

Perma Pure Gas Drying Solutions

Monotube Humidifiers (MH) Series

Application

The MH Series from Perma Pure is designed for applications requiring precise humidification of gas streams. Common use cases include gas sensor calibration, breath analysis, environmental monitoring, and humidity simulation in research settings. By providing stable and reproducible humidity levels, the MH Series significantly improves the accuracy of sensitive analytical devices. It also plays a vital role in medical and scientific testing environments where consistent humidity conditions are essential.

Technology

The MH Series employs proven Nafion™ membrane technology to introduce water vapor into the gas stream in a controlled, selective manner. Operating in a counter-flow of water or steam, the semipermeable membrane transfers only water vapor, blocking particulates and contaminants from entering the gas. This molecular selectivity results in ultra-clean humidification with exceptional stability. Even under fluctuating temperature and flow conditions, the system ensures precise and reliable humidity control.

Functions

MH humidifiers provide consistent humidity regulation without the need for power, mechanical controls, or active components. They are available in multiple lengths and configurations, enabling seamless integration into a wide variety of systems. Built from durable, chemically resistant materials, they require minimal maintenance. Their fully passive operation makes them ideal for remote or sensitive applications where system purity and reliability are crucial. Long-term performance is maintained even in challenging environments.



- ✓ Precise humidification of gas streams
- ✓ No power supply or moving parts required
- ✓ Contamination-free moisture transfer
- ✓ Ideal for sensor, breath, and environmental applications
- ✓ Stable performance under changing conditions
- ✓ Available in various lengths and setups
- ✓ Durable and chemically resistant materials
- ✓ Easy system integration
- ✓ Low maintenance needs
- ✓ Based on Nafion™ membrane technology

Technical Data

Model				
Type		MH-050	MH-070	MH-110
Operating				
Flow Rate		up to 20 l/min		
Operating Temperatures	°C	0 – 80		
Maximum Operating Pressure	psi	80		
Maximum Differential Pressure	psi	10		
Humidity		up to 98% RH		
Design Data				
Nafion™ Tube O.D.	Inch	0.053	0.072	0.108
Nafion™ Tube I.D.	Inch	0.042	0.060	0.086
Standard dimensions available	Inch	12 / 24 / 48		
Housing Materials		PP, PVDF or Stainless Steel		
Sample Gas Port – End Fitting Type		<div><div></div>16" Compression (MD-050 only)<div></div>1/8" Compression<div></div>1/4" Compression</div>		
Sample Gas Port – End Fitting Material		PP, PVDF or Stainless Steel		

Note:

- 1 Inch = 2,54 cm