Precise And Reliable Fluid Transfer

Product Manual

Kamoer Fluid Tech (Shanghai) Co.,Ltd.

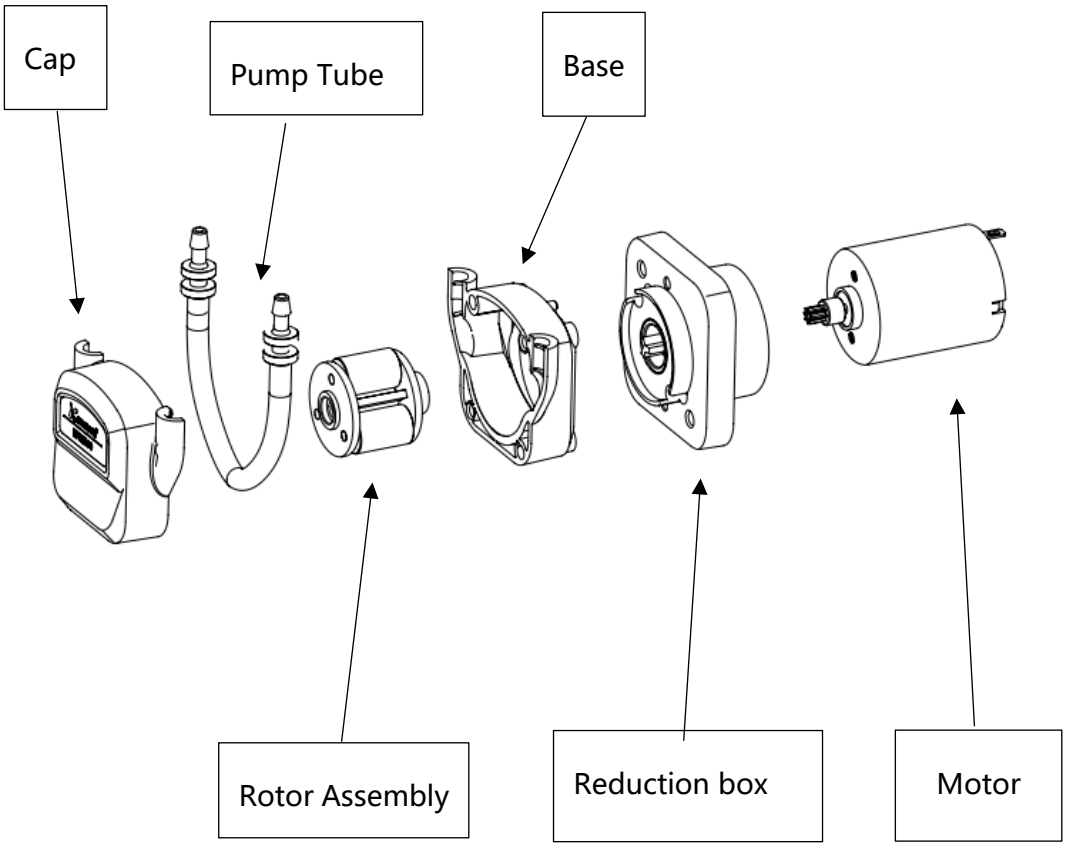
Version：A/1

Product name	Micro peristaltic pump
Model	KPHM100
Release Date	2022.11.23
Manufacturer	Kamoer Fluid Tech (Shanghai) Co.,Ltd.

1. Product Overview

1.1 Product Images

1.2 Product Structure



1.3 Model Explanation

KPHM100	HA	Null	B	10	Null
Model	Motor Type	Reduction	Tube Material	Tube Size	Mounting

1.3.1 Motor Type

HA: 24V DC brushed motor HD: 24V DC brushless motor ST: 24V stepper motor
HB: 12V DC brushed motor HE: 24V DC brushless motor

1.3.2 Deceleration

1: 1-stage deceleration, reduction ratio 1:14 0: No deceleration (stepper motor only)

1.3.3 Pump Tube Material

B: BPT tube

1.3.4 Pump Tube Size

10#: 3mm×5mm

1.3.5 Mounting

Blank: standard installation; L: with L type bracket

1.3.6 Pump Material

Pump Head	Pump Cap	Base	Rotor	Rotor Assembly	Tube fittings
KPHM100	PC plastic	POM	PET	POM	PP

1.4 Features & Applications

1.4.1 Features

- KPHM100 series peristaltic pumps are 3 types of motor driven peristaltic pumps, 24V/12V motor, different voltage options are available
- Pump tube selection - the pump tube adopts imported BPT (B) tube
- This peristaltic pump can be adapted to common brushed DC, brushless DC and stepper motor
- Ultra-small size, compact structure and light weight
- Small installation method - the installation method is fixed through the plate, in addition, the pump head adopts the quick release type, and the orientation of the pipe joint can be selected in any direction of up, down, left and right
- Transmission mode - The transmission mode is gear transmission, the first-stage reduction ratio is 1:14, with high reliability and low noise

1.4.2 Applications

Analytical instruments: ion chromatograph, blood analyzer, hypochlorous acid water generator; detergent delivery: automatic car washer.

