



Dispensing Peristaltic Pump

LB-11DPP

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1. Safety Measures

- The tubing may have cracks due to wear.
- It results in the overflow of fluid from the tubing.
- In that time the human body and instruments may be harmed frequently by checking and changing the tubing in time.
- Connect the power cord to the wall socket directly and avoid using the extended electric wire.
- If the power cord or plug has worn or other damage disconnect the plug.
- If the following situations happen, turn off the power supply and disconnect the plug. (Hold the plug instead of the wire).
- Fluid splashes on the pump.
- When the pump needs to be maintained or repaired.
- There should be proper grounding.

2. Introduction

Dispensing Peristaltic Pump LB-11DPP is a positive displacement pump with a mechanical keypad for controlling direction and speed. Specially designed pump heads pump out fluids with flow rates based on model type and tubing sizes. The number of channels and rollers ensures durability and performance. It is ideal for dispensing, metering and general transfer of fluids.

3. Features

1. Stainless steel construction
2. 4.3" LCD touch screen displays current motor speed direction and working state
3. Embedded handle for comfortable grip and convenience
4. Ability to preset dispensing volume and time, pause time, copy numbers, and back suction angle
5. Mechanical keypad for controlling direction and speed
6. Equipped with Servo motor drive

4. Specifications

Model No.	LB-11DPP
Flow rate range	0.00166 ml/min – 1330 ml/ min
Speed range	1 rpm – 350 rpm
Dispensing volume range	0.01 ml- 9999.99 ml
Number of channels	2
Number of rollers	3
Dispensing time	0.1 sec – 9999.99 sec
Speed resolution	0.01 rpm
Dispensing volume resolution	0.01 ml
Pause time	0.1 sec – 9999.99 sec
Time resolution	0.01 sec
Dispensing accuracy	<± 0.5 %
Back suction angle	0° - 360 °
IP grade	IP31
Outlet pressure (0.86 mm – 1.0 mm wall thickness tubing)	0.1 Mpa
Outflow pressure (1.6 mm – 2.4 mm wall thickness tubing)	0.1 Mpa – 0.27 Mpa
Standard power supply	220 V ± 10% 50 Hz 220 V ± 10% 60 Hz
Optional power supply	110 V ± 10% 50 Hz 110 V ± 10% 60 Hz
Power consumption	< 50 W
Temperature	0 °C – 40 °C
Relative humidity	< 80%
Dimension	261.4 mm × 157.3 mm × 236.9 mm
Weight	4.40kg

5. Applications

Used in pharmaceuticals, wastewater treatments, cosmetic industry, chemical industry, laboratories, research institutes, food and beverage industry, etc.

