JIHPUMP ®

INSTRUCTIONS

WT-300CAS/483KA

CHONGQING JIEHENG PERISTALTIC PUMPS CO.,LTD.

CONTENTS

1. Security

Please read this instructions carefully before operation!

- In order to avoid fire or electric shock, please do not use this pump in the outdoor and humid environment.
- In order to reduce the risk of electric shock and the possibility of damage to the pump, please use ground 3-hole WY16K3TE aerial socket.
- In the installation, please plug the 3 hole WY16K3TE aerial socket into the pump rear socket, then power on.
- Do not place heavy objects on the pump or allow liquids to flow into the machine.
- Do not cover the pump vents.
- After the power is on, the electrical components are in working condition,so please unplug the power cord if you do not use the pump.
- Tubing is the only consumables, due to worn tubing may cause cracks, the liquid will overflow from the tubing, which may harm the human body or equipment. It depends on your understanding of the pumped liquid and control, not any legal causal relationship with this pump!

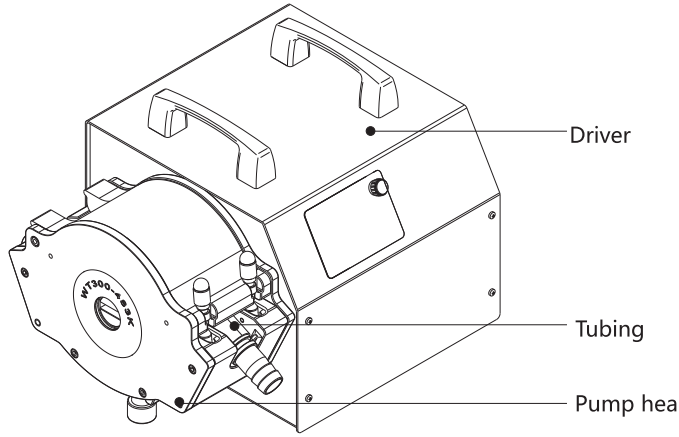
2. Know about peristaltic pump

Peristaltic pump, also known as tubing pump, or constant flow pump, is a new type of industrial pump, which is the product of modern industrial development, widely used in pharmaceutical, food, chemical, environmental protection, laboratory and other industries, to pump sensitive, viscous, strongly corrosive, with a grinding shearing force, high purity requirements, and containing a certain particle material medium.

As a positive displacement pump, the flow is generally ≤36L/ min. Its flow and speed is a linear constant relationship, that is, the output speed of the drive device corresponding to the flow is a certain value. As the constraints in structure and material, the pump speed should not be too high, and the pressure should not be too large, generally in the 2-4ba (special design can reach 15 ba), therefore, according to different process requirements, to configure different tubings are particularly important.

The fluid material pumped goes only through the high elastic tubing, and not contact the pump, so the pump parts are not corroded by fluid materials, fluid materials do not produce leakage and pollution of the surrounding environment, in line with drug production " GMP "standards and food production" FDA "standards.

Pump WT-300CAS / 483KA is a new type peristaltic pump of hinged block mechanism, that allows quick replacement of the tubing without removing the block. Spring with a adjustable gap block mechanism, can automatically adapt to the tubing wall thickness. Aviation aluminum pump body, high-precision CNC machining molding. Using standard medical grade stainless steel inverted cone connector, pipe connection more convenient. Low-noise AC gear motor controls cw/ccw and start/stop through the change-over switch, adjust speed through the frequency converter. Flow can be up to 36L/min. It applies to bio-engineering, chemical, pharmaceutical, hospital, food and other industries.



A complete set of peristaltic pump consists of three parts: drive + pump head + tubing.

Driver: provides power, additional functions.

Pump head: key part, to hold the tubing.

Tubing: the only part that comes into contact with the material pumped.

