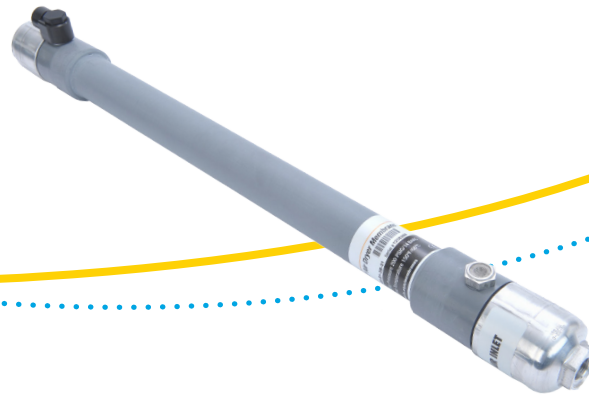


PRISM® PE1020

Membrane air dryer



A typical membrane separator contains thousands of fibers that are bundled and encased at both ends in epoxy resin. The ends of the bundle are cut, which leaves the fiber bores open on both ends, allowing the gas to travel from one end to the other. The fiber bundle is enclosed in a suitable casing. The casing protects the fibers and routes the gas properly.

Air Products' PRISM membranes: experience, performance, and value.

Air Products' PRISM® PE membrane dryers are a cost-effective way to manufacture a continuous stream of dry air on-site. These robust dryers use selective permeation, a passive technology, to separate water vapor from the air stream.

The adjustable external purge allows each membrane air dryer to be precisely calibrated to match the required product stream specification. The external dry purge gas flow is controlled by a customer-supplied orifice or adjustable valve. PE dryers are supplied with a 360-degree swivel purge gas inlet fitting that includes a threaded port for a flow orifice.

PRISM PE membrane dryers excel in air supply applications requiring 10 to 1000 standard cubic feet per minute in mobile, offshore, point-of-use, and marine applications. These maintenance-free and compact dryers work in areas where desiccants and refrigeration units are not practical.

Features/benefits

Durability included

The PE1020 membrane dryer is manufactured with durability and performance in mind. The passive technology uses no electricity, which makes it ideal for use in remote applications, mobile compressor stations, or on construction sites. Built from high-performance ABS, aluminum, and stainless steel, PE membrane dryers withstand the most grueling environments. Many of our dryers are in service longer than ten years.

Flexible application

PRISM PE membrane dryers can be mounted vertically or horizontally to meet your design requirements. Dryers are available in a variety of configurations (see ordering information).

Multiple dryers in parallel are used to increase capacity beyond that available with a single dryer. Note: all of the dryers must be the same model and piping must be configured so that the feed air is distributed evenly between the parallel dryers.

Quality assured

Every membrane dryer has to pass our rigorous testing requirements before it will be released into service.

You can be confident that every dryer will perform as advertised.

Our AS9100 certification meets the exacting requirements of the global aerospace industry for quality management systems.

Industrial grade

PRISM PE membrane dryers are designed to handle industrial production loads. Pressures up to 13.8 barg (200 psig) ensure that your air 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 dryers 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

Weighing only 0.7 kg (1.6 lbs), the PE1020 dryers are easily handled by one person, making installation and field service simple.

Performance Specifications*

Pressure Dew Point	Feed Flow	Outlet Flow	Outlet Purge	Pressure Drop
40°F	8.8 scfm	7.6 scfm	14.0%	2.5 psi
20°F	6.8 scfm	5.7 scfm	16.9%	1.9 psi
0°F	4.3 scfm	3.5 scfm	18.7%	1.2 psi
-20°F	2.8 scfm	2.3 scfm	20.7%	0.8 psi

Feed air: 100 psig @ 100°F; pressure dew point 100°F.

Pressure Dew Point	Feed Flow	Outlet Flow	Outlet Purge	Pressure Drop
3°C	4.2 nL/sec	3.6 nL/sec	13.3%	0.16 bar
-10°C	3.0 nL/sec	2.5 nL/sec	16.6%	0.12 bar
-20°C	2.0 nL/sec	1.6 nL/sec	18.2%	0.08 bar
-30°C	1.3 nL/sec	1.0 nL/sec	19.8%	0.05 bar

