

Shenchen Peristaltic Pump

Manual of Lab M Series



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Baoding Shenchen Precision Pump Co., Ltd

 **Important Information:**

- Please read the instruction before operating the product.

 **Warning:**

- Tubing may have crack due to wear. It results in the overflow of fluid from tubing. In that time human body and instruments may be hurted. Must check usually and change tubing in time.
- Please connect directly the power line to the wall socket, and avoid using the extension electric line.
- If power line or plug have wear and other damage, please unplug it, holding the plug, not the line.
- If following situations happened, please turn off the electric power and unplug the plug, holding the plug, not the line.
 1. Fluid splash on the pump.
 2. You think the pump need to maintain or amend.
- The customers' power socket must have ground wire, and have reliable grounding.

Catalog

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LabM Series Product Introduction:

Basic model peristaltic pump with the super silent performance have become the best choice for laboratory, also widely used for analytical instrument. The speed can be adjusted by membrane keypad also can be controlled by external control. Power down memory function. 60 seconds test function, easy for users test and calibrate the flow rate. 7 different external control way.

Suitable Pump Head:

Easy Load Pump Head: YZ1515x, YZ2515x;

Multichannel pump head: MC series (MC1-MC12);

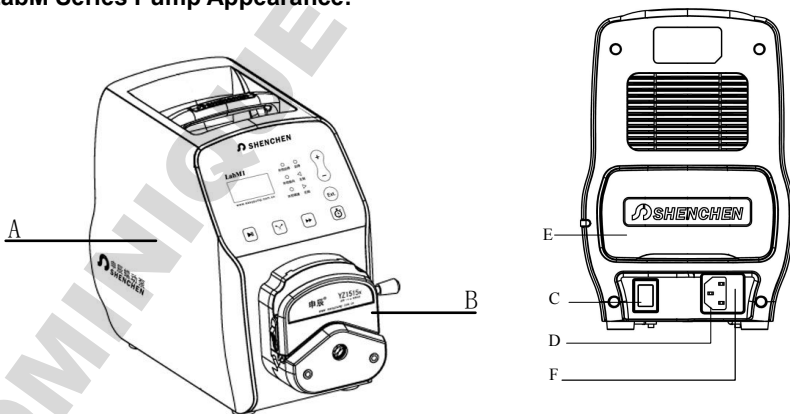
Multichannel pump head: DG series (DG1-DG12);

Standard pump head: SN series (SN15, SN25).

Typical Application:

University and research laboratories,
Ion chromatography, titrators.

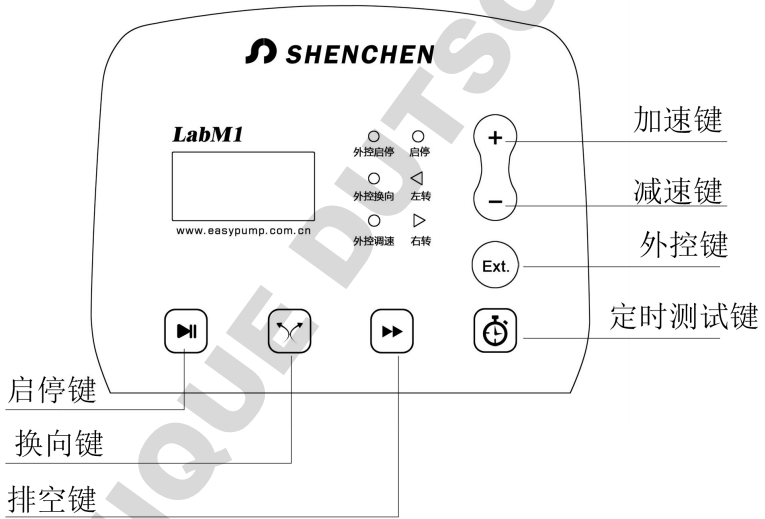
LabM Series Pump Appearance:





- A — Drive
- B — Pump head
- C — Power switch
- D — Power socket
- E — External control interface
- F — Fuse

LabM Operating Manual



Operating Instruction :

Start/stop button

Control drive running and stopping. Pressing the key of start/stop one time, drive running state will change one time. When drive run, start/stop display



indicator light; when drive stop working, start/stop display indicator black out.

