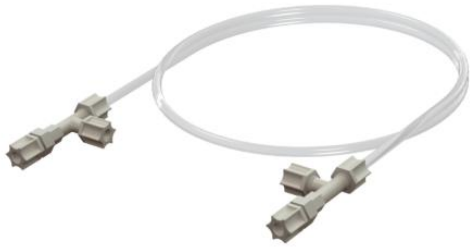
Perma Pure Gas Drying Solutions

Monotube Dryer (MD) Series

Application

Perma Pure's MD Gas Dryers, part of the Monotube Dryer Series (MD), are specifically designed for moisture control in gas samples and are primarily used in environmental and chemical analysis. They prevent excess moisture from distorting measurement results and ensure precise gas measurements in fields such as emission monitoring and air quality testing. These dryers offer easy integration and high reliability, making them the preferred choice for laboratories, scientific institutions, and companies conducting accurate gas analyses.



Technology

The MD Gas Dryers of the Monotube Dryer Series (MD) use Perma Pure® membrane technology, which selectively removes moisture through a specialized membrane without altering the gas composition. This technology provides high efficiency and stability, even under varying environmental conditions. It offers an energy-efficient solution for drying gas samples while ensuring precise removal of water vapor, which is essential for reliable measurements. The membrane is durable and suitable for a wide range of applications, including emission monitoring and chemical analyses.

Functions

The MD Gas Dryers remove excess moisture from gas samples without changing the gas components, ensuring accurate measurements. They provide stable performance under varying temperatures and gas flow conditions, making them ideal for continuous monitoring in demanding environments. With their energy-efficient operation and easy integration, they offer a practical solution for precise gas sample drying with minimal maintenance requirements.

- ✔ High efficiency in moisture removal
- ✔ Energy-efficient through membrane technology
- ✔ Stable performance under varying conditions
- ✔ Easy integration into systems
- ✔ Durable, long-lasting membrane technology
- ✔ Low maintenance requirements, reduced operational costs
- ✔ Versatile for applications (emissions, air quality, analysis)
- ✔ Ideal for 24/7 monitoring
- ✔ Compact, space-saving design
- ✔ Precise drying for accurate measurements

State 08 / 2025 | Subject to change

AGT-PSG GmbH | Hajo-Rüter-Str. 23 | D-65239 Hochheim am Main
Phone +49 6146-8329110 | info@perfectsamplegas.de

PSG Perfect Sample Gas

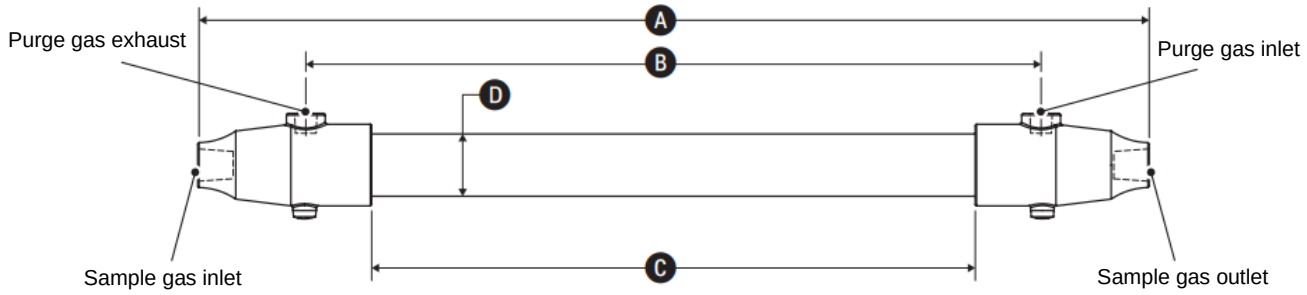
Perma Pure
Breathe Easier. Be Healthier.

