

OB1 MK3+

# MULTI CHANNEL PRESSURE & VACUUM CONTROLLER

ELVEFLOW.COM/MICROFLUIDIC-FLOW-CONTROL-PRODUCTS/FLOW-CONTROL-SYSTEM/PRESSURE-CONTROLLER/



**DON'T LET YOUR PUMP  
LIMIT YOUR RESEARCH**  
BEST RESPONSIVENESS  
AND ACCURACY ON THE  
MARKET

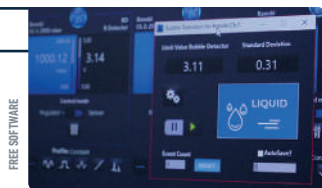


The OB1 MK3+ is a **high performance** microfluidic pressure and flow controller. Customize your unit: pick the number of channels you like and **choose for each of them the pressure and vacuum ranges** among the 5 options available.

✓ **MODULAR**

✓ **UPGRADABLE**

✓ **SOFTWARE INCLUDED**



## UNIQUE PERFORMANCES

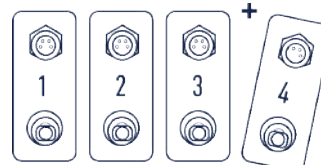
- > Pressure stability **0.005 % FS**
- > Response time **9 ms**
- > Pressure resolution **0.003 % FS**
- > Settling time **down to 35 ms**



**CUTTING EDGE  
PIEZOELECTRIC CONTROL  
FOR MICROFLUIDICS**

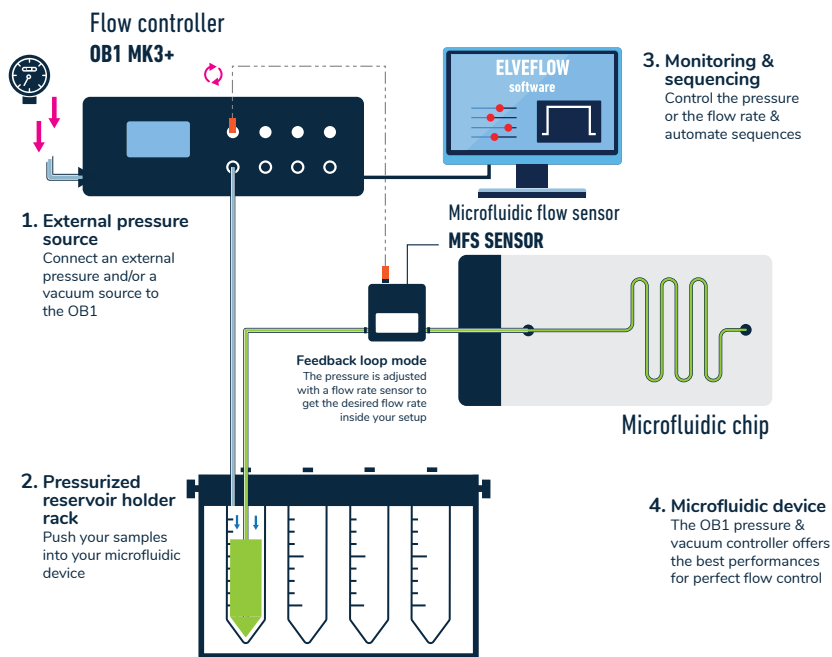
## APPLICATIONS

- > Digital microfluidics
- > Flow chemistry & polymer synthesis
- > Cell culture: cell perfusion, sequential injection
- > Droplet-sequencing: RNA sequencing
- > Organ on chip
- > Enhanced oil recovery
- > Lab on a chip



**CHOOSE FROM 1 TO 4  
CHANNELS, AND MORE...**

Get a one-channel today and  
add more channels later



> To **control flow rate or pressure** at any given point of your circuit, you can perform a **feedback loop** with the flow rate. The same can be done with pressure using a pressure sensor.

- 1 External pressure source**  
Connect a pressure and/or a vacuum source to your OB1 (required).  
Example: Gas cylinder, lab pressure line, compressor ([see more p.40](#))
- 2 Sample**  
Depending on your choice, the liquids can be pulled into the reservoir or be pushed from there since the OB1 can use pressure or vacuum within the same channel.
- 3 Monitoring & sequencing**  
Automate pressure and flow control using the Elveflow software on your computer.
- 4 Microfluidic device**  
The OB1's pressure & vacuum features offer precise sample handling, and provide full control over the injection.

