

MiniModule® Membrane Contactors Answers to Commonly Asked Questions

MiniModule® Membrane Contactors come in three sizes. These products are the same design. The only difference is size which allows them to handle different capacities.

Please refer to the data sheet located on our website for all of the technical data and performance information.

For customers that have a water stream that they want to debubble, or remove dissolved oxygen, carbon dioxide, or other gases from this product works great in the flow ranges for which it was designed. Customers that have fluids other than water may need to purchase one of these devices to test applicability. We know that ink solutions typically do not work with our polypropylene fiber and our current MiniModule Contactor design.

We have SuperPhobic® products that are well suited for ink

Are quantity discounts available? Yes, for orders greater than.

What is the maximum pressure of this device? The 1.5 x 5.5 and 1.7 x 5.5 modules can be operated up to 60 psig if the temperature is 25° C or lower. The 1.7 x 8.75 module is currently rated to 45 psig at 25° C and lower.

What is the maximum temperature for this device? All MiniModules can be operated at temperatures up to 35-45° C, but the operating pressure is reduced at this temp. Refer to the data sheet for actual ratings.

What is the pressure drop for These contactors? It depends on the flow rate. On the back of the data sheet there is a pressure drop curve that lists pressure drop as a function of flow rate.

What connections are available? Available connections are listed on the Data Sheet.

What is a Luer Lock connection? It is a standard connection often used in medical and other similar applications. Typing "luer lock" into an Internet search engine will provide numerous sources for these types of connectors.

What does Lumen Side and Shell Side refer to? Lumen side is the inside of the hollow fiber. This is the side where the process liquid flows in the MiniModule design. The Shellside is the vacuum side of the membrane.

What keeps these two phases separate inside of the device? The membrane in MiniModule contactors is polypropylene and it is hydrophobic. The water will not pass through the membrane wall when operated under normal pressures as listed on the data sheet.

Should my water inlet be hooked up to the lumenside or the shellside? You can flow water through either connection. For optimum performance, however, the water should be connected so that it flows through the lumenside with vacuum applied to the shellside. The Lumen ports are the ones that come straight off of the end of the device. See Illustration 1.

Product	Part Number for Ordering	Flow Capacity (One Contactor)	Surface Area	Number of Fibers
1 x 5.5	G543	Up to 500 ml/min	0.18 m ² (1.9 ft ²)	2300
1.7 x 5.5	G542	Up to 2000 ml/min	0.58 m ² (6.24 ft ²)	7400
1.7 x 8.75	G541	Up to 3000 ml/min	1.0 m ² (10.7 ft ²)	7400

degassing because they use a different membrane.

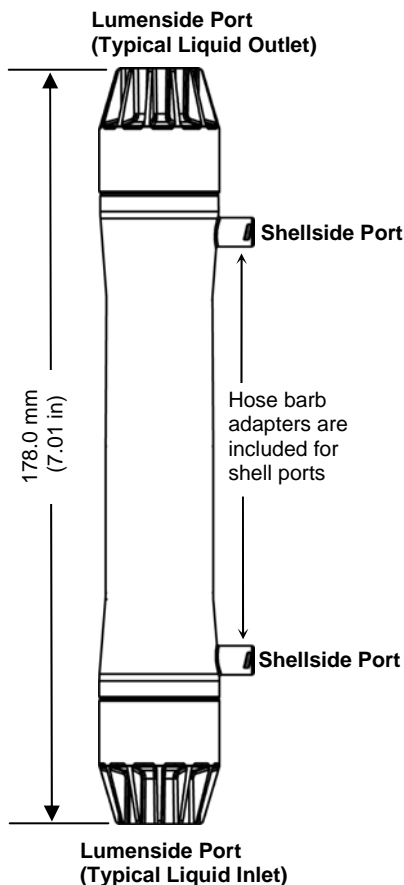
What is the delivery? Typically we can ship any of these products within 3 days.

Will MiniModules work for a water stream? Yes, they work great.

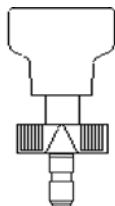
What if I need another type of connection? These are the only ones available at this time. We supply an adapter to convert the Luer Lock to a hose barb connection at no extra charge. If you need other adaptors, you may be able to find them with an internet search.

This device has four connections, what are they for? There are two lumenside and two shellside connections. This provides a water inlet and a water outlet connection and two vacuum connections. Again, see illustration 1.

Illustration 1



Optional John Guest Adapter



Why do I need two vacuum connections? In vacuum mode, you do not have to use both vacuum connections; two are provided to give additional flexibility. When operating in sweep or combo mode, both ports are required. Sweep enters the top port while vacuum is pulled from the bottom.

Then do I plug one of the vacuum connections and pull vacuum from the other? You have two options. You can plug one port and pull vacuum from the other port or you can connect these two ports together with a tee and pull a vacuum from both shell side ports. This provides slightly improved performance to the module.

What are the dimensions of this device? These are listed on the data sheet.

What are the weights of these products? Again, please look on the data sheet.

Where can I get a data sheet?

Go to our website at www.liquicel.com. Click on "Data Sheets" in the navigation menu.

A table listing all of our products will be displayed. MiniModules are located in the "debubbling" section at the top of the table. Clicking on the MiniModule Data Sheet link under the "Product" heading will connect you to a printable pdf version of a MiniModule data sheet that meets your capacity requirements.

Can I use this product for other liquids? Maybe. It depends on the specific solution. If your solution is compatible with materials used in the construction of these modules, then there is a high probability that these devices will be adequate for your application. The membrane hollow fibers are made from polypropylene. These fibers are potted in a polyurethane material. The housing is polycarbonate.

My fluid is essentially all water, but has some surfactants, can I use this product? Typically you cannot use MiniModules when surfactants are present.

As a rule of thumb, our standard MiniModules can handle a water-based stream with a surface tension close to water which is 76 dynes/cm. MiniModules are capable of debubbling liquid with a surface tension as low as 40 dynes/cm but the operating pressure must be very low so that breakthrough does not occur.

If the surface tension is lower than water, our SuperPhobic Contactors can be used instead of MiniModules.

If you have additional questions, please contact your Membrana representative.

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