Precise And Reliable Fluid Transfer

Product Manual

Kamoer Fluid Tech(Shanghai) Co., Ltd.

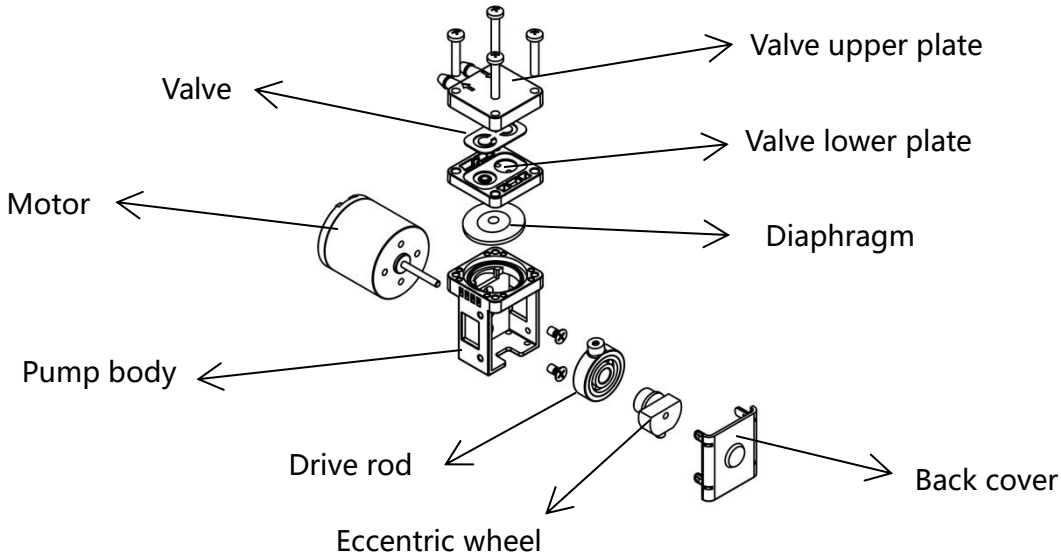
Version : A/5

Product name	Micro diaphragm pump
Product model	KLVP1
Execution date	2023.03.16
Company name	Kamoer Fluid Tech (Shanghai) Co.,Ltd.

A. Product Overview

1. Product physical picture

2. Product assembly drawing



3. Model definition

KLVP1	E	SB	12	L
model	rubber material	motor type	Input voltage	Adapter board

3.1 Rubber material

E: EPDM, general corrosion resistance, long service life

F: FFKM, extremely strong corrosion resistance, average life performance (customized model)

3.2 Motor type

SB: brushless motor SD: brushed motor

3.3 Input voltage

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

3.4 Adapter board

L: with adapter plate "empty": without adapter plate

4. Performance characteristics, typical applications

4.1 Performance characteristics

◆ KLVP1 series diaphragm air pumps are available in two voltages of 24V and 12V, and 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

◆ Oil-free, maintenance-free, can work 24 hours without interruption

◆ Optional motor, brush motor with cost advantage or brushless motor with performance advantage

◆ Low noise, low power design

◆ High-quality engineering plastics and rubber materials, showing good product stability

◆ Customized FFKM rubber material can be used for corrosive gases

4.2 Typical applications

◆ Environmental protection industry: such as used as a gas pump for gas monitoring

◆ Medical equipment: such as used as an air pump for a rehabilitation instrument

◆ Industrial automation: such as the use of negative pressure pumps as suction cups

◆ White goods: such as use as a negative pressure pump for a massager

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 40°C, and the humidity should not exceed 70% (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

◆ The medium contains dust, oil and other pollutants that will contaminate the pump components

and cause premature damage to the pump (please equip a pre-filter)

◆ When using the customized FFKM rubber material to detect gas, please use it in an environment higher than 20°C

