

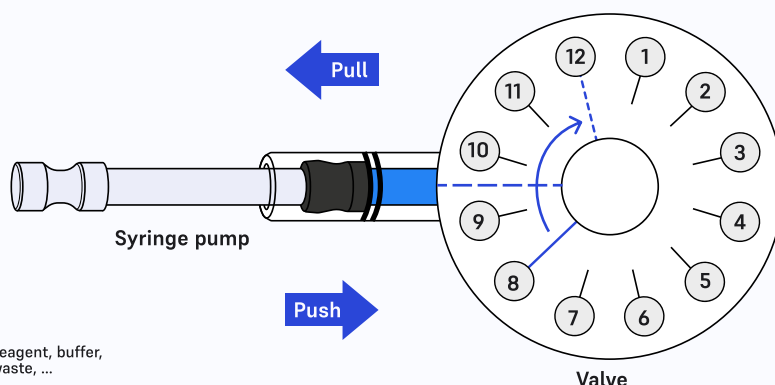
SPM HD

OEM Microfluidic Syringe Pump

High-precision OEM syringe pump for ultra-low flow rate



- Precise, programmable bidirectional microfluidic flow
- Multiplexing capacity thanks to the distribution microfluidic rotary valve (up to 12-ports)
- Compact, programmable
- Automation-ready



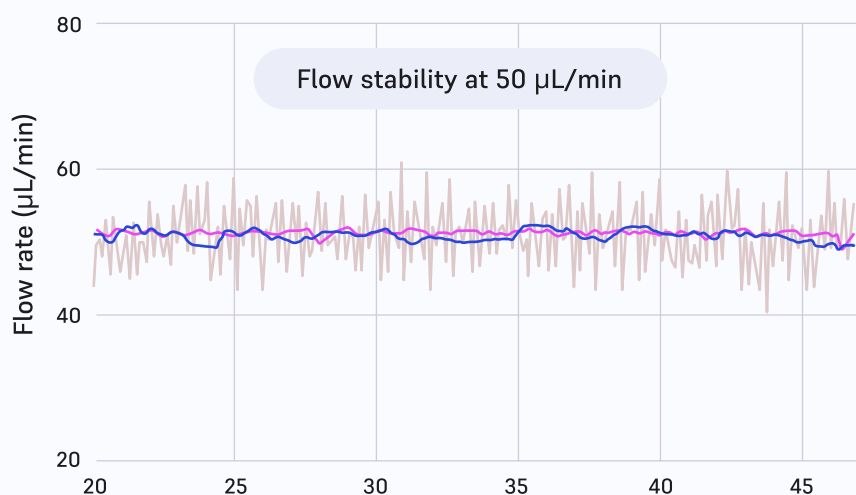
* Fluid: Sample, reagent, buffer, mixing, output, waste, ...

✓ 1,296,000 micro-steps

✓ Multi-port valve

✓ Automation ready

✓ Robust & compact OEM

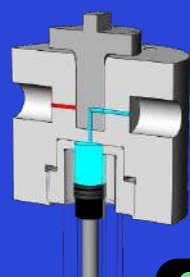


Flow stability that sets a new standard

- Stable flow at ultra-low rates is a key challenge in microfluidics
- Instability compromises accuracy, repeatability, and assay performance
- SPM HD:
 - High-precision syringe pump control
 - Integrated multi-port rotary valve
 - Pressure-pump-like stability, even with multiple liquids

● Basic syringe pump ● Pressure controller
 ● **NEW SPM HD** High-precision Industrial Programmable Syringe Pump

Dead, internal & carryover vol.



