

D50 Double Head Flow Control Micro Vacuum Pump & Compressor



Datasheet



Highlights

- High vacuum rate of 30mbar.abs
- Optional corrosion-resistant material
- Long service life under max load
- Compact size with high flow rate
- Analytical grade high air tightness
- Driven by BLDC motor
- Industrial-grade reliability
- PVDF/PTFE pump head
- Low EMC interference
- Restart with load

Applications

- Gas sampling
- Medical equipment
- Analytical instruments
- Pneumatic automation

7.5K^{hours}
lifetime test



PERFORMANCE DATA

Model	Voltage (V DC)	Max. Load Current (mA)	Max. Peak Flow rate (L/min)	Max. Average Flow rate (L/min)	Max. Vacuum (-kPa)	Max. Pressure (kPa)	Weight (kg)
Material Option EA	Diaphragm:EPDM Valves and Seals:EPDM Pump Head: PA						
D50VB-BL4	24	≤1.2	≥13	≥9	≥98	Max.50	1.1
D50FB-BL4	24	≤1.2	≥22	≥17	≥88	Max.50	1.1

Note: Peak flow refers to the flow value measured by the rotor flowmeter, and average flow rate refers to the value measured by the soap film flowmeter. The above data are all measured at 101.3kPa standard atmospheric pressure and rated voltage. Output pressure Max.50 represents the maximum allowable output positive pressure.

CONFIGURATION OPTIONS				
Material Options	Pump Head	Diaphragm	Valves	Seals
EA Combination	PA6	EPDM	EPDM	EPDM
Motor Options	BLDC	DC		
Voltage	12/24V DC	12/24V DC		
Connector Options				
D50FB	Default PA hose connector			
F50VB	Default PA hose connector/PA hose connector for ID.4mm hose/PC6 push-in quick connector/PC8 push-in quick connector /Rp1/8 internal thread /NTSC1/8 internal thread			

RELIABILITY DATA				
Models		D50VB D50FB		
Versions		Standard with BLDC Motor		
Fully Loaded Lifetime (hrs)		7500*		
Unloaded Lifetime (hrs)		10000*		
Motor Lifetime (hrs)		15000*		
Test conditions	<p>Fully-loaded lifetime: Pumps are fully loaded under rated voltage ,the inlet is blocked, and the outlet is directly connected to the atmosphere; the fully-loaded lifetime represents the continuous operating life under the most extreme and harsh working conditions. When the actual working condition is intermittent use or the working pressure is lower than the maximum rated pressure, the product lifetime will approach the unloaded lifetime;</p> <p>Unloaded lifetime: Both the inlet and the outlet of the pump are connected to the atmosphere, and the pump operates continuously for 7*24 hours without stopping;</p> <p>Motor lifetime: The motors run continuously for 7*24 hours without load under good ventilation and heat dissipation conditions;</p>			
Working Condition				
Operating temperature	Permissible ambient temperature is 0°C~50°C, it is not suitable to be exposed to the sun, and it should work in a clean and ventilated environment			
Medium	Permissible temperature of the medium is 0°C~40°C, the transferring gas is allowed to be rich in water vapor, but cannot contain solid particles			
Wetted materials	<p>HS material combination has good resistance to alcohol, acid, alkali, ozone, etc. (except strong acids, concentrated acids, fats, benzene, gasoline, etc.)</p> <p>PV material combination has excellent corrosion resistance and can be used to extract strong acids, strong alkalis and various corrosive gases</p>			

D50VB WITH BL MOTOR FLOW PRESSURE CURVE

A line graph showing the flow rate (L/min) versus pressure (kPa) for the D50VB with BL Motor. The x-axis represents pressure, ranging from -100 kPa (vacuum) to 50 kPa (pressure). The y-axis represents flow rate, ranging from 0 to 12 L/min. The curve starts at approximately 0.1 L/min at -100 kPa, rises to a peak of about 11.5 L/min at 0 kPa, and then gradually decreases to approximately 6.5 L/min at 50 kPa.

