

New pump control solution

3in1

PUMP CONTROLLER

User
Manual



PRODUCT COMMITMENT

Dear valued customer:

Thank you for your purchasing and using our products. Please read and properly keep this instruction manual to ensure that you can reliably operate this product.

This dedicated **3in1 pump controller** for the water pump, which is **developed basing on years of market experience**. Integrating the majority of automatic control advantages in the recent market, It is both **obviously ahead of** the traditional mechanical switch and electronic switch, and has a different using experience compared with the integrated intelligent dual control pump which is quite popular on the market currently. **Its core differences lies in:**

- ① Suitable for any water pump & Installed simply.
- ② Unique 3 in 1 function: 3 modes choices (Press mode/Timing mode/Flow mode) are for different applications which bring the excellent use experience.
- ③ More sophisticated control and protection, more abundant information exchange.

Looking forward to this intelligent controller can solve your problem to the maximum extent.

If you even forget the existence of it and the water pump, This will be the greatest recognition of our hard work.

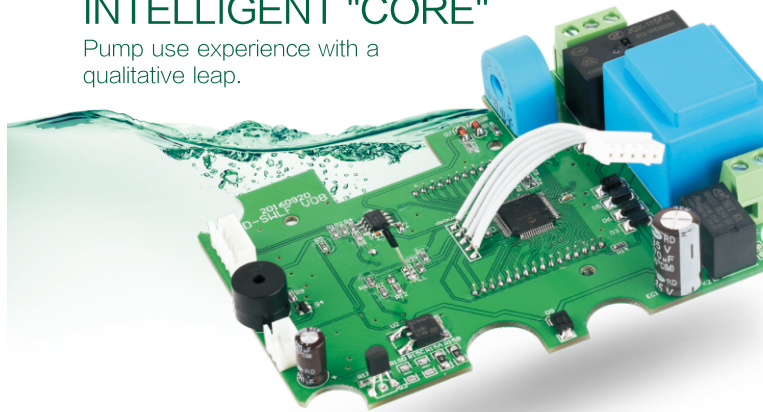
Our commitment: a warranty period of one year is provided from the purchase date and free maintenance services during the warranty period. However, due to improper use or suffered force majeure factors, We will not responsible for warranty repair or charge appropriate cost for parts and materials according to the case. Thank you for your cooperation!

Environmental statement: This product and all materials contact with water have been **certified by environmental certification**, and most of the materials are engineering plastics. And there are little copper and 304 stainless steel can tolerate slight saline-alkali water quality, please feel free to use it.

Proudly Presented by
Fujian Risefull Pump Co., Ltd.

INTELLIGENT "CORE"

Pump use experience with a qualitative leap.



Full Range Of Electronic Readings
More Sophisticated Intelligent control, including pressure, flow, water temperature, current



Led Large-screen Display
Multi-information platform for human-computer communication, more clear and intuitive.



Extremely High Flow Reading Accuracy
At least 1.5 l/min (0.09 t/h)



Large Flow Channel Design
Maximum flow rate of 7 tons / hour



Anti-sand Structure
Patented anti-sand and anti-magnetic structure, to ensure continuous operation of the controller without failure.



Automatic Setting Of Starting Value
Intelligent self-starting pressure value, to avoid the embarrassment of high floor can not be started.



Water Automatic Detection
Restoring water supply during the period without water, can automatically start the pump.



More Protection
Water shortage protection: automatic shutdown when there is no water supply.

Anti-rust: automatic derusting machine when the pump is not often used may lead to rust.

Frost protection: heating the pump to avoid freezing the pump. When the temperature dropped to freezing point.

Overload protection: automatic shutdown when pump crash and motor damage for some objects.

Leakage alarm: alarm in the LED display, when the pipe is leaking on the blind location.



Part of the intelligent function will be effective under a specific control mode.

THREE MODES ARE AVAILABLE TO CHOOSE

Find the pump control solution fit for you



Pressure Mode (Normal Use)

Open the tap and start pump quickly, it is the most common way of automatic control currently on the market.



