

Syringe Pump

FNM syringe pumps are designed as a low-cost unit, capable of holding 1 to 6 syringes of any make from 100µl to 60ml. These syringe pumps are ideal for delivering accurate and precise amounts of fluids for

a multitude of syringe pump applications including electrospinning, infusing calibration into a mass spectrometer or reaction chamber, long term drug infusion to animals and general infusion applications.



SP102 TPH



SP102 LPM



SP204 TPH

Software Description (windows platform)

The programming functions of HSM series provide powerful capabilities for advanced experiments. While in program mode, the pump could perform the following tasks at a predetermined time or when prompted by a signal from an external device:

- Start or stop pumping (injection)
- Change pumping (injection) direction (infuse-withdraw)
- Change flow rates
- Pump (Inject) a precise volume and stop
- Ramp up or down flow rates
- Inject in a desired formula

In the "Program" mode, the above-mentioned tasks could be linked together into powerful programs to simplify your automation projects. (commands are available)

	SP102 LOM	SP102 LPM	SP102 LSM	SP106 LPM	SP101 TPH	SP102 TPH	SP106 TPH	SP202 TPH	SP203 TPH	SP204 TPH
Number Of Mechanical Systems	1				2					
Control and Monitor	Micro/LCD (4-line, 20-character)				PLC/HMI (4.3" Touch Screen)					
Internal Programming / Autofill / Refuse	-	P	P	P	P	P	P	P	P	P
Computer Connection (USB)	-	-	P	-	-	-	-	-	-	-
Maximum Syringe Numbers (Channels)	2	2	2	6	1	2	6	1 + 1	1 + 2	2 + 2
Linear force (kg to each pedal)	25	25	25	25	50	50	50	50	50	50
Micro steps per one rev.	25600				20000					
Pedal resolution per step (µm/µstep)	0.05				0.15					
Minimum Syringe Diameter (mm)	1	1	1	1	5	1	1	5	1	5
Maximum Syringe Diameter (mm)	29	29	29	29	46	29	29	46	46	46
Maximum Syringe length (mm)	130	130	130	130	130	130	130	130	130	130
Minimum Flow Rate (ml/h)	0.001	0.001	0.001	0.001	0.05	0.01	0.01	0.05	0.01	0.05
Maximum Flow Rate (ml/min)	100	100	100	100	450	180	180	450	450	450
Size (cm)	22×21×16	22×21×16	22×21×16	22×31×16	26×24×19	26×24×19	26×34×19	26×37×19	26×37×19	26×37×19
Weight (kg)	4	4	4	5	6.7	6.7	7.5	11	11	11
Warranty (Months)	18	18	18	18	18	18	18	18	18	18

FNM Syringe Pump nomenclature:

SPXY ABC

X: one mechanical system (1), two mechanical systems (2)

YY: Max. Syringe lines (1, 2, 4 or 6)

A: PLC control with touch screen (T), micro control with LCD (L)

B: Not programmable (O), Internal programmable (P), Software and internal programmable (S)

C: Medium pressure (M), High pressure (H)

Common and Best-Selling Syringe Pump Models:

SP102 LPM: Syringe pump with 1 motor, maximum 2 syringes, micro control and LCD, internally programmable, medium pressure

SP102 TPH: Syringe pump with 1 motor, maximum 2 syringes, PLC control, and touch screen, internally programmable, high-pressure

SP204 TPH: Syringe pump with 2 mechanical systems, maximum 4 syringes, PLC control, internally programmable, high-pressure

SP101 TPH: Syringe pump with 1 mechanical system, maximum one syringe, PLC control, internally programmable, high-pressure

SP202 TPH: Syringe pump with 2 mechanical systems, maximum 2 syringes, PLC control, internally programmable, high-pressure

Specifications:

Input Power: 100-240V AC, 50-60 Hz.

Number of Syringes: Up to 1 (SP101 series) / Up to 2 (SP102 series) / Up to 6 (SP106 series)

Display: 4 lines, 20 characters LCD display or 4.3 Touch screen panel

Nonvolatile Memory: Stores syringe inner diameter, rate, target volume, programs and settings

Syringe Type: Plastic, metal or glass

Minimum Flow Rate: 1 µl/hr using a 10µl syringe (barrel diameter: 1 mm)

Maximum Flow Rate: 100 ml/min and 450 ml/min

Linear Force (Max): 25 kg (in M series); 50 kg (in H series); measured at the 120 ml/hr injection rate

Drive Motor: 1.8° Stepper Motor

Motor Drive Control: Microprocessor with 1/128 micro stepping

Connectors: USB (S Series)

Operating Temperature: 0 – 45 °C

Storage Temperature: 0 – 45 °C

Method of Operation: Continuous

Warranty: 18 months

Not for clinical uses

Typical Applications:

- Cell injection
- Controlled drug injection
- Electrospinning
- Controlled reactive injection into the reactor
- Lab on a chip



SP110 LPM

