Product Datasheet

Fluid Handling

ASP-LP100 Diaphragm Pump

-Aurora Pro Scientific
Email: sales@auroraprosci.com
Website: www.auroraprosci.com

1. Product Description



The micro diaphragm pump is based on a DC or stepper motor that drives a connecting rod to oscillate an elastic membrane, resulting in pumping action. During the downward stroke, the diaphragm draws the medium in via the inlet valve while pushing the medium out via the outlet valve. The pump motor has three options: brushed DC motor, brushless DC motor and stepper motor. This pump is designed for applications requiring miniaturized size, aggressive liquid, low power consumption and light weight and suitable for inkjet printing, medical equipment, and wastewater treatment, etc.

Key Features

- Self-priming
- Compact footprint
- Low power consumption: 5W
- Construction material: diaphragm (EPDM), Valve (EPDM)
- Stable flow and low noise
- Fluid temperature: 0 - 40 °C
- Maximum flow rate: 0.150 mL/min (DI Water); 0.20 L/min (Air)
- Maximum vacuum: 5.8 in Hg
- Maximum pressure: 42.6 PSIG
- Weight: 150mg

Typical Applications

- Precision liquid handling or delivery
- Hemodialysis application or medical infusion equipment
- Wastewater treatment
- Pharmaceutical manufacturing processes

2. Pump/Motor Specification

Pump Model	ASP-LP100	ASP-LP100BL	ASP-LP100ST
Pump Diaphragm/Valve		EPDM	
Wet Material		EPDM	
Pump Body		PPS	
Pump Voltage		12/24VDC	
Voltage Control	Fixed speed	Analog/PWM	Stepper motor driver
Flow Rate	0.24L/min (Air) ⩾100 ml/min (DI Water)	0.24L/min (Air) ⩾150 ml/min (DI Water)	0.24L/min (Air) 10- 50 mL/min (DI Water)
Maximum Pressure	42.6 PSI (0.29 MPa)	42.6 PSI (0.29 MPa)	42.6 PSI (0.29 MPa)
Maximum Vacuum	5.8 in Hg	5.8 in Hg	5.8 in Hg
Power	5W	5W	24W
Pump Motor	Brushed DC	Brushless DC	Stepper motor
Medium		Air or Liquid	
Fluid Temperature		0-40 Deg C	
Relative Humidity		<80%RH	
Pump Dimension	35 x 55 x 36 (mm)	35 x 56 x 36 (mm)	35 x 62 x 36 (mm)
Noise	⩽65dB	⩽62dB	⩽50dB
Lifetime	⩾500h	⩾5000h	⩾5000h
Weight	75 grams	80 grams	150 grams

The flow rate is tested with DI water under standard atmospheric pressure and room temperature (22C) without discharge pressure applied. Background noise is below 35 dB and the noise is tested at a distance of 50cm.

3. Product Dimension (Unit: mm)



Fluidics connector: 5mm Barb on inlet and outlet

4. Wiring Instructions

4.1 Brushless DC Motor (PWM or Analog)

- Red wire: positive
- Black wire: negative
- White/Blue wire: speed control (PWM 10-30KHz or 0-5VDC)
- Yellow wire: motor speed feedback.
- Full speed: connect the red wire to White/Blue wire; Black wire connects to negative.

4.2 Stepper Motor wiring diagram

