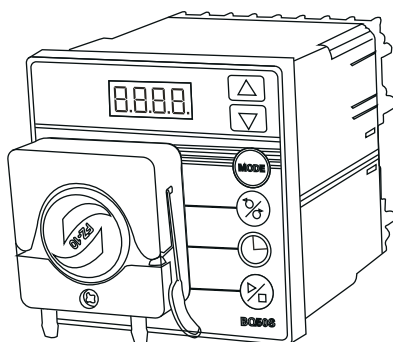


Operation Manual of BQ/S Series of Variable Speed Peristaltic Pump



Safety Caution



Danger: Please use the power supply as the nameplate, or it will damage the equipment!

Please do not remove or remold the equipment, or it will cause malfunction, Even the electrical accident!

If there is repairs and maintenance, please with contact the dealers or the company.

Danger: Fixing and removing the tube, please power- off, prohibit hands and clothes close to the rolling roller.



Warning: Please protect and have a periodic check on the tube, preventing the wear out tube cause the liquid spill.

Warning: Please power off, when connect the external controller or the communication connector.

Warning: Please connect the ground wire to the earth, or there will be electric shock or electromagnetic interference



Warning: Not suitable for medical care.

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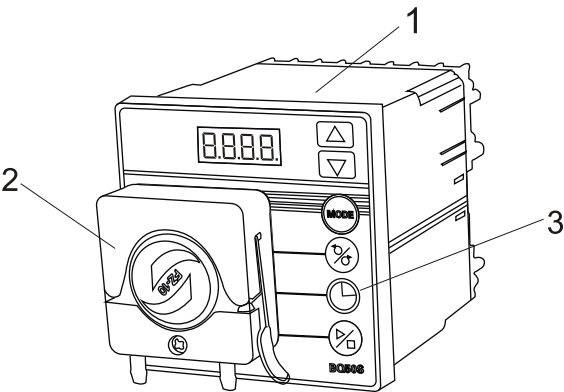
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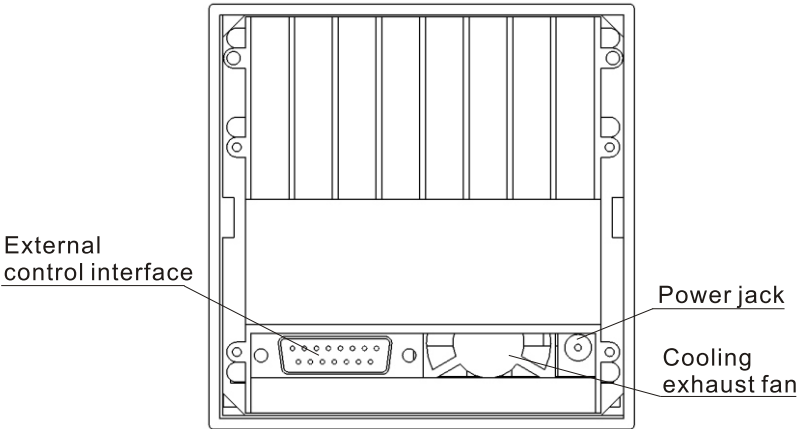
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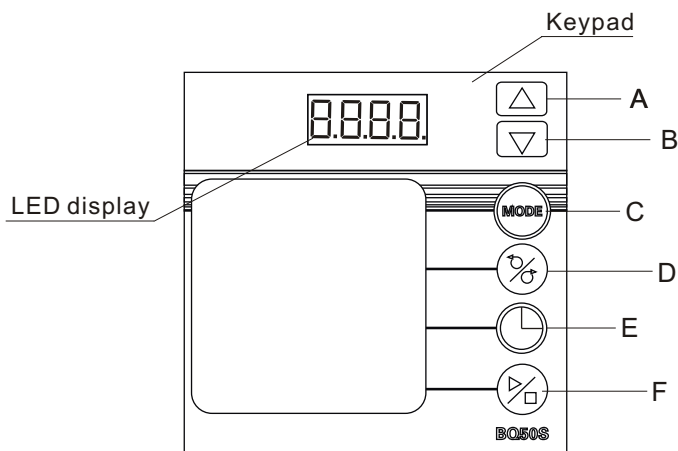
Components and Connectors