Pressure (kPa)	Flow rate (L/min)
-100	0.1
-80	0.5
-60	1.5
-40	3.0
-20	5.5
0	11.5
10	8.5
20	7.5
30	6.8
40	6.5
50	6.5

D50FB WITH BL MOTOR FLOW PRESSURE CURVE

The graph shows the flow rate (L/min) on the y-axis (0 to 18) versus the pressure/vacuum (kPa) on the x-axis (-100 to 50). The curve starts at approximately (-90, 0.2), rises to a peak of 18 L/min at 0 kPa, and then gradually declines to about 9.5 L/min at 50 kPa.

Pressure/Vacuum (kPa)	Flow rate (L/min)
-90	0.2
-80	0.5
-60	1.5
-40	3.5
-20	8.5
0	18.0
10	15.5
20	14.5
30	12.5
40	10.5
50	9.5

D50VB WITH BL MOTOR

DIMENSIONS

Unit:mm

Connector	K1	K2	K3
W/NR	62	73	
PC8	61	92	
PC6	75	86	
H8	80	91	
H4	79	90	

D50FB WITH BL MOTOR DIMENSIONS

Unit: mm

Technical drawings of the D50FB with BL Motor, showing dimensions and components.

Unit: mm

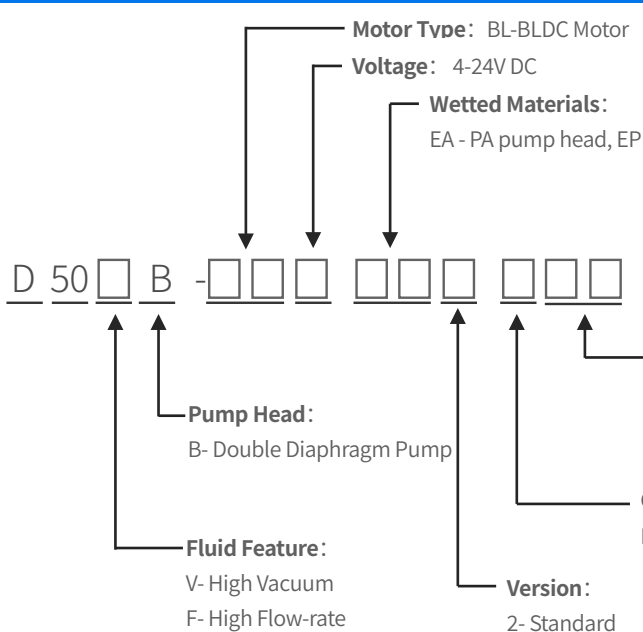
Dimensions shown:

- Overall height: 143
- Motor height: 65
- Base width: 58
- Overall width: 125
- Motor width: 72
- Motor depth: 62
- Overall depth: 143
- Motor diameter: Ø=220

Components labeled:

- 8x10 PU hose
- Inlet
- Outlet
- Y shape connectors
- VD rubber mounting feet x4 removable

D50 MODEL KEY



ACCESSORIES		
Descriptions	Illustration	Function
Shock-isolation mounting feet		Reduce the impact of vibration on the equipment during the operation of the pump. This accessory can be purchased on demand
Filter		The 80-mesh filter protect both pumps and other upstream instrumentation and hydraulic circuits against particulate, crystals and fibers . It is recommended to replace it regularly. This accessory can be purchased on demand
Check valve		Enhance the cut-off capability of the gas circuit system to ensure one-way gas flow. This accessory can be purchased on demand
Flow stabilizer		Eliminate and reduce pulsation, make gas output smooth and stable, this accessory can be purchased on demand
BLDC speed control module		This module uses open-loop or closed-loop PWM control logic to control the pumping speed through knobs, voltage, Modbus, frequency and other signal protocols.
DC power adapter		220V AC to DC switching power supply, this accessory can be purchased on demand
Silencer		It is used to eliminate and reduce the airflow noise caused by pumping operation, this accessory can be purchased on demand



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