6. Instrument introduction

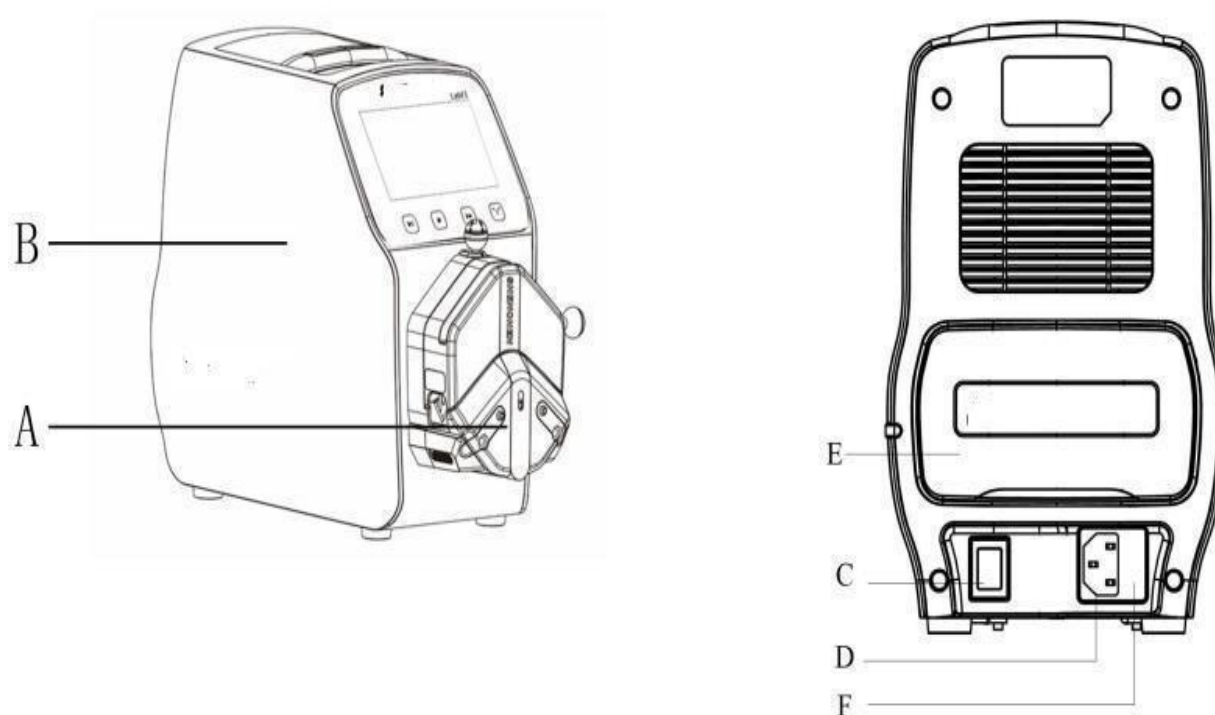


Figure.1

1. Pump head
2. Drive
3. Power switch
4. Power socket
5. External control input port
6. Built-in fuse

6.1 Key panel

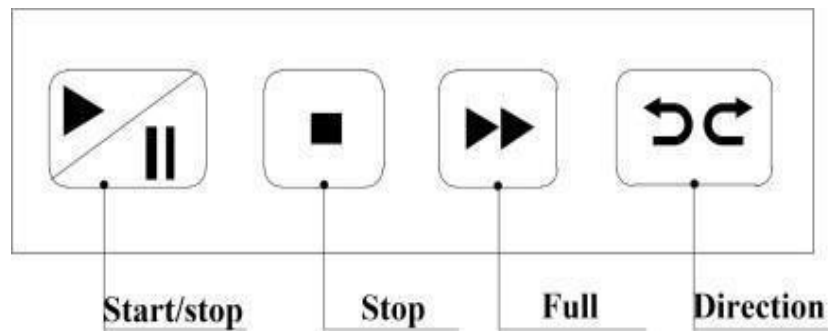


Figure.2

1. **Start/stop button:** After setting the dispensing data, press the Start/Stop button and the pump starts working then press the Start/Stop button again it will pause the current working.
2. After pressing the start/stop button in volume dispensing except for the calibration and monitor button all other buttons on the main interface become grey and cannot be used.
3. In speed dispensing just a calibration button is available and in transferring mode pressing the Start/Stop button pump starts working. It does not have any pause function.
4. **Stop button:** Press the stop button pump stops working and the forbidden status button in the main interface becomes available.
5. **Full speed button:** Keep pressing this button when the pump stops working or is in transmission mode. It will work at full speed and this function can be used for washing the tube or filling liquid.
6. **Direction button:** In stop state or transmission mode press this button once the motor changes running direction.

