

## PSNE1000 Single syringe pump

### Also available as:

- PSNE1010 - High pressure syringe pump
- PSNE1000D - Continuous infusion syringe pump system
- PSNE1002X Microfluidics single syringe pump



### PSNE1000 Features:

- Accepts 1 syringe from the smallest size available up to 60 mL. A 140 mL syringe can be filled up to 120 mL.
- PSNE1000 & PSNE1000D pumping rate as low as 0.73  $\mu\text{L/hr}$  with a 1 mL syringe or as high as 35.33 mL/min with a 60 mL syringe.
- PSNE1010 pumping rate as low as 1.459  $\mu\text{L/hr}$  with a 1 mL syringe or as high as 127.2 mL/min with a 60 mL syringe.
- PSNE1002X pumping rate as low as .008 nL/hr with a 0.5  $\mu\text{L}$  syringe or as high as 1555  $\mu\text{L/min}$  with a 60 mL syringe.

### 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](http://www.syringepump.nl)**

# Specifications

## Mechanical & electrical

Syringe sizes:	Up to 60 mL (140 mL partially filled)
Number of syringes:	1
Motor type:	Step motor
Motor steps per revolution:	400
Micro-stepping:	1/8 to 1/2 depending on motor speed
Advance per step:	0.2126 $\mu$ m to 0.8504 $\mu$ m 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 @ 800 mA
Dimensions:	22.86 cm x 14.605 cm x 11.43 cm
Weight:	1.63 kg
Allen wrench	3/32 hex

## Operational

Maximum speed	5.1005 cm/min
Minimum speed	0.004205 cm/hr
Maximum pumping rate	1699 mL/hr with a B-D 60 mL syringe
Minimum pumping rate	0.73 $\mu$ L/hr with a B-D 1 mL syringe
Maximum force	35 lbs. at minimum speed, 18 lbs. at maximum speed
Number of program phases	
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 ( $\mu$ L)	Inside diameter (mm)	Maximum rate ( $\mu$ L/hr)	Minimum rate ( $\mu$ L/hr)
SGE (Gas tight)	5	0.343	282.7	0.004
	10	0.485	565.3	0.008
	25	0.728	1273	0.018
	50	1.03	2549	0.036
	100	1.457	5102	0.071
Hamilton	0.5	0.103	25.49	0.001
	1	0.146	51.23	0.001
	2	0.206	101.9	0.002
	5	0.326	255.4	0.004

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

**[www.syringepump.nl](http://www.syringepump.nl)**



Syringe manufacturer	Syringe (mL)	Inside diameter (mm)	Maximum rate (mL/hr)	Minimum rate (µL/hr)	Maximum rate (mL/min)
B-D	1	4.699	53.07	0.73	0.884
	3	8.585	177.1	2.434	2.952
	5	11.99	345.5	4.748	5.758
	10	14.43	500.4	6.876	8.341
	20	19.05	872.2	11.99	14.53
	30	21.59	1120	15.4	18.67
	60	26.59	1699	23.35	28.32
HSW Norm-Ject	1	4.69	52.86	0.727	0.881
	3	9.65	223.8	3.076	3.73
	5	12.45	372.5	5.116	6.209
	10	15.9	607.6	8.349	10.12
	20	20.05	966.2	13.28	16.1
	30	22.9	1260	17.32	21
	50	29.2	2049	28.16	34.15
Monoject	1	5.74	79.18	1.088	1.319
	3	8.941	192.1	2.64	3.202
	6	12.7	387.6	5.326	6.46
	12	15.72	593.9	8.161	9.899
	20	20.12	972.9	13.37	16.21
	35	23.52	1329	18.27	22.15
	60	26.64	1705	23.44	28.42
	140	38	3470	47.69	57.84
Terumo	1	4.7	53.09	0.73	0.884
	3	8.95	192.5	2.646	3.208
	5	13	406.1	5.581	6.769
	10	15.8	600	8.244	10
	20	20.15	975.8	13.41	16.26
	30	23.1	1282	17.63	21.37
	60	29.7	2120	29.13	35.33
Poulten & Graf (Glass)	1	6.7	107.8	1.483	1.798
	2	8.91	190.8	2.622	3.18
	3	9.06	197.2	2.711	3.288
	5	11.75	331.8	4.559	5.53
	10	14.67	517.2	7.107	8.62
	20	19.62	925.2	12.72	15.42
	30	22.69	1237	17.01	20.62
	50	26.96	1746	24.01	29.11
Steel Syringes	1	9.538	218.6	3.005	3.644
	3	9.538	218.6	3.005	3.644
	5	12.7	387.6	5.326	6.46
	8	9.538	218.7	3.005	3.644
	20	19.13	879.5	12.09	14.65
	50	28.6	1965	27.01	32.76
SGE (Gas tight)	0.25	2.303	12.74	0.176	0.212
	0.5	3.257	25.49	0.351	0.425
	1	4.606	50.99	0.701	0.85
	2.5	7.284	127.5	1.752	2.125
	5	10.3	254.9	3.504	4.248
	10	14.57	510.2	7.01	8.503
	25	23.03	1274	17.52	21.23
	50	27.5	1817	24.98	30.28
	100	34.99	2942	40.43	49.03

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

**[www.syringepump.nl](http://www.syringepump.nl)**