Advantages of peristaltic pump:

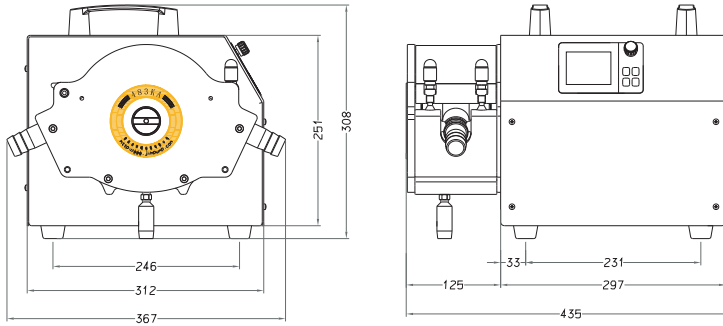
- Highly clean, non pollution: liquid only contact tubing, easy to clean, replace the tubing just a few seconds.
- High efficiency and low energy consumption: self-sucking, one-way valve capability.
- Low shear: pumpable shear sensitive liquid and organic solvent, transportable solid solution.
- Low maintenance: quick plug, no valves and seals.

3. Installation

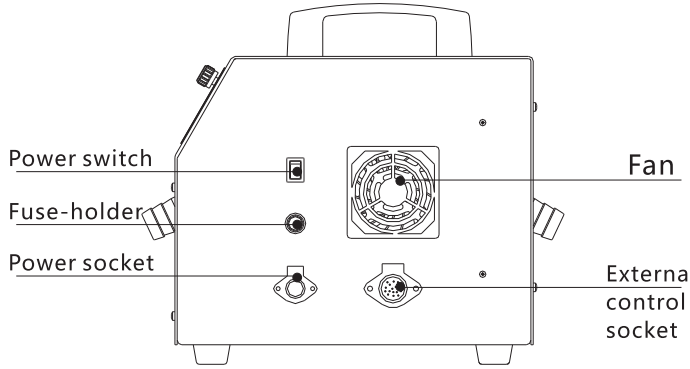
Power on:

Connect the drive to the 3-hole WY16K3TE aerial socket with ground wire. Make sure that you are physically safe. The pump must be installed in a well-formed, well-ventilated, dry environment and the pump must be fixed to the working position.

① Dimension

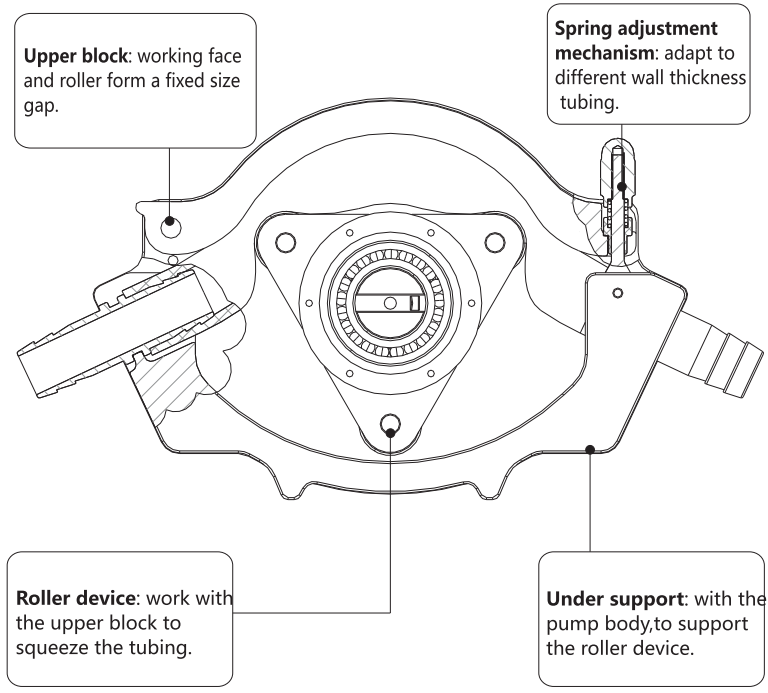


② External interface



4. Principle

Peristaltic pump principle: through the high elasticity of the pump tubing, under the action of the rotating squeeze of the roller, the suction end of the tubing forms a part of the vacuum, the fluid material is sucked into the tubing, and with the rotation of the roller, the fluid material is squeezed to the discharge end of the tubing, so as to achieve the purpose of pumping fluid material, just as your finger clips and squeezes a liquid filled tubing, with the fingers sliding forward, the liquid in the tubing will move forward, in our pump it is squeezed by the roller instead of your fingers to work.