7. Operations

7.1 Interface composition

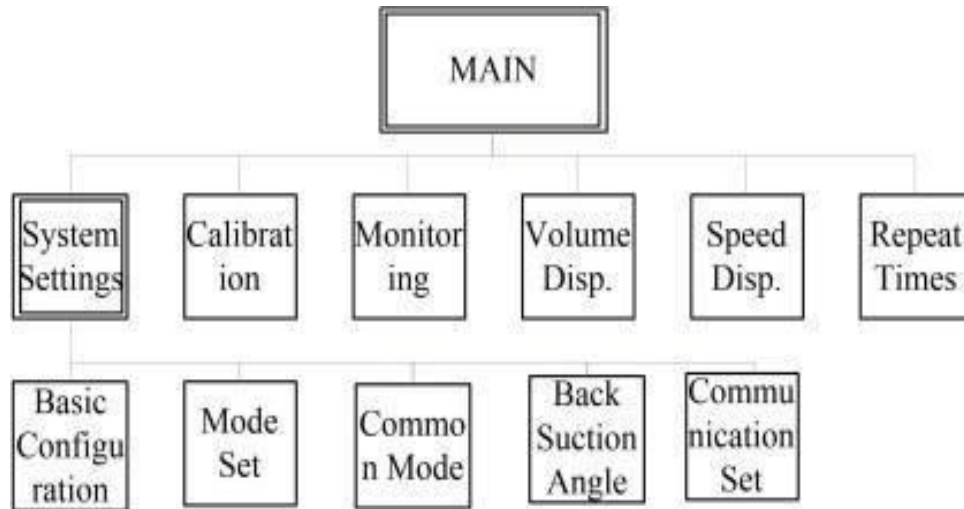


Figure.3

1) Booting interface

After powering **ON** the system click anywhere or wait for 2.5 seconds it will enter the English main interface automatically.

2) Main interface

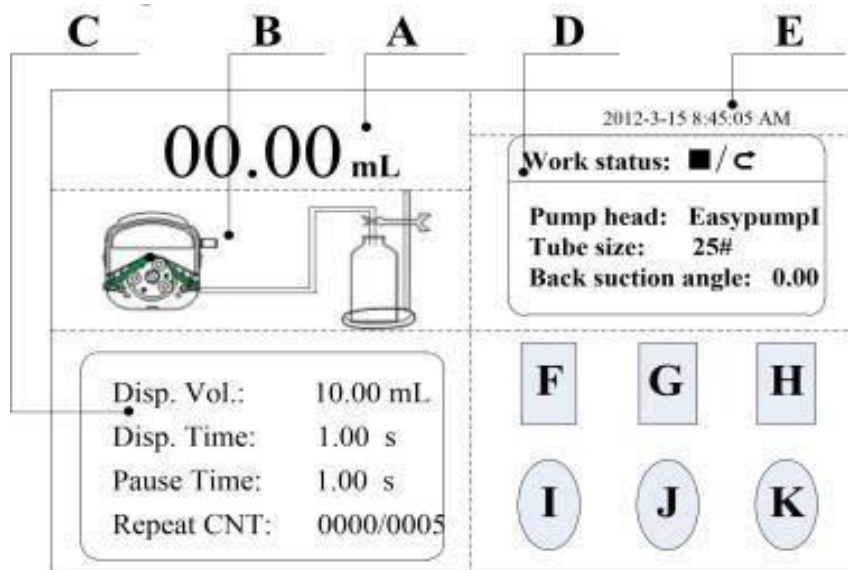


Figure.4

1. Real-time display volume

- In the system settings interface, choose working mode and display data.
- In **Transferring mode** display motor speed or flow rate, change motor speed or flow rate by clicking A area directly.
- In **Dispensing mode** if it is volume dispensing then display the filling volume or total filling number then select the **Start** button to display the current value in real-time.
- In **Speed dispensing mode** displays the current motor speed or total filling numbers.

2. Real-time dynamic display

- Displays the dispensing and transferring state in real-time, animation shows monitor results.
- Click the pump head to display the SN code and version of this pump.

3. Real-time parameter display

- In **dispensing mode**: Display the dispensing volume (Dis. Volume mode) or dispensing speed (Dis speed mode), current dispensing time count down, current pause time count down, copy number
- In **Transferring mode**: Display the current transferring total volume and current working time. The total transferring volume maximum is 9999L. The current working time maximum is 9999 hours. If each one of them reaches the limit, both data will go back to zero. Also, can set the data back to zero in the system setting.