5. Product Certification, Intellectual Property

CN306072020S

CN212376835U

RoHS certification

CE certification

B. Product specification

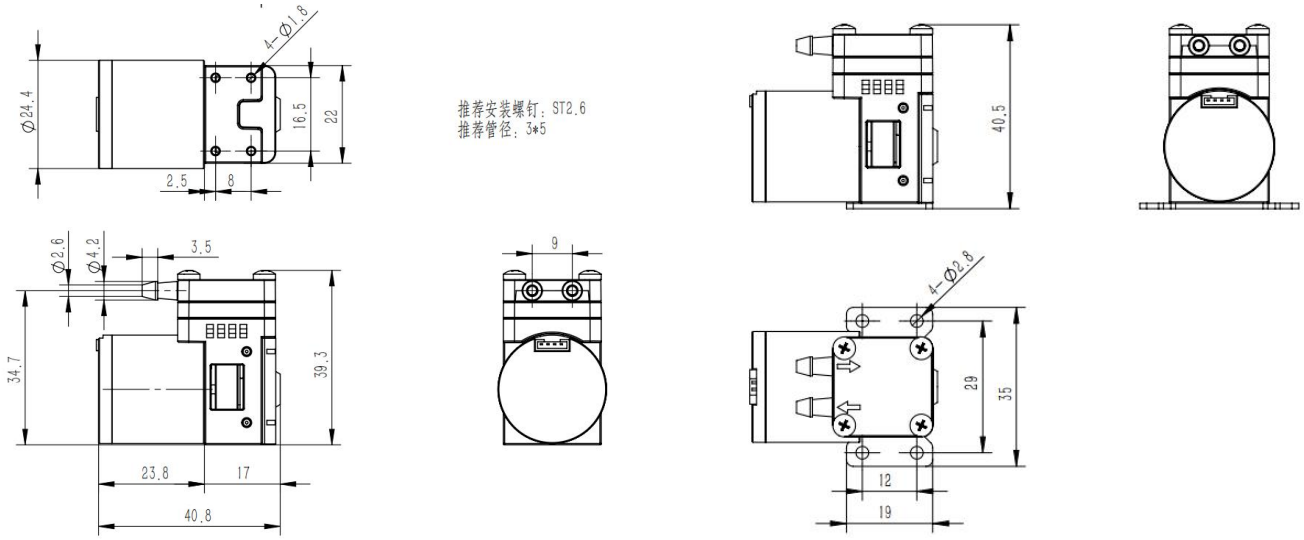
1. Technical Parameters

Project		KLVP1-SD	KLVP1-SB
Basic parameters	Flow	≥1.2L / min	
	Negative pressure	≥- 0.05MPa	
	Positive pressure	≥ 0.08MPa	
	Power	≤2.5W	
	Noise	Under the ambient noise of 35dB, the actual measurement at a distance of 50cm≤55dB	
	Control method	Fixed speed work	PWM speed regulation work, fixed speed work
	Weight	about 65g	about 55g
	Rated voltage	12V/24V	6V/ 12V/24V
	Motor type	DC brushed motor	DC brushless motor
	Product life	≥ 600 hours	≥ 8 000 hours
	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 air, 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.	

2. Product material

Model	Pump head	Pump body	Diaphragm	Valve	Eccentric wheel
KLVP1	PPS	PA	EPDM FFKM- Customized	EPDM FFKM-Customized	brass