Timing Mode (For Water Tower)

Transfer water to water tower by timing. Don't need to start-up frequently, extended motor life and protect water pipes.

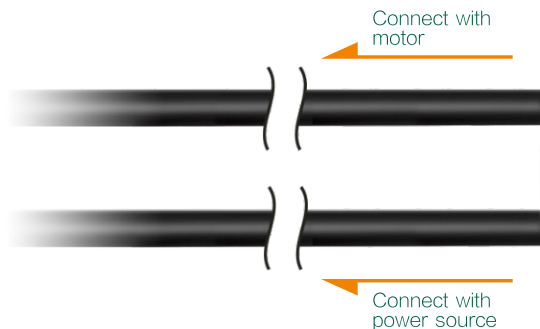
Enough water gage during water-rich period, without water pump working.



Flow mode (For Down pressurization)

Increase the water pressure from water tower, but avoid to start pump for little water usage.

Blind spot leak slightly (i.e. the leakage of toilet) will not start the water pump, which avoid disturbing people at night.



Model: PC31

- Voltage: 200~240V, 50/60HZ
- Maximum power: 1.3 KW
- Protection: IP54
- Maximum water temperature: 80°C
- Maximum current: 10 A
- The maximum pressure: 10 Bar
- The maximum ambient temperature: 40°C
- Inlet and Outlet: 1 "X1 "



The pictures and functions of this product are for reference only, subject to the final product.

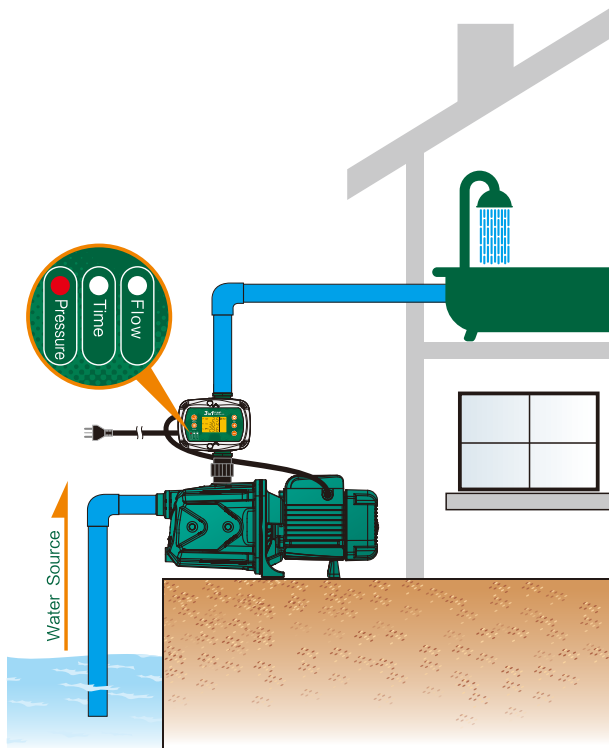
PRESSURE MODE

Instant pressurization, ready for your needs



WORKING PRINCIPLE

- Start-up**
Pressure relief after tap opening, When the actual pressure is lower than the starting pressure value of controller, start the pump.
- Stop**
Close the pipeline and the flow sensor can not sense the flow of water through, turn off the water pump.
- Typical application**
Instant water supply and pressurization of pipeline.



Notes:
Theoretically, this mode can be used for all application, but some applications experience is not good enough.

