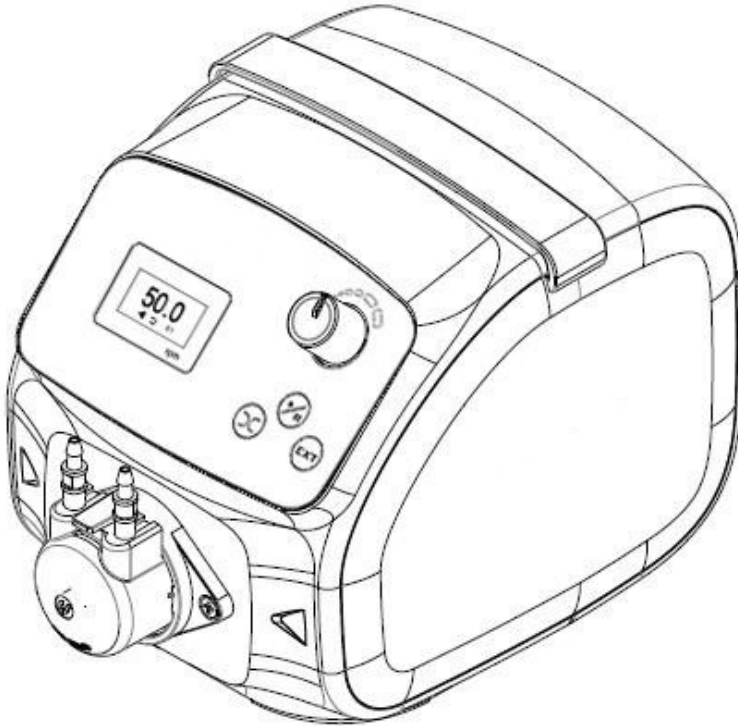


INSTRUCTION MANUAL



LLG-uni*PERISTALTIC*PUMP 1

Please read the manual carefully before use, and follow all operating and safety instructions!

1. Product Introduction	3
2. Installation instruction	4
3. Operation instruction	5
3.1 Product Appearance	5
3.2 Screen and keypad	6
3.3 Communication interface	7
4. Dimension drawing	7
5. Specifications	8
6. Ordering Information	9
7. Warranty	10

Warning!

- The tubings may have cracks due to wear. This could result in the overflow of fluid from tubing and may cause damages. So the user must check regularly and change tubings in time.
- Connect the power cable directly to the wall socket and avoid using an extension cable.
- If the power line or plug is damaged, please hold the plug to unplug it, not hold the line.

1. Product Introduction

LLG-uni*PERISTALTICPUMP* 1 uses a step motor, has a small size and low noise emission. It adopts an OLED high-definition display and has an external control interface for remote control. The pump can communicate with computers and is used with a variety of analytical instruments.

LLG-Labware offers 4 different pump heads with different inner diameter of the PharMed® tubing. Each pump head contains a short piece of tubing with 1, 2, 3 or 4 mm inner diameter and an appropriate tubing connector to connect the customers tubing. Part numbers of the pump heads can be found at the end of the manual.

Features:

- Easy installation of pump head, stable flow rate.
- OLED high-definition display
- Digital speed control knob
- Power down memory function
- Scope of supply:
LLG-uni*PERISTALTICPUMP* 1,
pump head, tubing with connector
ID = 3 mm, OD = 5 mm

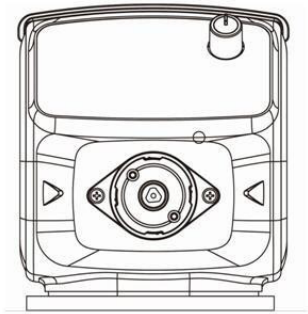
2. Installation instruction

Micro pump head installation and adjustment.

1. Put LLG-uniPERISTALTICPUMP 1 on the table.
2. Take off the pump head. When used for the first time, the pump head has been assembled. Do not remove the assembled roller in the pump head or pull the hose that is placed in the pump head.

Please note:

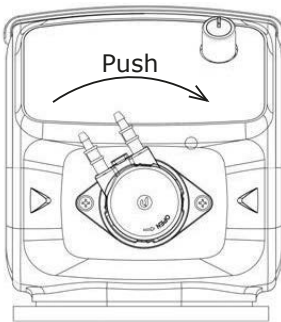
If the rollers and hoses are improperly placed, it will affect the service life of the hoses and the use of the pump. When the hose reaches the end of its life, it is time to replace it. When assembling the pump head after replacing the hose, the hose should be placed in the middle of the roller.



