

Perma Pure Gas Drying Solutions

Braided Exchanger (BE) Series

Application

The BE™ Moisture Exchanger by Perma Pure is designed to regulate the humidity levels of gas streams in various applications, including calibration of gas detection systems, environmental monitoring, and scientific research. By either removing moisture from wet gas samples or adding humidity to dry calibration gases, the BE™ ensures accurate and stable measurements. Its versatility makes it suitable for use in Continuous Emissions Monitoring Systems (CEMS), laboratory analyses, and process monitoring, where precise control of gas humidity is essential.

Technology

At the core of the BE™ Moisture Exchanger is Nafion™ polymer membrane technology, which selectively permeates water vapor without affecting other gas components. This technology enables moisture transfer between the gas stream and the surrounding atmosphere, achieving equilibrium without the need for external power sources or purge gases. The device operates efficiently across a wide range of temperatures and pressures; the BE-HP series is capable of handling pressures up to 17 bar (250 psi). Its chemical resistance ensures long-term durability and reliability in a variety of environments.

Functions

The BE™ Moisture Exchanger performs two primary functions: drying and humidifying gas streams. In drying applications, it extracts moisture from wet gas samples, reducing their humidity to match the ambient environment. Conversely, in humidifying applications, it adds moisture to dry gases, ensuring they reach the desired humidity levels for calibration or analysis. The exchanger's design allows for rapid response times, typically within 100 to 200 milliseconds, and continuous self-regeneration, leading to long-term performance with minimal maintenance. Its lightweight and portable design facilitate easy integration into various systems.



- ✓ Selective moisture transfer via Nafion™ membrane
- ✓ Dries or humidifies gases depending on application
- ✓ Requires no purge gas or external power
- ✓ Fast response time: 100–200 milliseconds
- ✓ Chemically resistant and pressure-rated up to 250 psi (17 bar)
- ✓ Self-regenerating system – maintenance-free operation
- ✓ Compact, lightweight design for easy integration
- ✓ Ideal for environmental monitoring, calibration, and lab analysis
- ✓ Does not affect sensitive gas components
- ✓ Performs reliably under varying ambient conditions

Technical Data

Model – BE™ Moisture Exchanger					
Type		BE-050	BE-060	BE-070	BE-110
Tubing Size	Inch	0.050	0.060	0.070	0.110
Operating					
Recommended active length for flow rate		Size Selection	Flow Rate		Recommended Active Length
			0—0.5 lpm		12"(15cm)
			0.5-1 lpm		18"(30cm)
			1-2 lpm		24"(60cm)
			2-4 lpm		48"(90cm)
Operating Temperatures	°C	0-80			
Max. Pressure	psi	90			
Humidity (Ambient)		0-100% RH			
Design Data					
Standard dimensions available	Inch	6 / 12 / 24	6 / 12 / 24	6 / 12 / 18 / 24 / 36 / 48	6 / 12 / 18 / 24 / 36 / 48
Tubing Material		Nafion			
Braided Material		Polypropylene			
Connector Material		Molded Polypropylene			
Connector Type		<ul style="list-style-type: none">1/8" Molded Header*1/8" Stainless Steel Compression Fitting1/16" Barbed Ends	<ul style="list-style-type: none">1/8" Molded Header*1/8" Stainless Steel Compression Fitting1/16" Barbed Ends	<ul style="list-style-type: none">1/8" Barbed Ends	<ul style="list-style-type: none">1/4" Molded Header for 1/4 compression fitting1/8" Barbed Ends

* The **1/8" Molded Header** connector does not fit a standard size compression fitting. If a compression fitting is needed you must order connector type **1/8" Stainless Steel Compression Fitting**.

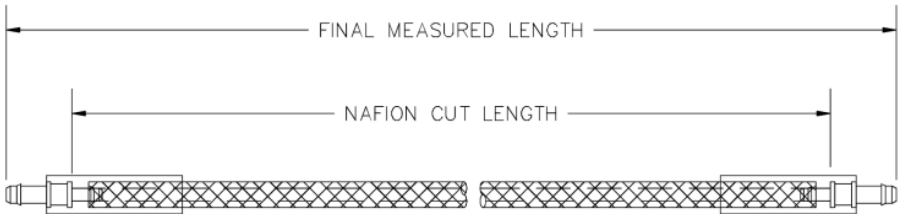
Notes:

- 1 Inch = 2,54 cm
- 1 bar = 14,504 psi
- Requires an enclosure fan if placed inside equipment. In all cases, requires an ambient environment with ventilation.

Model – BE-HP™-Series Moisture Exchanger				
Type		BE-110-HP		
Tubing Size	Inch	0.108		
Operating				
Recommended active length for flow rate		Size Selection	Flow Rate	Recommended Active Length
			0—0.5 lpm	12”(15cm)
			0.5-1 lpm	18”(30cm)
			1-2 lpm	24”(60cm)
			2-4 lpm	48”(90cm)
Operating Temperatures	°C	0-80		
Max. Pressure	psi	250		
Humidity (Ambient)		0-100% RH		
Design Data				
Standard dimensions available	Inch	6 / 12 / 18 / 24 / 36 / 48		
Tubing Material		Nafion		
Braided Material		Polypropylene Line		
Connector Material		Molded Polypropylene, Stainless Steel		
Connector Type		1/4" molded header with ferrule and nut		

Technical Data

Depictions - Dimensions



Dryer Active Length	12" (30 cm)	18" (45 cm)	24" (60 cm)	48" (120 cm)
Total Length ('L')	13.1" (33.3 cm)	19.1" (48.6 cm)	25.1" (63.8 cm)	49.1" (124.8 cm)

State 08 / 2025 | Subject to change