5. Parameter

① Pump head

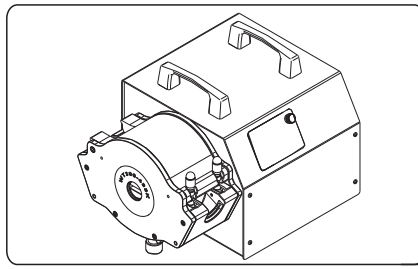
Pump head	Tubing #	Flow rate (water) L/min
483KA	90# 92#	≤36

② Driver

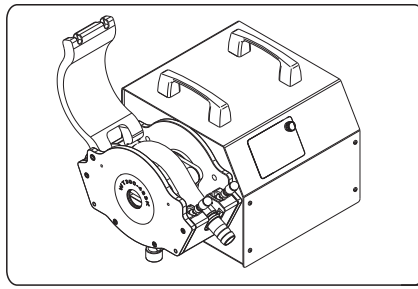
Item	WT-300CAS/483KA
Speed range	30-300rpm
Full speed	300rpm
Speed resolution	1rpm
Max output pressure	0.27兆帕
Control	Membrance keypad & rotary switch
Main function	Hand control,automation,appointment timing,filling,external control
External control	0-5V,0-10V,4-20mA,RS485
Display	Graphic LCD
Power	Ac 220V±10%,50Hz/60Hz
Consumed power	≤300W
Work ambience	Temperature 0～60℃, relative humidity <85%
Weight	32Kg
IP	Ip31

6. Usage

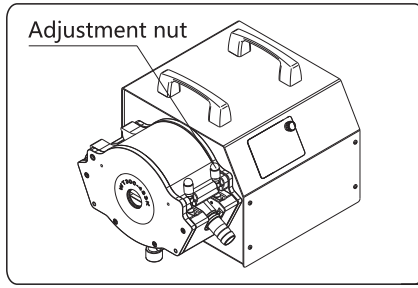
① Install tubing



First, loosen the adjustment nut and pull it toward right, then turn up counterclock-wise the upper block.



Then let the tubing pass through the left hole of the upper block and insert the connector into the slot, straighten the tubing and place it on the center part of the roller, and insert the right connector into the slot.

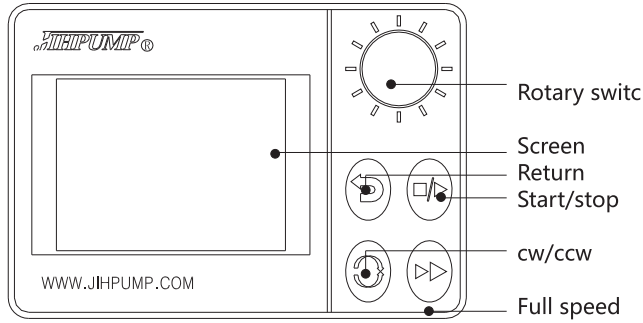


Clockwise rotate the upper block and install it, and then clockwise tighten the adjustment nut,locking nuts should not screw too tight, can be twisted to pump the water can be, if too tight, it will make the tubing cracked by the pressure load.

② Operation

Power on → Welcome screen → Standby. The factory setting is the basic "flow" operating mode.

The peristaltic pump has a power-off memory function, press the "start/stop" key or cut off the power, the peristaltic pump will remember the last set state.



