enertik

BSCW4 Series

WATER FILLED MOTOR ENERGY SAVING SOLAR DEEP WELL PUMP

INSTRUCTION MANUAL

Warnings:

- **Please read carefully the instructions before installation.**
- **Do not touch the pump while it is running.**
- **Do not run the pump without water. .**

 **Warning**	1.It is absolutely necessary to keep the VOC of the solar cell less than the rated open circuit voltage of the controller. 2.Please cut off the power and the controller in a thunderstorm to avoid damage caused by lightening. 3.Keep the controller away from children to avoid unnecessary injury. 4.The solar water pump system can only be used for pumping clean water for irrigation and living water, and can not be used for sandy and corrosive water. 5.Surface parts should be kept away from water to avoid damages. 6.Maximum submerged depth of submersible pump should be less than 100m. 7.These controllers can only be matched with our solar water pumps, and are not allowed to install with any other products or for any other use. Otherwise, we will not provide any warranties for the results of any consequences.

1.Description

The high speed, high efficiency and energy saving water filled motor solar pump is a new product developed by TAIFU, which is configured with water filled permanent magnetism brushless motor and intelligent controller . The built-in electronic device includes frequency converter and motor controller, which could flexibly convert AC to DC. It breaks many bottlenecks of traditional deep well pump.

The design for shielding does not require mechanical seal, it can avoid the danger of water leakage and efficiency loss caused by the abrasion and friction of mechanical seal. Also it can optimize the cooling system for rotors.

Adopting water lubricated bearings and water thrust bearings makes pump work quietly even it is underloaded. S/S Shielding rotor can prevent magnetic steel from corrosion and oxidation, and the shielding iron core optimizes the heat dissipated system.

The stainless steel 304 is used as the main material for the pump, Using the advanced laser welding machine, components can be well welded.

The products are widely used as water supply in many fields, such as villages, schools, hospitals, farms, pastures, power shortage region, buildings, small water plants, domestic water supply, water tank applications, irrigation and small hydraulic beautification, urban factories, commercial facilities for water supply, water conservancy systems, fountains, wildlife reserves, etc.

2.Parameter

Power: 550W-2200W
Wide voltage input: DC 60-380V
AC 90-240/50,60Hz
The limited VOC of input :430V
The recommended connection of all solar panel: in series connection
Current Range: 1.5-14A
Rotation Speed: 500-4500rpm
Insulation class: F
Protection class: IP 68

Liquid:

The product is suitable for liquid that is non- viscous, clean, non-corrosive, non-explosive, and contain no solid or long-granular particles with large sand

PH value: 5~9

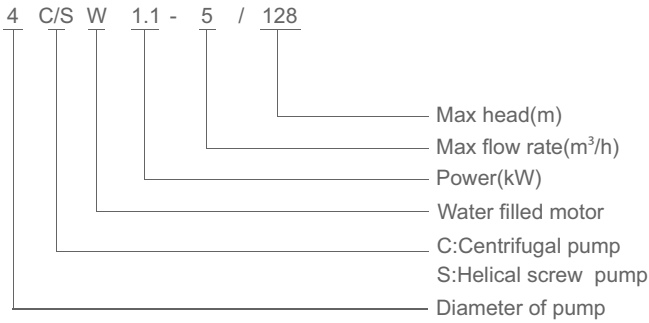
Liquid Temperature: 0℃～+40℃

Maximum sediment concentration:50g/m³(For 4CW series)

