

PSNE1002X Microfluidics syringe pump

Also available as:

- PSNE1002XD – Continuous infusion microfluidics syringe pump system
- PSNE502X – OEM Microfluidics syringe pump



PSNE1002X Features:

Advance per step: 4.252232 nanometers

Smooth pumping at ultra-low flow rates. Accepts syringes from the smallest size available up to 60 mL. A 140 mL syringe can be filled up to 120 mL. Pumping rate as low as 0.008nL/hr with a 0.5µL syringe or as high as 1246 µL/min with a 60 mL syringe. Includes the X upgrade smooth linear/gradient increasing and decreasing pumping feature.

The PSNE1000 family of syringe pumps features:

- Built for automation
- Operates stand-alone or from a computer
- Infuses and withdraws
- Applications range from simple infusions to complex pumping programs
- Programmable preset protocols
- Program up to 41 pumping phases: change pumping rates, set dispensing volumes, insert pauses, control and respond to external signals, sound the buzzer.
- RS-232 and TTL logic control interfaces

Two pumps connected with a dual cable create a Dual Pump System allowing for continuous infusion or emulsification. Network, control, and monitor up to 100 pumps with one computer. Worldwide power supplies available. Motor stall detection. Non-volatile memory of all parameters and programming. Upgradeable to the X and X2 advanced firmware versions for gradient pumping and increased program memory. Dispensing accuracy of +/-1%. Unlimited lifetime technical support. Two year warranty. Plus many, many more features!

Custom Applications

For specialized and OEM applications, contact us!

Custom modifications can be made to the mechanics and/or the firmware.

Cost effective, easy to use, fully programmable fluid handlers
Visit our website for our full range of syringe pumps and accessories

www.syringepump.nl

Specifications

Mechanical & electrical

Syringe sizes:	Up to 60 mL (140 mL partially filled) 140 mL fully filled with long versions
Number of syringes:	1
Motor type:	Step motor
Motor steps per revolution:	400
Motor gearbox reduction	25:1
Micro-stepping:	1/16 to 1/2 depending on motor speed
Advance per step:	4.2522321.4 nm to 34.0178571 nm depending on motor speed
Motor to drive screw ratio:	15/28
Drive screw pitch:	20 revolutions/inch
DC connector:	2.1 mm, center positive
Voltage at DC connector:	12V DC at full load
Amperage:	750 mA at full load
Power supply type:	Unregulated linear external wall adapter, country and power source specific
Power supply output rating:	12V DC @ 1000 mA
Dimensions:	22.86 cm x 14.605 cm x 11.43 cm (Non-OEM)
Weight:	1.63 kg

Operational

Accuracy	Within 1% error
Reproducibility	Within 0.1% error
Maximum speed	0.224469144 cm/min
Minimum speed	8.40896E-05 cm/hr
Maximum pumping rate	1246 µL/min with a B-D 60 mL syringe
Minimum pumping rate	14.59 nL/hr with a B-D 1 mL syringe
Maximum force	150 lbs. at minimum speed, 18 lbs. at maximum speed
Number of program phases	41
RS-232 pump network	100 pumps maximum
PS-232 selectable baud rates	300, 1200, 2400, 9600, 19200
Syringe inside diameter range:	0.100 to 50.00 mm

Syringe manufacturer	Syringe (µL)	Inside diameter (mm)	Maximum rate (µL/hr)	Minimum rate (nL/hr)
SGE (Gas tight)	5	0.343	12.44	0.078
	10	0.485	24.88	0.156
	25	0.728	56.06	0.351
	50	1.03	112.2	0.701
	100	1.457	224.5	1.403
Hamilton	0.5	0.103	1.122	0.008
	1	0.146	2.254	0.015
	2	0.206	4.488	0.029
	5	0.326	11.24	0.071

Cost effective, easy to use, fully programmable fluid handlers
 Visit our website for our full range of syringe pumps and accessories

www.syringepump.nl



Syringe manufacturer	Syringe (mL)	Inside diameter (mm)	Maximum rate ($\mu\text{L/hr}$)	Minimum rate (nL/hr)	Maximum rate ($\mu\text{L/min}$)
B-D	1	4.699	2335	14.59	38.92
	3	8.585	7796	48.68	129.9
	5	11.99	9999	94.95	253.4
	10	14.43	9999	137.6	367.0
	20	19.05	9999	239.7	639.7
	30	21.59	9999	307.9	821.7
	60	26.59	9999	467	1246
HSW Norm-Ject	1	4.69	2326	14.53	38.77
	3	9.65	9850	61.51	164.1
	5	12.45	9999	102.4	273.2
	10	15.9	9999	167	445.6
	20	20.05	9999	265.5	708.7
	30	22.9	9999	346.4	924.5
	50	29.2	9999	563.2	1503
Monoject	1	5.74	3485	21.76	58.08
	3	8.941	8456	52.8	140.9
	6	12.7	9999	106.6	284.3
	12	15.72	9999	163.3	435.6
	20	20.12	9999	267.4	713.6
	35	23.52	9999	365.4	975.2
	60	26.64	9999	468.8	1251
	140	38	9999	954	2545
Terumo	1	4.7	2336	14.59	38.94
	3	8.95	8473	52.91	141.2
	5	13	9999	111.7	297.9
	10	15.8	9999	164.9	440.1
	20	20.15	9999	268.2	715.8
	30	23.1	9999	352.5	940.7
	60	29.7	9999	583	1555
Poulten & Graf (Glass)	1	6.7	4748	29.65	79.14
	2	8.91	8397	52.44	139.9
	3	9.06	8682	54.22	144.7
	5	11.75	9999	91.19	243.4
	10	14.67	9999	142.2	379.4
	20	19.62	9999	254.3	678.6
	30	22.69	9999	340.1	907.6
	50	26.96	9999	480.1	1281
Steel Syringes	1	9.538	9.623	0.061	0.1603
	3	9.538	9.623	0.061	0.1603
	5	12.7	17.06	0.107	0.2843
	8	9.538	9.623	0.061	0.1603
	20	19.13	38.71	0.242	0.6451
	50	28.6	86.52	0.541	1.442
SGE (Gas tight)	0.25	2.303	561	3.503	9.35
	0.5	3.257	1122	7.006	18.7
	1	4.606	2244	14.02	37.4
	2.5	7.284	5612	35.05	93.53
	5	10.3	9999	70.07	
	10	14.57	9999	140.3	
	25	23.03	9999	350.3	
	50	27.5	9999	499.5	
100	34.99	9999	808.6		

Cost effective, easy to use, fully programmable fluid handlers
Visit our website for our full range of syringe pumps and accessories

www.syringepump.nl