

# SPM – Zero dead volume dilutor

## DATASHEET

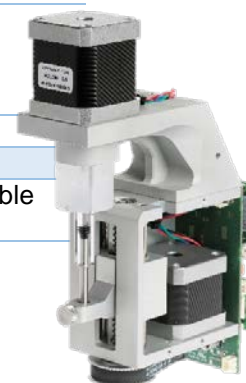


### Environmental conditions

Operating temperature	5-40°C (41-104°F)
Humidity	20-80%, non-condensing
Max pressure	5 bars (72 psi)

### Fluidic characteristics

Tube port fittings	Standard ¼-28 UNF, flat-bottom
Wetted materials	PTFE, PCTFE and borosilicate glass
Channel diameter	0.5 mm (0.020 in) / 0.4-1 mm (0.015-0.039 in) available upon request



### Mechanical characteristics

#### COMPATIBLE VALVE MODELS

Series	ULTRA-LOW CARRYOVER VOLUME	LOW CARRYOVER VOLUME
<b>Liquid path</b>		
<b>Number of channels inside rotary part</b>	2	1
<b>Number of ports</b>	6	6, 8
<b>Channel diameter</b>	0.5 mm	0.5, 1 mm
<b>Internal volume</b>	5.2 µL	3.5 – 14.1 µL
<b>Carryover volume</b>	1.5 µL	2.6 – 10.2 µL
<b>Dead volume</b>	None	

#### Glossary reminder

**Internal volume:** Volume inside the system, from entrance to exit (does not include the volume in the syringe)

**Dead volume:** Volume that is “stuck” in the system (dead end), which is not cleanly swept and relies on diffusion to clear out.

**Carryover volume:** Volume of liquid that will be mixed with the next liquid or sample. It is not stuck, but will be swept next time a liquid passes.

#### PLUNGER DETAILS

Travel length	30 mm with 96'000 micro-steps
Resolution	Selectable 3'000 steps or 24'000 steps
Drive	Screw drive with linear encoder for step loss detection
Materials	PTFE or UHMW-PE

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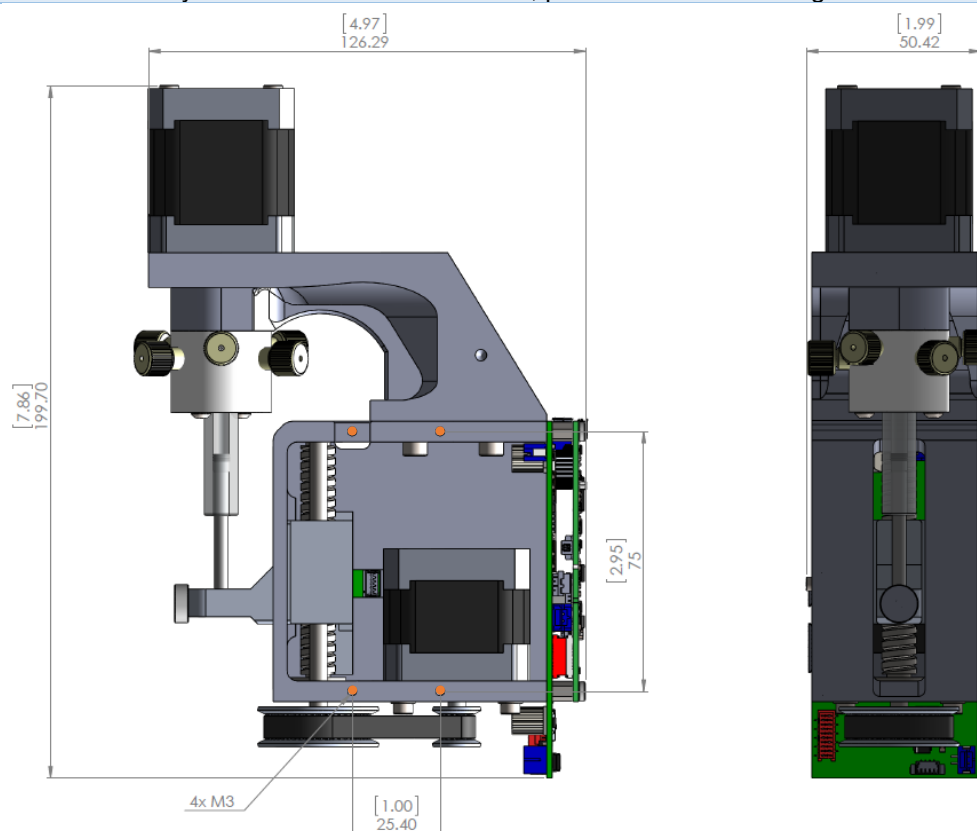
### COMPATIBLE SYRINGE MODELS

Default model: S500-P

Ref. #	Plunger material	Syringe volume [µL]	Min. flow rate [µL/min]	Max. flow rate [µL/min]	Min. dosing volume [µL]
S25-P	PTFE	25	0.25	750	0.05
S50-P	PTFE	50	0.5	1'500	0.1
S100-P	PTFE	100	1	3'000	0.2
S100-U	UHMW-PE	100	1	3'000	0.2
S250-P	PTFE	250	2.5	8'000	0.5
S500-P	PTFE	500	5	15'000	1
S500-U	UHMW-PE	500	5	15'000	1
S1000-P	PTFE	1'000	10	30'000	2

### COMPLETE MODULE (Ref. P100-O)

Weight	1.5 kg
Dimensions	199.7 x 126.3 x 50.5 mm
Default configuration	500 µL syringe with PTFE plunger (S500-P) 7-port/6-position valve with ultra-low carryover volume (VD2-6)
External fixation system	4x M3 screws, position shown in orange



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Dimensions are in mm [inch]

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### Electrical characteristics

Power	18-24 VDC, 2.2 A peak
Required cables for operation	USB mini to USB, Power cord (power jack 2mm)

### Communication interface

Interface	USB mini, RS-232 or RS-485
Communication type	Serial communication

The valve controller is seen as a virtual serial port. There is an on-board FTDI USB to serial chip, so the drivers are automatically installed on recent Windows 7 and above.

### SERIAL COMMUNICATION PARAMETERS

Baud rate	9600
Data Bit	8
Parity	None
Stop Bit	1
Handshake	None
End line	<CR>

View the operating manual for the extensive command set.