- 1.Driver
- 2.pump head
- 3.keypad control panel



Display Panel and Operating Keypads



Keypad operation

- A. Increase speed key: press once, the speed number plus one .long press this button, the speed continuous plus ten.
- B. Decrease speed key: press once, the speed number reduce one, long press this button, the speed continuous reduce ten.
- C. Mode key: control mode change between keypad control and external control, when the motor is working, this key does not work.
- D. Direction key: change the direction of the motor working, has two direction states: positive and negative.
- E. Dispensing key: long press this button can into the distribution function, the pump will turn according to the set time, long press this button into the set time function in the dispensing mode, the digital pipe will display flash at this time.
- F. Start /stop key: control the motor starts and stops. Long press this button into the full speed state, then short time press it, this motor will stop.

◆Digital pipe display introduction

Display current rotate speed and state

22.3 show the current rotate speed is 22.3 rpm.

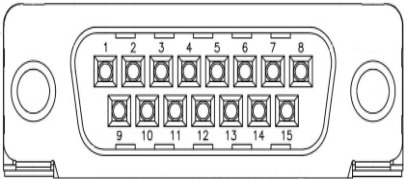
F 10.0 show the dispensing mode, rotate speed is 10 rpm.

E 21.4 show the external control, rotate speed is 21.4 rpm.

FULL show the full mode.

External control interface specifications

DB15 Interface



DB15number	English notes	Instructions
1	ADC-W	Positive pole of external analog input
2	B	Communication interface, B pole of RS485
3	A	Communication interface ,A pole of RS485
4	+24V-W	Input pole of external 24V
5		Without
6	CW-W	Input pole of external control direction signal
7		without
8	COM	External ground power pole
9	AGND	Negative pole pf analog signal input
10	+12V	Output pole of internal +12V power
11	GND	Internal power source pole
12	CW	Without
13	RS-W	Input pole of control start/stop signal
14		Without
15		Without

Operation specification

Preparation Work

- Open the outer packing of the peristaltic pump, check up the accessories whether right or broken, according to the packing list. If you have any problem, please contact the manufacture or agent promptly.
- Have a serious read about the Instruction, put it at hand or fix it in a place for referring at any time.
- Put the pump installation to embedded party hole or placed on a level surface and four corners set paste rubber legs at the bottom. Keeping it over 20cm' distance from the obstacle.

Fix the tube

- Rise up the metal handle on the right of pump head then open the pump head; Use the screwdriver unscrew the screw, take down the press block under the pump head.
- Take 100mm tube ,both ends of the tube insert respectively corresponding one end of converting head in the pump head,
- Set the tube up the roller, put the press cake back, fixed with screws.
- Put the press cake back and put the switch insert slot.

Power connection

- Insert switch power source in electric socket.

Man hand control

- Turn on the switch power source, panel LED digital light
- Adjust the control mode to internal control mode.
- Adjust the rotate speed and turn directions.
- Press the **start/stop** keypad, can adjust continuously the rotate speed and turn direction.
- Long press the start/stop keypad into the full speed turning.

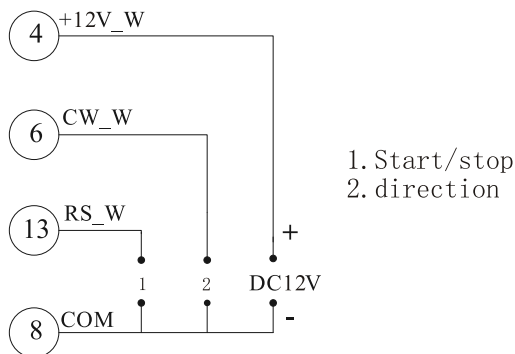
Dispensing function distribution liquid

Set the distribution time

- When the pump at the stop state, long press the distribution key, the digital will flash, enter into time distribution mode.
- In time distribution mode ,press the increase/decrease key to set the time.
Rang: 0.1-999 second.
- Press this distribution key again ,digital pipe stops flash, leave the setting mode ,the system of pump recording the time distribution.Dispensing function
- Press the dispensing button, the pump distribute according to the setting time, press once, distribution once.