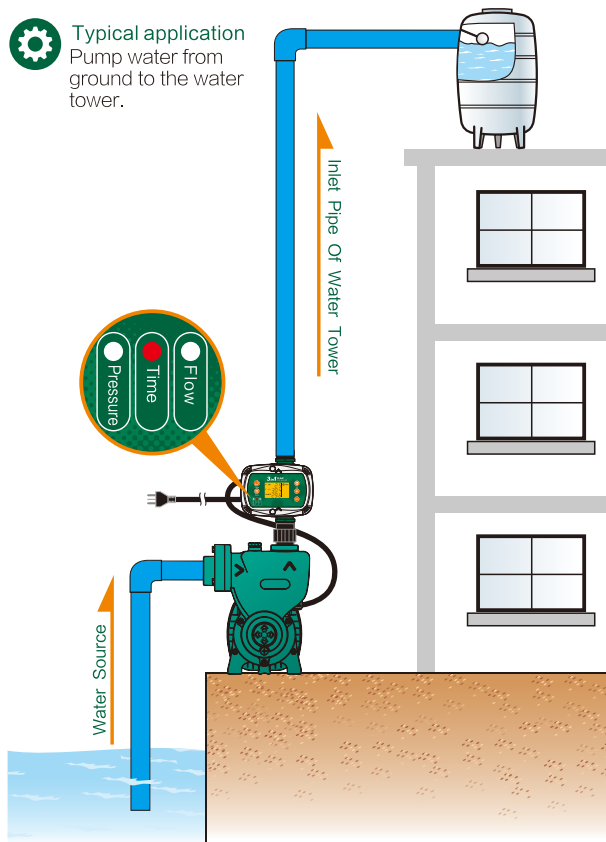
TIMING MODE

Timing start, the water supply of the water tower is more insurable.



WORKING PRINCIPLE

- Start-up**
Start pump as the interval time from last time stop.
- Stop**
Closed the tap and the flow sensor can not sense the flow, turn off the water pump.
- Typical application**
Pump water from ground to the water tower.



Notes:
Generally used for installation of the highest non-pressure water tower in the roof, the water tower has float valve.

FLOW MODE

Water flow control start and stop, more sophisticated control and protection.



WORKING PRINCIPLE



Start-up

When the flow reaches the set value after opening the tap, start the pump.



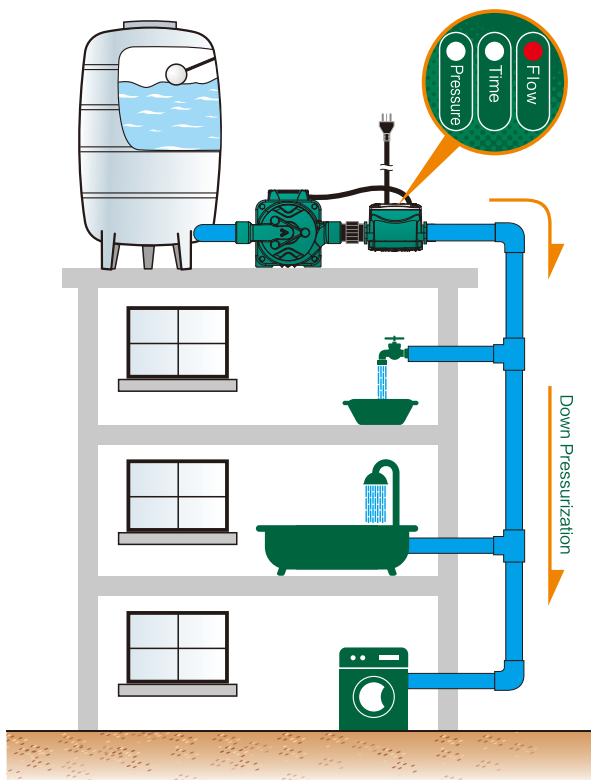
Stop

Close the tap and the flow sensor can not sense the flow, turn off the pump.



Typical application

Increase the pressure for positive pressure water supply, e.g. Water tower down pressurization.



Notes:

It work for the positive pressure water supply only, otherwise it will unable to start the pump.

MANUAL SETTING GUIDE

The built-in control parameters and intelligent functions can meet more than 90% of the use scene, If any special case, please kindly refer to the following guides to set manually.



