

Perma Pure Gas Drying Solutions

Monotube Rotating Dyer (MRD) Series

Application

The MRD Series from Perma Pure is ideal for applications requiring precise moisture control in gas samples. Typical uses include environmental monitoring, emissions analysis, process control, and mobile laboratories. Thanks to its compact design and rotating end fittings, it can be flexibly integrated into existing systems, even in confined spaces. The reliable drying performance ensures consistent results under varying operating conditions. The MRD Series also demonstrates high operational reliability in harsh outdoor environments and changing field locations.

Technology

The MRD Series uses proven Nafion™ membrane technology to selectively remove water vapor from gas streams while leaving other gas components unaffected. Gas flows through a Nafion™ tube, allowing water molecules to permeate the membrane and be absorbed by a counter-flowing purge gas. The rotating end fittings enable flexible positioning of connections without compromising the inner tube's integrity. An improved O-ring sealing system ensures effective separation of sample and purge gases, providing consistent drying performance with minimal maintenance. The physical-selective separation preserves the chemical composition of the sample almost unchanged.

Functions

The MRD dryers remove moisture from gas samples down to a dew point of -60 °C, depending on flow rate and purge gas quality. They operate efficiently across a wide range of temperatures, pressures, and flow rates, making them suitable for applications with varying operating conditions. The flexible configuration allows easy customization to specific customer requirements. The MRD Series is available as a versatile module and can be mounted either vertically or horizontally. With various length and connection options, it can be optimally tailored to system needs.



- ✓ Selective drying via Nafion™ membrane
- ✓ Dew points down to -60 °C (flow- and purge-dependent)
- ✓ Compact design for mobile or tight installations
- ✓ Rotating fittings for flexible setup
- ✓ Available in various sizes and materials
- ✓ Preserves gas sample integrity
- ✓ Wide range of temp, pressure, and flow
- ✓ Reliable sealing with improved O-rings
- ✓ Low maintenance, easy to integrate
- ✓ Perfect for environmental and process monitoring

Technical Data

| Model | | | |
|-----------------------------------|------|--|---------|
| Type | | MRD 070 | MRD 110 |
| Tubing Size | Inch | 0.070 | 0.110 |
| Operating | | | |
| Max. Flow Rate | lpm | 4 | |
| Design Data | | | |
| Standard dimensions available | Inch | 12 / 24 / 48 / 72 / 96 / 144 | |
| Shell Material | | FEP / PVDF | |
| Fitting Material | | Kynar | |
| Ferrule Material | | Viton | |
| Available Connector Types | | <div><div></div><div>None (5/32" F)</div><div></div><div>1/4" Quick Connect</div><div></div><div>1/8" Quick Connect</div><div></div><div>6mm Quick Connect</div></div> | |
| Recommended Sample Gas Flow Rates | | | |
| | lpm | 0.1 - 2 | 1 - 4 |

Note:

- 1 Inch = 2,54 cm

Selection Guide



MRD **110** - **72** **T** **K** **V** - **2222**
 Series Tubing Length Shell Fitting Ferrule Connections 1-4

1 – Series

MD-R (Monotube Dryer) Series

MRD

2 – Tubing Size

0.070" Nafion™ Tubing

070

0.110" Nafion™ Tubing

110

3 – Dryer Lengths

12" (30 cm)

012

24" (60 cm)

024

48" (120 cm)

048

72" (180 cm)

072

96" (240 cm)

096

144" (360 cm)

144

4 – Shell Material

Fluorocarbon (FEP / PVDF)

T

5 – Fitting Material

Kynar

K

6 – Ferrule Material

Viton

V

7 – Connector 1-4

1 Left Sample 2 Left Purge

3 Right Purge 4 Right Sample

NONE (5/32" F)

0

1/4" Quick Connect

1

1/8" Quick Connect

2

6mm Quick Connect

4

Selection Guide Notes – *MDR-070 and MDR-110 offer approximately the same drying performance. Specify MD-110 when pressure drop is a concern, MD-070 to minimize dead volume. For higher flow rates, please see our PD-Series dryers