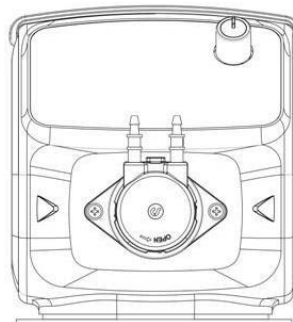
Picture 1:
Original status



Picture 2:
Pump head



Picture 3:
Installation



Picture 4:
Finished

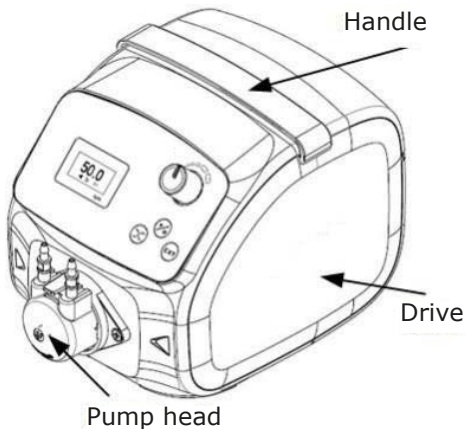
- Put on the pump head. At the factory, the direction of the rotary joint of the pump head and the pump have been matched. Align the pump head hose joint direction at about 11 o'clock and gently press it into the pump head base.
- Rotate the hose connector clockwise to the 12 o'clock direction after pressing.

Please note:

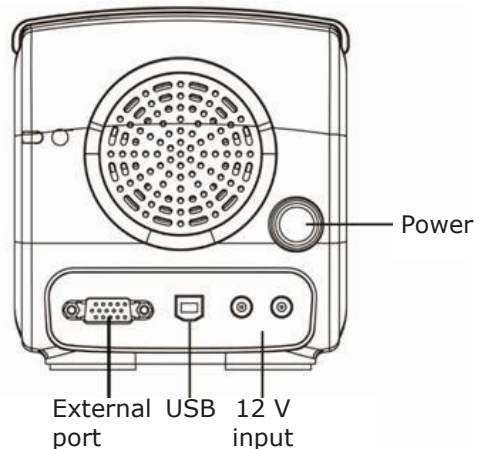
If the direction of the pump head and the direction of the rotary joint of the pump are not matched, adjust the pump speed to 20 rpm, adjust the hose joint direction of the pump head to about 11 o'clock, and slowly press it into the pump head base. The rotary joint is matched with the pump head roller bracket connection hole and rotated together to completely press the pump head into the pump head base and rotate clockwise to 12 o'clock direction.

3. Operation instruction

3.1 Product Appearance



Picture 5

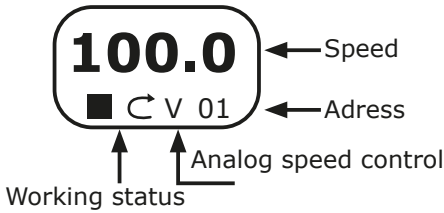


Picture 6

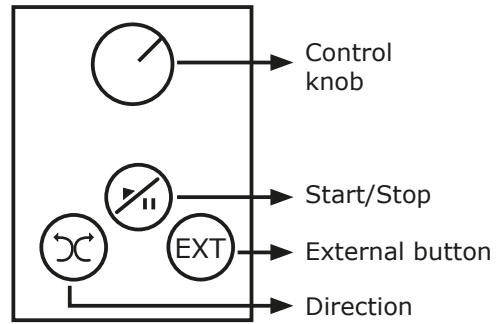
LLG-uniPERISTALTICPUMP 1 peristaltic pump has an ABS plastic casing that is anti-static and prevents corrosion. On the back, there are a fan, a power switch, a power interface, a USB interface and an external control interface.

The two power connectors on the back can be cascaded with up to three other LLG-uniPERISTALTICPUMP 1 pumps. In this case, please select the power adapter with power supply greater than or equal to 12V/3A.

3.2 Screen and keypad



Picture 7



Picture 8

The LLG-uniPERISTALTICPUMP 1 pump has a mechanical keypad with a life of 300,000 cycles to fully meet the needs of various environments.

1. **Digital knob:** Turn the speed control knob to the left or right to decrease or increase the speed. The speed range is 0.1-150 rpm.
2. Continuously pressing the knob will let the motor run at the highest speed in the current direction. The display shows the full speed and maximum speed. Release the button to stop, the screen displays the stop state and the original speed.
3. Press the knob in the stop state to enter the RS485 communication address adjustment. The two digits in the lower right corner of the screen flash, turn the knob left or right to decrease or increase the communication address. The address adjustment range is 1-32. After adjusting, press the knob again to exit the address adjustment state.
4. **Start/stop button:** Change the motor working status. Press once the pump will start, press again the pump will stop
5. **Direction button:** Change the running direction of the motor. Press the button once and change the running direction of the pump. Press the button again to change the direction again.