PRESSURE MODE SETTING

Items	Setting ways	Original value (adjustable range)	Reference experience values
Set the start pressure value	Press the "Set" button, the pressure value flashes, press + - to adjust	1.5 BAR (0.5~3.5)	10meters height=1.0Bar If the building more than 5 floors, the static pressure may be over 1.5Bar
Set the stop flow value	Press the "Set" button again, the flow value flashes, press + - to adjust	2.0 L/MIN (1.5~7.0)	It is nearly equivalent to trickle, it is recommended not to adjust.
Back	And then press the "Settings" button again to return or wait for 8 seconds to automatically return		



TIMING MODE SETTING

Items	Setting ways	Original value (adjustable range)	Reference experience values
Set the time interval	Press the "Set" button, the time value flashes, press + - to adjust	18 hours (1~24)	Commercial use of large volume of water: < 3 hours Areas often without water: 3~12 hours Normal use: 12~24hours
Set the stop flow value	Press the "Set" button again, the flow value flashes, press + - to adjust.	5.0 L/MIN (3.0~10)	In principle, no longer adjust, if in need it is recommended to adjust the longer direction.
Back	And then press the "Settings" button again to return or wait for 8 seconds to automatically return.		

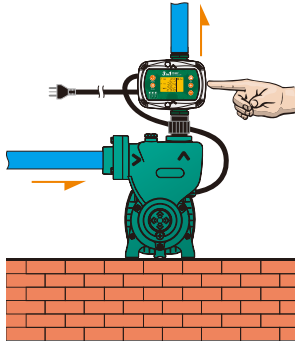


WATER FLOW MODE SETTING

Items	Setting ways	Original value (adjustable range)	Reference experience values
Set the flow value	Press the "Set" button, the flow value flashes, press + - to adjust.	2.0 L/MIN (1.5~5.0)	It is nearly equivalent to trickle, it is recommended not to adjust.
Back	And then press the "Settings" button again to return or wait for 8 seconds to automatically return.		

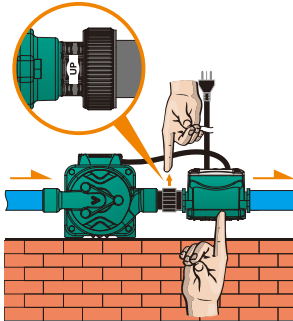
CONTROLLER INSTALLATION GUIDE

The installation of the controller should be strictly in accordance with the following correct ways , do not install in wrong ways, otherwise it may result in unpredictable breakdown and dangerous between the controller and the pump.



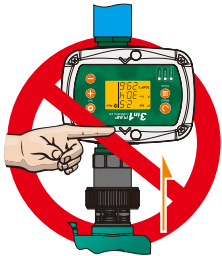
THE CORRECT WAY OF VERTICAL INSTALLATION

The controller arrow upward, installed along the direction of water flow. The screen can be adjusted to a convenient viewing angle.

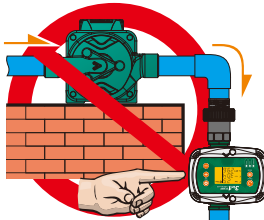


THE CORRECT WAY OF HORIZONTAL INSTALLATION

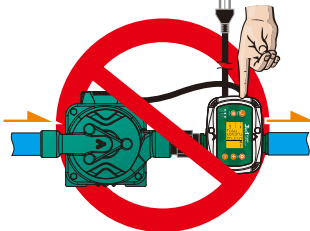
Install the controller arrow along the direction of water flow of pump. The screen should face up. When attaching the active connector, the orange sticker must be facing up.



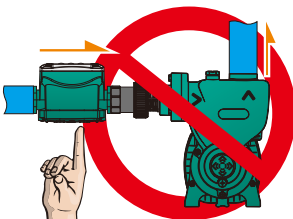
Reverse installation is prohibited, if the installation direction is reverse to the correct flow direction of the pump will cause the controller stop working.



Reverse installation is prohibited, for it will lead to the failure of the check valve.



When installed in horizontal, The direction of power is prohibited upward, which may be causes water penetration.

