Membrane N2 Generator Skid 3000 Cfm 95% Oil And Gas Purging Blanketing

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

- Usage: Nitrogen
- After-sales Service Provided: Engineers Available To Service Machinery Overseas
- Condition: New
- Warranty: 1 Year
- Production Rate: 95--99.9995%
- Voltage: 220v/380v/50-60hz
- Weight: Actual Weight)
- Dimension(l*w*h): Actual Size
- Power(w): 0.5KW
- Purity: 95%
- Application: General Industrial Fields
- Color: White/customized
- Capacity: 1-2000 Nm3/h
- Type: Membrane Nitrogen Generator

Our Product Introduction

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Product Description

OSM membrane nitrogen generator with capacity 3000 cfm 95% used for oil and gas purging &blanketing with ASME verified

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. H_2O 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 H_2O 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 H_2O, 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.

Following are benefits and features of membrane type nitrogen generators and how they can improve efficiency in a variety of applications.
An independent onsite supply of nitrogen, which means freedom from the industrial gas supplier and their long-term contracts and ever escalating nitrogen costs
Fast Return on Investment (ROI); typical ROI can be expected within six to 18 months
Fully automatic systems for on-demand operation; you only produce nitrogen as required
Extremely reliable
Easy, low cost maintenance
Minimal space requirements
Membrane type nitrogen generators can be housed in modified sea containers for system mobility or portability
Eliminate wasteful venting of nitrogen gas that’s associated with bulk liquid nitrogen tanks
Produces nitrogen purities from 95% to 99.5%; match nitrogen purities to the actual nitrogen purity requirement of your application
Nitrogen flow capacities are available from 40 SCFH (1 m3/hr) to 200,000 SCFH+ (5,600 m3/hr+)
Nitrogen discharge pressures to 300 psig (20 barg) without booster compressors
High pressure systems to 20,000 psig (1,360 bar) available
Features include touchscreen controllers with the following capabilities:
oxygen analyzer
air in pressure
nitrogen discharge pressure
low nitrogen purity alarm
low nitrogen pressure alarm
maintenance advisory
optional purity control setting (up to three purities)
optional remote monitoring, controlling and communications capability
optional nitrogen flow monitoring
optional off spec. gas vent
Turnkey systems engineered, assembled, and installed to specification

Membrane Nitrogen Generator Applications

Some of the applications that are well-suited for onsite nitrogen generating systems include:
autoclaves
beverage manufacturing
chemical plants and refineries
coffee packaging
controlled atmosphere fruit storage
enhanced oil field recovery
food/map packaging
fuel and chemical tank inerting
gas assist injection molding

heat treating
laser cutting
leak cutting
pharmaceutical manufacturing
printing
power plants
reflow ovens
shipboard inerting
soldering

Advantages of membrane nitrogen plant :

Why Choose Nitrogen Generator Membrane Units:

Extensive experience producing PSA and membrane units
All the facilities are ISO 9001 Certified
Modular design for easy installation
Systems designed for long-term reliability
Smallest physical footprint available
Strategic alliance with dryer and compressor suppliers
Extensive global service network
A top-rated membrane when comparing nitrogen/air ratio

Application :
Aircraft Fuel Tank Inerting
Agriculture
Liquid Sparging
Autoclave
Bacteria Elimination
Blanketing
Carbon Fiber Cutting
Bio-fuels
Fire Suppression

Item	Nitrogen purity (Nm3/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 ℃
Dew point at Nitrogen outlet - 50 ℃

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 ℃
Movable/containerized , plug and play
Diesel drive
Other special requirements as per site conditions

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