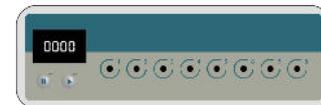


MFCSTM-EX

Microfluidic Flow Control System



INTRODUCTION

The **MFCSTM-EX** is a microfluidic flow controller with 8 customizable channels with different pressure ranges for **high precision operations** in microfluidic experiments. By using the patented **FASTABTM** technology, the **MFCSTM-EX** can deliver **highly stable flow rate** through 8 channels allowing for **parallelisation** or **pressurization of independant systems simultaneously**.



Possibility to integrate a pressure pump



Easy to use



Patented technology
reliable and reproducible results



Compact



Intuitive software
including SDK for customized applications

SOFTWARE COMPATIBILITY



OxyGEN



The **MFCSTM-EX** is compatible with **Fluigent's** newest software applications:

- **OxyGEN**: Complete interface to easily control, monitor, record data and automate time based protocols for all Fluigent instruments
- **Software Development Kit**: Integrate MFCSTM-EX seamlessly in existing application. Available in C++, Labview, Matlab, Python, etc.

SPECIFICATIONS

Hardware specifications		
Dimensions L*W*H	265 x 262 x 73 mm	
Weight	3.5 kg (7.7 lbs)	
Output connectors	Any range from -345 to 2000 mbar	7000 mbar range
	Female luer lock	4mm OD tube connectors
Pneumatic connections	Speed fit	
Chemical compatibility		
Gas compatibility	Dry, oil-free gas, air (N ₂ , O ₂ , CO ₂), any non corrosive or non explosive gas	
Liquid compatibility	Aqueous solvent, oil, organic solvent, biological sample	
Software compatibility		
Fluigent software	OxyGEN	
	Software Development Kit (SDK)	
Technical specifications		
Stability	<0.1% on the measured value	
Resolution	0.03% full scale	
Accuracy	0.25% on maximum pressure	
Repeatability	<0.001% full scale	
Response time	Down to 10 ms	
Standard operating conditions		
Operating temperature	20°C	
Operating humidity	40% HR	
Storage conditions		
Storage temperature	0°C to 40°C	
Storage humidity	0-80% HR	

PRESSURE RANGES

Product name	Pressure range	Ring Color **	Power Consumption	Part Number
MFCS™-EX Channel	-345 to 0 mbar (-5,00 to 0 psi) *		1.5 W	EX-80345001
	-800 to 0 mbar (-11,6 to 0 psi) *			EX-80800001
	0 to 345 mbar (0 to 5,00 psi)			EX-00345001
	0 to 1000 mbar (0 to 14,50 psi)			EX-01000001
	0 to 2000 mbar (0 to 29,01 psi)			EX-01000002
	0 to 7000 mbar (0 to 101,5 psi)	NA		EX-07000001
MFCS™-EX Base	Basic	NA	None	EX-11000001
	Positive pressure source	NA		EX-source-pos
	Negative pressure source	NA		EX-source-neg

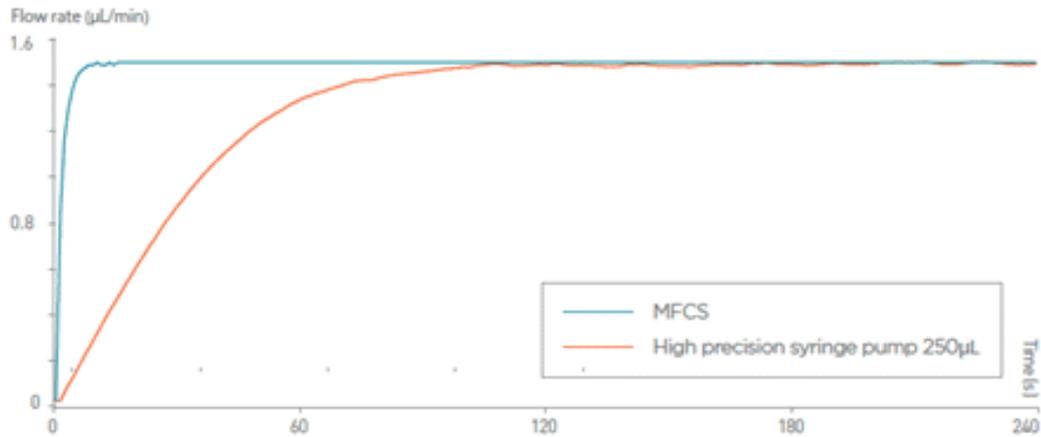
* For vacuum channels, to prevent any liquid from entering the device, a backflow filter or liquid trap reservoir use is recommended