4. Setting parameter display

This area displays the current working state, pump head, tubing size, and other parameters.

5. Date and time display

Display the current date and time and click "E" to revise it.

6. System setting buttons

Press this button to enter the system setting interface including basic configuration, mode setting, communication setting, back suction angle, and common mode

7. Flow calibration button

Press this button to enter the calibration interface

8. Real-time monitor button

- Press this button to enter the monitor interface, you can check the current setting flow rate, motor speed, and dispensing efficiency here.
- The monitor button is forbidden to be used in the dispensing mode of the speed dispensing

9. Volume dispensing button

Press this button to enter the volume setting interface. If in transferring mode, it is forbidden.

10.Speed dispensing button

Press this button, and the numerical keyboard comes out, input the dispensing speed. If in transferring mode, it is forbidden.

11. Copy numbers button

- Press this button, and the numerical keyboard comes to input the copy numbers.
- If input '0', the copy number is unlimited. In transferring mode, it is forbidden

7.2 Basic configuration interface

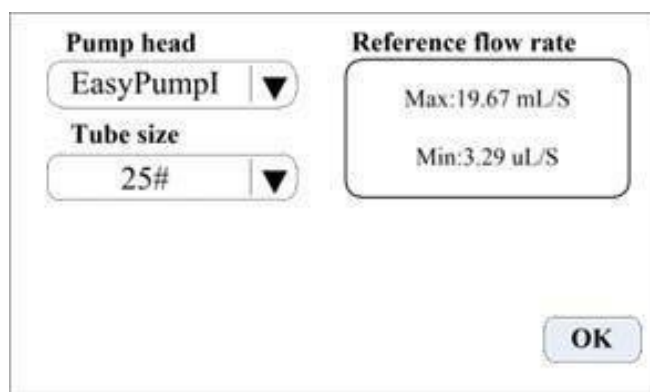


Figure.5

- In the main interface, click the **System settings** button, click the **Basic Configuration** button, and enter the basic configuration interface. Click pump head, and tubing size to select the correct pump head model and tubing size.
- The reference flow rate area displays the maximum and minimum flow rates of the current pump head and tubing.
- For example, the pump comes with two EasyPum pI, and the output connects with a Y-type connector to one channel, then when choosing the pump head need to select 2*Easypum pI, as in the below picture.

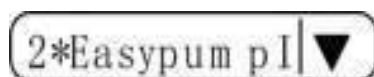


Figure.6

- In other cases, such as the pump comes with one pump head EasypumpI, or with two EasypumpI used as two channels, or with 3 or 4 EasypumpI pump heads, need to select a single pump head EasypumpI, as in the below picture.



Figure.7

1) Mode setting interface

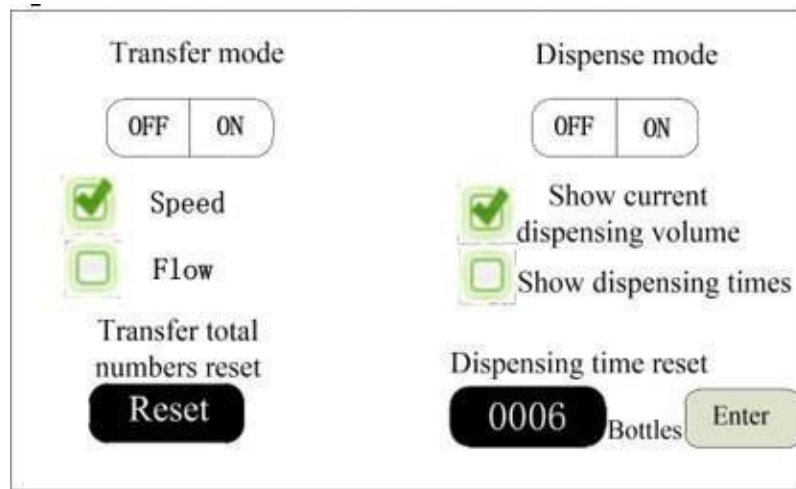


Figure.8

- Users can choose transferring mode or dispensing mode freely according to demands.
- In dispensing mode, choose to display the filling volume or copy numbers in the main interface.
- The current total number of dispensing can be cleared manually, and it will be cleared automatically after the maximum count reaches 9999.
- In transferring mode, choose display motor speed or flow rate; click the “Reset” button, and you can manually clear the total amount of transmission. And the total running time will be cleared together.

