

PSD/4 Half-Height Syringe Pump Specification Sheet

Design Flexibility with a Vast Range of Applications

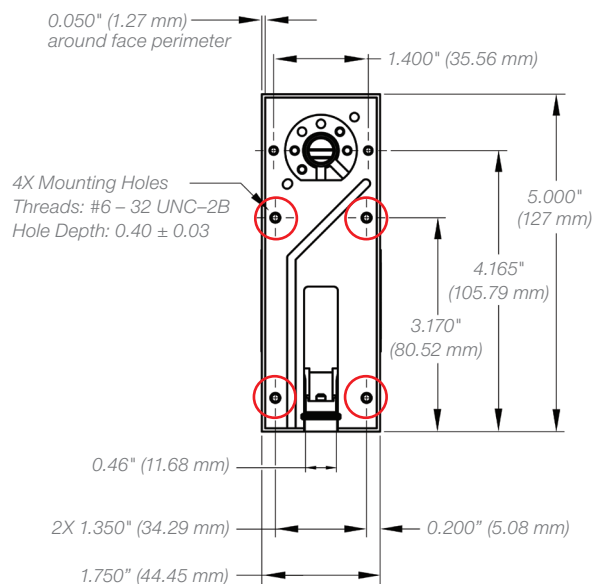
The PSD/4 is a popular choice for customers looking for a high precision syringe pump at an economical price. From the semi-conductor to the medical device industries, this pump has proven to be a reliable addition to numerous continued projects with top automation manufacturers. The space-saving design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



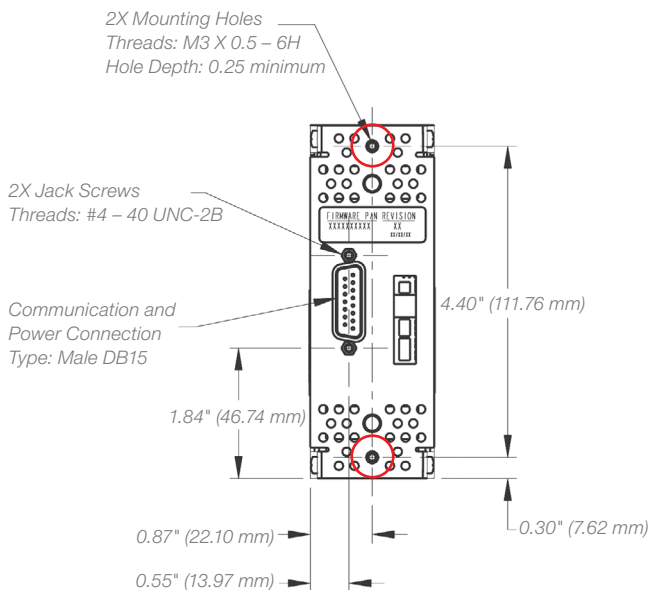
PSD/4 Type	P/N	Max Resolution (μsteps/stroke)	Fastest/Slowest (time/stroke)	Linear Force Capability (lbf)	Valve Torque Capability (in oz)	Size = D x H x W (in)	Weight (lbs)
Standard	54848-01	24,000	1.0 sec / 50 min	20	25	4.19 x 5 x 1.75	2.6
Smooth Flow	97709-01	192,000	14.1 sec / 8 hours	20	25	4.19 x 5 x 1.75	2.6
High Lift Force	99193-01	54,857	2.3 sec / 114 min	40	25	4.19 x 5 x 1.75	2.6
High Valve Torque	99194-01	24,000	1.0 sec / 50 min	20	75	5.4 x 5 x 1.75	3.1
High Torque and Lift Force	99195-01	54,857	2.3 sec / 114 min	40	75	5.4 x 5 x 1.75	3.1