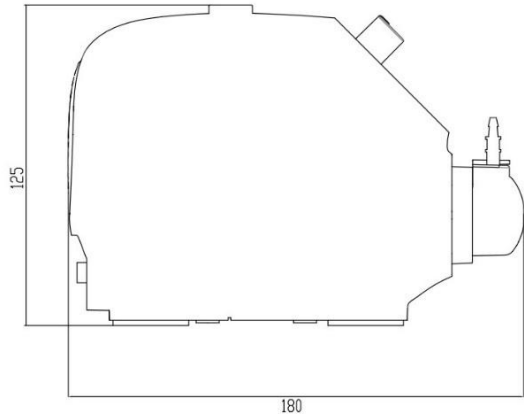
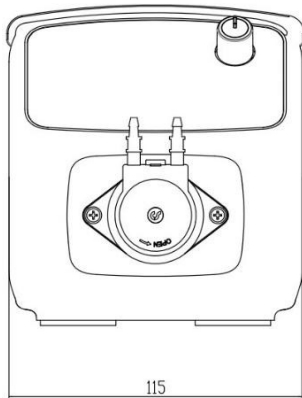
3.3 Communication interface

We use standard modbus protocol (RTU mode). Communication modes are RS485 and USB. You can control the start/stop, direction and motor speed. You can also read the current running status.

- USB communication mode is enabled with a USB cable from the factory, connected to the computer through the pump USB interface.

- For RS485 communication mode connect the A+ pin (5 pin) together with T/R+ pin of the RS485 module. Connect the B- pin (4 pins) together with T/R- of the RS485 module.

4. Dimension Drawing



5. Specifications

Model	Peristaltic Pump LLG-uniPERISTALTICPUMP 1	
Adaptor	Input: AC100-240V, 50/60Hz Output: DC12V/1A	
Power	<10 W	
Display	OLED screen	
Operation mode	Mechanical keypad	
Motor speed	0.1-150 RPM	
Flow rate	0,0043 - 63,69 ml/min (depends on tubing size)	
Working environment	Temperature	0-40 °C
	Relative humidity	<80 %
Dimension	180 x 115 x 125 mm	
Weight	800 g	

Tubing		Speed Range (rpm)	Flow Rate (mL/min)
Tubing Art. No.	ID x WallThickness (mm)		
6.263 546	1 x 1	0.1 ~ 150	0.0043 ~ 6.45
6.263 547	2 x 1		0.014 ~ 21.45
6.263 548	3 x 1		0.03 ~ 47.25
6.263 549	4 x 1		0.04 ~ 63.69

6. Ordering Information

Cat No.	Descriptions
6.263 540	Peristaltic Pump LLG-uni <i>PERISTALTICPUMP</i> 1, with EU plug, pumphead with PharMed® tubing ID = 3 mm
6.263 541	Peristaltic Pump LLG-uni <i>PERISTALTICPUMP</i> 1, with UK Plug, pumphead with PharMed® tubing ID = 3 mm
6.263 542	Pumphead for LLG-uni <i>PERISTALTICPUMP</i> 1 with PharMed® tubing ID = 1 mm, OD = 3 mm
6.263 543	Pumphead for LLG-uni <i>PERISTALTICPUMP</i> 1 with PharMed® tubing ID = 2 mm, OD = 4 mm
6.263 544	Pumphead for LLG-uni <i>PERISTALTICPUMP</i> 1 with PharMed® tubing ID = 3 mm, OD = 5 mm
6.263 545	Pumphead for LLG-uni <i>PERISTALTICPUMP</i> 1 with PharMed® tubing ID = 4 mm, OD = 6 mm
6.263 546	PharMed® tubing ID = 1 mm, OD = 3 mm, with connector (+tube clip) for LLG-uni <i>PERISTALTICPUMP</i> 1
6.263 547	PharMed® tubing ID = 2 mm, OD = 4 mm, with connector (+tube clip) for LLG-uni <i>PERISTALTICPUMP</i> 1
6.263 548	PharMed® tubing ID = 3 mm, OD = 5 mm, with connector (+tube clip) for LLG-uni <i>PERISTALTICPUMP</i> 1
6.263 549	PharMed® tubing ID = 4 mm, OD = 6 mm, with connector (+tube clip) for LLG-uni <i>PERISTALTICPUMP</i> 1

7. Warranty

This product is warranted to be free from defects in material and workmanship for a period of three (3) years from date of purchase.

This warranty is valid only if the product is used for its intended purpose and within the guidelines specified in this instruction manual. This warranty does not cover damage caused by accident, neglect, misuse, improper service, natural forces or other causes not arising from defects in original material or workmanship. This warranty does not cover any incidental or consequential damages, commercial loss or any other damages from the use of this product.

