Precise And Reliable Fluid Transfer

Product Manual

Kamoer Fluid Tech(Shanghai) Co., Ltd.

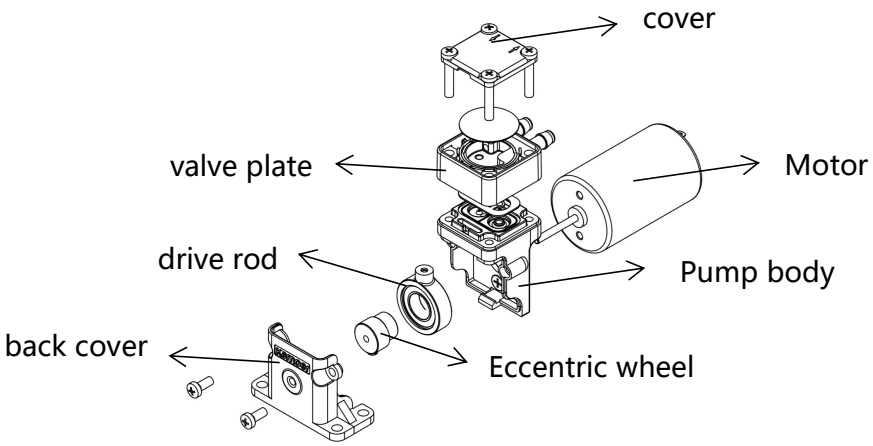
Version: A / 3

Product name	Micro Diaphragm Liquid Pump
Product number	KLP180
Execution date	2023.03.02
Company	Kamoer Fluid Tech(Shanghai) Co., Ltd.

A、Product Overview

1. Product picture

2. Product assembly drawing



3. Model definition

Model	Rubber type	Motor type	Input voltage
KLP180	E.	D.	12

3.1 Rubber type

E: EPDM has excellent mechanical properties and general corrosion resistance.

V: FKM has average mechanical properties and good corrosion resistance.

F: FFKM has general mechanical properties and good corrosion resistance.

3.2 Motor type

B: The performance of the brushless motor is excellent, but the price is more expensive D: The performance of the brush motor is average, and the price is economical

3.3 Input voltage

12: 12V voltage input 24: 24V voltage input

4. Performance characteristics, typical applications

4.1 Performance characteristics

- KLP180 series diaphragm liquid pumps are available in 24V and 12V voltage options, customers can choose the appropriate voltage according to their own usage scenarios
- The appearance of the product is personally checked by the design master, beautiful and generous
- The product is small in size, high in pressure and stable in chemical properties, suitable for various working conditions
- Optional motor, brush motor with cost advantage or brushless motor with performance advantage
- High-quality engineering plastics and rubber materials, showing good product stability
- A variety of rubber options, compatible with most of the media on the market

4.2 Typical applications

- Environmental protection industry: such as used as a pump for liquid monitoring
- Medical devices: such as used as a reagent transfer pump
- Filling industry: such as used as a transfer pump for filling liquid
- Inkjet coding industry: such as used as a transfer pump for inkjet printers

4.3 Known Risk Notification

- The medium will be in contact with the pump head and the rubber, so it is necessary to check the chemical compatibility or conduct an immersion test when selecting the model
- The working environment of the product should not exceed 50°C, and the humidity should not exceed 80% (no condensation).The harsh working environment will cause premature damage to the product
- Frequent start and stop, over pressure or under pressure and other unreasonable working conditions will lead to premature damage of the pump
- High overloading may result in premature failure of the product
- If the pump is placed for a long time, it will not be able to self-prime, and the pump can be activated by passing water at the inlet
- After some medium is emptied, it may not be able to self-prime, please avoid the possibility of such medium being emptied
- Added risk notification items to the manual: The diaphragm with PTFE coating is selected, and there is a risk of liquid leakage when the pump works under the condition of liquid pressure greater than 0.2MPa.

5. Product Certification, Intellectual Property

CN304946140S

CE certification

RoHS certification

B、Product specification

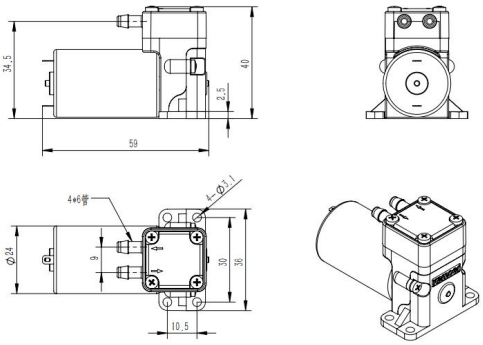
1. Technical Parameters

Items		KLP180-ED	KLP180-V-D	KLP180-F-D	KLP180-EB	KLP180-VB	KLP180-FB
Basic parameters	Flow	≥160ml/min		≥160ml/min	≥240ml/min		≥160ml/min
	Suction lift	2 m		1m	2 m		1m
	Lift	30m		15m	30m		15m
	Power	5W					
	Noise	Under the ambient noise of 35dB, the actual measurement at a distance of 50cm≤60dB					
	Control method	fixed speed work			PWM speed regulation work, fixed speed work		
	Weight	about 75g			about 80g		
	Rated voltage	12V/24V					
	Motor type	DC brushed motor			DC brushless motor		
	Product life	≥ 600h			≥6000h		≥2000h
Applicable environment		Temperature range: 0℃～50℃; relative humidity: <80% (no condensation)					
Supplementary Note		The test results of the above parameters at standard atmospheric pressure, room temperature 25°C, medium is water, and the pump has no load pressure (the liquid has no drop). The performance parameters of the product are affected by the environmental state (air pressure, temperature, humidity, etc.), the medium state (temperature, density, viscosity, and chemical properties, etc.) and the load before and after the pump, so the above parameters may be different from the actual parameters. FFKM rubber is affected by material properties. When the temperature is lower than 20 degrees Celsius, the pump may not be self-priming after draining.					