Rotary switch: ① Under running state, rotate to change the pump speed and flow, press to adjust the flow percentage (rotate to rectify and display the flow, then press to memorize and exit).

② In standby mode, press 3 seconds to enter the setup menu, rotate to select the parameter, press again to confirm (during operation,rotation and press often need to be used interchangeably).

Start/stop key: as the run command key in use.

Cw/ccw key: switch direction while running or in standby mode.

Return key: Return to previous menu, and clear the accumulated value in the flow standby state.

Full speed key: full speed draining, press to operate at the maximum speed, press again to restore, press the start/stop key to stop, in the usage as a cleaning tubing and so on.

Note: only the rotary switch is active in the standby mode under external control, the other function keys are disabled (rotate to enter the setting menu, set the external control "OFF" and the other keys are able).

1) Function introduction:

The pump can be operated directly through the panel keys, can accept the foot switch control, can also accept external analog or digital signal. The factory setting is the panel keys control. Please refer to page 19 wiring method.

The Pump has 3 working modes: flow, timing and filling. At flow mode, the foot switch can be connected, and can select the level and pulse command, at timing and filling mode only accept pulse command.

Filling mode operation can be set to run the program automatically, or can also accept external infrared signal control.

2).Basic operation:

The pump has three kinds of running function (mode). You can press the rotary switch in the standby mode for 3 seconds to enter the setting interface → click "function setting" → select the running mode you need (detailed setting see page P13).

In order to accurately reflect the pump information, please set the pump head model, tubing specifications in line with the actual.

Basic parameter settings:

Pump head model: cursor lock, press to enter the selection, rotate and confirm (please try to match with the actual, otherwise it will affect the accuracy of flow display).

Tubing setting: rotate and press to enter the selection.

Machine number: for communication, pump identification.

Suction angle: generally used for filling, in order to prevent the liquid droplets after stopping the pump. Each time the automatic reversal back suction liquid, the angle can be set. We recommend the configuration of professional filling needle to prevent dripping.

Time setting: Beijing time adjustment

Foot switch: there are two working modes in the flow mode: press: pressing down for a continuous state, lifting up for another continuous working state. press and hold: change once every step of a start and stop state. At timing and filling modes each step changes the start and stop state (at any time enable the foot switch, please set the external control to "off").

External control enable: this is very important, only in the flow mode to enable the analog signal or 485 digital signal control of the pump can be set to "open", any other time to be set to "off."

External control type: in the flow mode, keep the external control "on" state, you can use the analog signal, digital signal control of the pump: access "0-5V", "0-10V", "4- 20mA "or" Modbus-rtu "for external control of the pump (see page P18, page 19 for details, see page 20 for the

3) Run the pump in "flow" mode:

The most basic mode of operation, you can directly press the "start/stop" key to run the pump (please confirm the external control to "off" state, and select the "flow" running function).

Use the foot switch to control the pump: please insert the foot switch into the external control socket at the rear of the pump before use. Please note:please use 19 hole WY24J19Z standard air socket and make sure the welding is reliable and solid, 11 # and 12 # terminals need to be connected as identification signals.

At "flow "mode, the foot switch has" level "or " pulse " two ways optional. At stand by mode,you can press the rotary switch for 3 seconds into the" parameter settings "interface, turn the rotary switch to find the foot switch settings interface (external control as "off" status).

Use the analog signal and digital signal to control the pump: access "0-5V", "0-10V", "4-20mA" or "Modbus-rtu" to perform external control on the pump (please confirm that the external control is "off" state, and set the corresponding external control type under the parameter setting interface. Refer to page P19 for the relevant wiring, see page P20 for the communication protocol.

4) Run the pump in "timing" mode:

Before setting the "Timing" mode, make sure that the external control is in the "off" state, and then enter the "timing" setting page, set the delay running time, running time, pause time, running times, timing running flow, then return to the standby interface, start the pump(at this time you can see the lower right corner of the interface appears triangular run icon, said the timer began counting).

