises at the end of each cycle. This last advantage makes a membrane nitrogen generator more suitable for places in which there are a lot of people working. When selecting the right type of generator, it's wise to look at the application it will be used for and then, considering the total package of (dis)advantages, make a choice.

| | MEMBRANE | PSA |
|----------------------------|--|--|
| ACHIEVABLE PURITY | EFFICIENTLY UP TO 99.9% | EFFICIENTLY UP TO 99.999% |
| EFFICIENCY | HIGH | HIGHER |
| PERFORMANCE VS. TEMP. | HIGHER AT HIGH TEMP.* | LOWER AT HIGH TEMP. |
| SYSTEM COMPLEXITY | LOW | MEDIUM |
| SERVICE INTENSITY | VERY LOW | LOW |
| PRESSURE STABILITY | STABLE | FLUCTUATING IN/OUTLET |
| FLOW STABILITY | STABLE | FLUCTUATING IN/OUTLET |
| START-UP SPEED | SECONDS | MINUTES/HOURS** |
| WATER (VAPOUR) SENSITIVITY | NO LIQUID WATER | PDP MAX 8°C (Generally) |
| OIL SENSITIVITY | NOT ALLOWED (< 0,01mg/m ³) | NOT ALLOWED (< 0,01mg/m ³) |
| NOISE LEVEL | VERY LOW | HIGH (blow-off peaks) |
| WEIGHT | LOW | MEDIUM |

| Item | Nitrogen purity (Nm ³ /hr) | | | | | Dimensions | Weight |
|--------|---------------------------------------|------|-----|-------|-------|----------------|--------|
| | 90% | 95% | 99% | 99.5% | 99.9% | (L*W*H) mm | KG |
| OSM15 | 135 | 61 | 23 | 15 | 6.5 | 450*300*1300 | 100 |
| OSM30 | 270 | 122 | 46 | 30 | 13 | 550*500*1300 | 140 |
| OSM60 | 540 | 244 | 92 | 60 | 26 | 900*850*1300 | 200 |
| OSM120 | 1080 | 488 | 184 | 120 | 52 | 1200*1000*1500 | 280 |
| OSM180 | 1620 | 732 | 276 | 180 | 78 | 1500*1200*1500 | 400 |
| OSM240 | 1890 | 854 | 322 | 240 | 104 | 1800*1200*1600 | 520 |
| OSM300 | 2700 | 1220 | 460 | 300 | 130 | 2300*1350*1800 | 600 |
| OSM450 | 4050 | 1830 | 690 | 450 | 195 | 3850*1500*2000 | 800 |
| OSM525 | 4725 | 2135 | 805 | 525 | 227.5 | 4200*1550*2100 | 950 |

| | | | | | | | |
|---------|-------|------|------|------|-------|-----------------|------|
| OSM600 | 5400 | 2440 | 920 | 600 | 260 | 5000*1800*2250 | 1050 |
| OSM675 | 6075 | 2745 | 1035 | 675 | 292.5 | 5500*1800*2350 | 1250 |
| OSM750 | 6750 | 3050 | 1150 | 750 | 325 | 5850*1850*2400 | 1500 |
| OSM900 | 8100 | 3660 | 1380 | 900 | 390 | 6500*1950*2400 | 1700 |
| OSM1050 | 9450 | 4270 | 1610 | 1050 | 455 | 7800*2100*2450 | 1950 |
| OSM1500 | 13500 | 6100 | 2300 | 1500 | 650 | 10500*2300*2600 | 2100 |
| OSM1800 | 16200 | 7320 | 2760 | 1800 | 780 | 13000*2350*2600 | 2600 |

Design reference :

Compressed air inlet pressure 9 bar(g)/130 psi(g)
 Air quality 1.4.1 according to ISO 8573-1:2010
 Nitrogen outlet pressure 7 bar(g)/101psi(g)
 Nitrogen quality 1.2.1 according to ISO 8573-1:2010.
 Designed working temperature max 50 °C
 Dew point at Nitrogen outlet - 50 °C

Notes:

Compressed air inlet pressure decide membrane performance
 Following request of membrane nitrogen generator will be customized :
 Compressed air pressure >14 bar(g)/203 psi(g) max up to 24 bar(g)/350 psi(g)
 Working pressure >24 bar(g)/350 psi(g)
 Dew point < - 50 °C
 Movable/containerized , plug and play
 Diesel drive
 Other special requirements as per site conditions



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