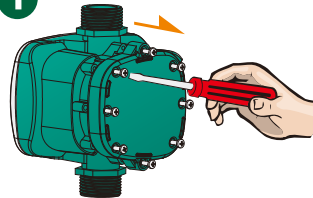


Install in the inlet of the pump is prohibited, this will cause the part function of the controller can not be used.

CONTROLLER CLEANING GUIDE

Even if the controller has a lot of protect functions, it still requires the water can not be too dirty, otherwise, in order to maintain the water flow fluent, the users need to regularly clean the controller according to the following steps.

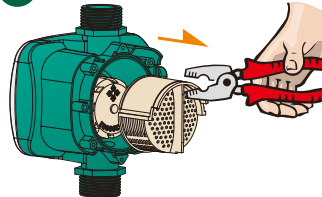
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STEP 1

Use a screwdriver to remove the 8 screws on the back cover of the controller and take off the back cover.

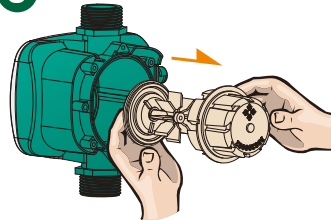
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STEP 2

Use pliers to clamp the filter and pull out back directly, pay attention not to force too much, to avoid damaging the filter.

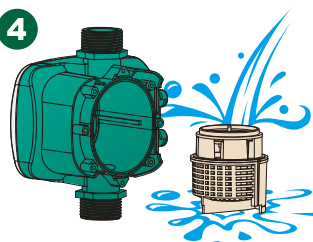
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STEP 3

Carefully take off the rest controller components by hands.

4

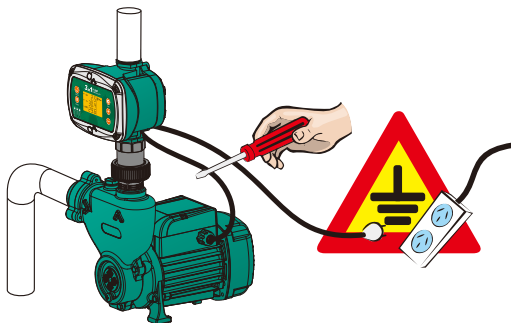


STEP 4

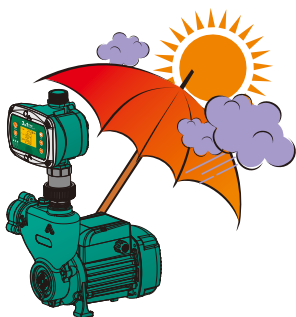
Use clean water to clean the removed parts and the internal control of the controller. After cleaning, reseal the parts in sequence and lock the back cover.

WARNING

- ① Earthing: Please confirm that the power outlet socket is reliable earthed to avoid hazard due to electric shock.
- ② For safety, ALWAYS disconnect the pump from the mains, in case of repair or maintenance.
- ③ Please make sure that the power outlet socket and plug are located in a dry place.



- ④ Whenever possible, install the water pump in shady, cool and dry area. If the water pump must be used in the open air, keep away from light and rain.
- ⑤ NEVER move the water pump by pulling or holding the plug cord. As it will cause breakage and short circuit of the internal wires.



Installation, wiring, debugging must be carried out by skilled personnel. If the power cord must be prolonged or replaced, use only same or higher wire specification. Please make sure connection are secured, waterproofed, and fully insulated.

⚠ The manufacturer will not assume any liability in case of any modification of the water pump.