2) Back suction angle setting interface

- Click the System Settings button on the main interface, click the Back Suction Angle button, and then enter the Back Suction Angle setting interface.
- Click the **Setback suction angle** button the numerical keyboard will come out input the back suction angle and click the **OK** button click the **OK** button to the system setting interface and the back suction angle range is 0- 360°.



Figure.9

3) Common mode interface

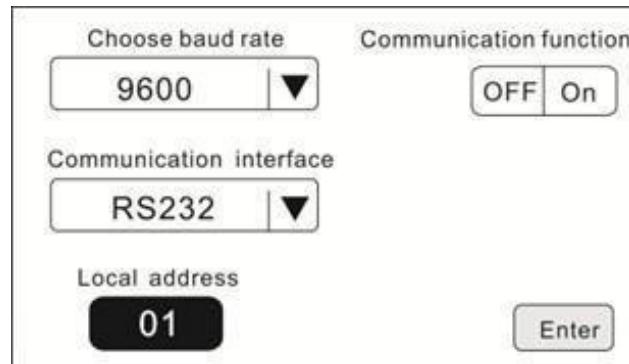
Pump Head	Tube	Disp. Vol.(ml)	Disp. Time(s)	Pause Time(s)	Back Suction Angle(°)
EasyPump1	14#	2	1	2	0
EasyPump1	16#	7	1	2	0

Navigation buttons: < Add Del. Clear Calling Cancel >

Figure.10

- Click the **system setting** button in the main interface then click the **Common mode** button (it is forbidden to use in dispensing speed mode to enter the common mode interface).
- **Add button:** Click this button to increase to one common mode. In dispensing mode click the **Add** button, it comes out a window and asks whether to add the current setting into common mode. Click 'Yes', then add this mode to the common mode. Maximum can save 60 common modes.
- **Delete button:** Choose one common mode, click the **Delete** button, and then delete this mode.
- **Clear button:** Click this button, come out a window ask whether clear all data, click 'Yes', clear all modes.
- **Calling button:** Select one common mode, click the **Calling** button, then go back to the main interface. The dispensing parameters are the one mode just selected.
- **Cancel button:** Click this button back to the main interface.
- **Page Up/Down Button:** Can check the previous page or the next page.

4) Communication setting interface

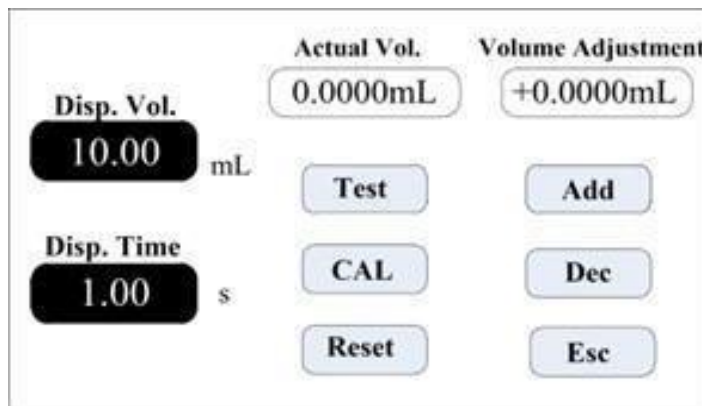


The screenshot shows a communication settings menu. It includes a 'Choose baud rate' dropdown set to '9600', a 'Communication function' toggle switch set to 'OFF', a 'Communication interface' dropdown set to 'RS232', and a 'Local address' input field set to '01'. An 'Enter' button is located at the bottom right.