PSD/4 Product Drawings and Dimensions

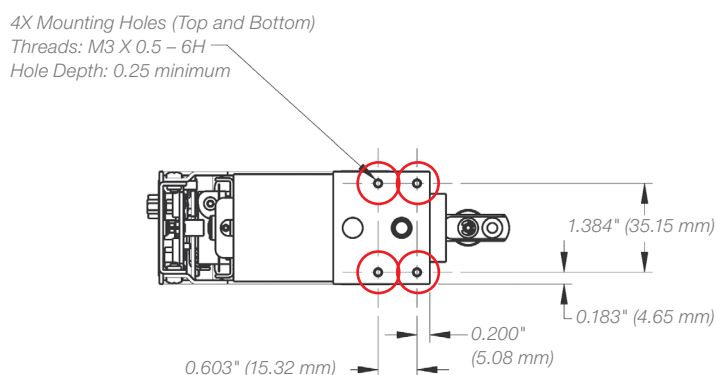
Front



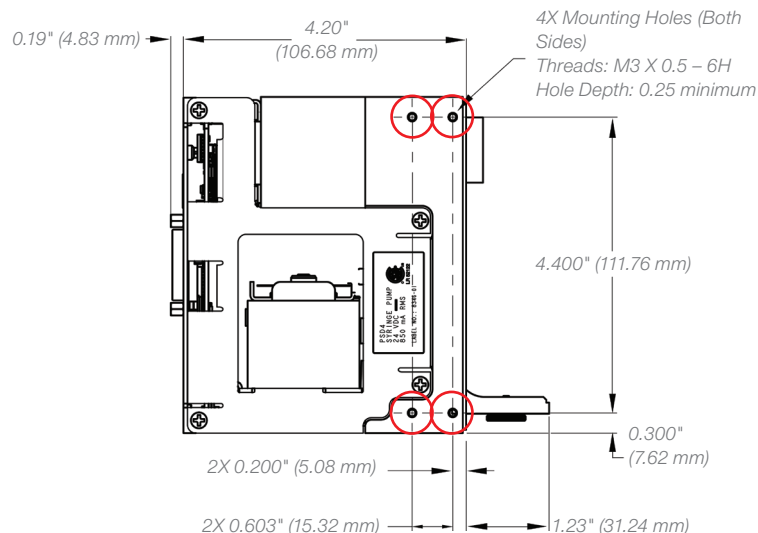
Back



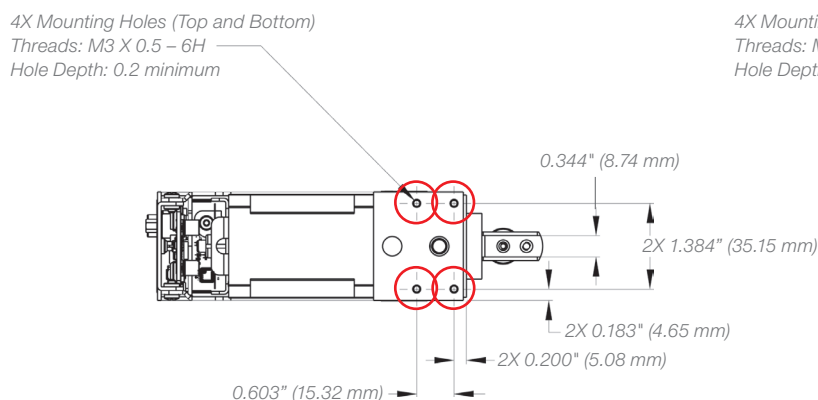
Top



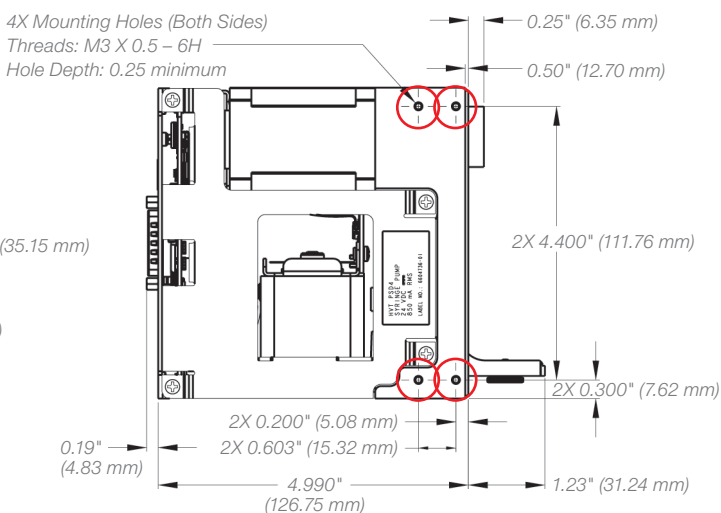
Side



Top (High Valve Torque)



Side (High Valve Torque)

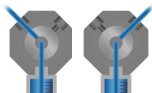
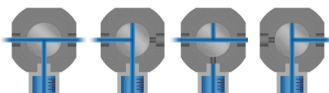
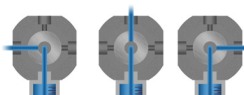
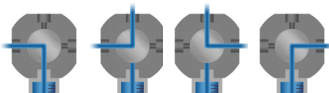
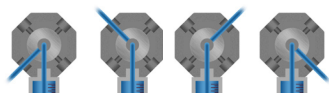
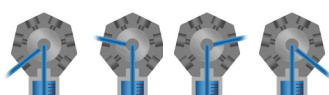
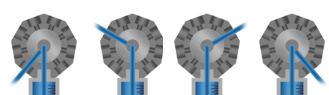


