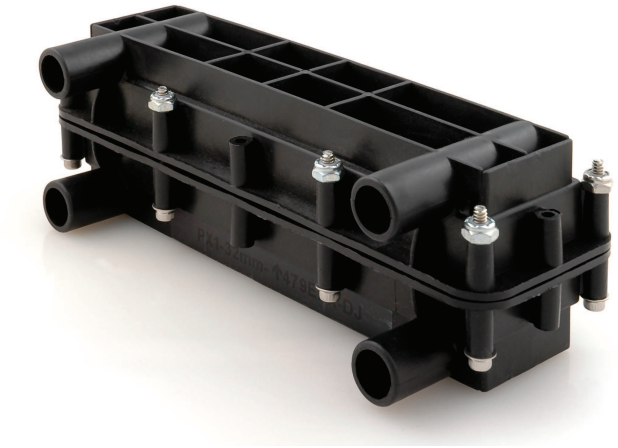
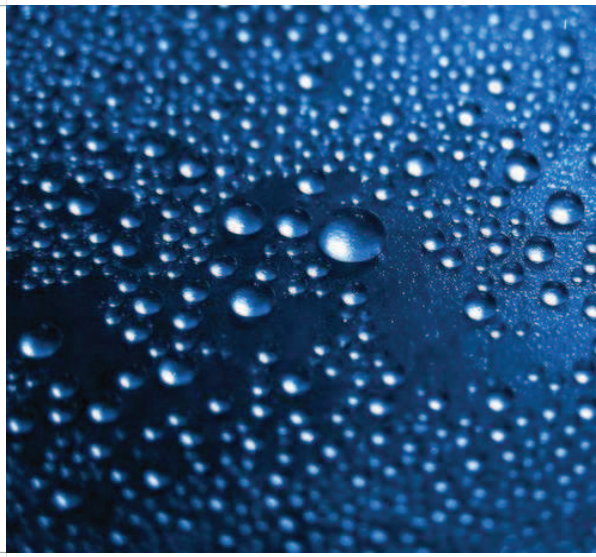
DPoint Px1-32
Fuel Cell Humidifier

dpoint technologies

Applications

• Portable Power





Overview

- Planar Membrane Humidifier
- Designed for 250 W fuel cell systems (25 SLPM)
- Low cost manufacturing process
- Replaceable membrane cartridge
- Excellent heat and humidity exchange
- Low cost manufacturing process
- Operated in gas to gas or liquid to gas mode
- Low gas cross-over
- Designed for low pressure systems
- Patent pending design

ADVANTAGES OF THE PX1-32

LOW COST

EXCELLENT RH PERFORMANCE

LOW PRESSURE DROP

COMPACT SIZE

RELIABLE

NO PARASITIC LOSSES

FREEZE TOLERANT

Px1-32 SPECIFICATION

Fuel Cell Rated Power	250 watt
Rated Flow	25 SLPM
RH Performance at Rated Flow and Dew-point Approach Temperature	100%
Dew-point Approach Temperature at Rated Flow, Temperature and Pressure	6˚C ± 1˚
Maximum Pressure Drop Across Humidifier at Rated Flow, Temperature and Pressure	1.3 ± 0.3 kPa
Lifetime	> 5000 hours (membrane dependent)
Maximum Allowable Operating Temperature	70°C
Minimum Allowable Operating Temperature	-20°C
Maximum Burst Pressure	35 kPag
Maximum Allowable Differential Pressure Across Membrane	21 kPa
Dimensions	60 mm x 61 mm x 184 mm
Size	0.7 L
Weight	0.3 kg
Materials of Construction	Polypropylene, Polyurethane, Polyethylene
Power Requirement	0 watts
Flow Configuration	Primarily Counter Flow
Material Compatibility	Deionized water and air*
Minimum Freeze Thaw Cycles	> 50 cycles from -20˚C to 25˚C
Gas crossover (wet)	< 10 cc/min @ 21 kPag
Maximum External Leakage	0 cc/min @ 35 kPag

*will not release compounds that adversely affect the fuel cell

Px1 ADVANTAGES

Low Cost:
The Px1 has been designed for manufacturability and uses low cost materials. The frames are made from polypropylene using a high volume injection molding process.

Excellent Relative Humidity Performance:
The membrane has high water transport and the humidifier geometry has been designed to maximize water vapour diffusivity and residence time through the channel.

Reliable:
No moving parts in the Px1 humidifier results in a high level of reliability.

Low Pressure Drop:
Designed using Computational Fluid Dynamics (CFD) modelling. The open channel design and controlled membrane spacing results in low pressure drop.

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