You can also use the foot switch interface access to other switch signal to execute timing operation program, the switch signal access same as above. Except that only the pulse control mode is provided in the "timing" operating mode.

5) Run the pump in "filling" mode:

Before starting the "Filling" mode, make sure that the external control is in the "off" state. The pump head model and specifications are the same to actual, and then enter the "Filling Setup" page to set filling volume, filling time, interval time (shift time), number of dispensing (number of filling bottles), and filling type ("automatic" for automatic operation according to this setting procedure, "infrared" for filling controlled by the infrared switch signal, that is, filling will be paused when sensing no bottles.

The infrared access same to foot switch, specific wiring with reference to page 19 and your purchased infrared device manual. After setting up, return to the standby screen to run the pump.

6) Monitor the pump:

In any state you can monitor the running status of the pump, the pump start/stop and direction are relay contact signal output, and provide 0-5V voltage output signal. Refer to page 18,19 for specific definitions.

7) Flow correction:

For the accuracy of the flow, especially the accuracy of the filling, you need to correct the pump in time, such as the replacement of the pump head, replace the tube, the process conditions change etc., one or two corrections are needed to meet accurate filling.

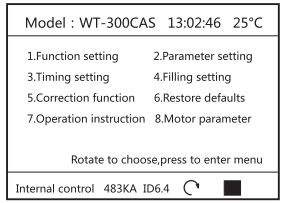
In the standby mode, you can enter the setting interface after pressing the rotary switch 3 seconds, select "correction function" to do the correction operation, the screen "test liquid volume" for the latest memory data (flow mode and timing mode default for the flow, the filling mode default filling volume), the calibration time in the flow mode and timing mode are default for 60s, at filling mode,default filling time. After the calibration, enter the measured data to improve the accuracy! Sometimes you need to repeat several times to obtain accurate filling volume.

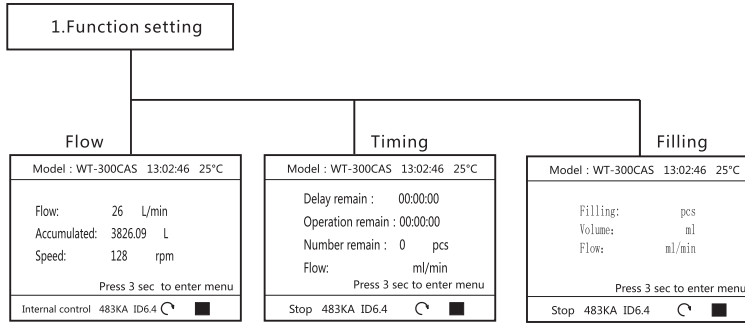
8) Restore defaults:

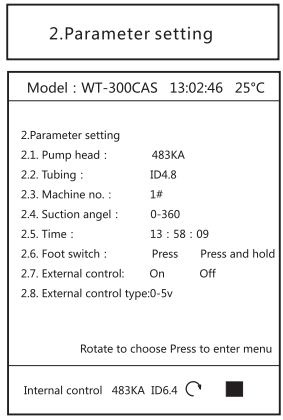
Turn the rotary switch to select and press to restore the pump factory settings.

