

# Perma Pure Gas Drying Solutions

## Monotube Dryer 700 Particulate Monitoring (MD-700) Series

### Application

The MD-700 Series is specifically designed for sample conditioning in aerosol and particle analysis. It efficiently and precisely removes moisture from gas samples, which is crucial for accurate particle and aerosol measurement in various environmental and process applications. Typical uses include environmental monitoring, air quality measurements, and industrial process control where accurate and reproducible results are essential. The MD-700 Series is particularly beneficial in applications where hygroscopic particles may rapidly absorb moisture and skew measurement results.

### Technology

The MD-700 Series employs a combination of robust drying technology with an integrated condensate separator that reliably removes moisture from gas samples. Its specialized membrane technology selectively transports water vapor, while the condensate separator retains particles and liquid, ensuring a clean and dry sample. Its compact design and easy maintenance make the MD-700 Series ideal for continuous use in both field and laboratory settings. All components are made of chemically resistant materials, ensuring long service life with minimal maintenance.

### Functions

The MD-700 Series provides reliable moisture removal from gas samples while protecting particle integrity. It operates efficiently over a wide range of flow rates, allowing for versatile application. With simple connection options and low maintenance requirements, it can be easily integrated into existing analytical systems. Its robust construction ensures long service life and high operational reliability, even under challenging conditions. In addition, the MD-700 minimizes humidity interference in sensitive analytical methods, contributing to improved data quality.



- ✓ Designed for particle and aerosol analysis
- ✓ Precisely removes moisture from gas samples
- ✓ Preserves particle integrity
- ✓ Combines dryer and condensate separator
- ✓ Compact, low-maintenance, and portable
- ✓ Reliable at varying flow rates
- ✓ Easy to integrate into existing systems
- ✓ Chemically resistant materials for durability
- ✓ Minimizes humidity interference in measurements
- ✓ Suitable for environmental, lab, and industrial use

## Technical Data

Model															
Type		MD-700													
Operating															
Recommended active length for flow rate		<table><tr><th rowspan="6">Size Selection</th><th>Flow Rate</th><th>Recommended Active Length</th></tr><tr><td>0-1.5 lpm</td><td>6" (15 cm)</td></tr><tr><td>1.5-4 lpm</td><td>12" (30 cm)</td></tr><tr><td>3-8 lpm</td><td>24" (60 cm)</td></tr><tr><td>6-12 lpm</td><td>36" (90 cm)</td></tr><tr><td>8-16.7 lpm</td><td>48" (120 cm)</td></tr></table>	Size Selection	Flow Rate	Recommended Active Length	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)
		Size Selection		Flow Rate	Recommended Active Length										
				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)														
Operating Temperature	°C	0-40													
Pressure		<ul style="list-style-type: none"><li>Maximum 15 psi (1000 mbar) positive differential between sample gas and purge gas</li><li>Maximum 3 psi (200 mbar) negative differential between sample gas and purge gas</li></ul>													
Humidity (Inlet)		0-99% RH (non-condensing)													
Design Data															
Tubing Size	Inch	0.700													
Standard dimensions available	Inch	6 / 12 / 24 / 36 / 48													
Shell Material		304 Stainless Steel													
Connector Material		<ul style="list-style-type: none"><li>Sample: 316 Stainless Steel</li><li>Purge: Kynar / 316 Stainless Steel</li></ul>													

**Note:**

- 1 Inch = 2,54 cm

## Technical Data

### Selection Guide

<b>MD</b>	<b>700</b>	<b>24</b>	<b>F</b>	<b>1</b>
Series	Tubing	Length	Material	Type

#### 1 – Series

MD-R (Monotube Dryer) Series

MD

#### 2 – Tubing Size

0.700" Nafion™ Tubing

700

#### 3 – Dryer Active Length

6" (15 cm)

6

12" (30 cm)

12

24" (60 cm)

24

36" (90 cm)

36

48" (120 cm)

48

#### 4 – Purge Connector Material

Kynar and Stainless Steel

F

Stainless Steel

S

#### 5 – Fitting Material

10 mm OD Tube End

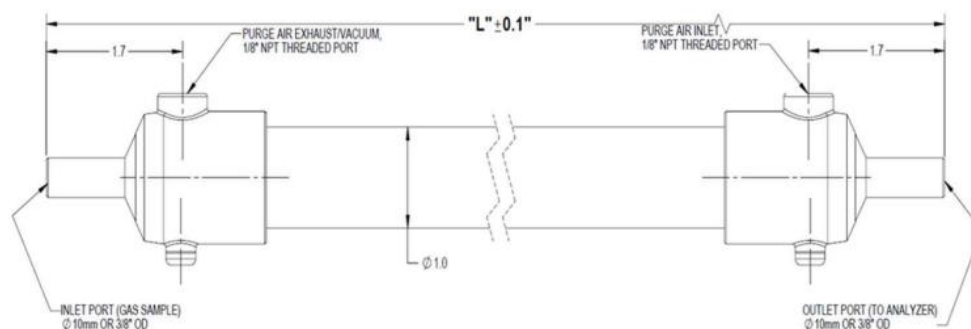
1

3/8" (9.5 mm) OD Tube End

3

3/4" (19mm) OD Tube End

5



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)