PERMA PURE
PROTECT LIFE

MD-700 Series Gas Dryers

Control Sample Humidity without Particle Losses

The MD-700 Series has been specifically developed for humidity control in particle measurement and aerosol analysis applications. In order to minimize particle losses, a laminar sample flow should be maintained through the flow path of the dryer. The MD-700 Series addresses these performance needs while providing the moisture removal necessary to make accurate measurements across a wide range of flow rates. All moisture is removed in the vapor phase with a purge gas flow.

Key Features

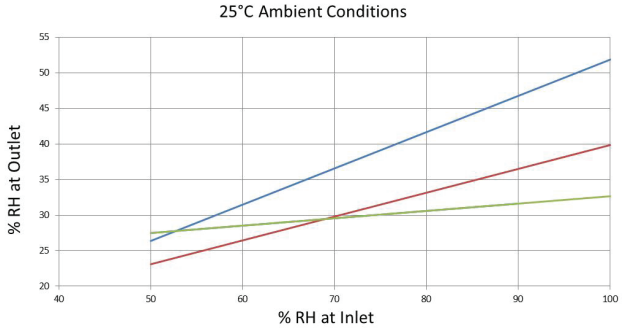
- Low Particle Losses
- Eliminate Heating
- Low Service Costs
- Requires no electricity
- Three Modes of Operation
- Stainless Steel Construction
- Long Service Life
- Short residence time

Principle of Operation

MD-700 Series gas dryers transfer moisture from one gas stream to a counter-flowing purge gas, much like a shell-and-tube heat exchanger transfers heat. Water molecules permeate through the Nafion™ tube wall, evaporating into the purge gas stream. The water concentration differential between the two gas streams drives the reaction, quickly drying the air or gas. Purge gas should be instrument air or other dry gas. If no dry gas is available, a portion of the gas dried by the MD -700 Series dryer can act as the purge gas in a split-stream or reflux method.

Select the Right Dryer for Your Application

Dryers are selected based on target dryness or moisture level required and flow rate of the sample through the tubing normally defined by the analyzer requirements. Below are performance curves for two common flow rates using the operating conditions shown in the table to the right.



Inlet Flow	2 lpm	5 lpm	16.7 lpm
Dryer Length	12″ (30 cm)	24″ (60 cm)	48″ (120 cm)
Vacuum	23″ Hg (779 mbar)	20″ Hg (677 mbar)	23″ Hg (779 mbar)
Purge Flow	80%	80%	80%

Making Analysis Possible

Operating Specifications

Temperature	0-40°C	
Pressure	Maximum 15 psi (1000 mbar) positive differential between sample gas and purge gas	
	Maximum 3 psi (200 mbar) negative differential between sample gas and purge	
Humidity (Inlet)	0-99% RH (non-condensing)	
Shell Material	304 Stainless Steel	
Connector Material	Sample :	316 Stainless Steel
	Purge :	Kynar / 316 Stainless Steel

	Flow Rate	Recommended Active Dryer Length
Size Selection	0-1.5 lpm	6″ (15 cm)
	1.5-4 lpm	12″ (30 cm)
	3-8 lpm	24″ (60 cm)
	6- 12 lpm	36″ (90 cm)
	8 - 16.7 lpm	48″ (120 cm)

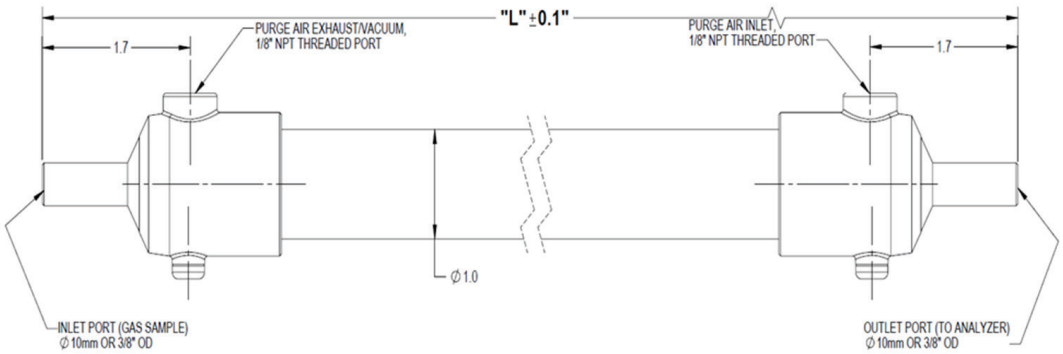
Intelligent Product Numbering System

Step 1: Select Series	
MD (Monotube Dryer) Series	MD
Step 2: Tubing Size	
0.700″ Nafion™ Tubing	700
Step 3: Dryer Active Length	
6″ (15 cm)	6
12″ (30 cm)	12
24″ (60 cm)	24
36″ (90 cm)	36
48″ (120 cm)	48

Step 4: Purge Connector Material	
Kynar and Stainless Steel	F
Stainless Steel	S
Step 5: Connection Ends	
10 mm OD Tube End	1
3/8″ (9.5 mm) OD Tube End	3
3/4″(19mm) OD Tube End	5

Example Product Number

MD	700	24	F	1
Series	Tubing	Length	Material	Type



Dryer Active Length	6″ (15 cm)	12″ (30 cm)	24″ (60 cm)	36″ (90 cm)	48″ (120 cm)
Total Length (“L”)	9.90″ (25.1 cm)	15.8″ (40.1 cm)	27.62″ (70.1 cm)	39.43″ (100.1 cm)	51.24″ (130.1 cm)

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