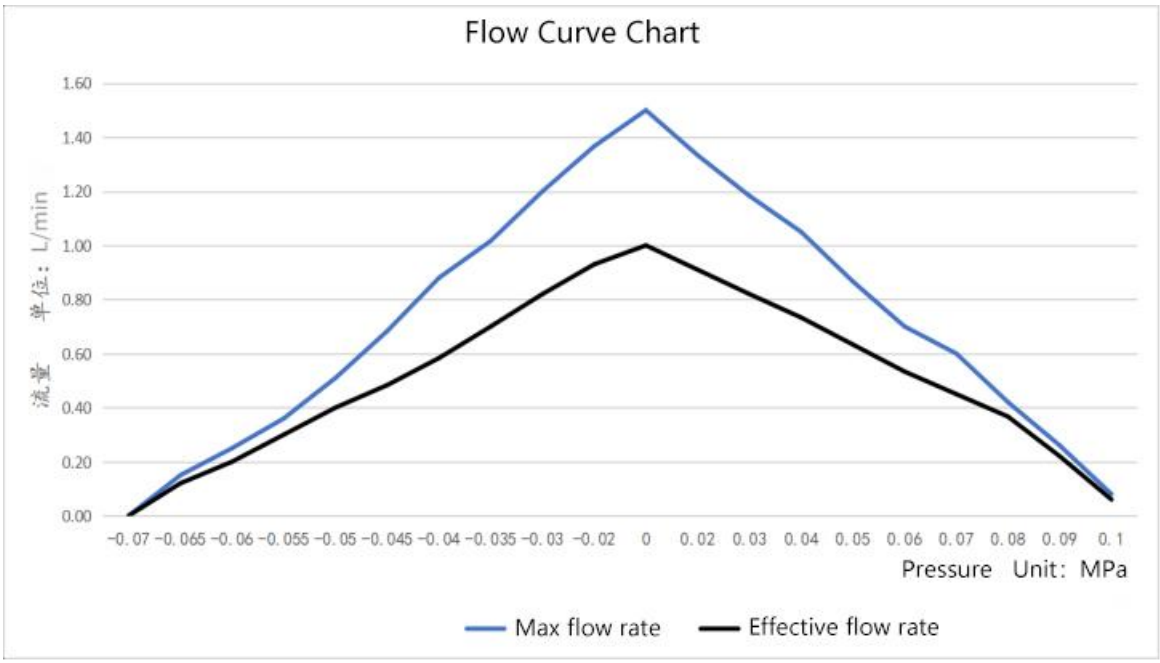
3. Product Size



Standard type

Schematic diagram of adapter board installation

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, PWM speed regulation: 10kHz~30kHz, amplitude: 5V.

◆ The control ratio is 0% to 10% without rotation, and 11% to 100% in the speed regulation range.

◆ Analog voltage speed regulation: voltage 0V ~ 5V, 0V ~ 0.5V motor does not rotate, 0.6V ~ 4.5V speed regulation range.

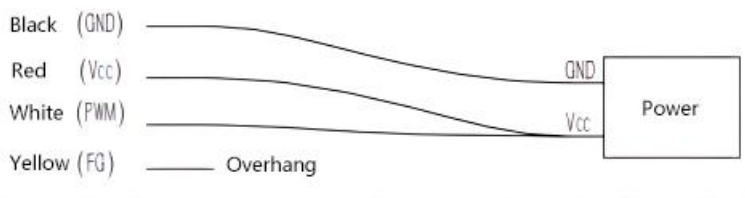
◆ Yellow line speed feedback: connect to the oscilloscope probe or host computer

SD series: 1 pulse/rev Speed (rev/min) = FG signal * 60

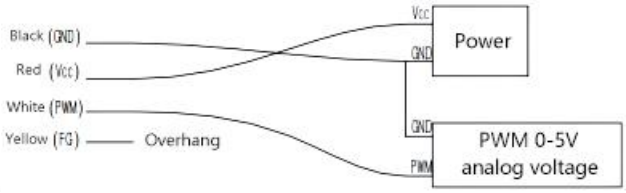
SB series: 6 pulses/rev Speed (rev/min) = FG signal * 60/6

◆ 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.



Full speed work



Speed regulation work

C. Optional accessories

Name	Specifications		Quantity	Function introduction
Vacuum pump filter	6mm		1	Prevent dust, oil stains, etc. in the medium from entering the pump head, causing damage to the pump
Speed control driver board		Three-wire governor	1	The water output of the three-line diaphragm liquid pump and the air output of the diaphragm air pump can be easily adjusted by the external speed knob.