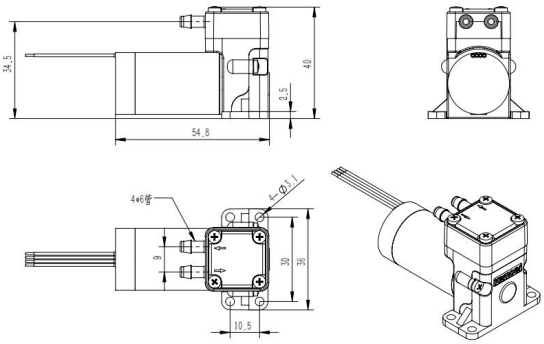
2. Product material

KLP180	PPS	PA	EPDM/FKM/PTFE coating	EPDM/FKM/FFKM	Aluminum
Model	Pump head	Pump body	Diaphragm	Valve	Eccentric wheel

3. Product Size

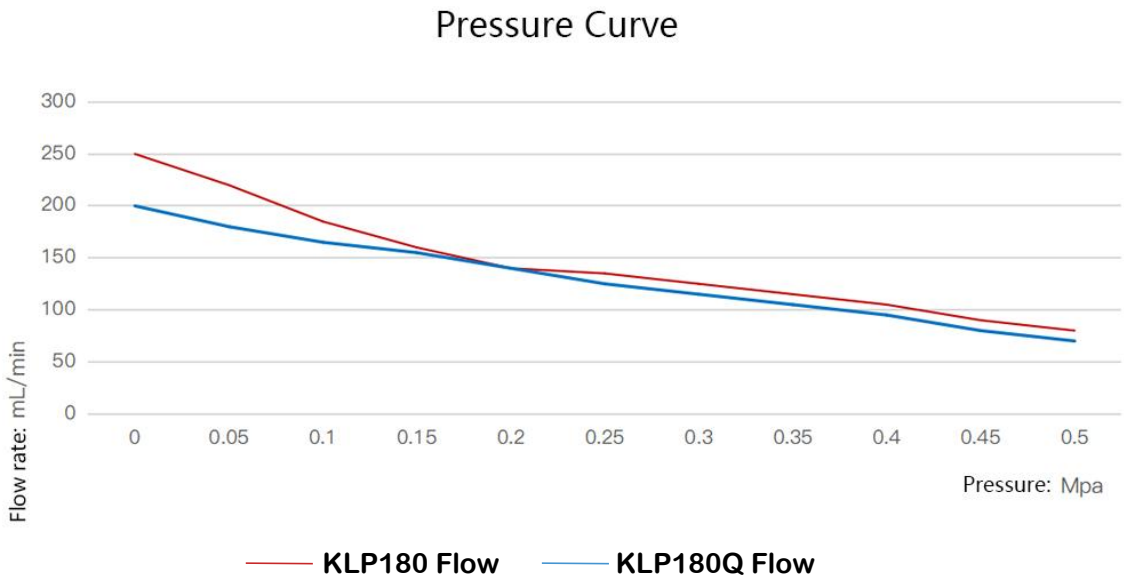


Brush type



Brushless type

4. Flow curve



5. Motor Control (for brushless motors)

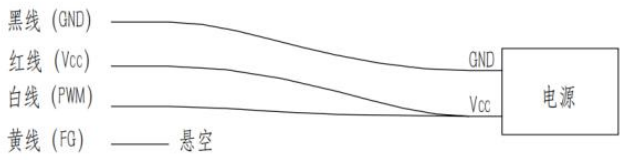
Red line	Yellow line	Blue line (white line)	Black line
Vcc	FG	PWM	GND
Positive electrode	Speed feedback	Speed regulation	Negative electrode

◆ PWM and 0V~5V two speed regulation methods : ① PWM speed regulation, frequency 10kHz~30kHz , speed regulation range 11%~100% , duty cycle 0%~10% , motor does not rotate, 11%~100% ② 0V~5V voltage speed regulation, the amplitude is 5V , 0V~0.5V, the motor does not rotate, 0.6V~5V is the speed regulation range

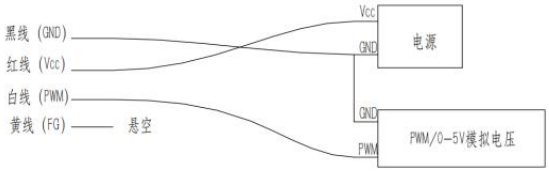
◆ Yellow line speed feedback, connected to oscilloscope probe or host computer, 1 pulse/rev Speed (rev/min) = FG signal × 60

◆ Full speed operation: connect the positive pole to the red wire and the blue wire (white wire), and connect the negative pole to the black wire

◆ There are two kinds of speed control cables, blue and white, and the performance is the same.



Work at full speed



Speed work

C、Optional accessories

Name	Specifications		Function introduction
Outer tubing		4mm×6mm	Suitable for liquid transfer, does not pollute the medium