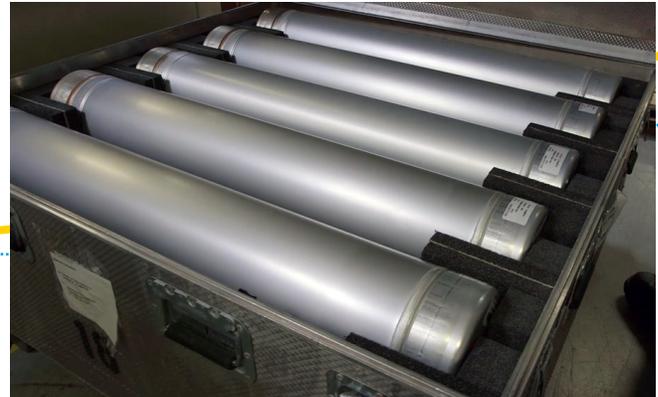


PRISM[®] Membranes

Frequently Asked Questions



The PRISM Membranes Business unit develops, manufactures, and sells gas membrane separators. This group pioneered gas membrane separation for commercial use with early projects commissioned in 1977 and full-scale commercialization in 1979.

Our Membrane separators generate gas onsite in the following industries: aerospace, oil and gas, food and beverage, marine, and many others. Primary applications include nitrogen generation, air dehydration, hydrogen recovery, biogas upgrading, and the generation of oxygen enriched air.

General Membranes

Q. Will PRISM membranes be damaged by liquid water and oil?

A. PRISM membranes will not be permanently damaged by liquid water. The membrane performance can be restored by flowing warm, dry air through the membrane until all the liquid water is removed. The membranes will not be affected by oil vapor in the feed stream; however, the membranes will be permanently damaged by liquid oil entering or condensing in the membrane.

Q. Can I replace the fiber if the device becomes damaged?

A. The fiber is not repairable or replaceable. Please contact Air Products for replacement options.

Q. Is the PRISM membrane warranted?

A. Air Products typically provides a standard performance warranty for one year from start-up or eighteen months from purchase date, provided the membrane and equipment have been properly operated and maintained. The warranty may be extended for Preferred Partners.

OBIGGS

Q. What does a PRISM membrane on board inert gas generating system (OBIGGS) weigh?

A. The weight is strongly dependent upon the system performance required. Separators weighing 5 to 20 pounds have been considered for various OBIGGS applications. Air Products can select from several materials to design and build membrane separators. These materials can save weight while meeting temperature and pressure requirements. In addition, we have developed manufacturing processes and designed custom components to keep the membrane separator weight to a minimum.

Nitrogen Membranes

Q. What is the dew point of the nitrogen that is produced by the membrane?

A. The dew point varies slightly with nitrogen purity. At 95% purity, the nitrogen will have at least a -70°F dew point. Operating at 99% will further lower the dew point to below -100°F. For systems requiring extremely low moisture levels, Membrane air dryers can be installed in series with nitrogen-generating PRISM membranes.

Q. Do I need to use a "final filter" with the PRISM membranes?

A. No. Some membranes made by other companies are susceptible to oil vapors. A carbon filter is used upstream of those membranes to remove the oil vapor, and often a final filter is added to remove any carbon dust carried over from the carbon filter.

Air Drying

Q. Is there any liquid to drain from the membrane?

A. The membrane removes water, in the form of water vapor, from compressed air. There is no liquid to drain from the membrane. Liquids should be removed by coalescing filters upstream of the membrane.

Q. What are the differences between desiccant dryers and membrane dryers?

A. Membrane dryers have a wide range of drying capability, while desiccant dryers dehydrate air by adsorbing water on a solid granular desiccant. Because the desiccant must be regenerated, two desiccant towers are used, and the air to be dried is periodically switched between the two towers. Maintenance is required on the switching valves, and there is the issue of desiccant carryover into the dried air as well as desiccant life.

Q. How does a membrane dryer compare to a refrigerated dryer?

A. A refrigerated dryer dehydrates air by cooling it down to condense the water. A refrigerated dryer typically dries your compressed air to a 35°F pressure dew point. The membrane dryer operates on a principle of dew point depression, so the outlet dew point is not limited to 35°F. The refrigerated air dryer also consumes electricity.

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