

# PRESSURE / VACUUM CONTROLLERS & GENERATORS



**ELVEFLOW**  
PLUG & PLAY MICROFLUIDICS

# FOUR-CHANNEL PRESSURE AND VACUUM CONTROLLER

OB1 MK3+ [ELVEFLOW.COM/MICROFLUIDIC-FLOW-CONTROL-PRODUCTS/FLOW-CONTROL-SYSTEM/PRESSURE-CONTROLLER/](http://ELVEFLOW.COM/MICROFLUIDIC-FLOW-CONTROL-PRODUCTS/FLOW-CONTROL-SYSTEM/PRESSURE-CONTROLLER/)

NEVER BE LIMITED BY ACCURACY  
OR RESPONSIVENESS OF YOUR FLOW CONTROLLER



The OB1 MK3 is a **high-performance** microfluidic pressure and flow controller. Customize your unit, choose from one to four channels among the **five pressure ranges available**.

✓ MODULAR

✓ UPGRADABLE

✓ SOFTWARE INCLUDED

## APPLICATIONS

- > Digital microfluidics
- > Flow chemistry & polymer synthesis
- > Cell culture assays: cell perfusion, sequential injection
- > Droplet-sequencing: RNA sequencing

## UNIQUE PERFORMANCES

- > Pressure stability **0.005 % FS**
- > Response time **9 ms**
- > Pressure Resolution **0.006 % FS**
- > Settling time **35 ms**

## CUTTING EDGE PIEZOELECTRIC TECHNOLOGY FOR MICROFLUIDICS

➤ *Piezoelectric technology*

- > Organ on chip
- > Enhanced oil recovery
- > Lab on a chip
- > Cell handling

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产品介绍：[www.techusci.com](http://www.techusci.com)

1. Pressure & vacuum controller

Connect a pressure and a vacuum source to your OBI.

2. Monitoring

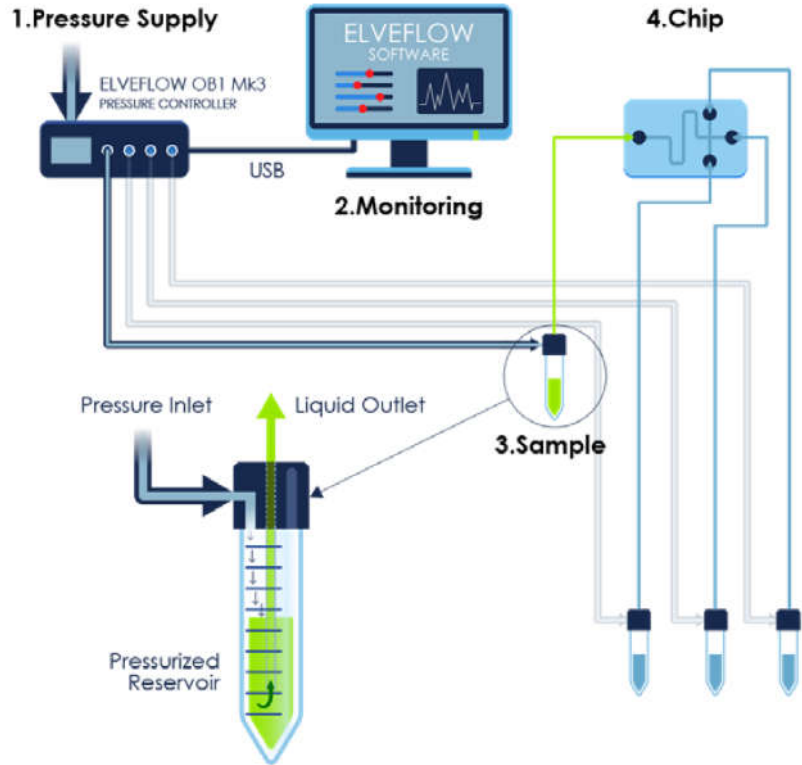
Control the pressure and flow rate using the Elveflow Smart Interface on your computer. This software enables you to create and automate sequences with a specific pressure or flow.

