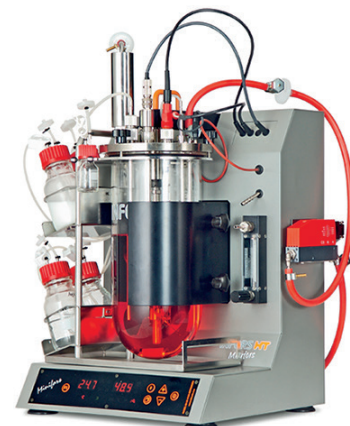


# Precision Gas Flow Control in Biotechnology



**Due to our experience we realize that most bio reactors are used for very critical and delicate processes where mass flow controllers need to be reliable, repeatable and flexible.**

**The quantities of fermentation gases strongly influence the mass transfer coefficient and there is no better way to precisely control gas flows than with thermal mass flow controllers from Vögtlin.**

**Bio reactors** can be used for very critical and delicate processes where **mass flow controllers** need to be **reliable, repeatable and flexible**. It does not matter if you use perfusion, sparging, or immersed silicone tubing for your oxygenation, the amount of dissolved oxygen needs to be carefully controlled to get a perfect and repeatable pH control.

Your fermentation gases like CO and H<sub>2</sub> quantities strongly influence your mass transfer coefficient and there is no better way than to precisely control your gas flows than with mass flow controllers.

**The Vögtlin mass flow instruments guarantee flexibility due to:**

- » Turndown of over 1 : 100 (application dependent)
- » Up to 10 different programmed gases in every mass flow meter
- » Strong valve that can handle a wide range of inlet and outlet pressures

Especially the **large turndown** helps to cover huge gas mix ranges with less mass flow controllers and it simplifies systems and reduces costs. Most likely you already have a Vögtlin mass flow controller in your bio reactor, since **Vögtlin is the preferred supplier of most large reactor system manufacturers**. Most modern systems replaced the traditional VA-meters (Rotameters) with MFCs. Besides the better control, you now have the ability to automate the process and record the gas flow electronically for future reference.

Vögtlin delivers simple stand-alone solutions for bench-top systems or IP67 (NEMA6) and EX-certified units that can be installed in a lab where regular wash-downs with high pressure waterjet cleaners are required. Control can be done in many different ways: we offer complete gas mixing systems and stand-alone units that communicate with Modbus, Profibus and analog signals. Other options include VB, C++, Labview or ready-to-use data collection programs. Units are available from the smallest SCCM flow range up to 450 SLPM. For system manufacturers, Vögtlin develops and manufactures complete OEM solutions.

**Contact one of our local experts today and learn how Vogtlin can help you get the best flow solution!**



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