Ion chromatograph

Auto car washer

Blood analyzer

Hypochlorous Acid Generator

1.5 Patents & Certifications

CN306503568S

RoHS certificate

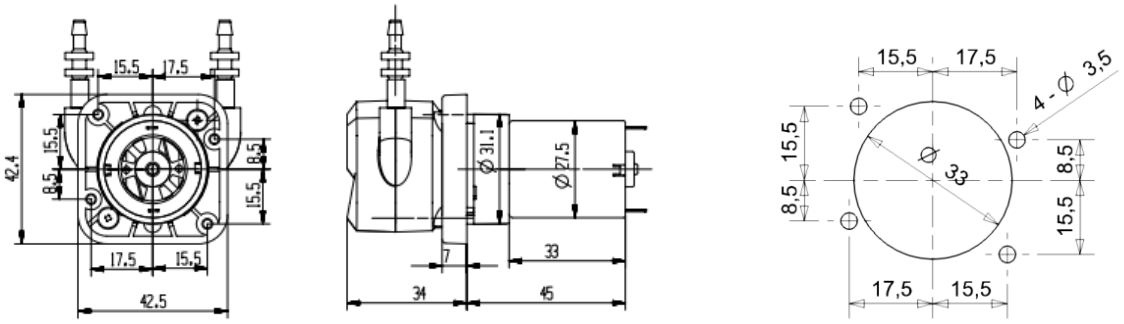
CE certificate

- The tube is resistant to liquid media. It is necessary to check chemical compatibility or perform immersion experiments. Improper tube selection may cause the tube to be damaged quickly.
- The working environment of the product should not exceed 45°C, and the humidity should not exceed 70% (no condensation). The harsh working environment will cause premature damage to the product.
- Fluid leakage incidents caused by ruptured hoses depend on the fluid medium and specific application conditions.
- High overload work may cause premature product damage.

2. Specification

2.1 KPHM100 Brushed Motor Specification

2.1.1 Dimensions



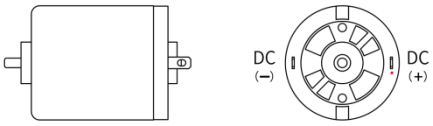
Mounting plate

2.1.2 Parameters

Item		Technical Parameters
Basic Parameters	Motor Type	DC brushed motor
	Minimum Flow	90ml/min
	Noise	≤60dB
	Power	6 W
	Control Mode	On-off control
	Weight	About 105g
	Rated Voltage	12V/24V
	Tube Lifetime	BPT：1000h
	Motor Lifetime	800h

Flow Rate	Reference Flow (Unit: ml/min)	
	Tube Code	B10（10#）
	ID x OD	3mm×5mm
	Tube Material	BPT
	HB/Current：0.5A HA/Current：0.25A	≥90ml/min
Notes	Remark	The above parameters are measured with pure water without pressure under the standard atmospheric pressure at room temperature of 20°C. Actually, there will be certain errors in the flow rate according to different media, different outlet pressures, and DC motor speed errors. The data are only for reference. In addition, it can be customized according to customer needs.
	Reference noise	In a quiet room with an ambient noise of 35dB, the product is 50cm away from the noise tester, and the noise is 55dB.

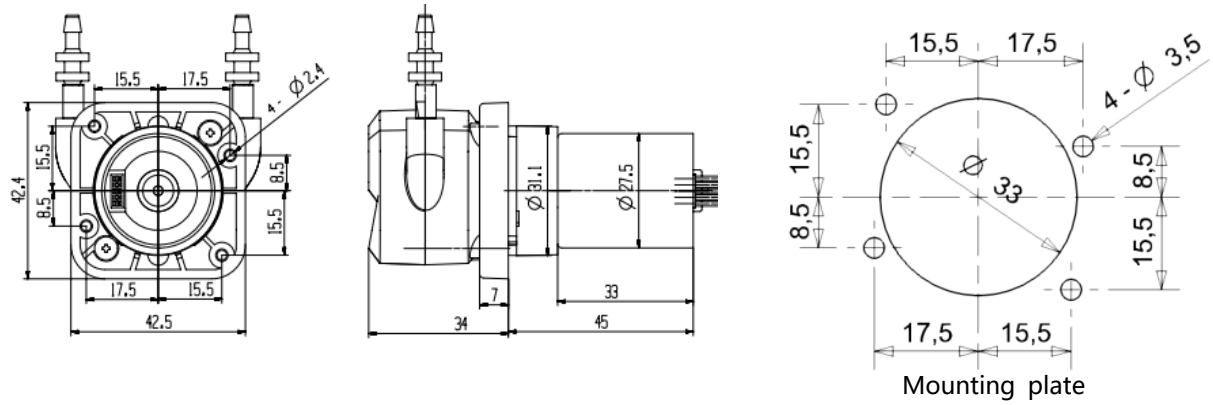
2.1.3 Motor control



Note: Connect the positive and negative electrodes according to the motor wiring diagram.