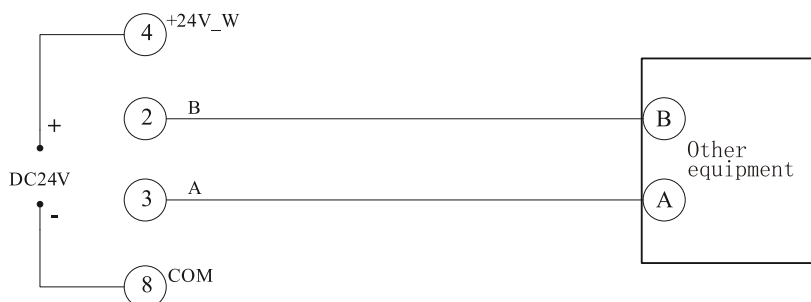
Applying the External Control Signal Controlling

External control



- Connected the power lines according to the above picture.
- Press the Mode keypad, select the External Control Mode, the digital pipe show : E
- When the start/stop signal is high electrical level, the pump in stop state. When it is Low electrical level, the pump will work. If the direction signal is high electrical level, the pump will run as clockwise. If the direction signal is low level, the pump will run as anti-clockwise.

RS485 Communication



- Connected the power lines according to the above picture.
- As long as the other equipments adopt the MODBUS protocol standard ,it can connect with the pump. Specific parameters address and support command reference Company communication technology index.

Malfunction and Maintenance

Guarantee and After-sales service

- The product guarantee period is one year. During the guarantee period, the company would be not responsible for the warranty, if the product has the improper operation or the man-made damage. Over the guarantee period, only the material and labor costs will be charged at cost price

Routine Maintenance

- The rollers of pump head put in grease regularly.
- Check the tube regularly, whether it broken or lose flexibility.
- The cooling exhaust fan in the back of the pump, please don't cover over it lest influence heat dissipation.
- The peristaltic pump cannot be washed in water, if the tube is broken in operation, the liquid in the pump head should be wiped dry or warmed dry. Please do not clean the peristaltic pump and the head surface by the chemical solvent.