Figure.11

- Users can select the baud rate and communication interface RS232/RS485. A local address can be any number between 1 and 32.
- For other parameters, kindly see the protocols for detailed instructions.

5) Flow rate calibration interface



The screenshot shows a flow rate calibration interface. It displays 'Disp. Vol.' as 10.00 mL and 'Disp. Time' as 1.00 s. To the right, there are fields for 'Actual Vol.' (0.0000mL) and 'Volume Adjustment' (+0.0000mL). Below these are buttons for 'Test', 'Add', 'CAL', 'Dec', 'Reset', and 'Esc'.

Figure.12

- **In volume dispensing mode**, calibration interface data: **dispensing volume** and **dispensing time** (When in speed dispensing mode, here shows the **Disp. speed** and **Disp. time**) is the data set in the main interface before.
- **In transferring mode**, **dispensing volume** is the current flow rate refers to dispensing time. Click **Dispensing time** to change the calibration volume.

6) Real-time monitor interface

- In dispensing mode, the monitor interface is below.

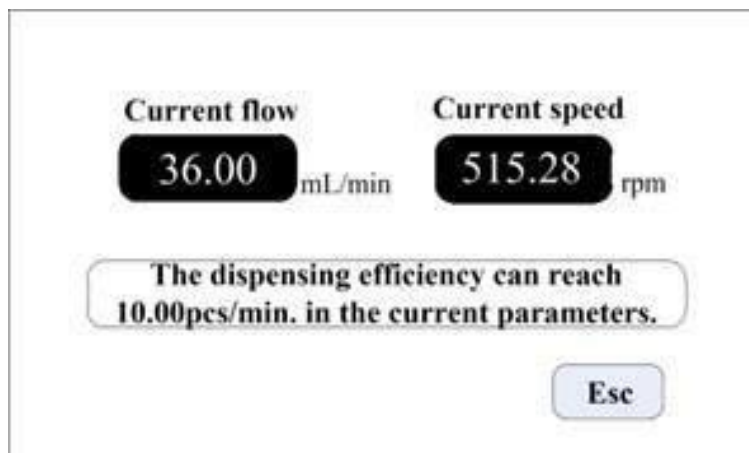


Figure.13

- Click the **Monitoring** button in the main interface to enter the monitor interface and check the current flow rate, motor speed, and dispensing efficiency. (In speed dispensing mode, it is forbidden)



Figure.14

7) Volume dispensing interface

- Click the **Volume dispensing** button on the main interface to enter the dispensing volume setting interface.
- First turn **ON** the volume dispensing function then enter other parameters after the parameter is entered click the **OK** button to return to the main interface.
- In Volume Dispensing mode, the monitor interface is as below.

Dispensing Peristaltic Pump LB-11DPP

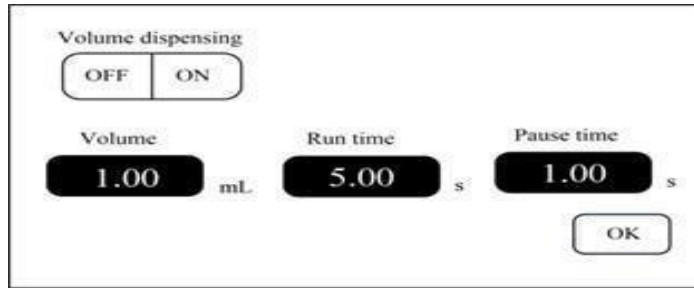


Figure.15

8) Speed dispensing interface

- In Speed Dispensing mode, the monitor interface is below
- Click the **Speed dispensing** button on the main interface to enter the dispensing speed setting interface.
- First turn **ON** the Speed Dispensing function, then enter other parameters. After the speed and run-time parameters are entered, click the **Test** button, and the machine will run on time according to the setting motor speed and run time.
- Click OK button to return to the main interface.

