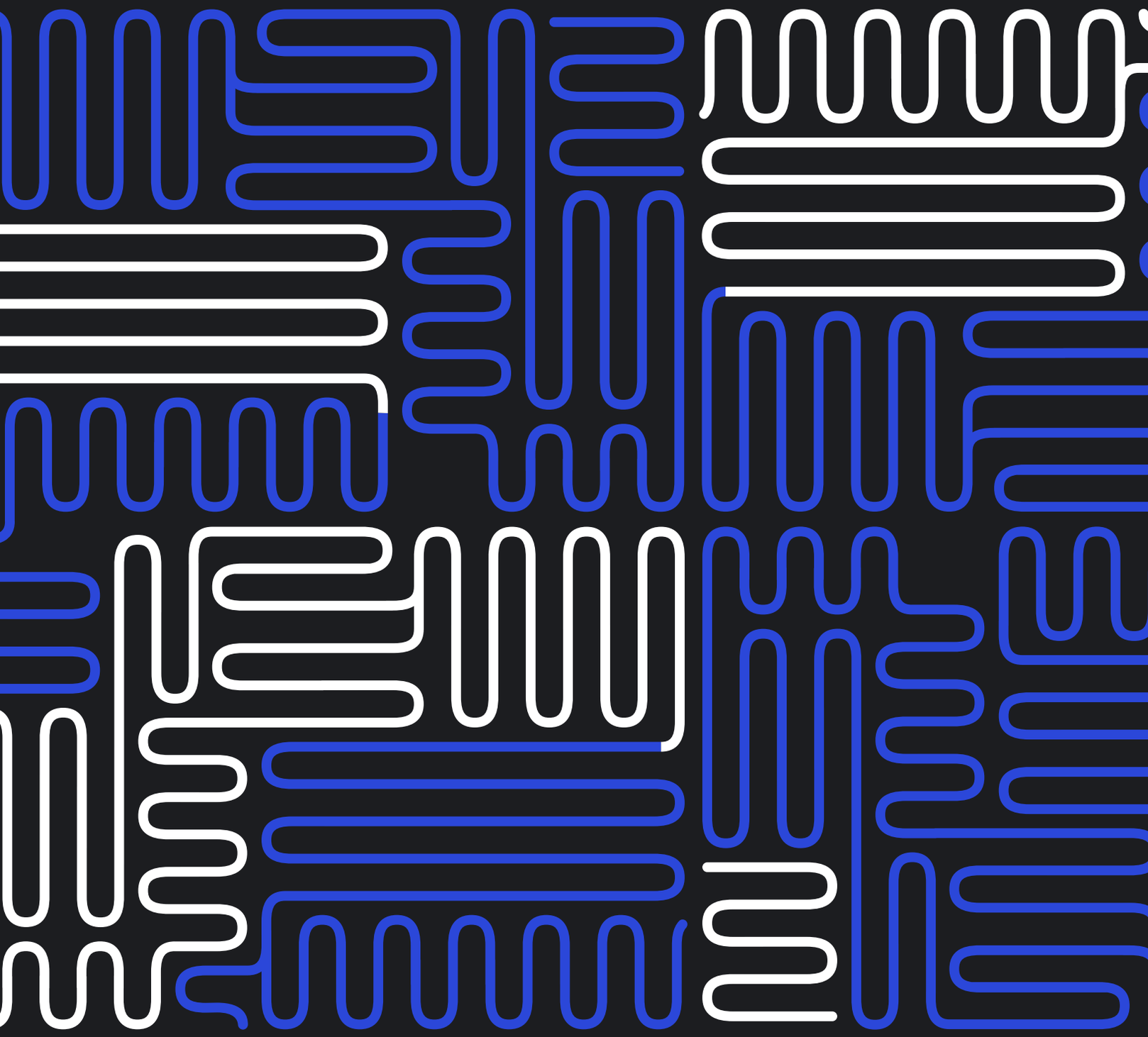
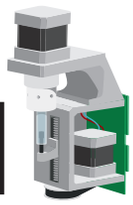


Small Volumes Matter

Advanced Microfluidics

www.amf.ch

SPM



Sequential Microdispenser

Selection Sampling Temperature Dispensing

This is an OEM product.
It can be tailored for the needs of your instrument.

BENEFITS

- Allows for multiple liquids
- Optimised to limit contamination
- Excellent chemical and biological compatibility
- Simple air removal
- Easy to use and integrate
- Swiss quality

APPLICATIONS

- Sample preparation automation
- Industry
- Lab-on-a-chip
- Research & Education
- Biological sample handling
- Accurate flow streams of fluids
- High-precision sampling and dosing

FUNCTIONS

- Dilute samples or reagents
- Aspirate liquids
- Dispense liquids
- Flow rate control
- Prepare complex mixes
- Alternate air / liquid samples