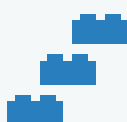
## FEATURES & BENEFITS



- **Short settling time**  
Operate blazing fast changes in any microdevice with our Piezo technology
- **Highest flow stability**  
Ensure superior flow performance over a large flow range, with pressure stability down to 10 µbar
- **Accurate flow control**  
Input a flow value into the software. Flow regulation down to 7.5 nL/min



- **Software automation**  
Control all instruments through a single dashboard. Powerful 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

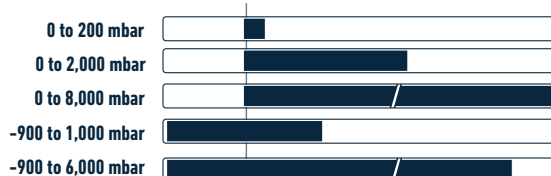


- **Easy to install and use**  
Start out of the box and set everything up within minutes
- **Customizable**  
Choose from any number of channels among the five pressure ranges available
- **Upgradable**  
Get a one-channel today and add more channels later

## PRESSURE RANGES



**FOR EACH CHANNEL:  
5 PRESSURE RANGES AVAILABLE**

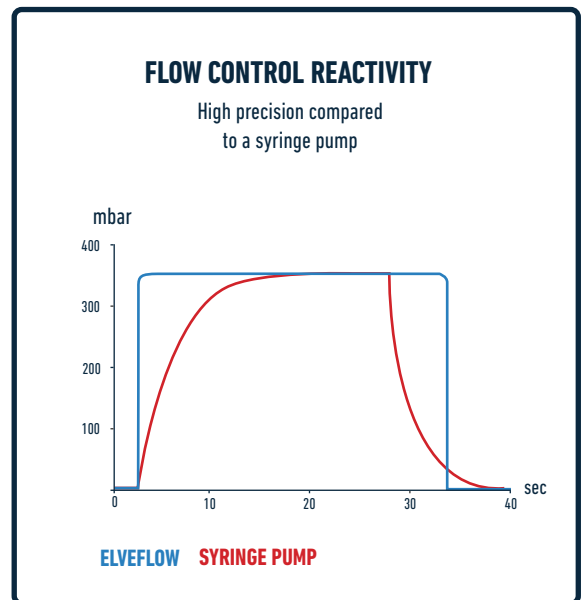
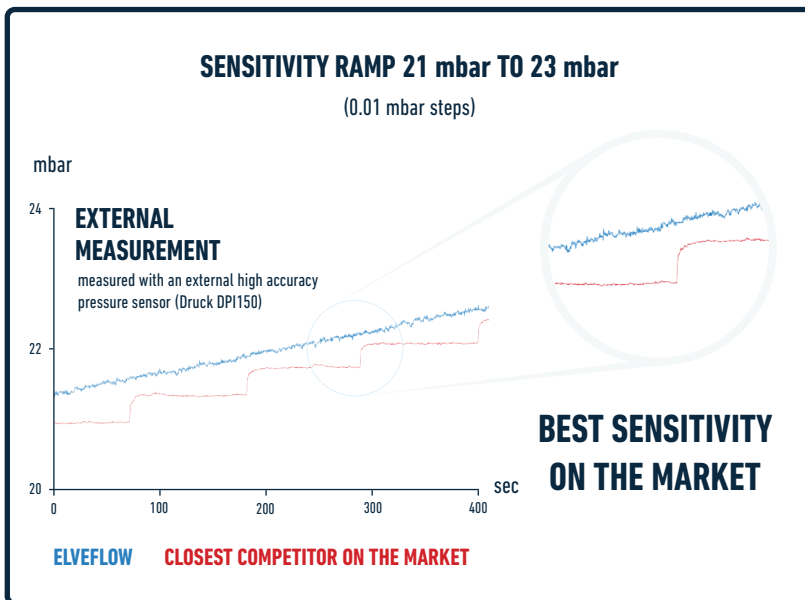