FAULT DIAGNOSIS AND PROCESSING

Fault	Possible cause of fault	Troubleshooting
The controller does not work properly and remains blank	No power supply	Check all the power supply
	The controller PCB is damaged	Replace a new controller
The pump starts normally, the controller pressure displays normally, but the flow shows 0, actually it can yield water.	The water flow sensor is wrapped around the card by the ribbon-like impurity, and the flow rate can not be read.	Follow 《Controller Cleaning Guide》 to disassemble and clean
The pump starts normally, the controller pressure displays normally, but the flow shows 0, it can not yield water and has ruled out the possibility of pump failure.	The water flow sensor is blocked by too much impurity, can not pass the water flow or the throughput is extremely low.	Follow 《Controller Cleaning Guide》 to disassemble and clean
Controller leakage alarm	The retained air of the pipeline installed just now is not ruled out clean, resulting in slow pressure relief.	Try to empty the air in the pipeline.
	Pipelines and water points leak	Find leaks and fix them
Controller water shortage alarm	Pipeline without water	Wait for incoming water or improve the water supply
	Poor water supply or failure to supply water	Refer to 《Pump Troubleshooting》
Controller water shortage alarm	The machine jammed for some objects in the pump chamber. Capacitor damaged. Pump motor is defective. Other possible external factors.	Refer to 《Pump Troubleshooting》

FRIENDLY REMINDER

- ❶ Delayed start: Initial use (including restoration of power supply), the controller will delay start. At the same time when LED display shows the countdown, if you need to immediately start the pump, please press the "hand start" button.
- ❷ Black screen: Normally, it will enter the black screen within 1 minutes without touching, press the "+" or "-" key to light up the screen.
- ❸ Parameter memory: the controller can automatically remember most of the setting parameters, even if the power failure, it will not be affected.
- ❹ Fault reminder: all the alarms will always be on the screen corresponding to the icon, At the same time the screen light flashes, press the "hand start" button to immediately start the pump retest.
- ❺ Leakage alarm: Since most of the leaks are relatively minor, and it is difficult to immediately find the leak point, the controller will maintain the normal use of function and alarm in the LED screen but will not downtime.

COMMON TROUBLE AND ELIMINATING METHOD OF WATER PUMP

Fault	Possible cause of fault	Troubleshooting
Motor do not run and no electromagnetic sound	No power supply	Check the power supply connection. The power supply should be securely connected, waterproofed and fully insulated.
	Fuse or air switch disconnected	Replace the fuse or reset the air switch.
	Motor damaged by water immersion or other reason	Sent it to the maintenance department for maintenance.
Motor do not run but electromagnetic sound heard, vibration and large noise of motor.	Capacitor damaged	Replace the capacitor
	Impeller jammed	Remove the fan cover and turn the fan manually until the fan can rotate smoothly Or disassemble the pump body to remove the sundries.
	Too low voltage	Adjust or install a voltage stabilizer to achieve the recommended voltage.

Fault	Possible cause of fault	Troubleshooting
Motor difficulty running	Friction resulting from foreign matter on the rotating part of the motor.	Check and clean the fan and the rotor.
	Failure to install the water pump horizontally	Reinstall the water pump horizontally.
	Bearing damaged	Replace the bearing.
Motor operating intermittently	Thermal protector enabled due to too high or too low voltage.	Adjust or install a voltage stabilizer to achieve the recommended voltage.
	Poor ventilation resulting in poor heat dissipation of the motor	Improve the ventilation conditions.
	Pump is being used outside recommended specification.	Reduce or increase piping. Or replace current pump with larger power water pump.
	Too much air inside the pump body.	Refill the water to remove the air.
Poor water supply or failure to supply water	Poor sealing of inlet pipe.	Reseal with a sealing material.
	Diameter of suction pipe too small, resulting in poor water supply.	Replace the suction pipe as the same size of pump's inlet.
	Suction is too high.	Adjust the suction head not more than 6m in principle.
	Suction pipe installation is higher than the pump inlet.	Reduce the installation height of the water inlet pipe and ensure it is lower than the pipe inlet.
	Motor reverse transfer.	Check the rotation direction of the motor to ensure the direction is clockwise from the view of the fan side.
Water leakage from the pump	Impeller damaged.	Replace the impeller.
	Mechanical seal damaged	Replace the mechanical seal.
	Sealing ring damaged	Replace the sealing ring.