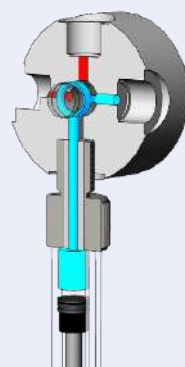
AMF Valve

- 90° geometry
- Integrated syringe into the valve
- Microfluidic design

✓ No dead volume

✓ Minimized internal volume (blue)

✓ Reduced carryover volume



Competitor Valve

- Flat geometry
- Additional syringe connector
- Macrofluidic design

✗ Dead volume

✗ Large internal volume (blue)

✗ Large carryover volume
(cross-contamination)

SYRINGE SPECIFICATIONS					
Reference	Volume	Plunger material	Minimum flow rate	Maximum flow rate	Min. dosing volume
S-50-P	50 µL	PTFE	0.00717 µL/min	400 µL/min	0.1 µL
S-100-P	100 µL	PTFE	0.0144 µL/min	800 µL/min	0.2 µL
S-250-P	250 µL	PTFE	0.0359 µL/min	2,000 µL/min	0.5 µL
S-500-P	500 µL	PTFE	0.0717 µL/min	4,000 µL/min	1 µL
S-1000-P	1,000 µL	PTFE	0.144 µL/min	8,000 µL/min	2 µL
S-2500-P	2,500 µL	PTFE	0.359 µL/min	20,000 µL/min	5 µL
S-5000-P	5,000 µL	PTFE	0.717 µL/min	40,000 µL/min	10 µL

Chemical compatibility: The wetted materials being PTFE, PCTFE and borosilicate glass, this pump offers an exceptional compatibility with most chemicals and biological samples.

Optional: It is possible to add a heating/cooling module around the syringe to suit your specific application.

VALVE SPECIFICATIONS						
Reference	Configuration	Wetted materials	Internal volume	Carryover volume	Fluid path diameter	Maximum Pressure
V-D-1-6-050-C-P	6 ports	PCTFE, PTFE	3.6 µL	2.6 µL	0.5 mm	7 bars
V-D-1-8-050-C-P	8 ports	PCTFE, PTFE	3.6 µL	2.6 µL	0.5 mm	7 bars
V-D-1-8-100-C-P	8 ports	PCTFE, PTFE	15 µL	8 µL	1 mm	7 bars
V-D-1-10-050-C-P	10 ports	PCTFE, PTFE	4.6 µL	2.8 µL	0.5 mm	7 bars
V-D-1-10-100-C-P	10 ports	PCTFE, PTFE	15 µL	8 µL	1 mm	7 bars
V-D-1-12-050-C-P	12 ports	PCTFE, PTFE	4.6 µL	2.8 µL	0.5 mm	7 bars

Valve heads are interchangeable. Other models and custom configurations available upon request. Check our website amf.ch

Description	SPM HD or SPM+ HD
Operating temperature	15-45°C (59-113°F)
Operating humidity	20-80%, non condensing
Maximum pressure	7 bars (102 psi)
Wetted materials	PTFE, PCTFE and borosilicate glass
Syringe size capacity	From 50 µL to 1 mL (SPM HD), 2,5 mL or 5 mL (SPM+ HD)
Dead volume	None
Plunger travel	30 mm with 1,296,000 micro-steps
Plunger resolution	Selectable 3,000 steps (standard) / 24,000 steps (high)
Plunger drive	Screw drive with linear encoder for step loss detection
Valve configuration	Zero-dead-volume multi-port distribution with angular encoder
Tube port fittings	Standard 1/4 – 28 UNF, flat-bottom
Cross-contamination	Typically from 1/100 to 1/1,000 per cleaning cycle
Accuracy	< 1% deviation from expected value at full stroke
Electrical interface	USB mini, 9–pin D–Sub
Interface	USB mini, RS-232, RS-485
Communication type	Serial (serial over USB, RS232, RS485)
Power	18 - 24 VDC, 2.2 A peak, 40 W / 18 VDC optimized for battery use
Time for full stroke	8 seconds to 6400 minutes
Dimensions	199.7 x 126.3 x 50.5 mm (SPM HD) & 211.9 x 136.7 x 49.6 mm (SPM+ HD)
Weight	1.5 kg (SPM HD) & 1.6 kg (SPM+ HD)