2.2 KPHM100 Brushless Motor Specification

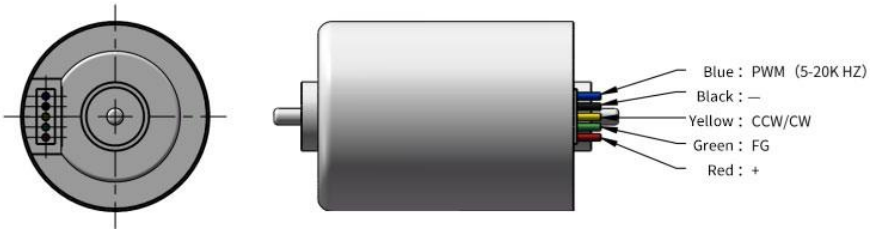
2.2.1 Dimensions



2.2.2 Parameters

Item		Technical Parameters
Basic Parameters	Motor Type	DC brushless motor
	Minimum Flow	90ml/min
	Noise	≤60dB
	Power	6 W
	Control Mode	On-off control / PWM speed regulation
	Weight	About 148g
	Rated Voltage	12V/24V
	Tube Lifetime	BPT：1000h
	Motor Lifetime	2000h
Flow Rate	**Reference Flow（Unit：ml/min)**	
	Tube Code	B10（10#）
	ID x OD	3mm×5mm
	Tube Material	BPT
	HD/Current：0.25A HE/Current：0.5A	≥90ml/min
Notes	Remark	The above parameters are measured with pure water without pressure under the standard atmospheric pressure at room temperature of 20°C. Actually, there will be certain errors in the flow rate according to different media, different outlet pressures, and DC motor speed errors. The data are only for reference. In addition, it can be customized according to customer needs.
	Reference noise	In a quiet room with an ambient noise of 35dB, the product is 50cm away from the noise tester, and the noise is 55dB.

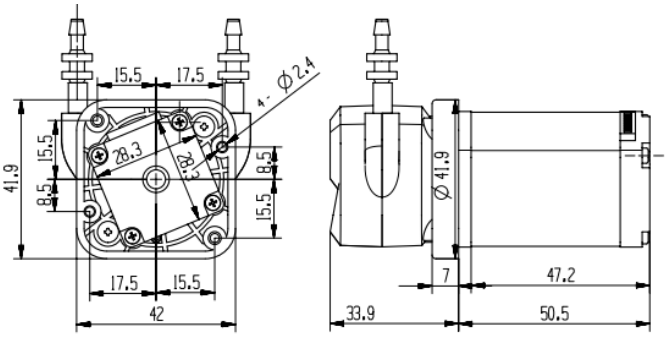
2.2.3 Motor control

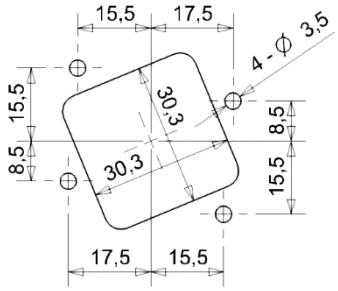


Description: blue wire is connected to PWM, black is connected to negative, yellow is connected to commutation, green is connected to feedback, red is connected to positive; blue and black are connected to negative, and red is connected to positive for full speed operation.

2.3 KPHM100 Stepper Motor Specification

2.3.1 Dimension





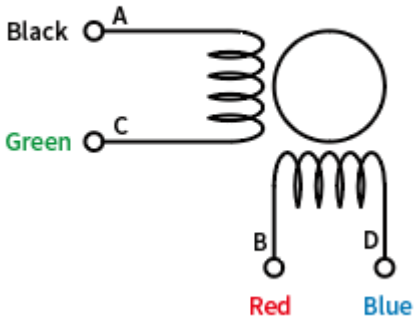
Mounting plate

2.3.2 Parameters

Item		Technical Parameters
Basic Parameters	Motor Type	Stepper motor
	Flow Range	0-180ml/min
	Noise	≤60dB
	Power	10 W
	Control Mode	Stepper driver
	Weight	About 235g
	Rated Voltage	24V
	Tube Lifetime	BPT：1000h
	Motor Lifetime	6000h
Flow Rate	**Reference Flow（Unit：ml/min)**	
	Tube Code	B10（10#）
	ID x OD	3mm×5mm
	Tube Material	BPT
	300rpm	≥80ml/min
Notes	Remark	The above parameters are measured with pure water without pressure under the standard atmospheric pressure at room temperature of 20°C. Actually, there will be certain errors in the flow rate according to different media, different outlet pressures, and DC motor speed errors. The data are only for reference. In addition, it can be customized according to customer needs.
	Reference noise	In a quiet room with an ambient noise of 35dB, the product is 50cm away from the noise tester, and the noise is 55dB.

