

## PRISM<sup>®</sup> PA Nitrogen Membrane Separators

PRISM PA membrane separators are used to generate high-purity nitrogen from compressed air. These robust and durable separators use hollow fiber membrane technology to molecularly separate nitrogen from other components in compressed air. The resulting stream of nitrogen is pure, dry, and ready to use in most industrial applications.



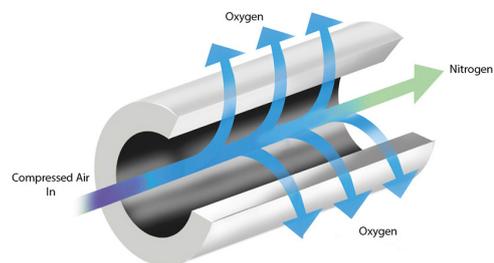
All 1-inch through 4-inch diameter separators are constructed with high-performance ABS shells and 6061 aluminum caps. Available with NPT, SAE, and BSPP connections.



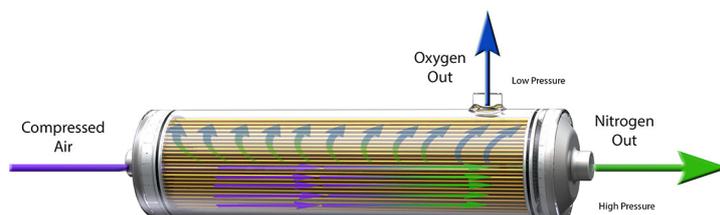
PRISM PA6050 features an aluminum shell. The larger size provides greater flow.

### How membranes work

The PRISM PA nitrogen membrane separator uses asymmetric hollow fiber membrane technology to separate and recover nitrogen from compressed air. Atmospheric air contains 78% nitrogen, 21% oxygen, and 1% other gases. The PRISM PA membrane uses the principle of selective permeation to produce high-purity nitrogen. Each gas has a characteristic permeation rate, which is a function of its ability to dissolve and 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 PRISM PA 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.



## Quality assured

Every membrane separator has to pass our rigorous testing requirements before it will be released into service. You can be confident that every separator will perform as advertised. Our AS9100 certification meets the exacting requirements of the global aerospace industry for quality management systems.

## Industrial grade

PRISM membrane separators are designed to handle industrial production loads. Pressures up to 24 barg ensure that your nitrogen production requirements will be met. The solid construction is a perfect match for remote and severe duty installations like oil platforms and mining operations.

## Passive technology

The selective permeation technology uses a passive system with no moving parts. This simple system allows you to engineer more reliable products that can be deployed in a wide range of environments, including mobile systems.

## Simple start-up

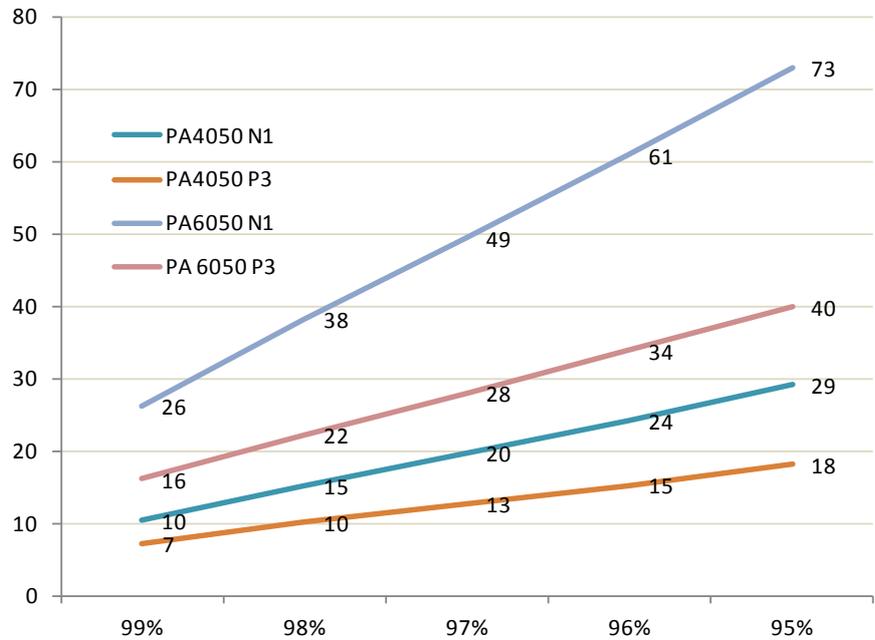
PRISM membrane separators are easily commissioned. Simply apply clean compressed air, and production begins. No break-in period, expensive media, or complex equipment to manage and maintain.

## Lightweight

PRISM PA membrane separators are constructed from high-performance ABS or 6061/6063 aluminum, which makes them very lightweight. Separators are easily handled by one person, making installation and field service simple.

The information contained in this document is believed to be true and accurate at time of publication. Air Products PRISM Membranes reserves the right to change product specifications without notification. Please consult current Product Design and Reference manual for detailed information associated with these products.

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Single Separator Nitrogen Flow Capacity in Normal Cubic Meters per hour @ 55°C



PRISM PA4050 Nitrogen Separators installed in an off-shore system.

Separators are configured in series and parallel to accommodate larger flow requirements. Turndown flexibility is achieved by valving off separators in the system.

For information regarding Air Products' PRISM Membrane products, please contact our After Sales department.

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