

# New SmallPumps™ SP100VO Variable-Flow OEM Pumps

These low cost peristaltic pumps are among the smallest variable-flow pumps in the market. Flow rates are available from 0.03 to 13 ml/min. They adapt easily to almost any instrument application. Enjoy the benefits of peristaltic pumps in your fluid transfer application.

Select from 5 different Vdc motor speeds, three different tubing sizes and a variety of tubing materials. Norprene tubing offers the longest pump life, Silicone is the softest with higher flow rates. Viton provides excellent chemical resistance. New models available with optional ABS housing, power jack and on/off power switch. For greater chemical resistance, check out the new Chem\*sure™ tubing @ [www.aptinstruments.com/goretube.htm](http://www.aptinstruments.com/goretube.htm) or call.

All pumpheads have ABS plastic housings, acetal rotor assembly with four stainless steel rollers. These brush Vdc motors are reversible. Silicone and Norprene pump systems are supplied with polypropylene fittings. Viton systems are supplied with PVDF fittings.

One year warranty.

**Installation Note:** These brush-type Vdc motors are rated for intermittent duty. Request information on our brushless dc motors for continuous-duty applications.

**Variable-flow  
Reversible  
Vdc motors**



*Compact, variable-flow SP100 Vdc pumps.*

Inquire for details on manual or remote control PCB systems.

## SPECIAL FEATURES

- Fluid only contacts the tubing*
- Self-priming, run dry without damage*
- Variable-flow 6 & 12Vdc motors*
- Pump viscous fluids and slurries*
- Compact size*

## APPLICATIONS

- Chemical metering*
- Detergent dispensing*
- Condensate removal*
- Analytical instruments*
- Research & Development*

## SPECIFICATIONS

	Norprene	Silicone
Max. Fluid Pressure:	30 psig (2 bar)	10 psig (0.7 bar)
Max. Suction Lift:		
0.8 and 1.6 mm ID	12-ft (3.6 m) H <sub>2</sub> O	12-ft (3.6 m) H <sub>2</sub> O
3.0 mm ID	25-ft (7.5 m) H <sub>2</sub> O	25-ft (7.5 m) H <sub>2</sub> O
Measurement Range:	See ordering table (page 2)	
Accuracy:	±10% full scale	
Repeatability:	±10% full scale	
Max. Fluid Temp.:	93°C (200°F)	
Duty Cycle:	Intermittent	
Operating Temp.:	0 to 50°C (32 to 122°F)	
Enclosure:	open motor systems; ABS optional	
Wetted parts:	Silicone, Norprene® or Viton®	
Power:	6 or 12Vdc; 75 to 300 mA	
Dimensions (W x H x D):	60 x 47 x 74 mm; (2.4 x 1.9 x 2.9 in.)	
(with housing)	84 x 140 x 97 mm (3.3 x 5.5 x 3.8 in.)	
Weight:	235 g (8.2 oz); 570 g (20 oz.)	
Shipping Wt:	0.45 kg (1 lbs); 0.9kg (2 lbs)	

## SP100VO Max Flowrates (ml/min)

Motor RPM	Vdc	Amps	Tubing ID (mm)		
			3.0	1.6	0.8
70	6	300 mA	13	3.8	1.3
70	12	150 mA	13	3.8	1.3
35	12	100 mA	7.7	2.1	0.7
20	12	75 mA	4	1.1	0.38
10	12	75 mA	1.9	0.54	0.18
5	12	75 mA	1	0.28	0.09

Flow rate listed are nominal and will vary depending upon fluid viscosity and back pressure. Specifications listed are for Norprene tubing. Silicone flow rates are approx 10-20% higher. Viton flow rates slightly lower.