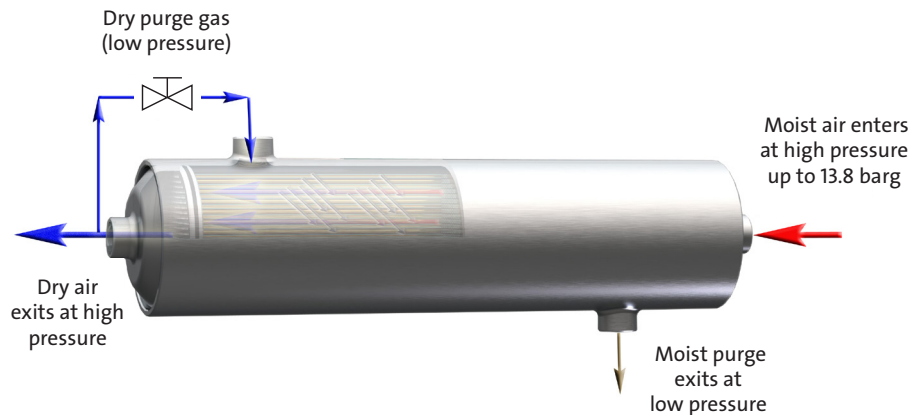
Feed air: 7 barg @ 35°C; pressure dew point 35°C.

Ordering Information

Catalog Number	Model Number	Product Description
107062	PE1020-E1-3A-00	PRISM PE membrane dryer with 3/8" NPT connections
107063	PE1020-E1-3B-00	PRISM PE membrane dryer with 3/8" BSPP connections

* Performance listed for single dryer only. Contact our Technical Services department to receive detailed performance charts or to generate computer simulations for your specific production requirements.

PE Membrane Dryer Flow



This diagram for illustration purposes only. Actual product design and port positions vary.

Feed air requirements

PRISM membrane dryers are specifically designed to remove water vapor. Dryer performance will be reduced if liquid water or liquid compressor oil enters the membrane dryer.

Coalescing filters must be installed upstream of the membrane dryer in order to remove both bulk and aerosol liquid water and liquid compressor oil. Food and drug applications or special electronic uses require oil vapor removal by installing an activated carbon adsorption filter after the coalescing filters.

Mechanical Design Limits

Design pressure	20.7 barg (300 psig)
Design temperature	65.6°C (150°F)

Operating Limits

Pressure maximum	13.8 barg (200 psig)
Temperature maximum	65.6°C (150°F)

Materials

Shell	High-performance ABS
End caps/purge fitting/vents	6061-T6 Aluminum

Weight | Dimensions | Connections

Length	660.4 mm (26.0 inches)
Diameter	54.9 mm (2.16 inches)
Height (w/purge fitting)	111.0 mm (4.4 inches)
Weight	0.71 kg (1.6 lbs)
Catalog number 107062	
Connection (in/out)	$\frac{3}{8}$ " NPT
Connection purge inlet	$\frac{3}{8}$ " NPT
Connection orifice insert	$\frac{1}{4}$ -20 UNC
Catalog number 107063	
Connection (in/out)	$\frac{3}{8}$ " BSPP [ISO 228 G $\frac{3}{8}$]
Connection purge inlet	$\frac{3}{8}$ " BSPP [ISO 228 G $\frac{3}{8}$]
Connection orifice insert	M6 x 1.00

WARNINGS:

Operation of the PRISM membrane dryer above the rated design pressure may be hazardous. Do not connect dryer to compressed air sources that can exceed the maximum rated pressure without installing appropriate pressure controls and safety relief devices in the compressed air supply line.

Compressed air can be dangerous. Know and follow all safety rules, especially when breaking into and blowing down compressed air lines when installing or modifying equipment.

For more information regarding
Air Products' PRISM membrane
products, please contact our Customer
Service department.

Air Products PRISM Membranes

11444 Lackland Road
Saint Louis, Missouri 63146 USA
T 314-995-3300
F 314-995-3500
Membrane@airproducts.com
or visit airproducts.com/membranes

Permea China LTD

60 Jinshajiang Road
Shandong, 264006 China
T +86-535-2165333
F +86-535-2165336
fungp@airproducts.com
or visit permea.com.cn

Air Products Japan, Inc.

21F, Muza Kawasaki Central Tower
1310 Omiya-cho, Saiwai-Ku, Kawasaki
Kanagawa, Japan 212-8554
T +81-44-542-1531
F +81-44-542-1521
higucht@airproducts.com
or visit airproducts.co.jp

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The Air Products PRISM Membranes
Business Unit's quality management
system is certified to ISO9001 and
AS9100C.



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