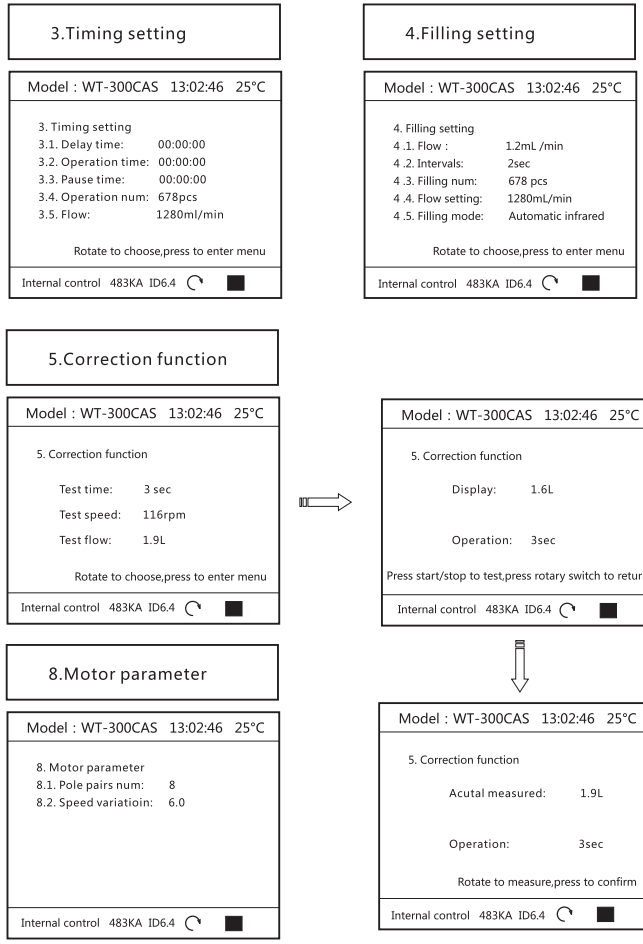
③ Menu logic diagram

At standby mode, press rotary switch 3 seconds to enter the setup interface:









Tip: correction function is to change the displayed flow data, make it close to actual measured flow,so let the user control flow accurately! It is especially important in filling operations. In the flow mode, press the rotary switch to make a rough adjustment! The factory motor parameters have been set, please do not change!

7. Maintenance

1. Before each time operation, should carefully check the tubing is damaged or not. Before the peristaltic pump stops running, should be pumping water to clean the tubing.

2. The silicone tubing is not resistant to strong acid, alkali or organic solvents. Before use, it is best to use a small section of the tubing soaked in the solution to test, lest the tubing is corroded and cracked and then the leaked liquid damage the pump body or even equipment.

3. Often check the squeezed parts of the silicone tubing, to prevent to use damaged or aged tubing, so as to avoid the flow of liquid into the pump, damage to motor and circuit. When the silicone tubing is detected aging, it should be replaced in time. In order to extend the life of the silicone tubing, often replace the squeezed parts. If long time not to use, the tubing should be taken out of the pump.

4. Because the roller is rolling friction, need to keep the roll groove clean.

5. The tubing used on the peristaltic pump is special silicone high elastic tubing (to pump strong acid, alkali or organic solvent or need long life tubing, please contact our Jieheng company).

8. Packing list

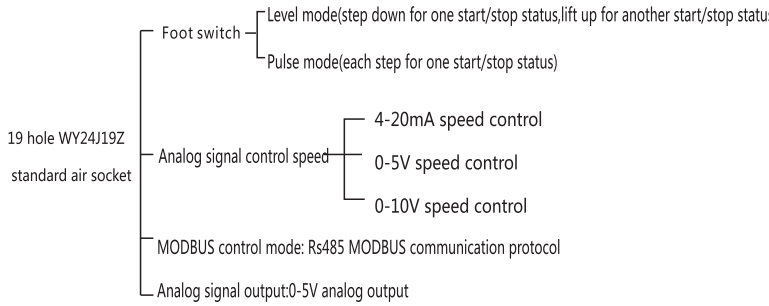
Item	Description	Unit	Qty	Remark
1	Driver	pc	1	
2	Pump head 483KA	pc	1	
3	Silicone tubing 90# 92#	m	2	Choose one
4	Instruction	copy	1	
5	Warranty card	copy	1	