3. Sample

Depending on your choice, the liquids can be sucked into the reservoir or be ejected from there since the OBI can use pressure or vacuum within the same fluidic channel.

4. Chip

The OBI pressure & vacuum features offers precise sample handling, and provides full control over the sample injection.



FEATURES & BENEFITS



• Short settling time

Piezo technology allowing a blazing fast flow change in any microdevice

• Highest flow stability

Pressure stability down to 10  $\mu$ bar ensuring a superior flow performance over a large flow range

• Accurate flow control

Input a flow value into the software. Flow regulation down to 7.5 mL/min



• Software automation

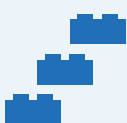
Control all instruments through a single panel. Power the full script module to automate control and injection over days

• Create your own program

Software Development Kits (C++, Python, MATLAB® and LabVIEW® libraries)

• Enhanced data saving

Up to 10 ms sampling rate to take out the best of your results



• Easy to install and use

Start out of the box and set everything up within minutes

• Customizable

Choose from one to four channels among the five pressure range available

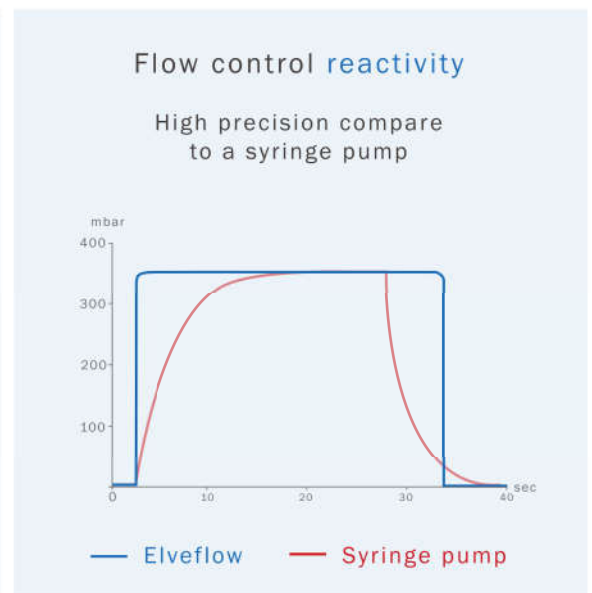
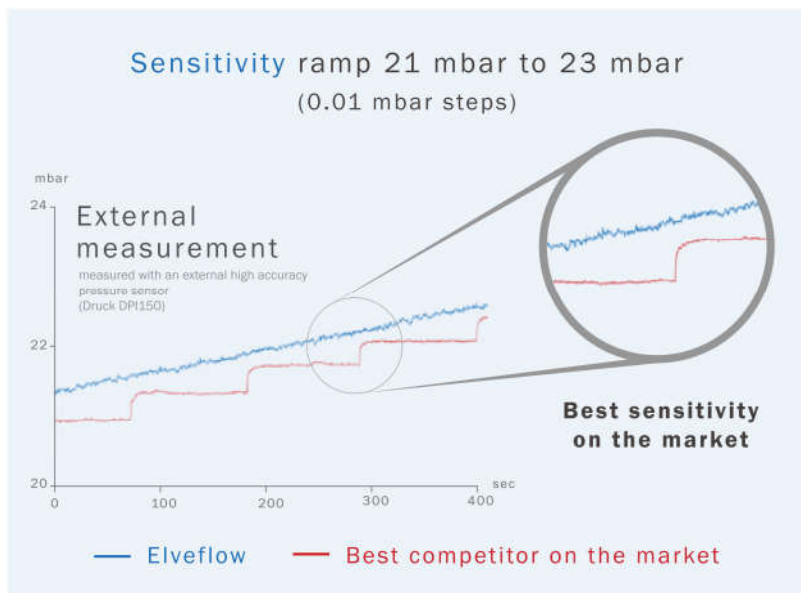
• Upgradable later