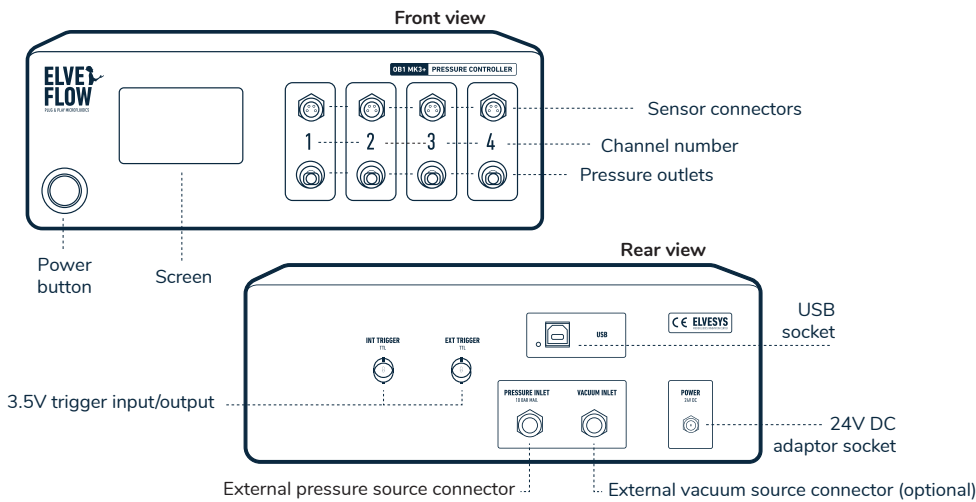
OB1 MK3+ CHANNEL PRESSURE RANGE	0 to 200 mbar <sup>(1)</sup> (0 to 2.9 psi)	0 to 2,000 mbar <sup>(1)</sup> (0 to 29 psi)	0 to 8,000 mbar <sup>(1)</sup> (0 to 116 psi)	-900 to 1,000 mbar <sup>(1)</sup> (-13 to 14.5 psi)	-900 to 6,000 mbar <sup>(1)</sup> (-13 to 87 psi)
Pressure stability <sup>(2)</sup>	0.005 % FS 10 µbar (0.00014 psi)	0.005 % FS 100 µbar (0.0014 psi)	0.006 % FS 500 µbar (0.007 psi)	-900 to 500 mbar:	-900 to 2,000 mbar:
				0.005 % FS 100 µbar (0.0014 psi)	0.005 % FS 350 µbar (0.05 psi)
				500 to 1,000 mbar:	2,000 to 6,000 mbar:
				0.007 % FS 150 µbar (0.0021 psi)	0.007 % FS 525 µbar (0.076 psi)
Response time <sup>(3)</sup>	down to 9 ms				
Settling time <sup>(4)</sup>	down to 35 ms				
Minimum pressure increment	0.003 % FS 6.1 µbar - 0,000085 ps	0.003 % FS 56 µbar - 0,00085 psi	0.003 % FS 240 µbar - 0,0035 psi	0.0032 % FS 61 µbar - 0,00085 psi	0.003 % FS 210 µbar - 0.003 psi
Input pressure	1.5 bar - 10 bar non corrosive, non explosive, dry and oil-free gases, e.g. air, argon, N2, CO2, ...				
Input vacuum <sup>(5)</sup>	/			any value from 0 to -1 bar	
Liquid compatibility	no liquid should enter the OB1 any aqueous or organic solvent, oil or biological sample solution can be propelled				

Non-contractual information, may be changed without notice.

**POWER CONSUMPTION** (maximum): 12 W    **CASE DIMENSIONS** (length x width x height): 240 x 223 x 80 mm    **WEIGHT:** 1.7 kg to 3.04 kg (3.1 Kg)    **TTL TRIGGER:** input 5V / output 3,3V

(1) Max pressure value might vary by +/- 2.5% (2) Pressure stability (standard deviation) measured over the full pressure range with an external high accuracy pressure sensor (Paroscientific MODEL 745) (3) Depending on your computer's operating system (4) Volume dependent – Measurement done on 12 mL reservoir for a set point from 100 to 200 mbar (5) The vacuum channels can be used without vacuum source if only positive pressures are desired.





### PRESSURE RANGE COLOR CODE



## PRODUCTS & SERVICES

ELEMENTS PROVIDED BY ELVEFLOW	INCLUDED	OPTIONAL
<b>Software &amp; libraries</b> Control all Elveflow instruments with the same smart interface	•	
<b>OB1 connection kit</b> A complete set of accessories fitted for the OB1 flow generator		•
<b>Reservoirs</b> Gas tight reservoirs with ergonomic fluidic connection		•
<b>Flow sensors</b> A line of sensors to monitor very low liquid flow rates		•
<b>Compressor</b> A safe & secure pressure source for the OB1 pressure controller		•
<b>Service</b> The Elveflow expertise & support to offer you individually tailored solutions	•	

## 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 Instrument is our technological partner for embedded electronics

