

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

32°F to 131°F (0°C to 55°C)

Operating Humidity

5 to 95% RH, non-condensing at

131°F (55°C)

#### Storage Temperature

13°F to 185°F (-25° to 85°C)

WEEE & RoHS compliant

### Mechanical

#### Operation

Any orientation

#### Mounting Holes

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

#### 1/10 Stroke Dispense

**Precision:** 0.10% CV, 0.20% max.

**Accuracy:** 0.20% CV, 0.60% max.

#### Full Stroke Dispenses

0.007% CV, 0.0092% max.

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### 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

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                   |       |
|------------|-----|-----|---------------|----------|--------|--------------------------|--------------|------------------------|-------|
| 48K        | 24K | 12K | NONE          | SOLENOID | ROTARY | BASIC                    | DRIVER BOARD | DRIVER & CONTROL BOARD | PT#   |
| X          |     |     | X             |          |        | X                        |              |                        | 54000 |
| X          |     |     | X             |          |        |                          | X            |                        | 54001 |
| X          |     |     | X             |          |        |                          |              | X                      | 55002 |
| X          |     |     |               | X        |        | X                        |              |                        | 54010 |
| X          |     |     |               | X        |        |                          | X            |                        | 54011 |
| X          |     |     |               | X        |        |                          |              | X                      | 55012 |
| X          |     |     |               |          | X      | X                        |              |                        | 54020 |
| X          |     |     |               |          | X      |                          | X            |                        | 54021 |
| X          |     |     |               |          | X      |                          |              | X                      | 55022 |
|            | X   |     | X             |          |        | X                        |              |                        | 54100 |
|            | X   |     | X             |          |        |                          | X            |                        | 54101 |
|            | X   |     | X             |          |        |                          |              | X                      | 55102 |
|            | X   |     |               | X        |        | X                        |              |                        | 54110 |
|            | X   |     |               | X        |        |                          | X            |                        | 54111 |
|            | X   |     |               | X        |        |                          |              | X                      | 55112 |
|            | X   |     |               |          | X      | X                        |              |                        | 54120 |
|            | X   |     |               |          | X      |                          | X            |                        | 54121 |
|            | X   |     |               |          | X      |                          |              | X                      | 55122 |
|            |     | X   | X             |          |        | X                        |              |                        | 54200 |
|            |     | X   | X             |          |        |                          | X            |                        | 54201 |
|            |     | X   | X             |          |        |                          |              | X                      | 55202 |
|            |     | X   |               | X        |        | X                        |              |                        | 54210 |
|            |     | X   |               | X        |        |                          | X            |                        | 54211 |
|            |     | X   |               | X        |        |                          |              | X                      | 55212 |
|            |     | X   |               |          | X      | X                        |              |                        | 54220 |
|            |     | X   |               |          | X      |                          | X            |                        | 54221 |
|            |     | X   |               |          | X      |                          |              | X                      | 55222 |

Decal (23279) is optional, add to order as required. 3-way solenoid valve supplied with pumps configured for solenoid valve.

**Precision Syringe Pump V6P:**

**VERSAPUMP 6 AVAILABLE SCENARIO CHART**

| RESOLUTION |     | VALVE FEATURE |  | DRIVER & CONTROL FEATURE |  | PUMP  |
|------------|-----|---------------|--|--------------------------|--|-------|
| 48K        | 24K | ROTARY        |  | DRIVER & CONTROL BOARD   |  | PT#   |
| X          |     | X             |  | X                        |  | 55023 |
|            | X   | X             |  | X                        |  | 55123 |

**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:**

| Configuration     | Orifice | Distribution | non-distribution | Port Thread |
|-------------------|---------|--------------|------------------|-------------|
| 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 PCTFE body insert and PTFE (PTFE) 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):

| Size   | Orifice | Standard Syringe | ZDV   | Port Thread |
|--------|---------|------------------|-------|-------------|
| 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):**