Syringes and valves specifications, see on page 17

THE ALL-IN-ONE SYRINGE PUMP

HANDLE DELICATE SAMPLES WITH GREAT PRECISION

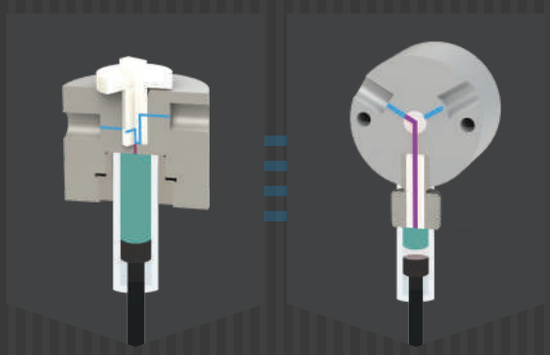
Our OEM syringe pump is a high-precision dosing device for automated microfluidic applications. The high-accuracy dosing and nearly-pulseless flow stream capabilities make it the perfect tool for multiple liquid handling in the range of milliliter down to nanoliter.

The integrated zero dead volume selection valve allows you to handle multiple fluids with one syringe pump thanks to the high cleaning efficiency and low carryover. Coupled with its ease of use, this syringe pump is thus the ideal companion for your instruments and laboratory experiments at a reduced investment cost.

Pump Specifications	
Operating temperature	15 – 45°C (59-113°F)
Operating humidity	20-80%, non condensing
Max. pressure	7 bars (102 psi)
Wetted materials	PTFE, PCTFE and borosilicate glass
Syringe pump capacity	From 50 µL to 1 mL (SPM) & 2,5 mL or 5 mL (SPM+)
Dead volume	None
Plunger travel	30 mm with 96,000 micro-steps for nearly pulseless flow
Plunger resolution	Selectable 3,000 steps (standard) / 24,000 steps (high)
Plunger drive	Screw drive with linear encoder for step loss detection
Valves 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 1/1000 per cleaning cycle
Accuracy	< 1% deviation from expected value at full stroke
Electrical interface	USB mini, 9–pin D–Sub
Interface	Serial (serial over USB, RS232, RS485)
Power	18 VDC, 2.2 A peak, 40 W / 18 VDC optimized for battery use
Time for full stroke	2 seconds to 6400 minutes
Dimensions	199.7 x 126.3 x 50.5 mm (SPM) 211.9 x 136.7 x 49.6 mm (SPM+)
Weight	1.5 kg (SPM) & 1.6 kg (SPM+)

Dead, internal and carryover volumes

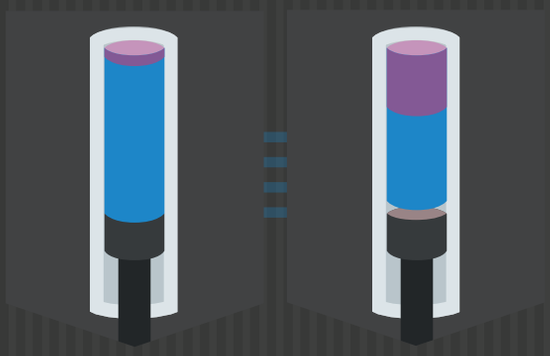
Our unique valve geometry limits the carryover volume to 1.5 µL (purple) whereas standard products exhibit up to 50 µL. The exceptionally small channel diameter of 0.5 mm reduces the internal volume to only 4 µL (blue + purple). There is no dead volume.



AMF TECHNOLOGY STANDARD PRODUCTS

High dilution ratio

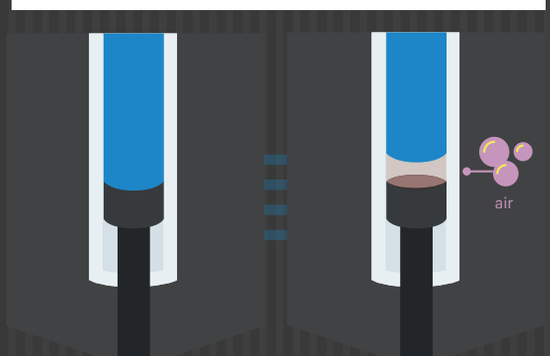
When rinsing, diluting or switching liquid, our minimal carryover volume (purple) leads to a maximal dilution ratio with the diluent (blue).