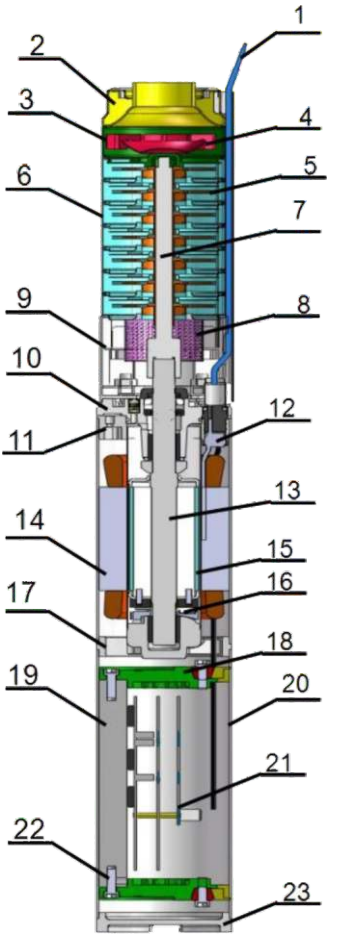
3.The feature and function of pump

-Permanent magnet Brushless double shield motor with FOC function(Field-Oriented Control)
-Soft start operation function extends the life of the system
-AC/DC wide voltage: 60-360VDC or 90-240VAC,50/60Hz
-MPPT function for DC part, can achieve efficiency more than 99%
-PFC (Power Factor Correction) function for AC part,can make power factor over 0.99
-Easy installation
-No-load protection
-Reverse protection
-Over load /under load protection
-Over temperature protection
-Over-current protection
-Over-voltage protection
-Phase lack protection
-Locked rotor protection

4.Model Name Instruction

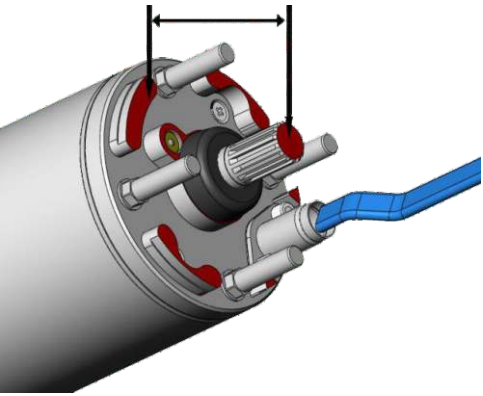


5.Explosive View



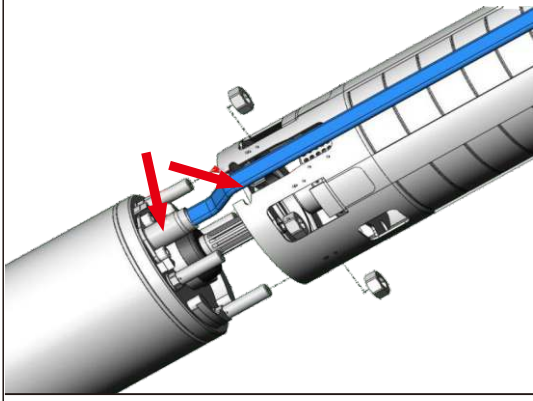
NO	Components	NO	Components	NO	Components
1	Cable	9	Inlet	17	Lower bearing seat
2	Outlet	10	Upper bearing seat	18	Locator
3	Bracket	11	Upper flange	19	Heat sink
4	Check valve	12	Cable plug	20	Controller body
5	Impeller	13	Shaft	21	Circuit board
6	Diffuser	14	Stator	22	Inner hexagon bolt
7	Hexagonal axis	15	Magnetic steel	23	Gland cover
8	Filter	16	Thrust bearing		

6.Assembling

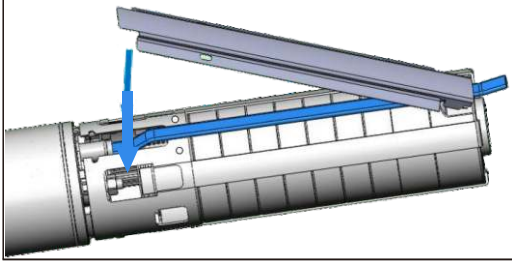


1.Measure the vertical distance before assembling to make sure the distance is between 38±0.5mm.

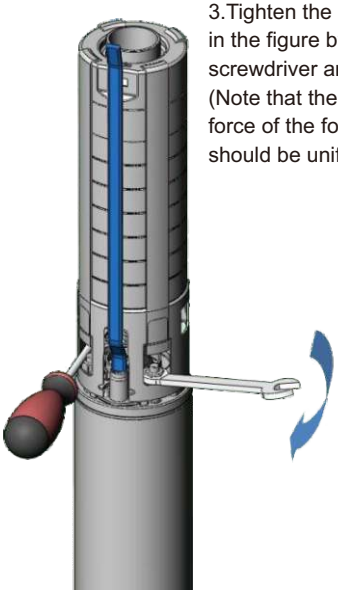
2.Put motor and pump body in a proper place, make sure four M8 nuts are inserted into the bolt.(Pay attention to the direction of outgoing line of motor and pump body.)