30 mm Syringes for PSD/4



Volume	Bubble Free Prime (BFP) Termination		Luer Lock (TLL) Termination	
	Standard Life PTFE Plunger Tip	Long Life UHMWPE Plunger Tip	Standard Life PTFE Plunger Tip	Long Life UHMWPE Plunger Tip
12.5 µL	-	-	5495-10	-
25 µL	-	-	5495-15	8250-15
50 µL	69000-20	69005-20	5495-20	8250-20
100 µL	69000-22	69005-22	5495-22	8250-22
125 µL	69000-25	-	5495-25	8250-25
250 µL	69000-30	69005-30	5495-30	8250-30
500 µL	69000-35	69005-35	5495-35	8250-35
1.0 mL	69000-38	69005-38	5495-38	8250-37
1.25 mL	69000-40	69005-40	5495-40	8250-40
2.5 mL	69000-45	69005-45	5495-45	8250-45
5.0 mL	69000-50	-	5495-50	8250-50
12.5 mL	69000-55	-	5495-55	-
25 mL	69000-60	-	-	-

Valves for PSD/4

	Valve Type	Hamaflon Plug Valves		Ceramic Face-Sealing Valves	
	Fluid Path	TLL	BFP	TLL	BFP
	Y-Block	9537-01 ^A	-	-	-
	Port Diameter / Torque	0.060 in / -		-	
	Y-Valve	99891-01	99891-02	8778-01 ^D	8778-02
	Port Diameter / Torque	0.059 in / 25 in-oz		0.060 in / 25 in-oz	
	3-Port T (3-3)	99892-01	99892-02	8063-01	8063-02
	Port Diameter / Torque	0.059 in / 25 in-oz		0.060 in / 25 in-oz	
	3-Port Distribution (3-5)	99893-01	99893-02	7991-01	7991-02
	Port Diameter / Torque	0.059 in / 25 in-oz		0.060 in / 25 in-oz	
	4-Port 90° (4-2)	99894-01	99894-02	9234-01	9234-02
	Port Diameter / Torque	0.059 in / 25 in-oz		0.060 in / 25 in-oz	
	4-Port Distribution (4-5)	99895-01 ^B	99895-02 ^B	7992-01 ^C	63760-02
	Port Diameter / Torque	0.059 in / 25 in-oz		0.075 in / 25 in-oz	
	6-Port Distribution (6-5)	99896-01	99896-02 ^D	9998-01	9998-02
	Port Diameter / Torque	0.055 in / 45 in-oz		0.050 in / 25 in-oz	
	8-Port Distribution (8-5)	-	-	59943-01	59943-02 ^D
	Port Diameter / Torque	-		0.063 in / 25 in-oz	

^AFor use with a 25 mL syringe, adapter 209651 is required

^BMax compatible syringe volume is 5 mL

^CMax compatible syringe volume is 1.25 mL

^DIncompatible with 25mL syringe

PSD/4 Communication Starter Kit

P/N	Description
64316-04	Starter Kit Containing Software CD, Demo Communication Cable, Serial-to-USB Adapter, and Power Supply

PSD/4 Specifications

General Specifications

Accuracy	± 1% at 100% stroke
Precision	≤ 0.05% at 100% stroke
RoHS Compliant	Yes

Smooth Flow Pump Specifications

Flow Rate Accuracy	± 5%
Flow Rate Precision	≤ 5%
Flow Rate Range	26 nL/minute to 53 mL/minute

Power Requirements

Supply Voltage	24 VDC
RMS Current	850 mA
Max Current	1.5 A

Syringe and Syringe Drive

Syringe Materials	Borosilicate glass barrel, PTFE or PFA insert, PTFE or UHMWPE plunger tip
Syringe Drive Mechanism	Stepper motor driven lead screw and optical encoder
Stroke Length	30 mm

Valve and Valve Drive

Valve Drive Speed (Default)	250 ms per 120° rotation
Valve Drive Mechanism	Stepper motor with optical encoder feedback
Valve Fittings	¼" – 28
Valve Fluid Path Materials	Ceramic and ETFE, or PTFE and CTFE

Communication

Type	RS-232, RS-485, or CAN
Protocols	Terminal and standard
Baud Rate	9,600 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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