Keep pressing this button can set the RS485 ID. When you press this button over 5 seconds, the display digital will twinkling, then press increase or decrease to set the request address. Then press the start/stop button again, the address effective.

Change direction button

Press this button to change the pump working direction. When the pump running left, the left running light on; when the pump running right, the right running light on.

Increase/decrease button

This button used for increase or decrease the motor speed. The motor speed increase or decrease 0.1rpm when you press the increase /decrease button. Keep press this button, the speed increase or decrease fast, to short the adjust time.

Full speed button (Prime)

Under internal control mode, pressing full speed button, pump runs under the full speed. In this time, it shows "Full" state that finish emptying quickly, filling or washing operation; pressing full speed button again, pump will return to the state before full state. Under the full mode, pressing start/stop button also stop drive from working.

External control button

The button of external control mode only effect when the pump stop working. It is used for change different kinds of external control modes. It has 7 kinds of modes.

Internal control mode (the indicator of external control start/stop, cw/ccw and speed are all dark).

2) The only mode of external control start/stop (the display indicator of external control start/stop is light; the display indicators of external control cw/ccw and speed are dark).

3) The only mode of external control cw/ccw (the display indicator of external control cw/ccw is light; the display indicators of external control start/stop and cw/ccw are dark).

4) The only mode of external control speed (the display indicator of external control speed is light; the display indicators of external control start/stop and cw/ccw are dark).

5) The mode of external control start/stop and cw/ccw (the display indicators of external control start/stop and cw/ccw are light; the display indicator of external control speed is dark).

6) The mode of external control start/stop and speed (the display indicators of external control start/stop and speed are light; the display indicator of external control cw/ccw is dark).

7) The mode of external control cw/ccw and speed (the display indicators of external control cw/ccw and speed are light; the display indicator of external control start/stop is dark).

8) The mode of external control start/stop, cw/ccw and speed (the display indicators of external control start/stop, cw/ccw and speed are all light).

Note: When the display indicator of external control is light, the relevant button of internal function will be shielded

Timer button

The timer button only work when the internal control mode. Press the timer

button, the pump will working 60 seconds with current speed (default time is 60 s), and then stop working automatically. Pree the timer button over 5 seconds, the display digital will twinkle, pree increase/decrease button to set the timer time. Usually used for calibration and test. (if press start/stop button during test, the pump will stop running. The pump will reclock when test again.)

LabM Technical Specification

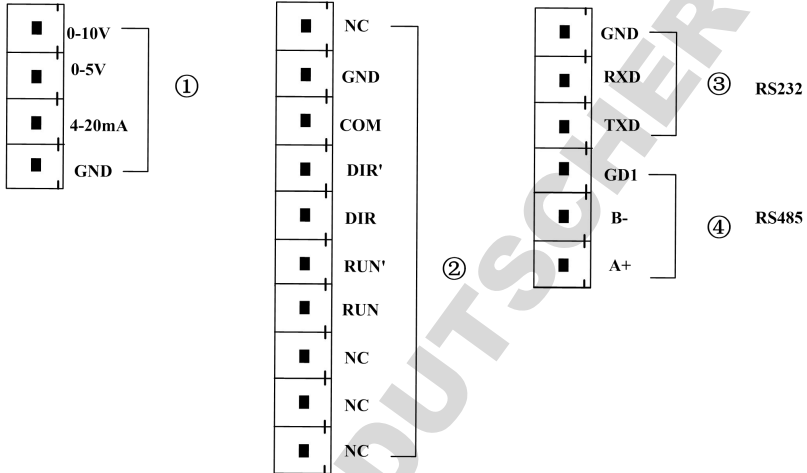
- Speed range: 0.5~600rpm, reversible.
- Speed resolution: 0.1rpm(1~100rpm); 1rpm (100~600rpm) ;
- Control method: Membrane keypad
- External control: TTL level control start/stop and change direction
0-5V/0-10V/4-20mA control speed
- Communication: RS232/RS485 interface. Support standard MODBUS communication protocol.
- Power supply: AC 220V±10%,50Hz/60Hz,
AC110V±10%, 50Hz/60Hz
- Consumption: <50W
- Working condition: Temperature:0~40℃, Relative humidity < 80%
- Pump weight: 4.8Kg
- IP rate: IP31

