

# PRISM CACTUS® PC3010

## 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 CACTUS PC 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 resulting flow of dry air is ready for use in most industrial applications.

The fixed internal purge makes these dryers robust and easy to operate. CACTUS dryers require no outside power supply, have no moving parts, and do not require regeneration or replacement of expensive desiccants to function. These maintenance-free, compact dryers work where desiccants and refrigeration units are not practical.

### Features/benefits

#### Durability included

The PRISM CACTUS PC3010 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, PC dryers withstand the most grueling environments. Many of our dryers are in service longer than ten years.

#### Flexible application

PRISM CACTUS 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 CACTUS membrane dryers are designed to handle industrial production loads. Pressures up to 20.7 barg (300 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 CACTUS membrane dryers are easily commissioned. Simply apply compressed air, and production begins. No break-in period, expensive media, or complex equipment to manage and maintain.

## Lightweight

PC3010 dryers are easily handled by one person, making installation and field service simple.

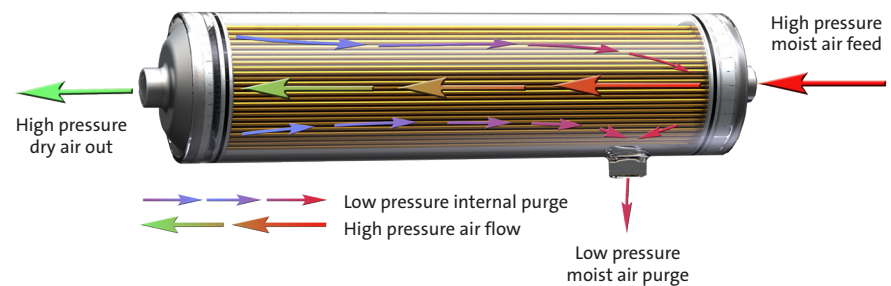
## Performance Specifications\*

Feed Air	Outlet PDP	Feed Flow	Outlet Flow	Outlet Purge
100°F 100 psig 100°F PDP	40°F	7.8 scfm	6.7 scfm	14.1%
	20°F	6.5 scfm	5.4 scfm	16.9%
	0°F	5.5 scfm	4.3 scfm	21.8%
	-20°F	4.7 scfm	3.5 scfm	25.5%
	-40°F	3.9 scfm	2.7 scfm	30.8%
Feed Air	Outlet PDP	Feed Flow	Outlet Flow	Outlet Purge
100°F 300 psig 100°F PDP	40°F	30.7 scfm	27.4 scfm	10.8%
	20°F	22.3 scfm	18.9 scfm	15.3%
	0°F	16.6 scfm	13.2 scfm	20.5%
	-20°F	12.7 scfm	9.2 scfm	27.6%
	-40°F	9.8 scfm	6.3 scfm	35.7%

PDP = Pressure Dew Point

\* 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.

## PRISM CACTUS PC Membrane Dryer Flow Illustration



### WARNINGS:

Operation of the PRISM CACTUS dryer above the rated design pressure may be hazardous. Do not connect dryers 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.

## Feed air requirements

PRISM CACTUS 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	26.5 barg (385 psig)
Design temperature	65.6°C (150°F)

## Operating Limits

Pressure maximum	20.7 barg (300 psig)
Temperature maximum	65.6°C (150°F)

## Materials

Shell	High-Performance ABS
End caps/vents	6061-T6 Aluminum

## Weight | Dimensions | Connections

Length	387.4 mm (15.3 inches)
Diameter	99.3 mm (3.9 inches)
Weight	2.1 kg (4.6 lbs)
Connection (in/out) for 107025	$\frac{3}{8}$ -inch NPT
Connection (in/out) for 107027	$\frac{3}{8}$ -inch BSPP [ISO 228 G $\frac{3}{8}$ ]

## Ordering Information

Catalog Number	Model Number	Product Description
107025	PC3010-D2-3A-20	PRISM CACTUS membrane dryer with $\frac{3}{8}$ -inch NPT connections
107027	PC3010-D2-3B-20	PRISM CACTUS membrane dryer with $\frac{3}{8}$ -inch BSPP connections

For more information regarding  
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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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