

Phymetrix Gas-Liquid Separator Model: **Mini-Demister**

The Phymetrix Mini-Demister is specifically designed to fill a need for portable gas analyzers to separate liquid vapor mixtures such that they do not compromise sensitive analyzer components. Ideal for SF₆ moisture measurement oil carryover separation, or for any gas analyzer that can be potentially exposed to liquids. It enhances the analyzer integrity, speed of response and accuracy.

The Mini-Demister operates by allowing liquids to settle to the bottom of the separator under force of gravity, where they are drained out through a metering valve. The sample travels through the container tube at a low velocity; thus minimizing the entrainment of any liquid droplets in the gas as it exits near the top of the separator and flows down into the analyzer. The glass container tube affords the operator a 360° view of the accumulated liquid. Adjusting the drain metering valve optimizes the liquid removal with minimum waste of sample gas.

Miniaturized (1" dia. x 3.65" high) to allow connecting directly on top of a small hand-held analyzer, such as the Phymetrix PPMa as well as other manufacturer's gas analyzers. With axial in-line construction; conveniently positioned INLET on top and OUTLET to analyzer on the bottom. On the side the rotatable drain valve and port can be positioned as needed. The outlet to the analyzer has a built-in facility for an optional flow control pressure drop orifice. Stainless Steel housing, Viton seals and a glass container tube provide the seal integrity necessary even for the most demanding measurements such as low levels of moisture. The Mini-Demister is easy to disassemble and clean if needed. The glass tube is rated for 450 psi. It has an outer impact resistant protective clear plastic shield that prevents nicks and scratches in the field. This shield is designed to move freely around the collar. If the Mini-Demister is submerged, liquids can get trapped between the protective shield and the glass tube; this will not effect the measurement but may become unsightly. A variety of inlet and outlet port fitting types are available, e.g.: SAE straight-thread with o-ring seals, swageable tube, NPT etc.

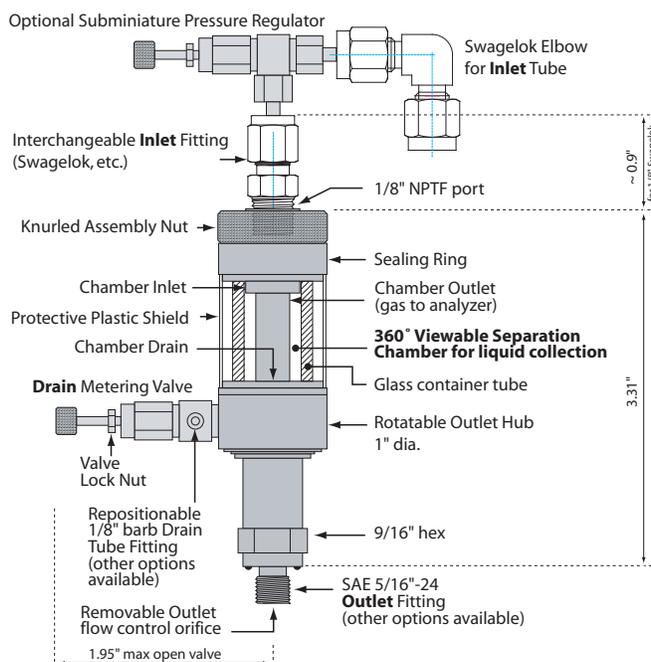
The Mini-Demister is superior to coalescing filters because the liquid is visible, drains out in a controlled fashion and does not accumulate in absorbent materials to outgas when the analyzer is used in other measurements. There are no hygroscopic materials used.

The Phymetrix Mini-Demister is a cost effective addition to any portable analyzer, feature packed in an extremely compact housing that fits on top of even the smallest analyzer.

Mini-Demister Quick Instructions

⚠ CAUTION: Do not exceed 300 psia ⚠

1. Make sure that the inlet fitting can accommodate your specific needs. The Mini-Demister has a 1/8" NPTF inlet to allow a large variety of Inlet fitting adapters. Do not over tighten, to avoid binding the "knurled assembly nut".
2. Attach the Mini-Demister on to the analyzer. For example, the PPMa SAE 5/16"-24 inlet port.
3. Rotate the Drain valve in a convenient position, the valve is attached to a hub that can be rotated 360°.
4. Attach a drain tube to the 1/8" barb fitting on the drain valve. If there are any liquids in the sample they will drain out through this tube, therefore make sure the tube will drain into a suitable container or out of the analyzer body.
5. The Mini-Demister works best when held in an as near to a vertical position as possible, it relies on gravity to separate liquids from gasses.
6. Loosen the metering valve lock nut, and open the metering valve approximately half-way.
7. Connect the sample gas tubing to the Mini-Demister Inlet fitting, or to the optional pressure regulator inlet.
8. While the PPMa sensor is still in the IN position (desiccant store), apply sample gas to the Mini-Demister inlet. Similar procedures apply to other analyzers.
9. If equipped with the optional pressure regulator may need to adjust it to obtain >1LPM of flow through the analyzer, the exact flow is not important thus does not have to be measured.
10. Observe the **Separation Chamber**; operate the drain valve as to minimize draining out sample gas while not allowing liquid accumulation in the separation/collection chamber.
11. If the **Separation/Collection Chamber** begins to fill with liquid keep opening the drain valve, if the valve is fully open an the chamber is still filling with liquid then there is too much liquid in the sample; therefore the sample stream should be shut off before it overflows and contaminates the analyzer (e.g. PPMa).
12. If the **Separation Chamber** has small amounts of liquid, the valve can be closed as to conserve sample gas, however if the analyzer will be left unattended, it is best to leave the drain valve partially open to assure that any liquid slugs that may occur will drain out.
13. Once the valve setting is selected the valve lock nut can be used to secure it.
14. Pull the PPMa sensor into the measuring position, and perform the measurement according to the directions in the PPMa user's manual. Similar procedures apply to other analyzers.



Cleaning:

If the Mini-Demister is contaminated it may become necessary to clean it.

- a) Remove the Mini-Demister from the analyzer.
- b) Close the drain valve and plug the outlet.
- c) Fill with alcohol and shake to rinse the contaminant.
- d) Open the ports and flush by applying clean dry gas to the drain outlet of the valve.
- e) If necessary the Mini-Demister can be disassembled by loosening the knurled assembly nut.
 - Caution when handling the glass tube.
 - Do not over tighten knurled assembly nut.
 - Leak check after reassembling.