# SP100VO-Peri Pumps

NA - Not Available at this time  
NR - Not Recommended

## SP100VO Ordering Information – (Flow rates listed are for Norprene tubing; Silicone is 10-20% higher).

Flow Rate ml/min	Tubing		Model No.	Pump Part No.		
	ID	RPM Range (Vdc)		Norprene®	Silicone	Viton®
<b>6Vdc Pumps - Variable-flow; reversible; up to 300 mA current draw</b>						
0.4 to 1.3	0.8 mm (1/32")	20 to 77 (5 to 12Vdc)	SP10XX.008.FV00.00X	SP101.010	NA	NA
1 to 3.8	1.6 mm (1/16")	20 to 77 (5 to 12Vdc)	SP10XX.016.FV00.00X	SP101.011	SP100.011	NA
3.3 to 13	3.0 mm (1/8")	20 to 77 (5 to 12Vdc)	SP10XX.030.FV00.00X	SP101.012	SP100.012	SP102.012*
<b>12Vdc Pumps - Variable-flow; reversible; up to 150 mA current draw</b>						
<b>Standard Pump Range</b>						
0.17 to 0.7	0.8 mm (1/32")	9.5 to 41 (4 to 12Vdc)	SP10XX.008.BV00.00X	SP101.005	NA	NA
0.4 to 1.3	0.8 mm (1/32")	20 to 77 (5 to 12Vdc)	SP10XX.008.AV00.00X	SP101.006	NA	NA
0.5 to 2.1	1.6 mm (1/16")	9.5 to 41 (4 to 12Vdc)	SP10XX.016.BV00.00X	SP101.001	SP100.001	NA
1 to 3.8	1.6 mm (1/16")	20 to 77 (5 to 12Vdc)	SP10XX.016.AV00.00X	SP101.002	SP100.002	NA
1.7 to 7.7	3.0 mm (1/8")	9.5 to 41 (4 to 12Vdc)	SP10XX.030.BV00.00X	SP101.003	SP100.003	SP102.003
3.3 to 13	3.0 mm (1/8")	20 to 77 (5 to 12Vdc)	SP10XX.030.AV00.00X	SP101.004	SP100.004	SP102.004*
<b>Low Flow Pump Range</b>						
0.03 to 0.09	0.8 mm (1/32")	1.5 to 5.5 (4 to 12Vdc)	SP10XX.008.EV00.00X	SP101.013	NA	NA
0.06 to 0.18	0.8 mm (1/32")	3.3 to 10.5 (4 to 12Vdc)	SP10XX.008.DV00.00X	SP101.014	NA	NA
0.08 to 0.28	1.6 mm (1/16")	1.5 to 5.5 (4 to 12Vdc)	SP10XX.016.EV00.00X	SP101.015	SP100.014	NA
0.14 to 0.38	0.8 mm (1/32")	8 to 22 (4 to 12Vdc)	SP10XX.008.CV00.00X	SP101.016	NA	NA
0.18 to 0.54	1.6 mm (1/16")	3.3 to 10.5 (4 to 12Vdc)	SP10XX.016.DV00.00X	SP101.017	SP100.017	NA
0.3 to 1	3.0 mm (1/8")	1.5 to 5.5 (4 to 12Vdc)	SP10XX.030.EV00.00X	SP101.018	SP100.018	SP102.018
0.42 to 1.1	1.6 mm (1/16")	8 to 22 (4 to 12Vdc)	SP10XX.016.CV00.00X	SP101.019	SP100.019	NA
0.65 to 1.9	3.0 mm (1/8")	3.3 to 10.5 (4 to 12Vdc)	SP10XX.030.DV00.00X	SP101.020	SP100.020	SP102.020
1.5 to 4	3.0 mm (1/8")	8 to 22 (4 to 12Vdc)	SP10XX.030.CV00.00X	SP101.021	SP100.021	SP102.021

Flow rates listed are nominal and will vary depending upon fluid viscosity and back pressure.  
\*3mm Viton tubing with 70 rpm motor operates at approx 10% less than ratings. Flow is reduced.  
Other special tubing options are available on special order. Call for details.



### Customize your OEM pumps!

Order your OEM pump with an optional protective ABS plastic housing and power switch. All cased and switched models include a 5.5 x 2.5 mm jack for quick power connect. Add the following letter(s) to the p/n to include the options.

"C" ABS plastic housing (e.g. SP101C.013).

"CS" ABS plastic housing w/ on-off switch (e.g. SP101CS.013).

**For more information contact:**

**APT Instruments or your local distributor.**

Specifications subject to change.

APT Instruments provides no warranty on usage of pumps or life of tube. Immersion and life tests are recommended prior to use.

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