LabM Main Function and Features

- Membrane keypad control speed, also can be controlled with external control interface. Easy operation.
- Can connect with dispensing controller, reach dispensing function.
- Full speed button, fast filling and empty function.
- Big torque, low consumption.
- Good performance, low noise, working stable, power down memory function.

External control interface

External control interface diagram:



① **Analog signal input port:** when you use the external control, first choose the external control indicator light on. Then the external control is effective.

0-10V: 0V ~10V voltage signal input port.

0-5V: 0V~5V voltage signal input port.

4-20mA: 4~20mA current signal input port.

GND: Analog signal negative port.

Note:

- External control speed default signal is 0-5V voltage signal. If need to use other signal, please contact us. Do not change it by yourself, or the pump will be burned down.
- Please turn off the pump first when you connect the external control.

② **External control start/stop, change direction signal input port:**

When use the external control start/stop, change direction function, please



choose the external control start/stop, change direction mode indicator light on first.

NC: blank pin

GND: Passive signal start/stop, change direction signal common port.

COM: Active signal start/stop, change direction common port.

DIR': Active change direction signal input port (default 24V)

DIR: Passive change direction signal input port.

RUN' : Active start/stop signal input port (default 24V)

RUN: Passive start/stop signal input port.

③RS232 Communication interface definition (option)

TXD: Master send data port, connect with pin3 of DB-9 connector.

RXD: Master receive data port, connect with pin2 of DB-9 connector.

GND: Ground wire, connect with pin5 of DB-9 connector.

④ RS485 communication interface definition(option)

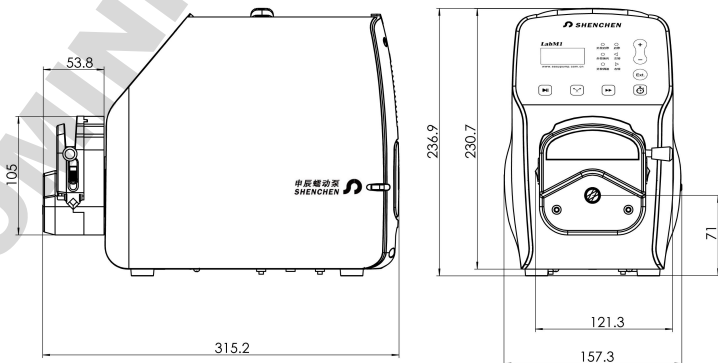
GD1: Ground wire, connect with RS485 transformer GND.

B: 485 communication signal port, connect with 485 transformer B-.

A: 485 communication signal port, connect with 485 transformer A+.

Note: Lab M series pump can connect with foot pedal switch and dispensing controller, if you need, please contact us.

Dimension:





Maintenance

- When pump is not working, please loose the cartridges of pressing the tubing for avoiding changing the shape of tubing because of longtime extrusion.
- Keep the rollers of pump head clean and dry, otherwise it can quicken the tubing wearing, reduce the useful life of tubing and lead the rollers to damage in earlier.
- Pump head can not resist super corrosive liquid. Please pay attention to it when it is using.
- Keep the rollers of pump head clean and dry. If the surface of rollers is not clean, it can quicken the tubing wearing, and reduce the useful life of tubing. If liquid were on the rollers, please dry it. Longtime moisture can damage the rollers.

Warranty and After Sales Service

Products have one year warranty(not including tubing). In the warranty, the products are damaged because of users' wrong operation or other human damages, our company have not responsibility for warranty. Beyond the warranty, our company only receive the costs of maintenance. Refer to all maintenance including in and beyond the warranty, our company can not bear any freight charges because of maintenance.

MADE IN CHINA

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