2.3.3 Stepper Motor Parameters & Wiring

Wiring diagram:



Pin No. VS. Lead Wire Color

PIN NO.	Color
1	Black
2	Green
3	Red
4	Blue

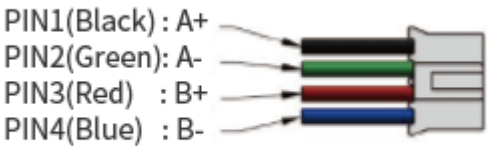
Exciting Sequence vs. Direction of Rotation

STEP	A	B	C	D
1	+	+	-	-
2	-	+	+	-
3	-	-	+	+
4	+	-	-	+

CCW

CW

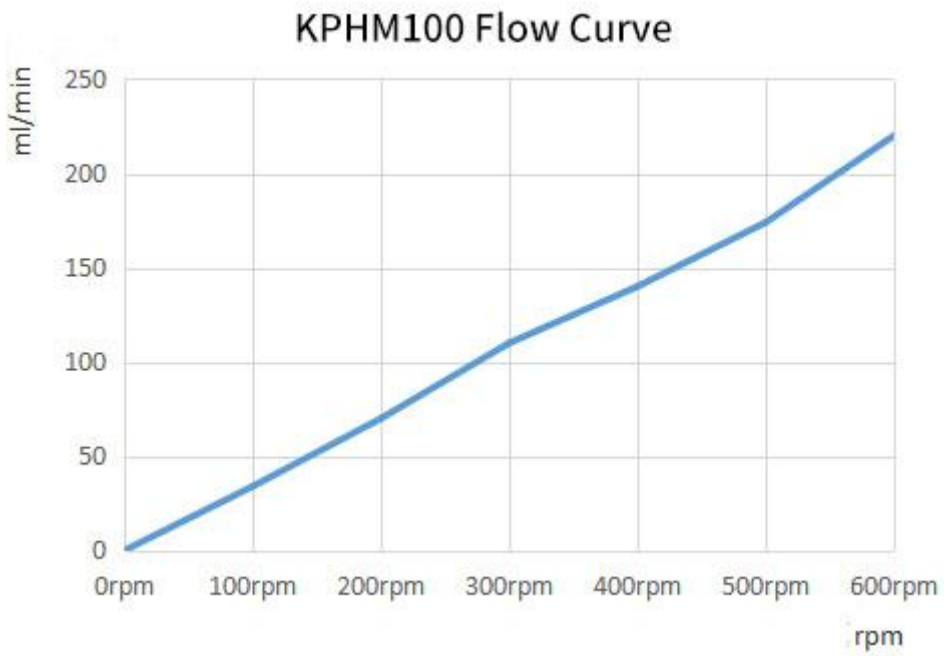
Clockwise View from Motor Mounting Side



XH2.54-4P

Phase	Resistance	Inductance	Current	Holding torque	Insulation class
2	2.5±10%Ω	2.5±20%mH	1.0A	0.18Nm	B

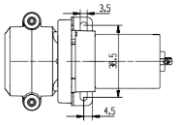
2.3.4 Flow Rate Curve



3. Pump Tube

Tube Material	Features	Standards compliant	Tube Code
BPT tube（B）	Good resistance to common chemicals, acid and alkali, and oxidation resistance, life time >1000h.	RoHS, FDA	10#

4. Optional accessories

Accessory name	Specifications		Function
L shape mounting plate	56.6×31.2×13mm		Increase installation methods to meet different customer needs
Straight connector	1/8"		External connection can be connected to 3 × 5 mm hard pipe or similar hose
Stepper motor driver	MODBUS-RTU		It can realize built-in and external potentiometer speed regulation, can realize MODBUS RS485 communication and 0-10V analog speed regulation, realize electric and trigger two start and stop modes, the maximum subdivision is 32, and the drive current can be set (0.7A, 1.2A) , 1.7A, 2.2A, 2.7A, 2.9A, 3.2A, 4.0A)
Pulse generator board + Stepper driver board	2802 + KMD-42B-P	 	Support clockwise and counterclockwise operation, LED 4-digit digital tube display, various control methods: rotary encoder, foot switch, external analog, 485 communication control