Gravity: Digital Peristaltic Pump

SKU:DFR0523

INTRODUCTION

Gravity: digital peristaltic pump is a new product developed by DFRobot. This is a new member of our water quality monitoring devices. It is an actuator for the liquid system.
DFRobot peristaltic pump integrates a PPM motor driver on the pump, this is a Gravity interface (PH2.0-3P) motor driver. The control signal is compatible with standard servo motor, you can use Arduino, Raspberry Pi, micro:bit, and other kinds of microcontrollers to control its direction and flow speed. The tube in the pump head is made up of BPT material, which is anti-acid and long life. Peristaltic pumps are a kind of positive displacement pump used for delivering small amounts of fluid. The fluid is contained within a flexible tube fitted inside a circular pump casing. When the rotor rotates continuously, the fluid in the tube will be squeezed and deliver to the other side. In this way, the liquid flow rate can be easily accuracy controlled.

As a kind of metering pump, peristaltic pump can be conveniently used for quantitative delivery. It has a wide range of application scenarios, such as science experiment, hydroponics, drip irrigation, tropical fish farming, shrimp cylinder environment control, etc. A large number of titration experiments can be automated with this peristaltic pump, such as potentiometric titration, indicator-based colorimetric titration, pH-based titration, and so on. It is great helpful to improve your working efficiency
On the other hand, peristaltic pumps also have a wide range of applications in food, medical and other industries. Making an automatic coffee machine will be a really good idea!

Attention: Since the motor power consumption (about 5W) is a little large, it's better to add an external power supply on your microcontroller, USB port can only provide 2.5W power supply.

FEATURES

Peristaltic pump

- Low noise,

- Low cost,

- Simple structure,

- Easy to maintain,

- Three rotors with moderate pulsation,

- Non-toxic and pollution-free

Driver board

- Gravity 3Pin digital connector, plug and play

- Servo PPM control signal, driving easily and compatible with Arduino, Raspberry Pi, micro: bit and other controllers.

SPECIFICATION

Driver Board

- Input Voltage: 5V-6V

- Maximum Continuous Operating Current: 1.8A

- Peak Current: 2.5A

- Quiescent Current: <1mA (No PPM Signal Input)

- PPM Signal Resolution: 1us

- Positive Pulse Width of the PPM Signal: 500us-2500us

- Forward Pulse Width Range: 500us-1400us (500us: max forward speed)

- Stop Pulse Width Range: 1400us-1600us

- Inverted Pulse Width Range: 1600us-2500us (2500us: max inverted speed)

- PPM Frequency: 50Hz (Servo Control Signal)

- Connector: Gravity PH2.0-3P

- Size: 27.4 x 28.7 mm/1.08 x 1.13 inches

Peristaltic Pump

- Motor: DC Motor

- Rated Voltage: 6V

- Rated Power: 5W

- Tube Material: BPT

- Tube Specifications: inner diameter 2.5mm, outer diameter 4.5mm

- Pump Head Material: Engineering Plastics

- Pulsation: Three Rollers, Small Pulsation

- Flow: ≥45ml/min (almost 1ml/s)

- Working Conditions: ambient temperature 0 ~ 40 ℃, relative humidity <80%