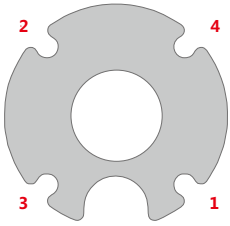


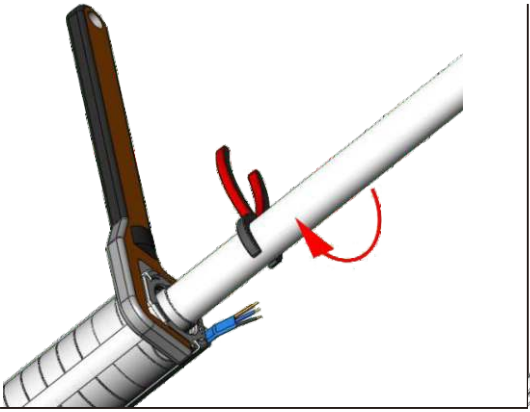
4.Fix the cable to the pump body with the crimping plate.

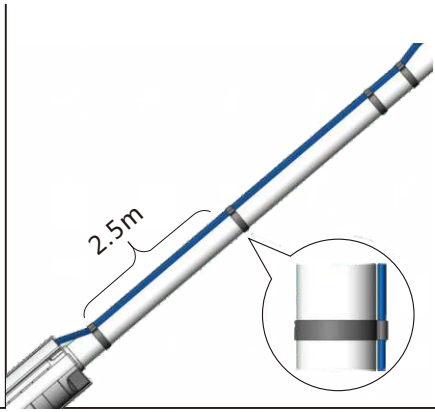


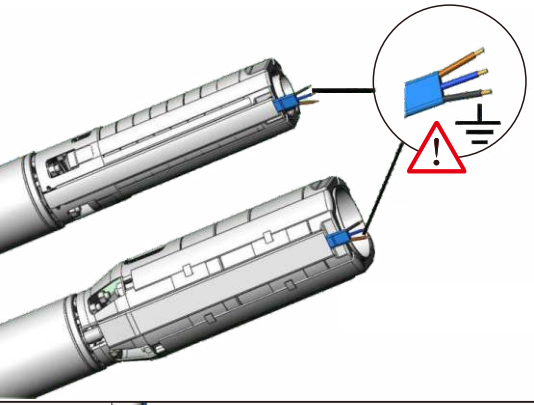
3.Tighten the nut as shown in the figure by using screwdriver and wrench. (Note that the tightening force of the four nuts should be uniform.