Technical Data

Model				
Type		MD-050	MD-070	MD-110
Housing Materials				
Housing Materials Available		PP, PVDF or Stainless Steel		
Operating				
Max. Flow Rate	lpm	0,2	4	4
Max. Operating Temperatures	°C	PP: 80 / PVDF, Stainless Steel: 100		
Design Data				
Outer Diameter	Inch	0,050	0,070	0,110
Standard dimensions available	Inch	12 / 24 / 48 / 72	12 / 24 / 48 / 72 / 96 / 144	12 / 24 / 48 / 72 / 96 / 144 / 275 / 288
Sample Gas Port – End Fitting Material		PP, PVDF or Stainless Steel		
Sample Gas Port – End Fitting Size	Inch	1/16 (Stainless Steel only); 1/8	1/8; 1/4	
Purge Gas Port – End Fitting Material		PP, PVDFor Stainless Steel		
Purge Gas Port – End Fitting Size	Inch	1/8	1/4	
Purge Gas Recommendations				
		Purge gas must be drier than sample gas		
		Purge gas can be instrument quality air (max -40 °C dew point) or nitrogen		
		Purge gas should flow at 2 or 3 times the sample rate		
		*Alternate methods to using a purge gas are possible, such as recycling the dry sample gas, or pulling vacuum through the purge gas flow path. See website for more information.		

Hinweise:
- 1 Inch = 2,54 cm

Depiction of Purge and Sample Gas Ports



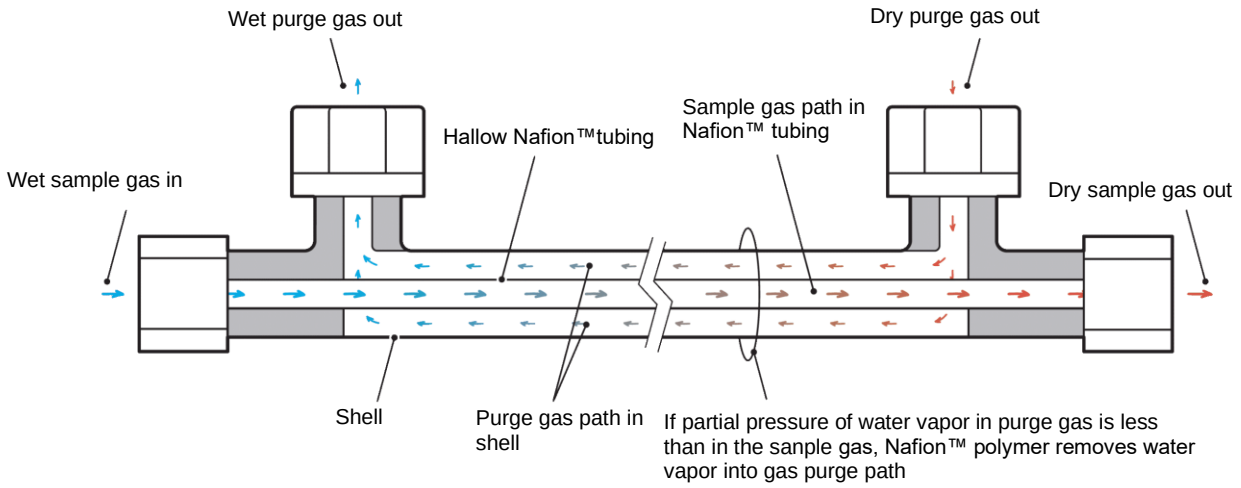
AGT-PSG GmbH | Hajo-Rüter-Str. 23 | D-65239 Hochheim am Main
Phone +49 6146-8329110 | info@perfectsamplegas.de

PSG Perfect Sample Gas

Perma Pure
Breathe Easier. Be Healthier.

Technical Data

MD Gas Dryers - Operating Principle



How the MD Series Works

- The MD Series uses Nafion™ membrane technology to remove water vapor from gas samples without affecting other analytes
- Moist gas samples flow through the membrane, while a dry purge gas stream runs along the outside to extract the water
- The pressure differential between the gas streams causes water to diffuse from the sample into the purge stream

Functional Benefits

- Compact design makes the MD series suitable for tight installation spaces or portable equipment
- Provides consistent drying performance for low to moderate gas flow rates
- Requires no power or consumables, making it highly efficient and low-maintenance
- Stable operation improves accuracy and reliability of gas analysis
- Compatible with a wide range of gases and analytical systems

Areas of Application

- The MD Series is ideal for use in environmental science, gas analyzers, and specialized applications such as ozone generation and IMS
- It improves signal-to-noise ratio and reduces the maintenance needs of gas analyzers
- The technology extends the lifespan of desiccants and is used in applications like gas generation and threat detection

State 08 / 2025 | Subject to change

AGT-PSG GmbH | Hajo-Rüter-Str. 23 | D-65239 Hochheim am Main
Phone +49 6146-8329110 | info@perfectsamplegas.de