

## 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](http://www.aptinstruments.com), search for tubing 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, 12 & 24Vdc motors  
Pump viscous fluids and slurries  
Compact size*

### APPLICATIONS

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

### SPECIFICATIONS

	Norprene	Silicone
<b>Max. Fluid Pressure:</b>	30 psig (2 bar)	10 psig (0.7 bar)
<b>Max. Suction Lift:</b>		
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
<b>Measurement Range:</b>	See ordering table (page 2)	
<b>Accuracy:</b>	±10% full scale	
<b>Repeatability:</b>	±10% full scale	
<b>Max. Fluid Temp.:</b>	93°C (200°F)	
<b>Duty Cycle:</b>	Intermittent	
<b>Operating Temp.:</b>	0 to 50°C (32 to 122°F)	
<b>Enclosure:</b>	open motor systems; ABS optional	
<b>Wetted parts:</b>	Silicone, Norprene® or Viton®	
<b>Power:</b>	6 or 12Vdc; 75 to 300 mA	
<b>Dimensions (W x H x D):</b>	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.)	
<b>Weight:</b>	235 g (8.2 oz); 570 g (20 oz.)	
<b>Shipping Wt:</b>	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
70	24	75 mA	13	3.8	1.3
35	12	100 mA	7.7	2.1	0.7
35	24	50 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 ml/min	Tubing ID	RPM Range (Vdc)	Model No.	Norprene®	Pump Part No.		
					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 (2.5 to 6Vdc)	SP10XX.008.FV00.00X	SP101.010	SP100.010	SP102.010	
1 to 3.8	1.6 mm (1/16")	20 to 77 (2.5 to 6Vdc)	SP10XX.016.FV00.00X	SP101.011	SP100.011	SP102.011	
3.3 to 13	3.0 mm (1/8")	20 to 77 (2.5 to 6Vdc)	SP10XX.030.FV00.00X	SP101.012	SP100.012	NR	
<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	SP100.005	SP102.005	
0.4 to 1.3	0.8 mm (1/32")	20 to 77 (5 to 12Vdc)	SP10XX.008.AV00.00X	SP101.006	SP100.006	SP102.006	
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	SP102.001	
1 to 3.8	1.6 mm (1/16")	20 to 77 (5 to 12Vdc)	SP10XX.016.AV00.00X	SP101.002	SP100.002	SP102.002	
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	NR	
<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	SP100.013	SP102.013	
0.06 to 0.18	0.8 mm (1/32")	3.3 to 10.5 (4 to 12Vdc)	SP10XX.008.DV00.00X	SP101.014	SP100.014	SP102.014	
0.08 to 0.28	1.6 mm (1/16")	1.5 to 5.5 (4 to 12Vdc)	SP10XX.016.EV00.00X	SP101.015	SP100.015	SP102.015	
0.14 to 0.38	0.8 mm (1/32")	8 to 22 (4 to 12Vdc)	SP10XX.008.CV00.00X	SP101.016	SP100.016	SP102.016	
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	SP102.017	
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	SP102.019	
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	NR	
<b>24Vdc Pumps - Variable-flow; reversible; up to 75 mA current draw</b>							
0.17 to 0.7	0.8 mm (1/32")	9.5 to 41 (8 to 24Vdc)	SP10XX.008.GV00.00X	SP101.055	SP100.055	SP102.055	
0.4 to 1.3	0.8 mm (1/32")	20 to 77 (10 to 24Vdc)	SP10XX.008.HV00.00X	SP101.056	SP100.056	SP102.056	
0.5 to 2.1	1.6 mm (1/16")	9.5 to 41 (8 to 24Vdc)	SP10XX.016.GV00.00X	SP101.051	SP100.051	SP102.051	
1 to 3.8	1.6 mm (1/16")	20 to 77 (10 to 24Vdc)	SP10XX.016.HV00.00X	SP101.052	SP100.052	SP102.052	
1.7 to 7.7	3.0 mm (1/8")	9.5 to 41 (8 to 24Vdc)	SP10XX.030.GV00.00X	SP101.053	SP100.053	SP102.053	
3.3 to 13	3.0 mm (1/8")	20 to 77 (10 to 24Vdc)	P10XX.030.HV00.00X	SP101.054	SP100.054	NR	

Flow rates listed are nominal and will vary depending upon fluid viscosity and back pressure.

NR--3mm Viton tubing with 70 rpm motor is not recommended. See SP100FOHD-series for higher torque and flow rates.

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**

**P.O. Box 317, Rochester, IL 62563 USA**

**877.324.5444 Toll-free**

**217.498.0342 \* 217.498.0352Fx**

**[www.aptinstruments.com](http://www.aptinstruments.com)**

**[sales@aptinstruments.com](mailto:sales@aptinstruments.com)**

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.*

SmallPumps—TM Advanced Product Technology, LLC Viton—Reg TM DuPont Dow Elastomers LLC

Norprene—Reg TM Norton Co. Chemsure—Reg TM W.L. Gore & Associates, Inc.

© Copyright 2003-5 Advanced Product Technology, LLC.