



## V6 Syringe Drive Pump

### Product Data Sheet

The VersaPump 6 is a programmable precision liquid metering instrument with non-volatile user program memory and system input/output (I/O). The V6 is designed with the flexibility and versatility to meet a variety of system configurations. It can be used as a stand alone controller, or integrated into system configurations. The module is capable of simple closed loop control of an external quantity or process without the need of an external controller for direction.

Mechanically, the syringe pump is driven via stepper motor and precision ball screw. It has a 60mm stroke and is available in three resolutions. The pump can be coupled with a variety of valves and syringes, as well as PC board selections, to meet specific needs. Pump communications are compatible with other Kloehn devices.

### Physical

- Height 10"
- Width 2.55"
- Depth 4.75" (face plate to back plate) 4.9" to card edge
- Weight 5.14 lbs.

### Environmental

- Operating temperature of 0° to 55° C
- Operating humidity of 5 to 95% RH, non-condensing at 55° C
- Storage temperature of -25°C to 85° C
- RoHS and WEEE compliant

### Mechanical

- Operation in any orientation
- Mounting holes at top and bottom as well as on the face plate
- Resolutions available (12000; 24000; and 48000 increments)
- Speed; (Max. - 10000 steps / sec.; min. 60 steps / sec.) (Default - 5000 steps / sec.)
- Syringe size - 25ul to 50ml
- Valve type – 2 way to 12 way
- Available with no valve; solenoid valve; or rotary valve
- PC board choices:
  - **Base board** (sensor array and motor pin out only - no motor drivers or control electronics).
  - **Driver board** (sensor array and motor drivers only, no control electronics).
  - **Driver & Control boards** (fully functional motor drivers and control electronics).
- Card-edge connector
- Integrated RS232 Integrated power filter
- Multiple valve choices, including no valve & solenoid valve
- |                                 |                              |
|---------------------------------|------------------------------|
| <u>1/10 Stroke Dispenses</u>    | <u>Full Stroke Dispenses</u> |
| Precision: 0.10% CV, 0.20% max. | 0.007% CV, 0.0092% max.      |
| Accuracy: 0.20% CV, 0.60% max.  | -----                        |

### Interface

- RS-485 or RS-232 communications
- Data terminal or OEM protocol
- 1200 to 38.4K baud, 8 data bits, 1 stop bit, no parity, half duplex
- Three inputs, three output ports
- Digital voltmeter
- Switched and wired device address

### Power

- Operation at 24V (with a maximum power voltage ripple of 720mv peak-to-peak)
- Power consumption – 40 watts, 11 watts idle.

**Syringe Pump:**

VERSAPUMP 6										
AVAILABLE SCENARIO CHART										
RESOLUTION			VALVE FEATURE			DRIVER & CONTROL FEATURE			PUMP	DECAL
48K	24K	12K	NONE	SOLENOID	ROTARY	BASIC	DRIVER BOARD	DRIVER & CONTROL BOARD	PT#	PT#
X			X			X			54000	23279
X			X				X		54001	23279
X			X					X	55002	23279
X				X		X			54010	23279
X				X			X		54011	23279
X				X				X	55012	23279
X					X	X			54020	23279
X					X		X		54021	23279
X					X			X	55022	23279
	X		X			X			54100	23279
	X		X				X		54101	23279
	X		X					X	55102	23279
	X			X		X			54110	23279
	X			X			X		54111	23279
	X			X				X	55112	23279
	X				X	X			54120	23279
	X				X		X		54121	23279
	X				X			X	55122	23279
	X	X	X			X			54200	23279
	X	X	X				X		54201	23279
	X	X	X					X	55202	23279
	X	X		X		X			54210	23279
	X	X		X			X		54211	23279
	X	X		X				X	55212	23279
	X	X			X	X			54220	23279
	X	X			X		X		54221	23279
	X	X			X			X	55222	23279

Decal is optional, add to order as required. 3-way solenoid valve supplied with pumps configured for solenoid valve.