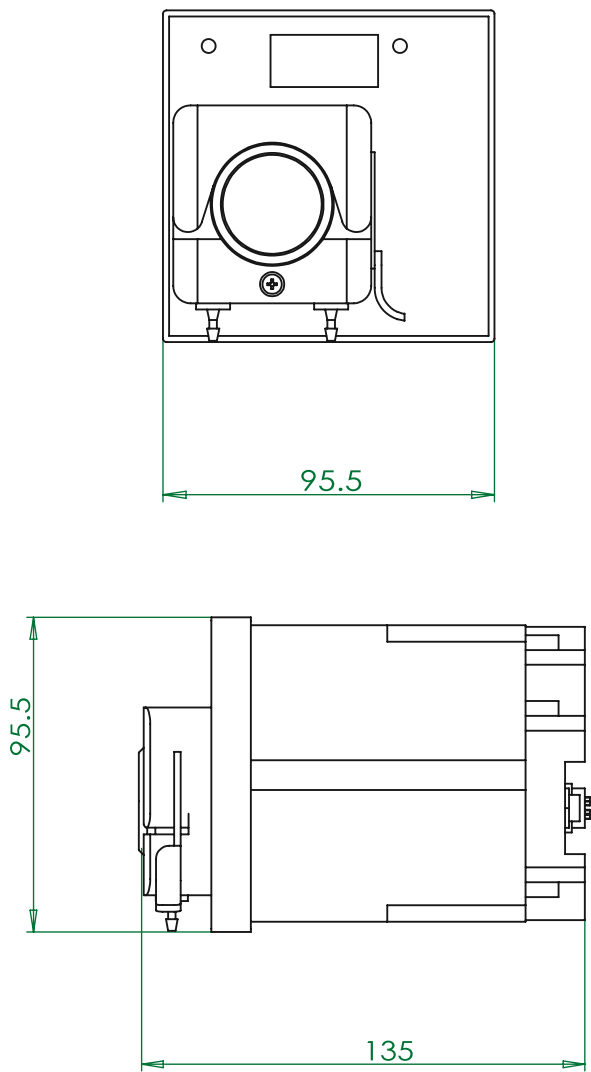
Minor Malfunction

No.	Type of malfunction	Malfunction Description	Solutions
1	hardware	without display of the driver	1. Check the lines connected well. 2. The lines in internal equipment connected well.
2	hardware	The motor does not work	1. Check the indicator lamp of the driver board. 2. Check the driver and the main board connected well.
3	hardware	the motor trembling	1. Check the motor and the driver connected well. 2. The motor overloaded, check the machine drives well.
4	hardware	the keypads not work	1. Check the keypad and the main board connected well. 2. Check the keypad well.
5	hardware	The external control does not work	1. Check the external board fixed well. 2. Check the lines connection well. 3. Check external power well.
6	hardware	The communication does not work	1. Check the communication board fixed well. 2. Check the lines connected right or not.
7	hardware	Operation noise loudly	1. Check the rollers of pump head need the grease.
8	software	The external control does not work	1. Check the external control mode ,display :E.
9	software	The communication does not work	1. Use the software by Lead Fluid set up the machine address again. 2. Check one equipment has a one corresponding address

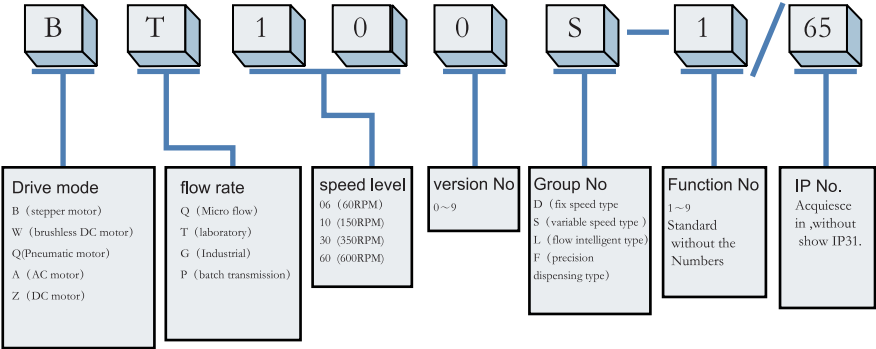


If the malfunction cannot be solved, please contact with the manufacturer.

Specification index



Naming Rules



Technology Parameters

BQ50S Technology Parameters

- Acceptable pump head: FZ10,DW10-1/-2/-3
- Display function: 4 digital pipes
- Direction control: Positive and negative reversible
- Communication function: RS485, support MODBUS protocol
- External control function: External high-low electrical level controls the start/stop, physical isolations
- Speed range: 0.1-50 rpm, speed resolution: 0.1 rpm.
- Flow range: 0.005-20 ml/min
- Adjustment way: mask keypad, start/stop, direction, full speed, adjust speed, mode.
- Application power: DC12V 1A
- Power ratio: $\leq 15W$
- Working environment: 0 ~ 40 centigrade, Relative humidity <80%
- Installation way: Embedded installation, place on the desk.
- Shape dimension: 96*96*112 mm
- Weight: 0.7 kg
- Protection level: Ip31

BQ80S Technology Parameters

- Acceptable pump head: FZ10,DW10-1/-2/-3,DW15-1
- Display function: 4 digital pipes
- Direction control: Positive and negative reversible
- Communication function: RS485, support MODBUS protocol
- External control function: External high-low electrical level controls the start/stop, physical isolations
- Speed range: 0.1-80 rpm, speed resolution: 0.1 rpm.
- Flow range: 0.005-32 ml/min
- Adjustment way: mask keypad, start/stop, direction, full speed, adjust speed, mode.
- Application power: DC12V 1A
- Power ratio: $\leq 15W$
- Working environment: 0 ~ 40 centigrade, Relative humidity <80%
- Installation way: Embedded installation, place on the desk.
- Shape dimension: 96*96*112 mm
- Weight: 0.7 kg
- Protection level: Ip31