

# PSD/4 Half-Height Syringe Pump Specification Sheet

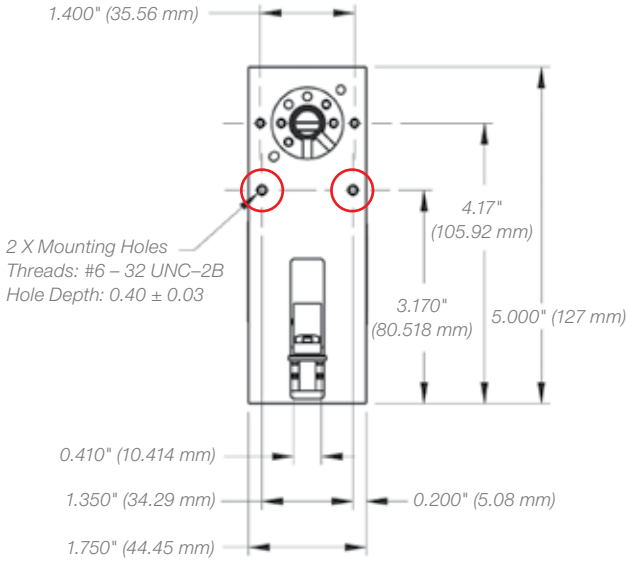
## Design Flexibility with a Vast Range of Applications

The PSD/4 is a popular choice for customers looking for a high precision syringe pump at an economical price. From the semi-conductor to the medical device industries, this pump has proven to be a reliable addition to numerous continued projects with top automation manufacturers. The space-saving design uses 30 mm half-height syringes and performs all standard liquid handling functions, including dispensing, serial dispensing, and diluting.

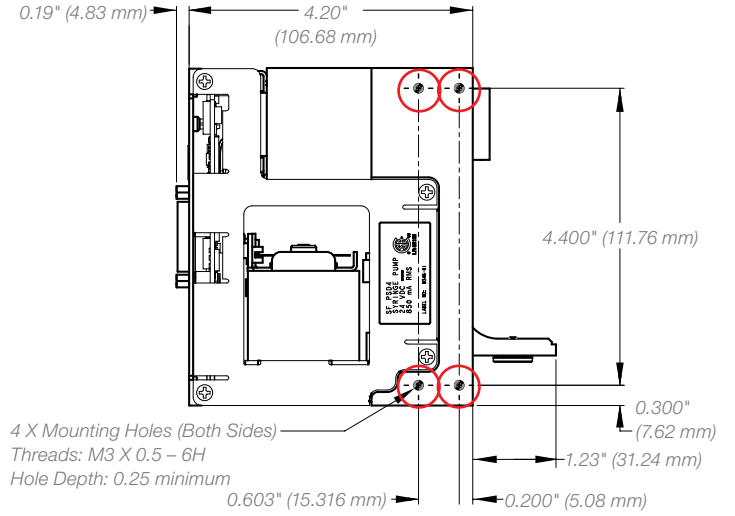


# PSD/4 Product Drawings and Dimensions

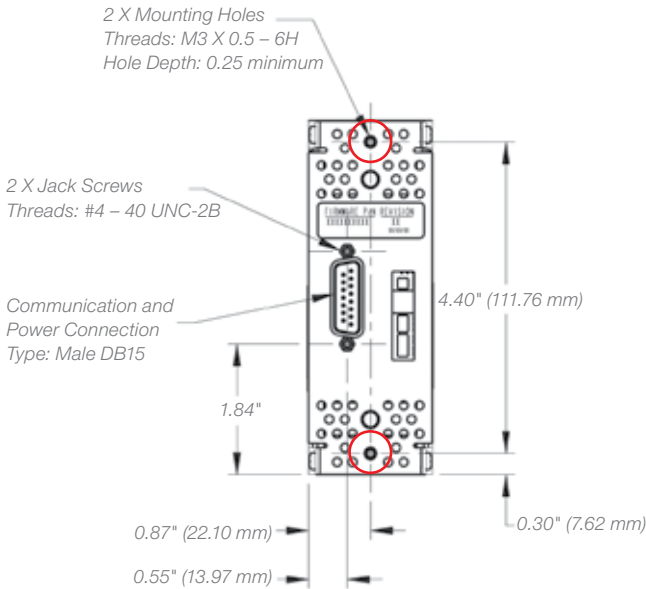
## Front



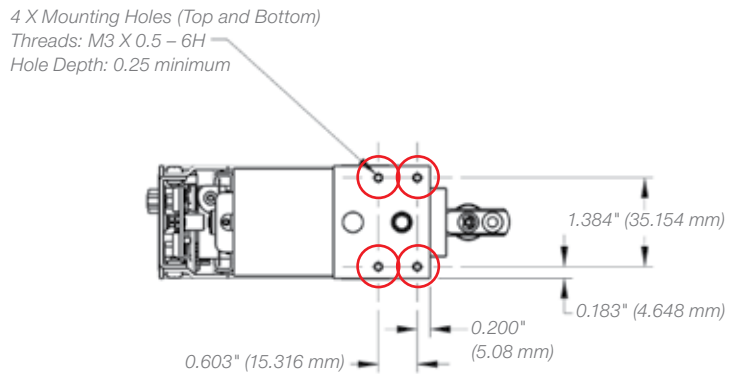
## Side



## Back



## Top



## PSD/4 Precision Syringe Pump

Description	Part Number
PSD/4 Precision Syringe Pump	54848-01
PSD/4 Starter Kit Containing Software CD, Demo Communication Cable, Serial-to-USB Adapter, and Power Supply	64316-04

