

## Dual V3



### Product features

The Dual V3 is designed with the flexibility and versatility to meet a variety of system configurations such as sample / diluent applications. The Dual V3 pump is two independently driven channels which 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 Dual V3 pump is driven via stepper motors and precision ball screws. Each channel has a 30mm stroke and is available in two resolutions. Each channel can be coupled with a variety of valves and syringes to meet specific needs.

Pump communications are compatible with other Kloehn devices.

### Physical

- Height 5"
- Width 4.92"
- Depth 4.6" (face plate to back plate)
- Weight 5 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° to 85° C

### 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 outputs per channel
- Digital voltmeter capability
- Switched and wired device address
- I / O expansion

### Power

- Operation at 24V nominal (20V to 30V) (with a maximum power ripple of 720mv peak to peak). Power consumption - 25 watts; 6 watts idle (per channel).

**Mechanical**

- Operation in any orientation
- Mounting holes at top and bottom
- Two resolutions available (6,000 and 12,000 increments)
- Speed; (Max. - 8000 steps / sec.) (Default - 2500 steps / sec.)
- Syringe size - 50ul to 5ml
- Valve type – 3 way to 6 way
- |            |                              |                              |
|------------|------------------------------|------------------------------|
|            | <u>1/10 Stroke Dispenses</u> | <u>Full Stroke Dispenses</u> |
| Precision: | 0.36% CV, 0.5% max.          | 0.01% CV, 0.018% max.        |
| Accuracy:  | 0.44% CV, 0.5% max.          | -----                        |

**Syringe Pump:**

**VERSAPUMP 3  
DUAL CHANNEL**

AVAILABLE SCENARIO CHART

<u>RESOLUTION FEATURE</u>		<u>VALVE FEATURE</u>	<u>DRIVER &amp; CONTROL FEATURE</u>	<u>PUMP</u>
12K	6K	ROTARY	DRIVER & CONTROL BOARD	PT#
X		X	X	<b>24892</b>
	X	X	X	<b>24897</b>

**Ancillary items:**

- Communication cable RS485, 6" long; pump to pump (2 units) P/N 17736
- Pump to pump stacking kit P/N 23453
- Mounting Kit P/N 24480
- Starter Kit (includes all items listed below) P/N 24682
- 24VDC Power supply P/N 24680
- Software; operator's manual; and application notes. P/N 23422
- Communications cable 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>P/N - Distribution</u>	<u>Non - Distribution</u>	<u>Port Size</u>
2-WAY (syringe mtg. block)	23272	-----	.059 (straight through)
3-WAY	23324	23562	.059
4-WAY	23325	23563	.059
5-WAY	23326	-----	1 mm
6-WAY	23327	-----	1 mm

Valve construction:

- Valve wetted surfaces have a PPS (polyphenyl sulfide) body and PEEK (XP113) rotor.
- Port connection is 1/4-28 UNF.
- All valve ports are accessible when using syringes listed and Kloehn spring-loaded fittings (recommended) or standard fittings (Upchurch #P200 fittings or equal).
- Valve weep hole port connection is #6-40 UNF-2A. Fittings for this port is available in two materials; PEEK (PT # 24528); and stainless steel 303 (PT # 24529). For use with 1/16 OD tubing.

**Standard Syringes:**

<u>Size</u>	<u>Syringe Assy</u>	<u>Port Size</u>
50ul	23164	0.023
100ul	23165	0.023
250ul	23166	0.031
500ul	23167	0.031
1.0ml	23168	0.073
2.5ml	23169	0.073
5.0ml	23170	0.073

Syringe construction:

- Syringes have Borosilicate glass, Teflon seal and tip wetted surfaces.

**SP-K Syringes:**

<u>Size</u>	<u>Syringe Assy</u>	<u>Port Size</u>
50ul	24411	0.023
100ul	24412	0.023
250ul	24413	0.031
500ul	24414	0.031
1.0ml	24415	0.073
2.5ml	24416	0.073
5.0ml	24417	0.073

Syringe construction:

- Syringes have Borosilicate glass, Teflon seal, and UHMW (B-1000 black) plunger tip wetted surfaces.