Oxygen Generator Psa System Nitrogen 99.999 Electronic Industry 40cfm

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: OSL-10
- 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

- Model: OSL-10
- Material: Carbon Steel
- Type: Modular Nitrogen Generator
- Certificates: CE, ISO, ASME, GOST, KGS, NB Etc
- Capacity: 40 CFM
- Purity: 99.9-99.99%
- Pressure: 120 Psig
- Application: For Electronic Industry Packing Machine
- Working Model: Fully Automatic
- Control Type: One Button Start & Stop
- VFD Motor: Available
- Oil Residue: N/A
- Electronic Application: SMT, Purging, Semiconductor
- Highlight: **oxygen psa generator**, **oxygen generator psa system**, **nitrogen 99.999**

Our Product Introduction

for more products please visit us on n2-nitrogengenerator.com

Product Description

OSL Series modular nitrogen generator for electronic industry with 40 cfm 99.99%-99.999% 120 psi packing machine

What Is a PSA Nitrogen Generator?

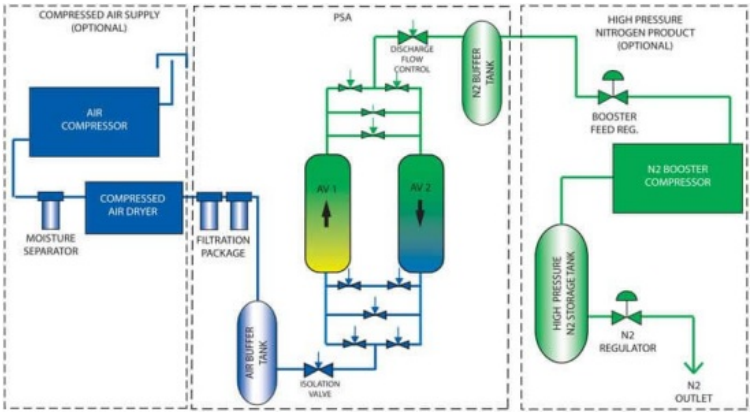
Pressure Swing Adsorption is a technology used for separating gas species from a mix of various gases under pressure, depending on the affinity for an adsorbent material and the species' molecular characteristics. This technology differs significantly from cryogenic-distillation gas separation techniques. Specific adsorptive materials, such as activated carbon or molecular sieves, are used as a trap, adsorbing the target gas species at a high pressure. Operating at near-ambient temperatures, the process swings to low pressure, desorbing the adsorbed material.

How Do Industrial PSA Nitrogen Generators Work?

For this process, pressure swing adsorption relies on the principle that under high pressure, gas tends to be attracted to solid surfaces. Higher pressures result in more gas being adsorbed. When pressure is reduced, adsorbed gas is then released (desorbed). Pressure Swing Adsorption processes are often used to separate gases from mixtures because different gases are attracted to different solid surfaces more/less strongly. For example, if air (gas mixture) passes under pressure through a particular vessel containing an adsorbent bed of CMS (which attracts O2 more strongly than it does N2), some or all of the oxygen will remain in the bed, and gas exiting the vessel will then be enriched in N2. When the bed reaches its capacity's end to adsorb oxygen, it can regenerate by reducing pressure, consequently releasing adsorbed oxygen. It can then begin the cycle again and produce more high purity N2 gas.

Using two (2) adsorbent vessels allows for near-continuous production of target gas. This technique also permits pressure equalization, which is where gas leaving a depressurized vessel is used to partially pressurize a second vessel. This common industrial practice leads to significant energy savings.

Typical System Configuration (PFD)



System Specification
Sumairui Gas offers completely turn-key system designs, including all components, elements, and design drawings. Our engineering teams will work directly with you to design and install systems to your exact specifications. Our full-service team is ready to answer any questions you may have 24/7.
Technology
How Does a Pressure Swing Adsorption System Work?
Nitrogen PSA Generator Systems send air over a bed of adsorbent material, which bonds with O2 and leaves a rich stream of nitrogen gas to exit.

Adsorption separation is achieved by the following steps:

FEED AIR COMPRESSION & CONDITIONING
The ambient inlet air is compressed, dried by an air dryer, filtered, all before entering the process vessels.

PRESSURIZATION & ADSORPTION

The pre-treated filtered air is then directed into a CMS-filled vessel, where oxygen is adsorbed preferentially into the CMS pores. This permits concentrated nitrogen, with adjustable purity as low as 50 ppm O2, to stay in the gas stream until it flows out of the vessel. The separation process interrupts the inlet flow (before the full adsorption capacity of the CMS is reached) and finally switches over to the other adsorber vessel.