Get one channel today and add more channels later

| Unit pressure range               | 0 - 200 mbar<br>(0 - 2.9 psi)  | 0 - 2,000 mbar<br>(0 - 29 psi)      | 0 - 8,000 mbar<br>(0-116 psi)      | -900 to 1,000 mbar<br>(-13 psi to 14.5 psi)   | -900 to 6,000 mbar<br>(-13 psi to 87 psi)  |
|-----------------------------------|--|-------------------------------------|------------------------------------|---|--|
| Pressure stability <sup>(1)</sup> | 0.005 % FS<br>10 µbar (0.00014 psi)  | 0.005 % FS<br>100 µbar (0.0014 psi) | 0.006% FS<br>500 µbar (0.007 psi)  | -900 to 500 mbar:<br>0.005 % FS<br>100 µbar (0.0014 psi)<br>500 to 1,000 mbar:<br>0.007 % FS<br>150 µbar (0.0021 psi) | -900 to 2,000 mbar:<br>0.005 % FS<br>350 µbar (0.05 psi)<br>2,000 to 6,000 mbar:<br>0.007 % FS<br>525 µbar (0.076 psi) |
| Response time <sup>(2)</sup>      | down to 9 ms   |                                     |                                    |   |  |
| Settling time <sup>(3)</sup>      | down to 35 ms  |                                     |                                    |   |  |
| Minimum pressure increment        | 0.006 % FS<br>12.2 µbar - 0.00017 psi  | 0.006 % FS<br>122 µbar - 0.0017 psi | 0.006 % FS<br>480 µbar - 0.007 psi | 0.0064 % FS<br>122 µbar - 0.0017 psi  | 0.0061 % FS<br>420 µbar - 0.006 psi  |
| Input pressure                    | 1.5 bar - 10 bar<br>non corrosive, non explosive, dry and oil-free gases, e.g. air, argon, N2, CO2, ...              |                                     |                                    |   |  |
| Input vacuum <sup>(4)</sup>       | /  |                                     |                                    | any value from 0 to -1 bar  |  |
| Liquid compatibility              | no liquid should enter the OBI<br>any aqueous or organic solvent, oil or biological sample solution can be propelled |                                     |                                    |   |  |

Non-contractual information may be changed without notice.

[1] Pressure stability (standard deviation) measured over the full pressure range with an external high accuracy pressure sensor (Druck DPI150) [2] Depending on user computer operating system [3] Volume dependent – Measurement done on 12 mL reservoir for a set point from 0 to 200 mbar [4] The vacuum channels can be used without vacuum source if only positive pressures are desired. If no vacuum channels are present the Vacuum Input can be left open.



It is no coincidence that the most prestigious names trust us



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产品介绍：www.techusci.com

| Elements provided by Elveflow  | Included | Optional |
|--|----------|----------|
| <b>Software &amp; libraries</b><br>Control all Elveflow instruments with the same smart interface. | ●        |          |
| <b>AFI connection kit</b><br>A complete set of accessories fitted for the AFI pressure generator.  |          | ●        |
| <b>Kits</b><br>Connect any pressure source/syringe pump to your device.                            |          | ●        |
| <b>Reservoirs</b><br>Gas tight reservoirs with ergonomic fluidic connection.                       |          | ●        |
| <b>Flow sensors</b><br>A line of sensors to monitor very low liquid flow rates.                    |          | ●        |
| <b>Compressor</b><br>A safe & secure pressure source for the OBI pressure controller.              |          | ●        |
| <b>Service</b><br>The Elveflow expertise & support to offer you individually tailored solutions.   | ●        |          |

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**SOFTWARE FEATURES** [ELVEFLOW.COM/MICROFLUIDIC-FLOW-CONTROL-PRODUCTS/FLOW-CONTROL-SYSTEM/ELVEFLOW-SOFTWARE/](http://ELVEFLOW.COM/MICROFLUIDIC-FLOW-CONTROL-PRODUCTS/FLOW-CONTROL-SYSTEM/ELVEFLOW-SOFTWARE/)

- > Pressure & flow rate **visualization** and **recording**
- > **Programming & automation** of complex sequences
- > Easy alternative instrument control through the provided **C++**, **Python**, **MATLAB®** and **LabVIEW®** libraries



National instruments is our technological partner for embedded electronics

