

SPM / P100-O Sequential Microdispenser

DATASHEET



Environmental conditions

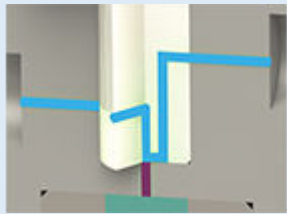
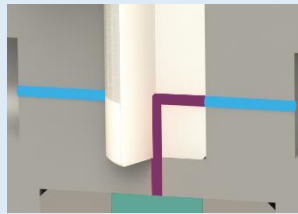
Operating temperature	15-45°C (59-113°F)
Humidity	20-80%, non-condensing
Max pressure	7 bars (102 psi)

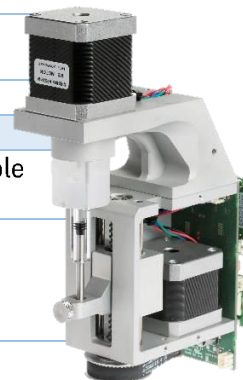
Fluidic characteristics

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
Liquid path		
Number of channels inside rotary part	2	1
Number of ports	6	6, 8, 10, 12
Channel diameter	0.5 mm	0.5, 1 mm
Internal volume	5.2 µL	3.5 – 14.1 µL
Carryover volume	1.5 µL	2.6 – 10.2 µL
Dead volume	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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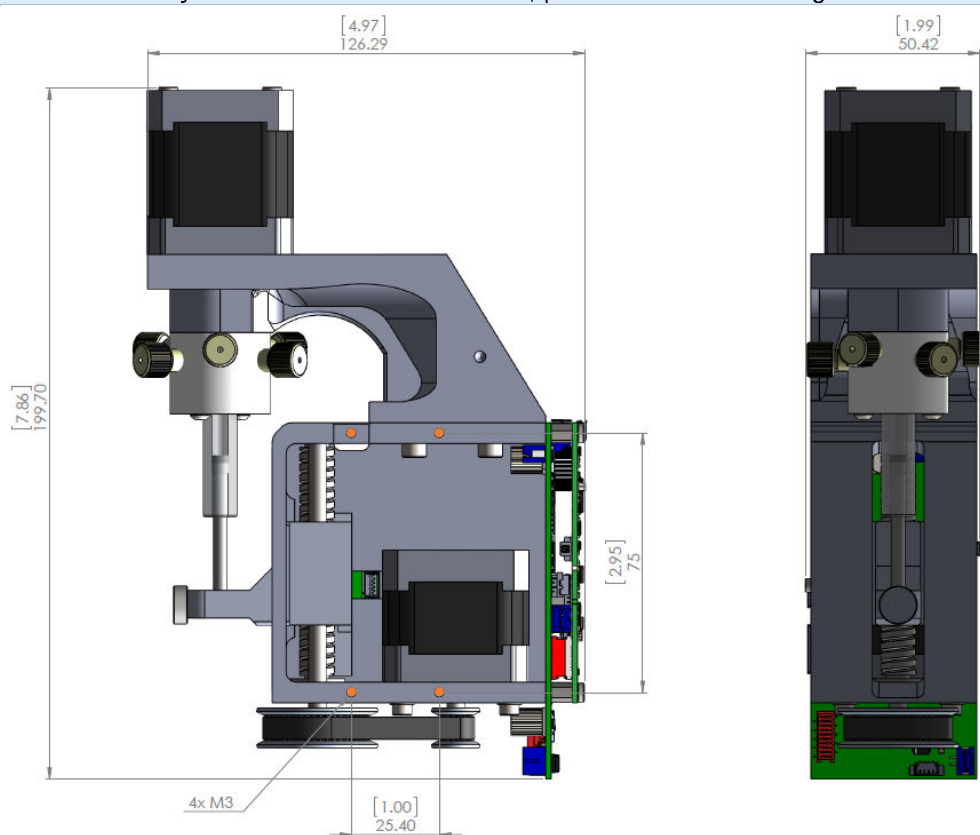
COMPATIBLE SYRINGE MODELS

Default model: S500-P

Ref. #	Plunger material	Syringe volume [μL]	Min. flow rate [$\mu\text{L}/\text{min}$]	Max. flow rate [$\mu\text{L}/\text{min}$]	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 (VD2-6-050)
External fixation system	4x M3 screws, position shown in orange



Dimensions are in mm [inch]

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

Electrical Interface	USB mini, 9-pin D-Sub (other upon request)
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.

Revisions

Version	Author	Release Date	Modifications	Revised By	Approved By
02.02	RRY	03/11/2023	Update	PGI	RRY
02.03	RRY	16/01/2024	Minor corrections	NFA	RRY
02.04	RRY	16/01/2024	Minor corrections	NFA	RRY

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