DESORPTION

The O2-Saturated CMS is then regenerated by means of pressure reduction, below the previous adsorption step. It achieves this by using a pressure release system where exhaust/waste gas stream is carefully vented from the vessel, typically through a diffuser/silencer, then back into the safe surrounding atmosphere. Regenerated CMS is now refreshed and can be used again for generating nitrogen.

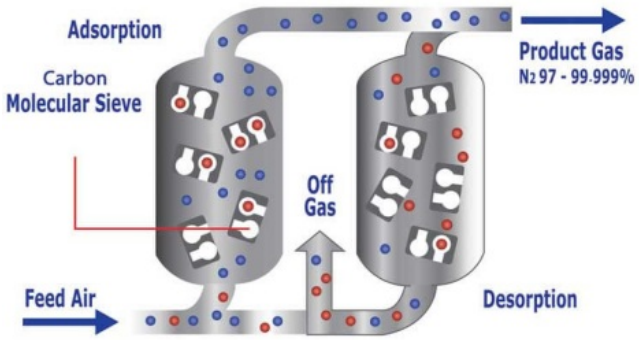
ALTERNATING VESSELS/SWING

Desorption and Adsorption should take place at equal time intervals, alternately. This way, the constant generation of nitrogen is be achieved by using two (2) adsorbers. As one is adsorbing, the second is in regeneration mode. Constant switching back and forth results in a controlled and continuous flow of nitrogen.

NITROGEN RECEIVER

Continuous nitrogen product flow & purity is maintained by a connected product buffer vessel which stores the N2 output. This is designed for a pressure up to 150 psig (10 bar) and Nitrogen purity up to 99.9995%.
NITROGEN PRODUCT

The resulting product is a constant stream of high purity, on-site produced Nitrogen, and costs significantly below the standard price of liquid/bottled gases.



The Benefits of an Onsite Nitrogen Generating System
Cost Savings

Factors like market cost and delivery location will impact what you spend if you have nitrogen delivered to your facility. When you shift to onside nitrogen generation, you can significantly reduce these costs no matter where you are located. In fact, you can see a return on investment in a little as nine to 24 months.

Increase Safety for Employees

Since your primary concern is your employee safety, onsite nitrogen generation significantly reduces the risk of worker injury. Handling nitrogen cylinders, tank leaks and exposure to liquid nitrogen through delivery and unloading is 100% eliminated, thus creating a safe and reliable system.

Reduce Impact on Environment

By having your own nitrogen generating system you reduce your environmental impact as you no longer need to use heavy transport trucks to deliver and replenish your tanks. You also increase efficiency and improve your reputation in the industry as a company that is environmentally conscious.

Efficient Time Savings

Industrial users who set up onsite nitrogen generation save time on critical operations that use nitrogen. One of the biggest losses for industrial users each year is operational downtime caused by logistical issues with transporting nitrogen from vendor locations. With an onsite nitrogen generating system, you have a 24-hour supply of high-purity gas to run your processes.

Nitrogen Generator Applications

Food Packaging

Modified Atmosphere Packaging (MAP) with nitrogen and nitrogen-CO2 gas mixes are often used in the food packaging industry to preserve perishable items by preventing spoilage, ensuring freshness, maintaining flavour, and extending the product shelf life. Onsite nitrogen generation is highly beneficial in the food packaging industry to maintain a quality product. Food packagers can save hundreds of thousands of dollars by having an onsite system installed.

Beverage Storage, Transport, and Dispensing

Like the food industry, the beverage industry can also improve from having onsite nitrogen generating systems. These systems make it more efficient to transport beverages to end users such as juice packagers, vintners, breweries, and other manufacturers of beverage dispensing systems.

Onsite nitrogen generators are extremely efficient and cost-effective for various industrial applications. By installing an onsite system, all you need to focus on is maintenance, while your investment pays for itself over time. We offer the following nitrogen generator services

Maintenance Services

For help with installation, our team offers around-the-clock service support. If you require maintenance for your existing system, we will ensure that your nitrogen generator is running in great condition, so you can get back to your operations. For nearly three decades we have been helping our clients significantly reduce their industrial nitrogen and oxygen costs by utilizing leading-edge technologies such as onsite nitrogen and oxygen generating systems. We displace the requirement of having to purchase the gas. Instead, we sell our business clients the technology and equipment they need to make their own gas on site.

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