** The ring color on the pressure outlet indicates the channel pressure range.

PRESSURE SUPPLY

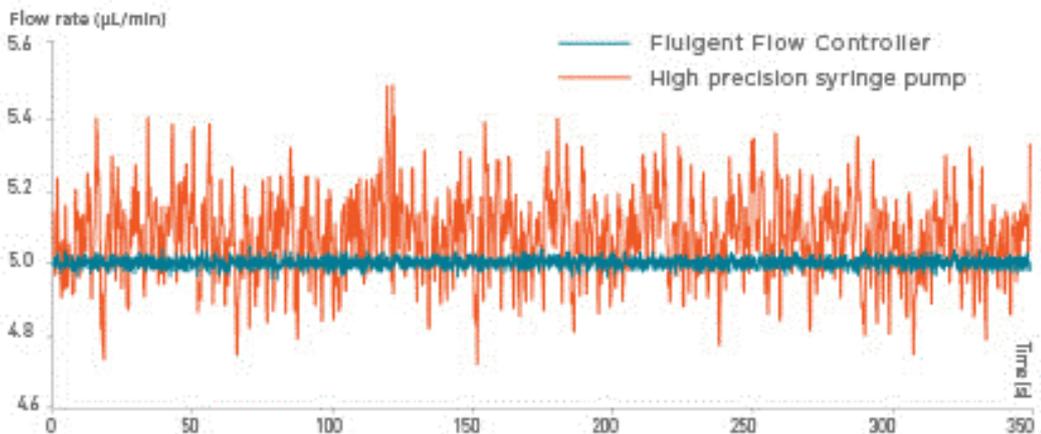
Pressure range	Required supply	Maximum pressure supply	Part Number
-25 to 0 mbar (-0,36 to 0 psi)	-800 mbar (-11,6 psi)	N/A	EX-80025001
-69 to 0 mbar (-1,00 to 0 psi)	-800 mbar (-11,6 psi)	N/A	EX-80069001
-345 to 0 mbar (-5,00 to 0 psi)	-800 mbar (-11,6 psi)	N/A	EX-80345001
-800 to 0 mbar (-11,6 to 0 psi)	-800 mbar (-11,6 psi)	N/A	EX-80800001
0 to 345 mbar (0 to 5,00 psi)	1100 mbar (15,95 psi)	900 mbar (13,05 psi)	EX-00345001
0 to 1000 mbar (0 to 14,50 psi)	1100 mbar (15,95 psi)	1400 mbar (20,3 psi)	EX-01000001
0 to 2000 mbar (0 to 29,01 psi)	2100 mbar (30,46 psi)	2600 mbar (37,7 psi)	EX-01000002
0 to 7000 mbar (0 to 101,5 psi)	7100 mbar (103,0 psi)	7600 mbar (110,22 psi)	EX-07000001

RESPONSE TIME



FLUIGENT Technology allows to obtain a fast flow rate response over the time . With a **short settling time** and **quick pressurization of systems**. Compared to syringe pumps, **MFCs™-EX** allows to save experimental time, precious samples and expensive reagents with significantly **shorter response times compared to syringe pumps**.

PRESSURE STABILITY



The **FASTAB™** technology allows to have a **pulseless flow** when manipulating fluids at the sub-microliter scale compared to syringe, peristaltic or piston pumps. For basic microfluidics experiments such as microdroplet generation, droplet size and frequency are directly linked to the flow rates of the continuous and dispersed phases. Flow rate stability is critical for having **repeatable and monodispersed droplets**. Pressure pumps provide a **more stable flow profile** leading to better experimental data.