The warranty does not cover damage to paint or finish and defects or damages caused by physical and chemical abuse or normal wear and tear. The warranty is invalidated by any non-factory modification, which will immediately terminate all liabilities on us for the products or damages caused by its use. The buyer and its customer shall be responsible for the product or use of products as well as any supervision required for safety. If requested the products must be returned to the distributor in well packed and insured manner and all shipping charges must be paid.

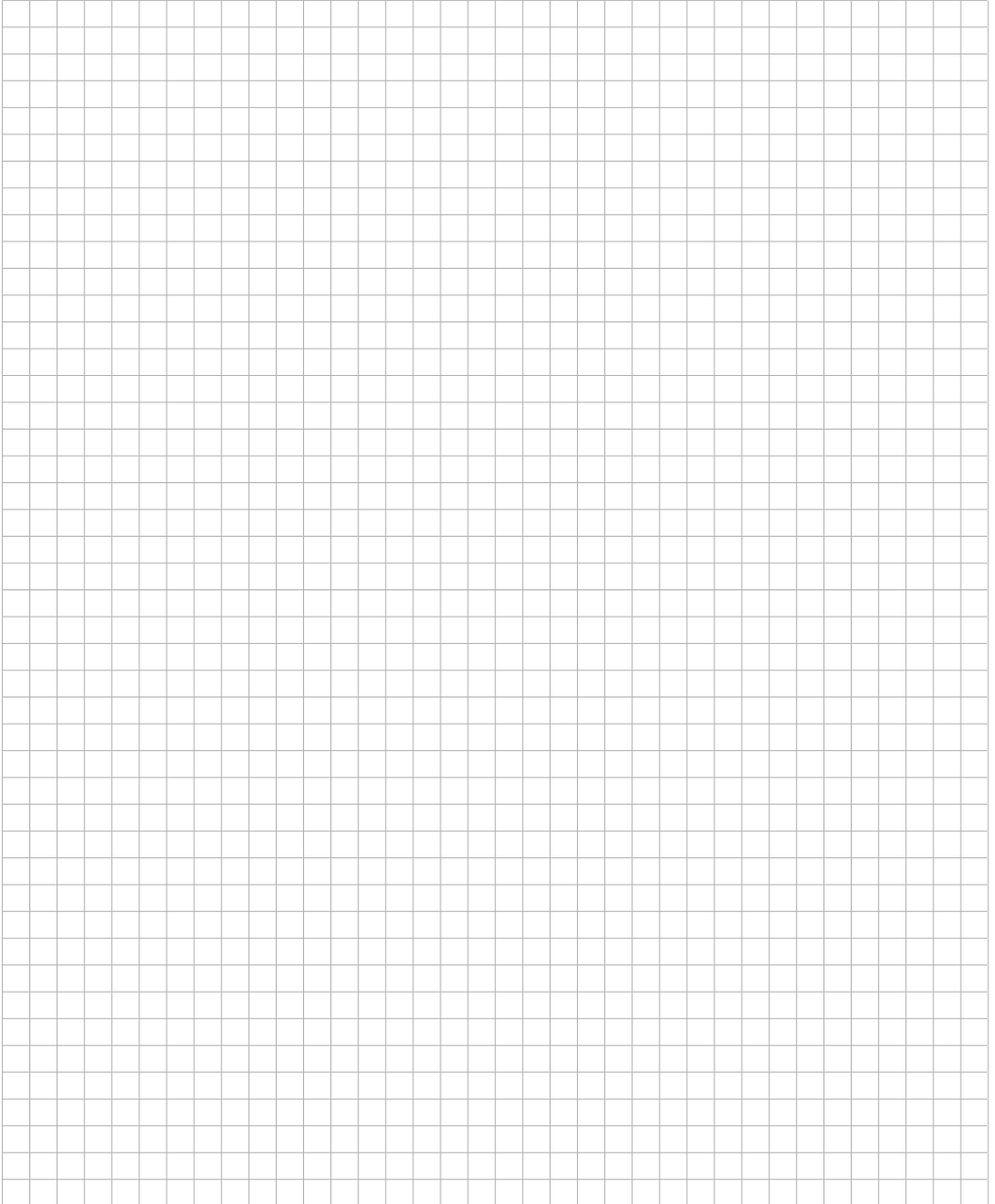
Information on the disposal of electrical and electronic devices in the European Community:

The disposal of electrical devices is regulated within the European Community by national regulations based on the European Directive 2012/19/EU on waste electrical and electronic equipment (WEEE). According to these regulations, any devices supplied after 13.06.05 in the business to business sphere, to which this product is assigned, may no longer be disposed of in municipal or domestic waste. They are marked with the following symbol to indicate this. As disposal regulations within the EU may vary from country to country, please contact your supplier if necessary.

PRODUCT DISPOSAL



In case the product is to be disposed of, the relevant legal regulations are to be followed.





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