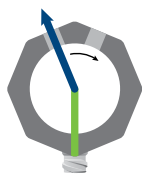


## 30 mm Syringes for PSD/4

Volume	UHMW-PE P/N	PTFE P/N	Pressure Rating
12.5 µL	N/A	5495-10	
25 µL	8250-15	5495-15	
50 µL	8250-20	5495-20	1000 psig (68.9 bar)
100 µL	8250-22	5495-22	
125 µL	8250-25	5495-25	
250 µL	8250-30	5495-30	500 psig (34.5 bar)
500 µL	8250-35	5495-35	
1 mL	8250-37	5495-38	
1.25 mL	8250-40	5495-40	
2.5 mL	8250-45**	5495-45**	200 psig (13.8 bar)
5 mL	8250-50**	5495-50**	
12.5 mL	N/A	5495-55*	

\* Not compatible with 57252-01, 58889-01, 8778-01, 7992-01, and 7993-01.  
 \*\* Not compatible with 7992-01 and 7993-01. Use valve 59943-01 as a substitute for 7993-01.

## Valves for PSD/4



**Fluid Logic:** Y-Valve

**Valve Description:**

"Y" Flow Path  
Two ports, plus syringe port

**Ceramic Part Number:**

8778-01

**PTFE/CTFE Part Number:**

57252-01\*



**Fluid Logic:** Y-Block

**Valve Description:**

Static non-switching  
Y-block

**PTFE/CTFE Part Number:**

9537-01



**Fluid Logic:** 3-3

**Valve Description:**

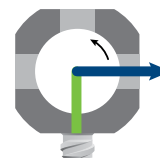
"T" Flow Path  
Two ports, plus syringe port

**Ceramic Part Number:**

8063-01

**PTFE/CTFE Part Number:**

58889-01



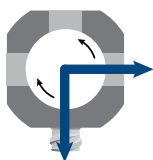
**Fluid Logic:** 3-5

**Valve Description:**

Distribution Flow Path  
Three ports, plus syringe port

**Ceramic Part Number:**

7991-01



**Fluid Logic:** 4-2

**Valve Description:**

90° Flow Path  
Three ports, plus syringe port

**Ceramic Part Number:**

9234-01



**Fluid Logic:** 4-5

**Valve Description:**

Distribution Flow Path  
Four ports, plus syringe port

**Ceramic Part Number:**

7992-01



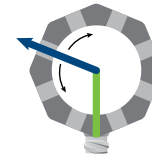
**Fluid Logic:** 6-5

**Valve Description:**

Distribution Flow Path  
Six ports, plus syringe port

**Ceramic Part Number:**

9998-01



**Fluid Logic:** 8-5

**Valve Description:**

Distribution Flow Path  
Eight ports, plus syringe port

**Ceramic Part Number:**

7993-01, 59943-01

\* Valve 57252-01 has a 0.059" (1.499 mm) fluid path diameter.

All tubing connections are compatible with 1/4" x 28 flanged or flangeless fittings.

All valves have a pressure rating of 100 psi. Higher pressure ratings are available upon request.

All valve housings are aluminum. Stainless steel, CTFE, and PEEK housings are available as a custom option.

## PSD/4 Specifications

General Specifications	
Accuracy	± 1% at 100% stroke
Precision	≤ 0.05% at 100% stroke
Fluid Path	Borosilicate glass, PTFE, PFA, CTFE, ETFE, UHMW-PE, or ceramic
Weight	2.6 lbs (1.2 kg)
RoHS Compliant	Yes
Linear Force Capability	20 lbf. (9.07 kgf.)
Power Requirements	
Supply Voltage	24 VDC
Average Current	850 mA maximum
Syringe and Syringe Drive	
Syringe Volumes	12.5 µL to 12.5 mL
Syringe Materials	Glass barrel, PTFE or PFA insert, stainless steel or aluminum plunger with PTFE coating, PTFE or UHMW-PE plunger tip
Resolution	Selectable 3,000 steps (standard) / 24,000 steps (high)
Syringe Drive Mechanism	Stepper motor driven lead screw and optical encoder
Stroke Length	30 mm
Syringe Speeds	1 second to 50 minutes per stroke
Valve and Valve Drive	
Valve Drive Speed	250 ms per 120° rotation
Valve Drive Mechanism	Stepper motor with optical encoder feedback
Valve Fittings	¼" – 28
Valve Materials	CTFE, PTFE, ETFE, or ceramic
Nominal Fluid Path Diameter	All valves: 0.060" (1.524 mm) unless otherwise noted
Communication	
Type	RS-232, RS-485, or CAN
Protocols	Terminal and standard
Baud Rate	9600 or 38,400 (RS-232 or RS-485); 100,000 or 125,000 (CAN)
Data Bits	8
Parity	None
Stop Bit	1, Half duplex
Daisy Chain Length	Up to 16 individual pumps
Programmable Capabilities	Ramps, cutoff velocity, backlash compensation, syringe speeds, loops, on-the-fly speed changes, terminate moves and delays, error detection, valve rotation selection, enhanced "h" Factor capabilities including valve rotation clockwise and counter-clockwise, 15 location method storage
Environmental Operating and Storage Range	
Operating Temperature	59 °F (15 °C) to 104 °F (40 °C)
Operating Humidity	20% to 95% relative humidity, non-condensing
Storage Temperature	-4 °F (-20 °C) to 149 °F (65 °C)
Storage Humidity	20% to 95% relative humidity, non-condensing

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