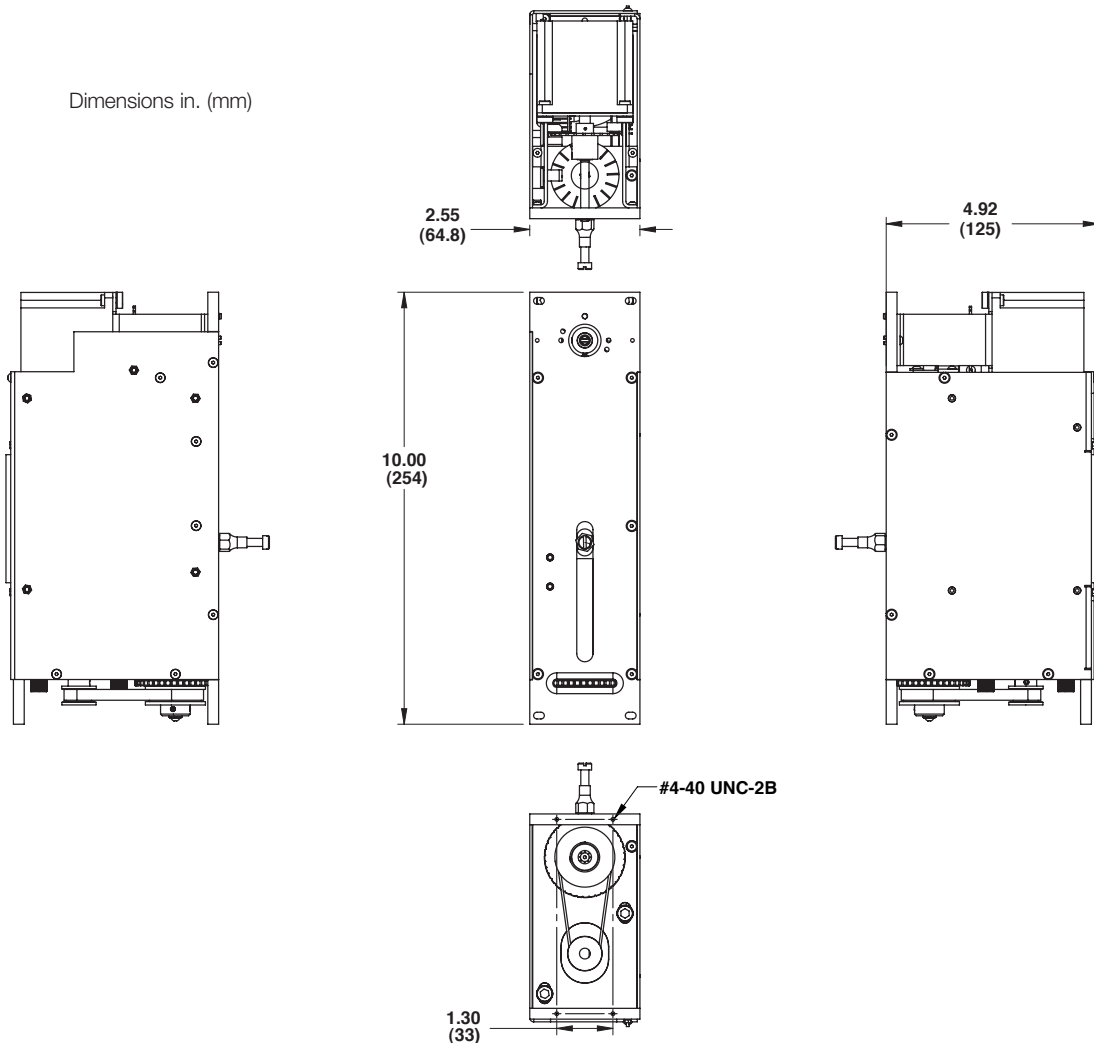
| Size   | Orifice | Standard Syringe | ZDV   | Port Thread |
|--------|---------|------------------|-------|-------------|
| 25ul   | 0.027   | —                | —     | ¼-28 UNF    |
| 50ul   | 0.024   | 24681            | —     | ¼-28 UNF    |
| 100ul  | 0.032   | 24518            | —     | ¼-28 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; PCTFE; UHMW

Dimensions in. (mm)





**Warning**

Improper selection, misuse, age or malfunction of components used in systems can cause failure in various modes. The system designer is warned to consider the failure modes of all component parts and to provide adequate safeguards to prevent personal injury or damage to equipment or property in the event of such failure modes. System designers and end users are cautioned to consult instruction sheets and specifications available from the factory. The system designer/end user is responsible for verifying that all requirements for the application are met.

**Proposition 65:** These products may contain chemicals known to the state of California to cause cancer, or birth defects, or other reproductive harm.

**Warranty**

The products described herein are warranted subject to seller's Standard Terms and Condition of Sale, available at seller's website.