

COBALT AUTONOMOUS MICROFLUIDIC PUMP

ELVEFLOW.COM/MICROFLUIDIC-PRODUCTS/MICROFLUIDICS-FLOW-CONTROL-SYSTEMS/AUTONOMOUS-VACUUM-PRESSURE-PUMPS/



STANDALONE PRESSURE-DRIVEN FLOW CONTROLLER



The Elveflow® Cobalt autonomous microfluidic pump provides easy access to the most stable and accurate pressure and flow control technology. Equipped with its own pressure (and vacuum) source, it does not require an external pressure supply. Also, thanks to its embedded software, it can be controlled with or without a computer.

✓ **MOST STABLE FLOW AND PRESSURE CONTROL**

✓ **INTUITIVE USER INTERFACE**

✓ **PORTABLE AND COMPACT**

UNIQUE PERFORMANCES*

Cobalt generates powerful flow control when paired with a MFS flow sensor from our product line:

- > Flow rate range from 200nL/min to 5mL/min
- > Repeatability down to 3.5 nL/min
- > Accuracy down to 20 nL/min

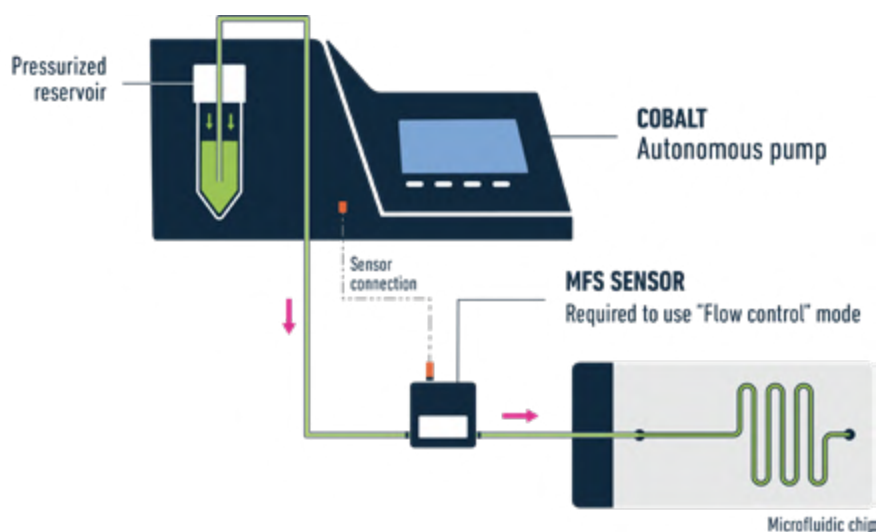
Available in two versions:

- > pushing only: pressure range 0/2000 mbar
- > push & pull: vacuum and pressure range -900/1000 mbar

* All the values given for water.

APPLICATIONS

- > Lab-on-chip development
- > Bench test or characterisation (chips, sensors, filters, etc)
- > Mechanobiology (cell confinement, tissue engineering, etc)
- > Cell perfusion



> **Plug it to a power source:**

All you have to do is to turn on your Cobalt. The pressure source is inside.

> **Connect the reservoir:**

No more pneumatic tubing needed. You only have to plug your reservoir to the instrument.

> **Program and run your experiment:**

Automate pressure and flow control using the Elveflow embedded software, no computer needed!

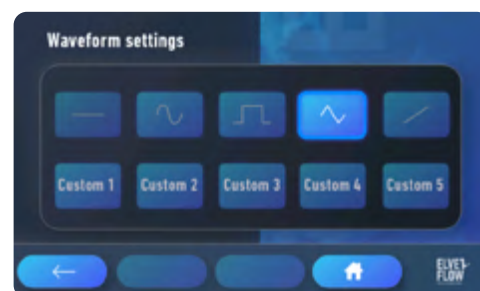
Choose between two Cobalt versions; both allow either gas or flow control when paired with a flow sensor.

> 0 to 2000 mbar positive pressure control.

> -700 to 1000 mbar dual vacuum & pressure control.

The **Cobalt technology** made state-of-the-art microfluidics accessible, autonomous, and user-friendly.

COBALT EMBEDDED SOFTWARE



Cobalt's intuitive embedded software can be fully controlled without the need of external software. Its user-friendly interface contains a knob button for easy setting modifications.



OPTIONAL
COBALT COMPUTER SOFTWARE

The Cobalt® computer software allows you to control advanced tasks - such as real-time creation, monitoring, and modifications of complex pressure and flow rate profiles - via computer using a USB connection.