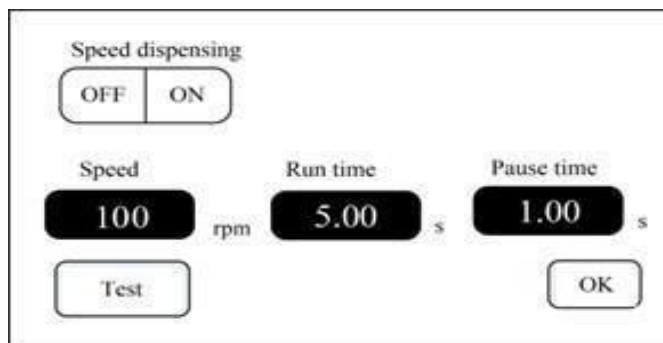


Figure.16

1. Date and time setting interface

Click the **Date and Time** display on the top right corner and enter the date and time setting interface below.



Figure-17

7.3 Calibration process:

- Click the **Test** button to start the test, and display the countdown **dispensing time**, it will stop automatically, and the numerical keyboard comes out, and you can input the actual dispensing volume.
- After inputting the actual dispensing volume, it will ask whether to continue the test (suggest 3 times), choose '**YES**' and it will test again; choose '**NO**', back to the calibration interface.
- After several tests, the actual dispensing volume display area displays the average volume, click the **Calibration** button, and display calibrate successfully.
- If request higher accuracy, you can use the adjust function, click **Add** or **Dec** button, micro-adjust the dispensing volume, and meet high accuracy dispensing. Click the **Reset** button and restore to the factory default calibration parameters.

7.4 Online micro-adjust dispensing volume process

- If the dispensing volume is not correct during working, this function can micro- adjust the volume online without affecting the production line.
- Click the **Calibration** button on the main interface and enter the flow calibration interface.
- Now only the **Add**, **Dec**, and **Esc** buttons can be used, other buttons are forbidden
- Click the **Add** or **Dec** button to adjust the dispensing volume.
- Click the **Reset** button, and the data goes back to the factory default data.

7.5 External control interface

- Click **the Set Date** button, the numerical keyboard comes out, input the **Year**, setting year range is 1970-2099.
- After inputting the year, click confirm to set the month and day.
- Click **the Set Time** button, the numerical keyboard comes out, and input the hour, minute, and second in sequence.

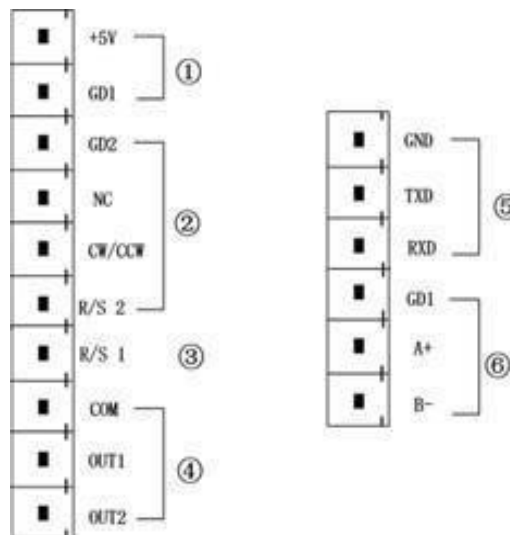


Figure-18

1. Inter + 5VDC output
2. **External control direction, start/stop signal input terminal:** Active signal input (5-24VDC)
3. **GD2:** External control signals common input terminal.
4. **NC:** External control full-speed signal input (Run at full speed at high level, stop low level)
5. **CW/CCW:** External control direction signal input (Signal rising edge valid)
6. **R/S2:** External control start signal input (Signal rising edge valid)
7. **R/S1:** External control start/stop signal input terminal, passive signal input.
8. This terminal can connect with a passive switch or foot pedal switch.
9. Set the validity of this input terminal in the external control setting interface foot switch option.
10. External control cable