**Precision Syringe Pump V6P:**

VERSAPUMP V6P							
AVAILABLE SCENARIO CHART							
RESOLUTION		VALVE FEATURE		DRIVER & CONTROL FEATURE		PUMP	DECAL
48K	24K	ROTARY		DRIVER & CONTROL BOARD		PT#	PT#
X			X		X	55023	23279
	X		X		X	55123	23279

### Ancillary items:

- Communication cable RS485, 6" long; pump to pump (2 units) P/N 17736
- Cooling Fan Option P/N 24290
- Starter Kit (includes all items listed below) P/N 23427
  - 24VDC Power supply P/N 23429
  - Adapter (card edge to AMP connectors) P/N 23428
  - Connector (card edge with solder pins) P/N 26875
  - Software; operator's manual; and application notes. P/N 23422
  - Communications cable (RS232 / 5' long; pump to computer) P/N 17734

### Software support:

- KloehnControl (configuration and debug program)
- KSerial (command-line communication utility)
- KCom (machine language helper program)
- KProbe (communication trouble shooting utility)

### Valves:

<u>Configuration</u>	<u>Orifice</u>	<u>Distribution</u>	<u>non-distribution</u>	<u>Port Thread</u>
Through mtg block	0.059	19218	-----	¼-28 UNF
2-WAY	0.059		-----	¼-28 UNF
3-WAY	0.059	17616	17615	¼-28 UNF
4-WAY	0.059	17617	17712	¼-28 UNF
5-WAY	0.059	17618	-----	¼-28 UNF
6-WAY	0.059	17619	-----	¼-28 UNF
8-WAY	0.059	17620	-----	¼-28 UNF
12-way	0.040	24105	-----	¼-28 UNF
3-WAY	0.076	18189	18192	¼-28 UNF
4-WAY	0.076	18190	18191	¼-28 UNF
5-WAY	0.076	18188	-----	¼-28 UNF
6-WAY	0.076	18193	-----	¼-28 UNF
8-WAY	0.076	17877	-----	¼-28 UNF

### Valve construction:

- V6 pump uses the same valves as the 50300 pump
- Valve wetted surfaces have a Kel-F body insert and PTFE (Teflon) plug.
- Port connection is 1/4-28 UNF.
- Some valve ports may not be accessible when used with certain syringes sizes. See Application Notes for further information.

### Standard Syringe Assembly (individually boxed):

<u>Size</u>	<u>Orifice</u>	<u>Standard Syringe</u>	<u>ZDV</u>	<u>Port Thread</u>
25ul	0.027	17591	-----	¼-28 UNF
50ul	0.024	17592	-----	¼-28 UNF
100ul	0.032	17593	-----	¼-28 UNF
250ul	0.039	17594	19509	¼-28 UNF
500ul	0.076	17595	19537	¼-28 UNF
1.0ml	0.076	17596	25429	¼-28 UNF
1.25ml	0.076	17597	25431	¼-28 UNF
2.5ml	0.076	17598	19539	¼-28 UNF
5.0ml	0.076	17599	18463	¼-28 UNF
10.0ml	0.076	17600	18469	¼-28 UNF
25.0ml	0.076	17601	23734	¼-28 UNF
50.0ml	0.076	17602	-----	¼-28 UNF

### Syringe construction:

- Syringes have Borosilicate glass. The 25ul, 50ul, and 100ul syringes use a standard plunger tip, while the 250ul through 50ml incorporate a canted spring design.

**UHMW Syringes (individually boxed):**

<u>Size</u>	<u>Orifice</u>	<u>Standard Syringe</u>	<u>ZDV</u>	<u>Port Thread</u>
25ul	0.027	-----	-----	¼-28 UNF
50ul	0.024	24681	-----	¼-28 UNF
100ul	0.032	24518	-----	¼-28 UNF
250ul	0.039	19513	-----	¼-28 UNF
500ul	0.076	24694	25427	¼-28 UNF
1.0ml	0.076	24690	25413	¼-28 UNF
1.25ml	0.076	-----	25438	¼-28 UNF
2.5ml	0.076	24685	25388	¼-28 UNF
5.0ml	0.076	18857	24691	¼-28 UNF
10.0ml	0.076	19110	24139	¼-28 UNF
25.0ml	0.076	24688	25380	¼-28 UNF
50.0ml	0.076	-----	-----	¼-28 UNF

**Syringe construction:**

- Syringes have Borosilicate glass. The 25ul, 50ul, and 100ul syringes use a standard plunger tip, while the 250ul through 50ml incorporate a canted spring design.
- Wetted materials: Borosilicate glass; KEL-F; UHMW