	COBALT	COBALT DUAL
PNEUMATICS		
Flow control	Push	Push & pull
Pressure range ⁽¹⁾	0 to 2000 mbar (0 to 29 psi)	-700 to 1000 mbar (-10 to 14 psi)
Minimum pressure increment step	Cobalt Embedded Software (1 mbar) Computer software (0.1 mbar)	
Pressure stability ⁽²⁾	0.1 mbar	
Electronic response time	Cobalt Embedded Software: down to 10 ms Computer software: down to 100 ms ⁽³⁾	
Settling time ⁽⁴⁾	Down to 75 ms	Down to 105 ms
Pressure Source	No pressure source needed (integrated)	No pressure & vacuum source needed (integrated)
FLOW CONTROL		
Flow sensor compatibility	Possible to pair 1 flow sensor from the Elveflow MFS series (MFS2, 3, 4, 5)	
Flow rates ⁽⁵⁾	MFS2: 0 to 7 µL/min MFS3: 0 to 80 µL/min MFS4: 0 to 1000 µL/min MFS5: 0 to 5000µL/min	
Minimum flow rate increment	MFS2: 3.5 nL/min MFS3: 8 nL/min MFS4: 0.2 µL/min MFS5: 1 µL/min	
Flow sensor calibration	User-friendly automated sensor calibration module ⁽⁶⁾	
Liquid compatibility	Non contact pump. Any aqueous or organic solvent, oil, or biological sample solution. Recalibration required for non aqueous solutions at the bottom of the game	
CONTROL & MONITORING		
User interfaces	Cobalt Embedded Software Cobalt computer software (Windows) on PC	
Cobalt computer software added functionalities	Custom profile: design, upload, download Recording data: download	
Record frequency range	Cobalt Embedded Software: 1-5-10Hz Computer software: 0-100Hz	
Maximum recording time	Cobalt Embedded Software: up to 6000 sec depending on recording frequency Computer software: unlimited	
OTHER		
Power consumption	36 W (100 V to 240 V - 50 Hz to 60 Hz)	
Case dimensions	328 x 235 x 168 mm (l x w x h)	
Weight	3.3 kg	4.1 kg
Output connectors	Quick Connect	

⁽¹⁾ Max pressure value might vary by +/- 2.5%.

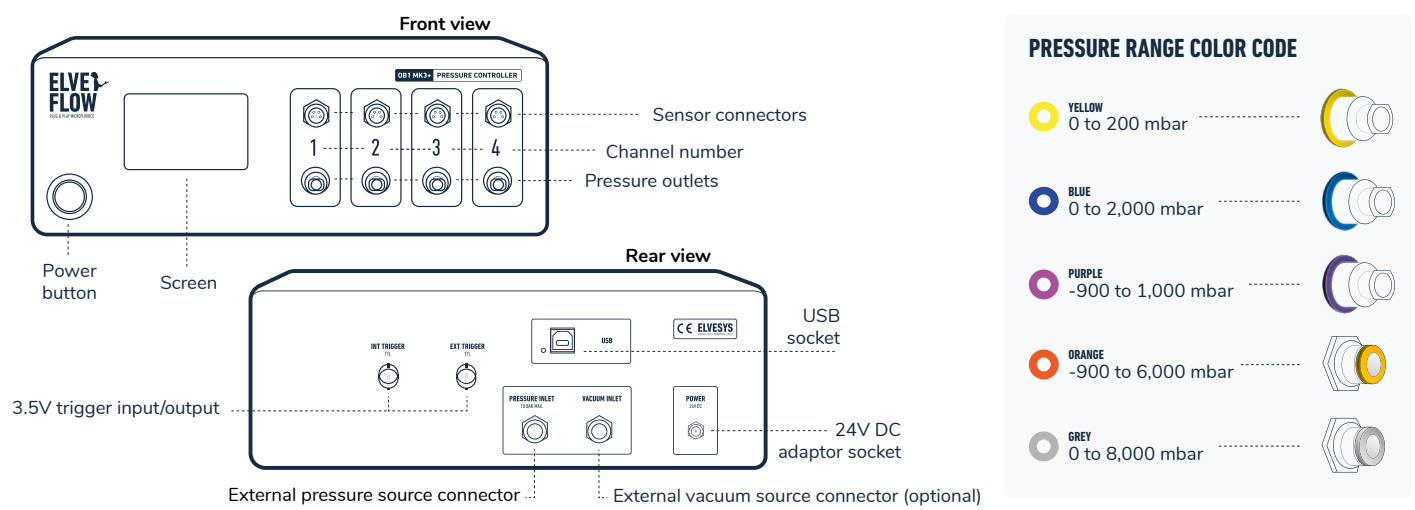
⁽²⁾ Pressure stability (standard deviation) is measured over 60s, 1 minute after the setpoint is reached.

⁽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⁾ Indicative, please refer to the MFS documentation for detailed specifications.

⁽⁶⁾ For aqueous solutions only.



PRODUCTS & SERVICES

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

SOFTWARE FEATURES

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



More information:



ESI - FREE SOFTWARE
ELVEFLOW SMART INTERFACE - ALL INSTRUMENTS

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