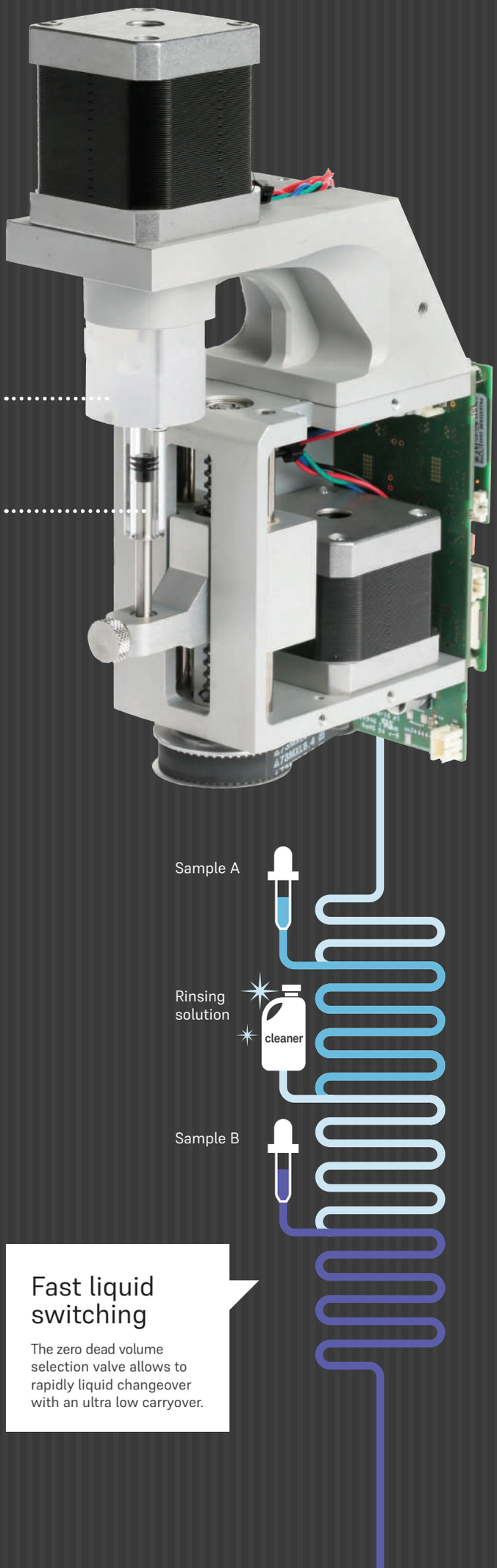
AMF TECHNOLOGY STANDARD PRODUCTS

Bubble free priming

Our distinct valve design expels the air from the syringe and valve immediately, eliminating the traditional cumbersome priming procedure.



AMF TECHNOLOGY STANDARD PRODUCTS



Fast liquid switching

The zero dead volume selection valve allows to rapidly liquid changeover with an ultra low carryover.

Syringe specifications

Reference	Volume	Plunger material	Min. flow rate	Max. flow rate	Min. dosing volume
S–50–P	50 µL	PTFE	0.00745 µL/min	1,500 µL/min	0.1 µL
S–100–P	100 µL	PTFE	0.0149 µL/min	3,000 µL/min	0.2 µL
S–250–P	250 µL	PTFE	0.0373 µL/min	7,500 µL/min	0.5 µL
S–500–P	500 µL	PTFE	0.0745 µL/min	15,000 µL/min	1 µL
S–1000–P	1,000 µL	PTFE	0.149 µL/min	30,000 µL/min	2 µL
S–2500–P	2,500 µL	PTFE	0.373 µL/min	75,000 µL/min	5 µL
S–5000–P	5,000 µL	PTFE	0.745 µL/min	150,000 µL/min	10 µL
Chemical compatibility The wetted materials being PTFE, PCTFE and borosilicate glass, this pump offers an exceptional compatibility to most chemicals and biological samples.					

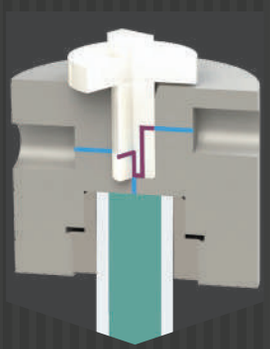
Optional:
It is possible to add a heating/cooling module around the syringe to suit your specific application.

Valves specifications

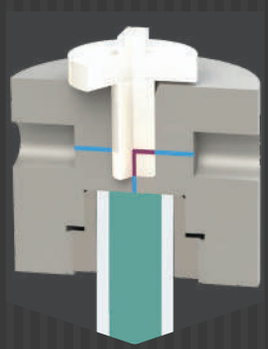
Ref.	Configuration	Wetted materials	Internal volume	carryover volume	Fluid path diameter	Max. pressure
V–D–1–6–050–C–P	6 ports	PCTFE, PTFE	3.6 µL	2.6 µL	0.5 mm	7 bars
V–D–1–8–050–C–P	8 ports	PCTFE, PTFE	3.6 µL	2.6 µL	0.5 mm	7 bars
V–D–1–8–100–C–P or U	8 ports	PCTFE, PTFE or UHMW–PE	15 µL	8 µL	1 mm	7 bars
V–D–1–10–050–C–P or U	10 ports	PCTFE, PTFE or UHMW–PE	4.6 µL	2.8 µL	0.5 mm	7 bars
V–D–1–10–100–C–P or U	10 ports	PCTFE, PTFE or UHMW–PE	15 µL	8 µL	1 mm	7 bars
V–D–1–12–100–C–P or U	12 ports	PCTFE, PTFE or UHMW–PE	4.6 µL	2.8 µL	0.5 mm	7 bars

- Valve heads are interchangeable
- Other models and customs available upon request

Check website for new models www.amf.ch



ultra-low
carryover volume



low
carryover volume

Customization options

- Wetted materials
- Fluidic fittings
- Fluid path diameter
- Motor
- Electrical interfaces
- Communication types
- Number of ports

NOTES

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