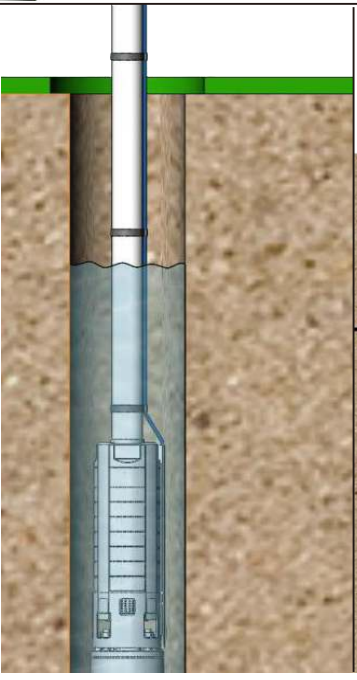


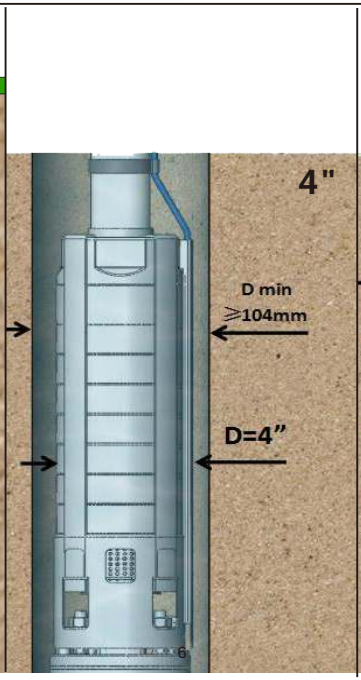


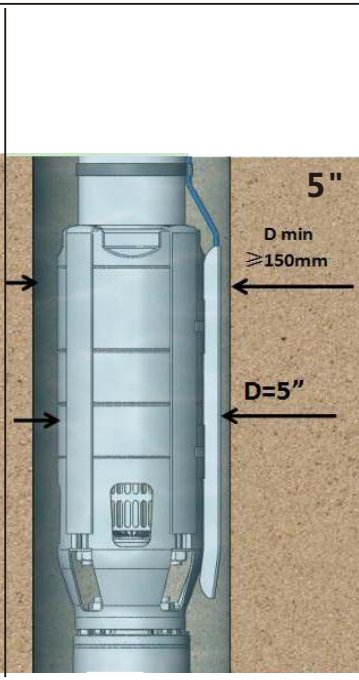




7.Installation

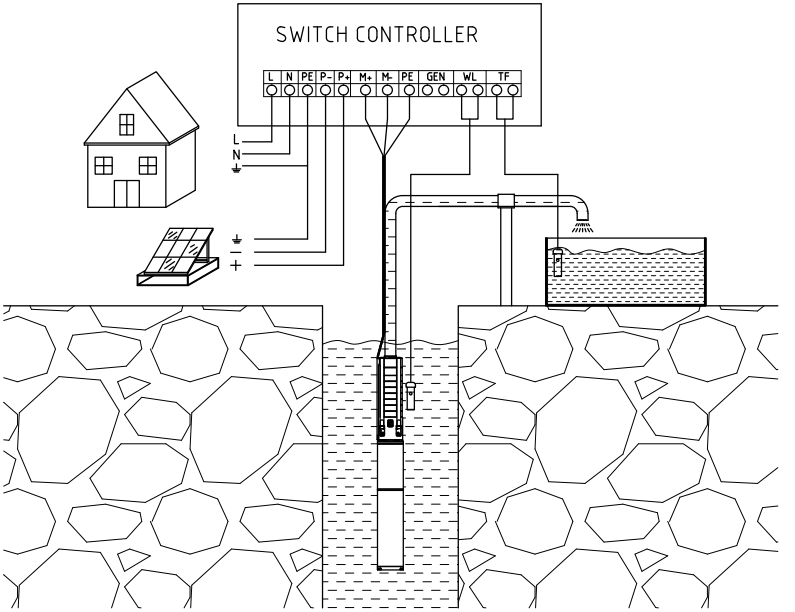




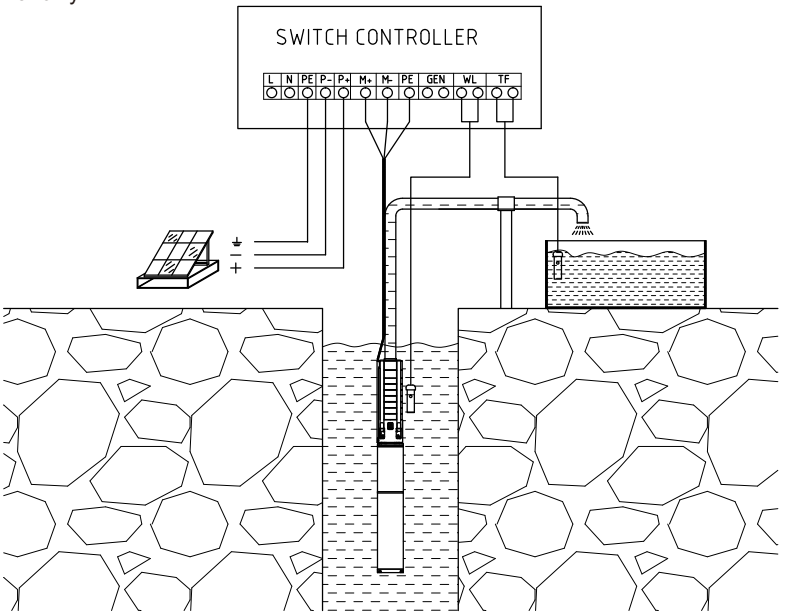


8.Usage and installation of the pump

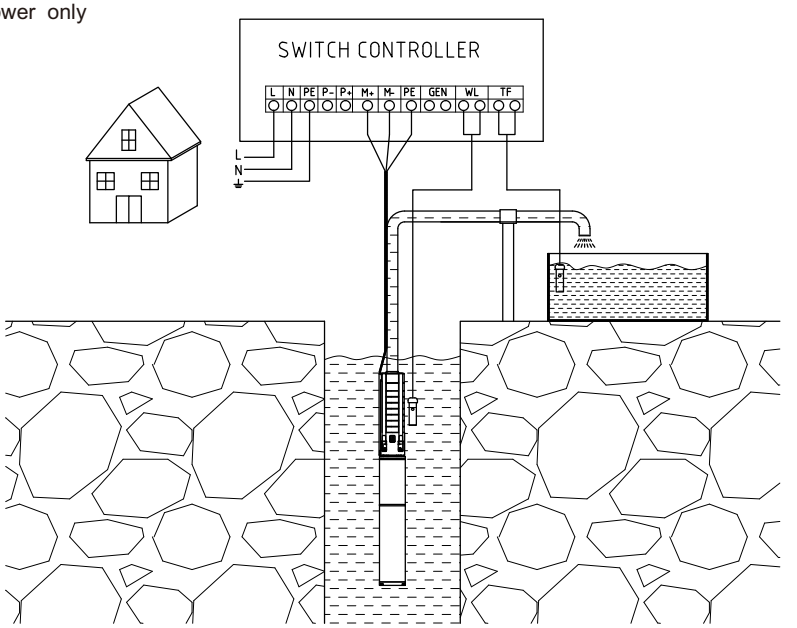
AC power +DC power



DC power only

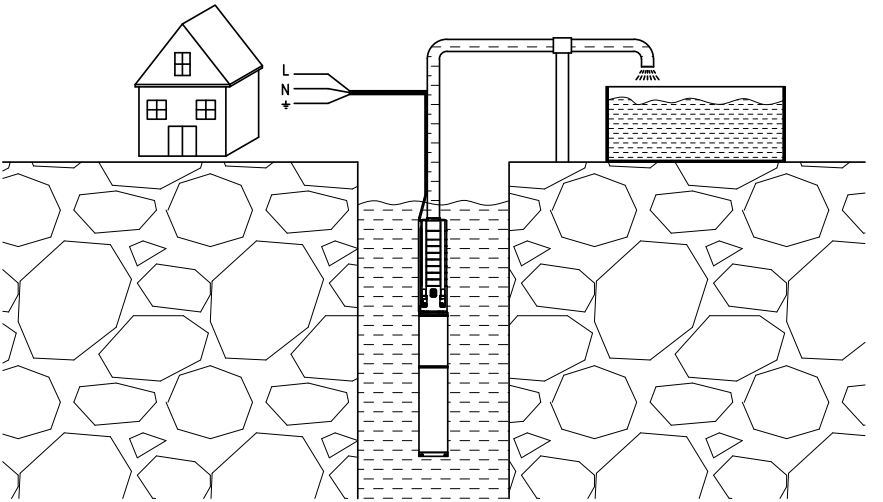


AC power only

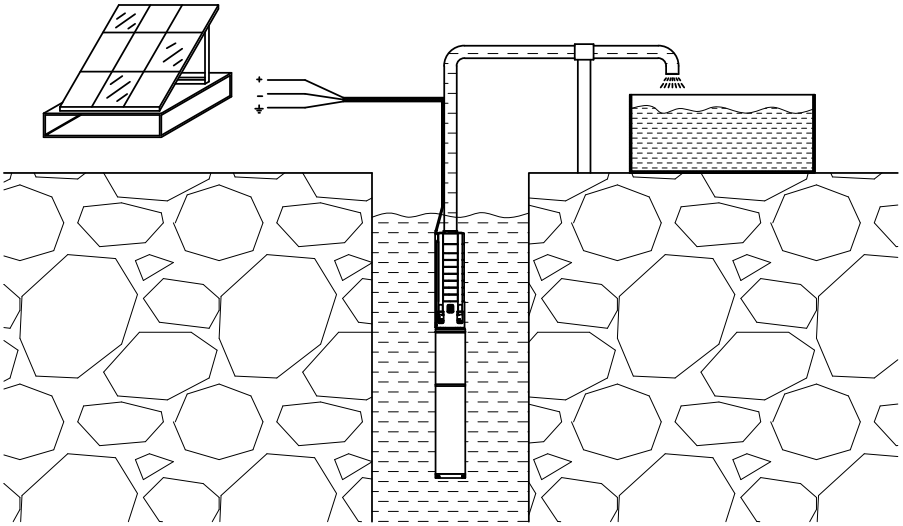


Without switch controller

AC power only



DC power only



9.Selection of the solar panel

Max.Pump Power (w)	Solar Panel (w)	Recommend Solar Panel 60 cell (32Vmp 40Voc)										
		250w	255w	260w	265w	270w	280w	285w	290w	295w	300w	305w
550	1.3×pump power	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3
750	1.3×pump power	2-5	2-5	2-5	2-5	2-5	2-5	2-4	2-4	2-4	2-4	2-4
1100	1.3×pump power	2-7	2-7	2-6	2-6	2-6	2-6	2-5	2-5	2-5	2-5	2-5
1500	1.3×pump power	2-8	2-8	2-8	2-8	2-8	2-7	2-7	2-7	2-7	2-7	2-7
2200	1.3×pump power	2-10	2-10	2-10	2-10	2-10	2-10	2-10	2-10	2-10	2-10	2-10