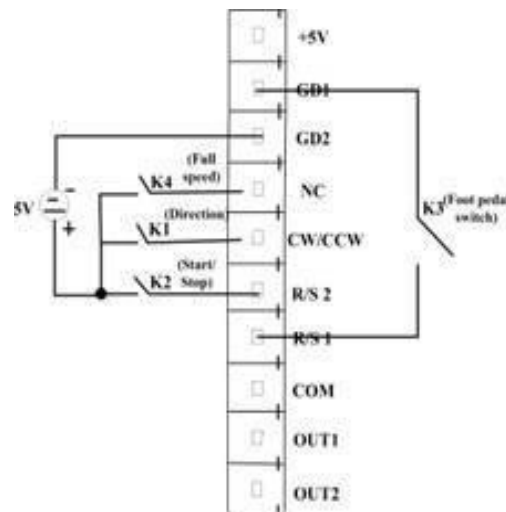


Figure.19

11. Disconnect K2 after a short connection, and the motor starts working, disconnect again after a short connection, pump pauses working.
12. Short-circuited K4, the motor runs at full speed, disconnect it, and the motor stops running.
13. Each time disconnects K1 after a short connection, the motor changes its working direction.
14. Disconnect K3 after a short connection, the motor starts working. Disconnect again after a short connection, the motor stops working.

7.6 Motor running status output

- The output motor running status is shown below
- If connected with relays, when the motor runs, K1 connects; when the motor stops running, the K1 disconnects.

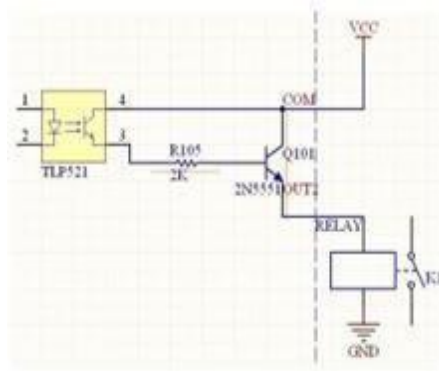


Figure.20

1) RS232 communication

- Choose RS232 in the Communication setting interface, this terminal is active.
- **GND:** Communication ground terminal.
- **TXD:** Master sends, peristaltic pump receives signal terminal.
- **RXD:** Peristaltic pump sends, the master receives signal terminal.
- RS232 Communication Interface Connection Diagram as below.

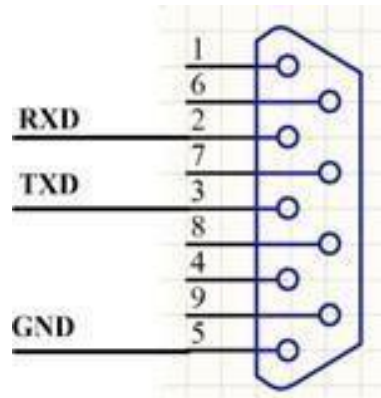


Figure.21

2) RS485 Communication Interface

- Choose RS485 in the communication setting interface, this terminal is active.
- **GD1:** RS485 signal ground
- **A+:** Connect RS485 A+ terminal
- **B-:** Connect RS485 B- terminal

8. Maintenance

- Check for leakage, and correct faults which can appear.
- Clean liquid overflowed from the pump in time
- Turn **OFF** the power supply and unplug the power socket (Hold the socket instead of the power cord) when liquid splashes on the pump. Check whether liquid flows into the machine.
- The foot pedal switch and other external control plugs must be connected or disconnected the power-off status to prevent the external control interface from being burned.
- The user's power socket must have a ground wire and have reliable grounding.
- This product has no waterproof measures so, take protective measures when using it in a moist environment.
- This product does not have special certification such as medical certification. Self-certify when it needs to be used in special fields such as in medical and military activities.
- If the pump is not used for a long time, clean it and keep it in a dry and ventilated environment.



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