

Nitrogen Generating Systems

Membrane Dryer Modules—210 GMD



The compressed air, saturated with water vapor, flows through a bundle of **GENERON®** hollow-fibers. The membrane fibers allow water vapor to pass. The air stays in the membrane fibers and is discharged as dry product. A fraction of the dry air is redirected internally to sweep the permeated water vapor as a gas out of the module.

Thanks to our advanced fiber technology and state-of-the-art module fabrication and our patented ejector technology, Generon Membrane Dryers perform with the lowest purge air loss for the highest possible efficiency – saving you time and money in your production process.

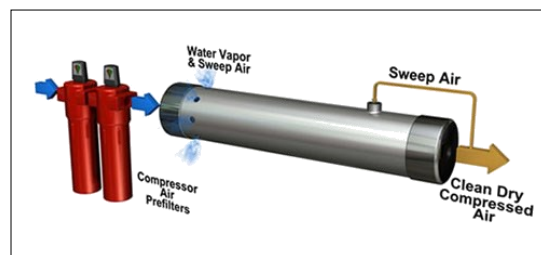
GENERON® GMD Membrane Dryers perform where other Technologies won't

- Where no power is available
- If high vibrations are present
- In classified hazardous areas
- In corrosive environments
- If space is limited
- If flexible installation is required
- In fluctuating and high temperatures
- If noise can create a problem

Use GENERON® GMD MEMBRANE DRYERS.....and NOT REFRIGERATED DRYERS...

- ... where pressure dew points are to be < 32°F (0°C)
- ... where maintenance shall be eliminated
- ... where space is limited
- ... where no power is available
- ... where simplicity is preferred
- ... where vibrations are present
- ... where air or gas pressures are > 100 psig
- ... where air or gas or ambient temperatures are > 70°F

| Operating Conditions | |
|------------------------|---------------------------------|
| Max Pressure | 203 PSIG (14 barg) |
| Temperature (Min /Max) | 40 °F (4.4 °C) / 149 °F (65 °C) |
| Max Relative Humidity | 100% (no liquid water) |
| Max Particle Size | 0.01 micron |



Advantages of GENERON® Membrane Dryers

- **Lowest purge loss in the industry**
- **(greater than 10% power savings compared to closest competitor)**
- Designed for the harshest environments
- Custom design and installation
- Low Pressure Drop, 2 to 3 psig
- No moving parts
- Adjustable dew point to -70°F
- Service-free
- No dust from desiccants and no post-filters required to protect your application
- No regulatory requirements
- Prevent corrosion in instruments and piping
- Increase tool efficiency
- Increase product quality
- Reduce equipment maintenance

| Mechanical Description | |
|------------------------|----------------------|
| Outer Diameter | 3.42 inch [87 mm] |
| Length | 38 1/2 inch [978 mm] |
| Weight | 6 lbs [2.7 kg] |
| Case Material | 6061-T6 Aluminum |

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www.generon.com

Nitrogen Membrane Systems— Modules Type 210 GMD

Tom Jeffers, President and CEO of IGS:

"In any application it is most economical to only dry the portion of your compressed air that you actually use in your application, and to make it only as dry as you actually need it to be. Thus GENERON Membrane Dryers are best satisfying your requirements. The dried compressed air is available immediately and reliable."

Sizing for your Application

Table 1 shows dry air flow rates for one GMD membrane model at desired dry air pressure dew points. The influence of the moisture saturated air inlet temperature is given as well.

To match your required dryer capacity, use multiples of one or different GMD modules and simply add up the given flow rates.

Table 2 shows the influence of a higher operating pressure on the flow rates. Simply multiply the feed air and dry air flow rates of Table 1 with the performance factors from Table 2.

For flow rates at other pressures please consult your Generon representative.

Table 1: Dry Air Product Flow at 100 psig vs. Dew Point

| Feed | | 40°F | | 60°F | | 80°F | | 100°F | | 120°F | |
|--------------------------------|-------------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|
| 210 GMD | | Feed Flow [SCFM] | Dry Flow [SCFM] | Feed Flow [SCFM] | Dry Flow [SCFM] | Feed Flow [SCFM] | Dry Flow [SCFM] | Feed Flow [SCFM] | Dry Flow [SCFM] | Feed Flow [SCFM] | Dry Flow [SCFM] |
| Outlet Dew Point (at Pressure) | 40°F ¹ | - | - | 5.4 | 4.9 | 4.0 | 3.6 | 3.2 | 2.8 | 2.7 | 2.2 |
| | 20°F | 4.5 | 4.0 | 3.5 | 3.0 | 2.9 | 2.4 | 2.4 | 2.0 | 2.1 | 1.7 |
| | 0°F | 3.1 | 2.6 | 2.6 | 2.1 | 2.2 | 1.8 | 2.0 | 1.5 | 1.7 | 1.3 |
| | -20°F | 2.4 | 1.9 | 2.1 | 1.6 | 1.8 | 1.4 | 1.6 | 1.2 | 1.5 | 1.0 |
| | -40°F | 1.9 | 1.5 | 1.7 | 1.3 | 1.5 | 1.1 | 1.4 | 1.0 | 1.3 | 0.8 |

| All GMD Modules | | 125 PSIG | | 150 PSIG | | 200 PSIG | |
|-------------------------------|-------|----------|---------|----------|---------|----------|---------|
| | | Feed Air | Dry Air | Feed Air | Dry Air | Feed Air | Dry Air |
| Dry Air Dew Point (@Pressure) | 40°F | 1.47 | 1.50 | 2.08 | 2.15 | 4.09 | 4.37 |
| | 20°F | 1.40 | 1.42 | 1.87 | 1.92 | 3.08 | 3.27 |
| | 0°F | 1.36 | 1.38 | 1.76 | 1.80 | 2.69 | 2.83 |
| | -20°F | 1.34 | 1.35 | 1.70 | 1.73 | 2.48 | 2.58 |
| | -40°F | 1.32 | 1.33 | 1.65 | 1.68 | 2.35 | 2.42 |

Table 2: Performance Factors @100 °F Inlet Temp.

Pre-Filtration

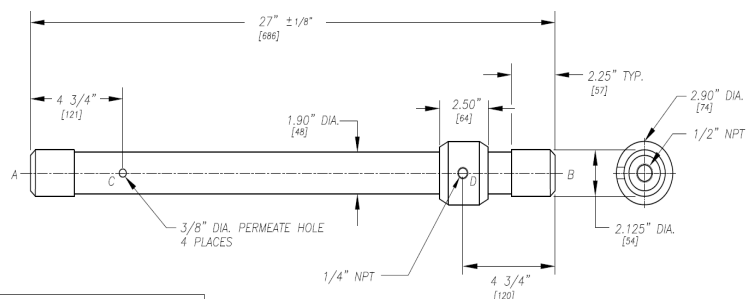
In normal operating conditions the GMD membrane modules need to be connected directly to one (1) HVM coalescing filter. More filtration is not required but will extend the membrane life-time where highly contaminated feed air is present.

Ask your Generon representative for additional information.

GENERON

16250 Tomball Parkway
Houston, Texas 77086
O +1 713 937 5200
F +1 713 937 5250
www.generon.com

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PORTS
A - COMPRESSED AIR INLET
B - DRY PRODUCT AIR
C - WET PERMEATE AIR
D - PRODUCT SWEEP STREAM

* DIMENSIONS IN [mm]