Max.Pump Power (w)	Solar Panel (w)	Recommend Solar Panel 72 cell (37Vmp 47Voc)											
		310w	315w	320w	325w	330w	335w	340w	345w	350w	355w	360w	365w
550	1.3×pump power	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3
750	1.3×pump power	2-4	2-4	2-4	2-4	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3
1100	1.3×pump power	2-5	2-5	2-5	2-5	2-5	2-4	2-4	2-4	2-4	2-4	2-4	2-4
1500	1.3×pump power	2-7	2-7	2-7	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6
2200	1.3×pump power	2-9	2-9	2-9	2-9	2-9	2-9	2-9	2-9	2-9	2-9	2-9	2-9

Precautions for solar panel selection: Vmp>40v,Voc<430v, all solar panels are in series connection

10.Angle of solar panel installation

Use the following graphics to help determine your optimal mounting angle. If you are located in the Northern hemisphere, face your panels south, and tilt back to an angle equal to your latitude. The opposite is required if located in the Southern Hemisphere.This is a standard year-round default position. For seasonal positioning, please see the chart below.

Latitude	Year Round Tilt	Year Round Tilt	Winter Tilt
50	60	55	65
45	55	50	60
40	45	40	50
35	40	35	45
20	20	15	25

11.Problems and solutions

Failure	Reason	Solution
Pump can not start	1、The cable is too long or diameter is too small 2、Power cut off 3、The impeller is jammed	1.Use proper cable 2.Check electric circuit and adjust 3.Disassemble the pump body, remove the impurities
No water or insufficient water	1.The filter is blocked 2.Low Water level	1.Remove the impurities 2.Adjust the pump to a suitable depth
Frequent start-up	Unstable input voltage	Adjust the input voltage to ensure the voltage is in the correct range
Noise and shaking	1.Bearing damage 2.The bolts connected pump body and motor are loose	1.Install new bearing 2.Tighten the screw

12.Maintenance

1.Cut off the power before maintenance
2.Do not put any metal parts into the controllers to avoid short circuits
3.Keep the controllers away from water and dust after maintenance