9. Malfunction

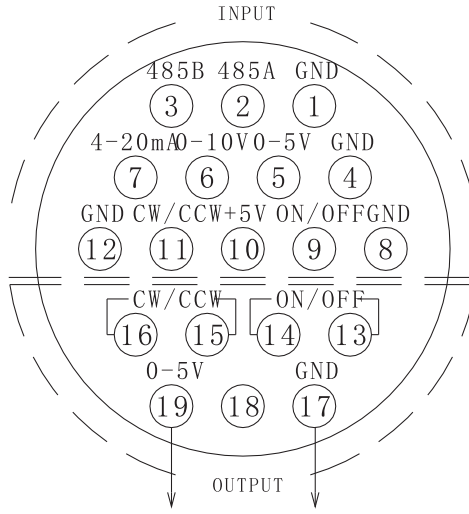
Item	Description	Check	Process	Remark
1	After switch on, LCD screen no display	Check power socket available or not	Check wire	Socket built-in insurance
2	After switch on, LCD display normal,but pump does not work.	Check control mode right or wrong	Enter setting inter-face to check and re-set	
		Check pump head upper block squeeze tubing too tight or not	Adjust squeeze gap	
		Check tubing no. suitable for pump head or not	Choose proper tubing	
		Check wiring loose or not	Check and resume	
		Check driver or motor damaged or not	Check and replace	
3	After switch on, pump works normally, but can not pump liquid.	Check pump head upper block squeeze tubing too loose to hold tubing well	Adjust squeeze gap	
		Check tubing cracked or not	Replace tubing	
4	While operation,tubing moves along with rollers.	Check tubing clip loose or not	Adjust tuing clip	
5	Stop during operation	Function setting	Re-set	
6	Tubing worn prematurely	Roller flexibility	Maintenance	

Tips:
If you accidentally get the process messy in the operation,you can press the rotary switch to enter the settings,select the sixth item,press again and you can restore factory settings data!

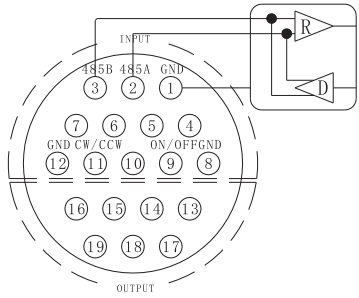
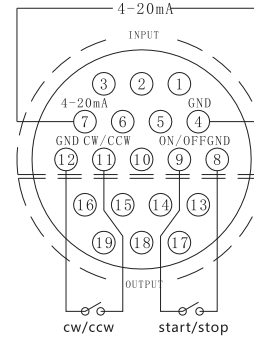
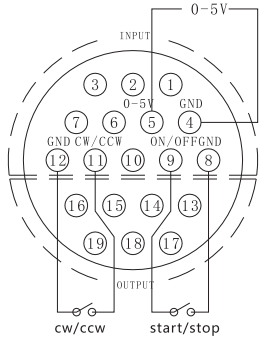
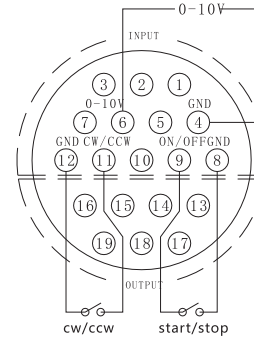
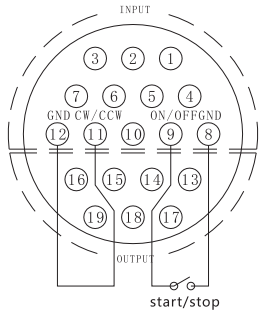
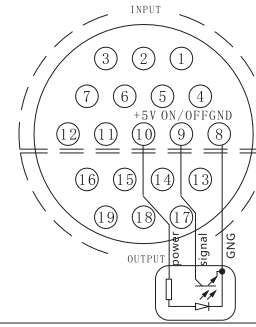
19 hole WY24J19Z Standard Aerial Socket Access Signal Control Logic



External control output port definition

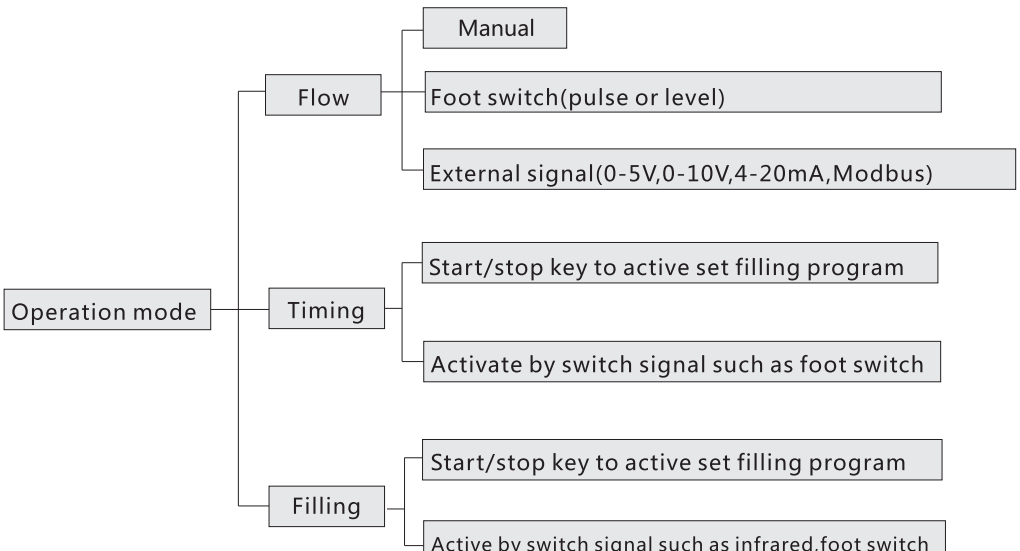


1. 19&17 are 0-5V speed signal output.
2. 13&14 are start/stop relay output contacts.
3. 15&16 are directional relay output contacts.

External control:ModBus_rtu	External control:4-20mA
	
External contro:0-5V	External control:0-10V
	
Internal control:foot switch	Infrared switch
	

MODBUS Communication Protocol Control Parameters List		
No.	Item	Presentation
1	Communication data format	MODBUS_rtu standard communication protocol, Baud rate 9600, 8 bit data bits, 1 stop bit, even parity.
2	Implementation of the command code	MODBUS_rtu communication command code is 02,04,06,15, the starting address is 999.
3	02 discrete signal input	02 command bit address 999 for the start/stop signal, 1 for the start, 0 for the stop. 1000 for the cw/ccw signal, 1 for cw, 0 for ccw.
4	04 register input	1) 04 command word address 999 for the speed signal, 1000 for the temperature signal, the data are the number of plastic. 2) 1001 and 1002 for the flow coefficient signal, 1001 for the high number of data for the long integer, the flow data is that the speed multiplies flow coefficient. 3) 1003 and 1004 for the cumulative flow signal, 1003 is high, the data is long integer.
5	06 register output	06 command word address 999 for the speed control, the data is the integer number.
6	15 discrete information output	15 command bit address 999 for start and stop control, 1000 for the cw/ccw control.
7	MODBUS output control	MODBUS output control speed, start/stop and cw/ccw, only achieve in the external control MODBUX_RTU.
8	MODBUS input acquisition	In any mode can be collected speed, start/stop and cw/ccw signals. At flow mode can also collect flow and cumulative flow data.
9	Communication machine address	The communication machine address is set in the parameter and re-initialized.
10	Multi - machine communication	The machine can be multi-machine communication, the max number of machines 30.

WT-CAS Series Operation Mode&Logic List



Remark:
1. Before flow mode operation,please confirm the external control is closed.
2. For timing operation,please rotate to choose timing mode in the standby mode,and set the corresponding timing instructions.
3. For filling operation,please rotate to choose filling mode in the standby mode,and set the corresponding filling instruction.
4. Refer to page P15 for the wiring.

201609首印

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