Deye Solar Water Pump Controller
After-Sales Technical Service Manual

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A、Product Overview

Product Overview

1、Product Pictures



Product Overview

2、Advantages

【DC Water Pump Controller】

- **Solar Pure** — Solar pure DC input.
- **Maximum Input** — Maximum input current 18A
- **Controller** — Working environment humidity 30% -90%
- **Automatic Shutdown** — Automatic shutdown when the water tank is full
- **Water Shortage Protection** — Direct current reverse protection and indicator light reminder.
- **Timed Detection** — Regular incoming water detection
- **DC Reverse Connection Protection** — Connection protection and indicator light reminder
- **Solar MPPT** — MPPT tracking technology
- **Permanent Magnet Synchronous Motor** — Position-free on field-oriented control
- **Six Protection Functions** — Overhigh/low voltage, overcurrent low speed, open phase, start operation, anti-reverse connection.

【 (AC/DC Auto-Switch Water Pump Controller】

- **Control Chip** — Imported main control chip.
- **Intelligent Protection on Motor Drive** — Never-burn machine
- **Permanent Magnet Synchronous Motor** — Position-free on field-oriented control
- **Wide Voltage Input** — 108-430V DC, 136-264V AC
- **Solar Power Input** — Prioritize solar power
- **Solar** tracking technology — MPPT tracking technology
- **Real-Time Data Model** — Real-time data monitoring, optimizing the system
- **Error Code Memory** — Error reporting, storing fault code history, simplifying troubleshooting
- **Smart 7/24 Timer** — Automation and energy saving
- **Liquid Crystal Display** — Enhanced user convenience and experience

【Technologically Advanced】

◆Intelligent Control

◆Constant pressure water supply

◆Multi-mode switching

◆Fault warning

【Reliable quality】

◆International brand components

◆Low failure rate

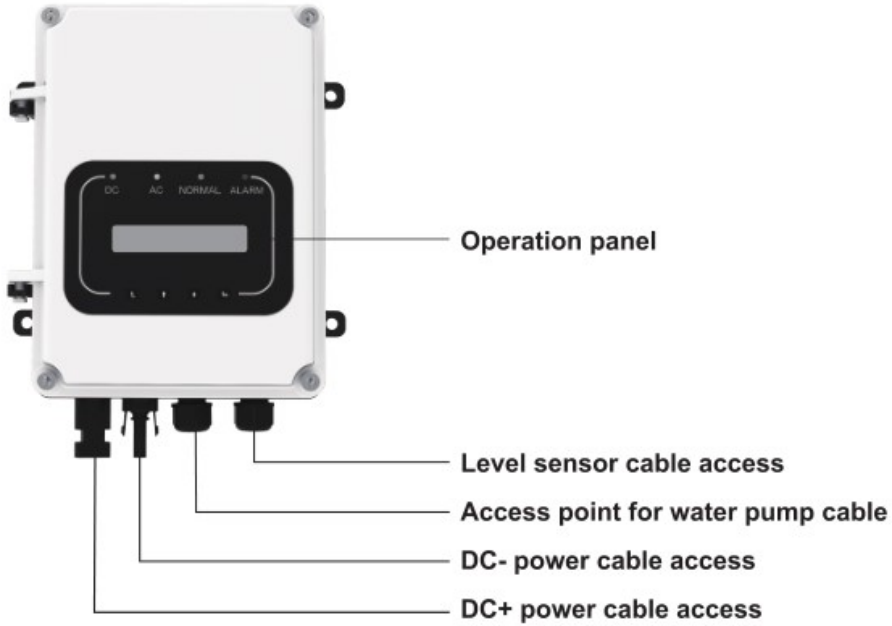
【Professional after-sales service】

◆Professional installation and repair services.

3、Water Pump Controller - Parameter Table

Model	Pump Type	Motor power(w)	PVStarting Voltage(V)	PV		AC		IP Rating	OperatingTempRange (℃)	Type
				Protection Voltag(V)	Max.InputCurrent(A)	Voltagerange(V)	Max.InputCurrent(A)			
DY-D900DC	F600	600	Vmp≥30	Voc≤110	18	/	/	IP65	-15-60	PV(DC)
DY-D2000D(DY-D1500DC)	E800	800	Vmp≥60	Voc≤220						
	C1100	1100								
	B1500	1500								
DY-D3600AC/DC	D0110JA	1100	Vmp≥108	Voc≤430	20	136-264	24			AC/DC
	D0150JA	1500								
	D0220JA	2200								
	D0300JA	3000								
DY-D13600AC/DC	D0550JB	5500	Vmp≥200	Voc≤780	17-32	280-528	28			
	D0750JB	7500								
	D0920JB	9200								
	D1100JB	11000								
	D1300JB	13000								
DY-D3000ACDC	C1100	1100	Vmp≥80	Voc≤410	14	136-264	15			ACDC
	B1500	1500								
	A2200	2200								

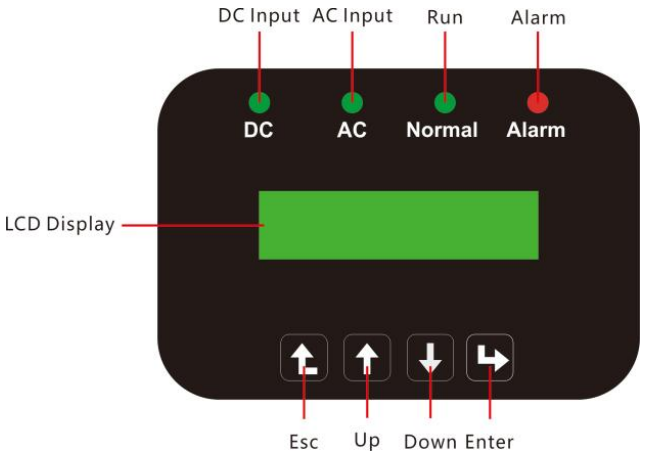
4、Pump Controller-Interface Wiring Names and Precautions



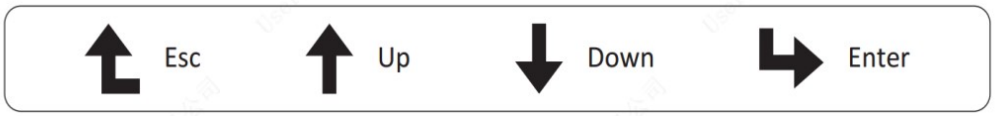
CAUTION

Please be sure to ensure that the solar panel positive and negative poles are correctly connected to the control box.
Please connect the pump to the control box according to the corresponding logo and make sure there is no contact between the wires. If the wiring is not correct, the pump will reverse in the next power-on test.
When connecting the battery, please make sure the electrodes are correct, positive to positive,negative to negative.Please be careful not to touch the control box circuit board with your hands when connecting the pump and float wires to avoid damage to the control box. If you need to connect to the battery, please be very careful not to reverse or short circuit. Solar panels are also capable of generating a large amount of energy when connected together.Care must be taken when docking, and a piece of dark fabric or cardboard or other items can be used to effectively shield the solar panels to achieve lower power output.

5、Water pump controller - Interface display function

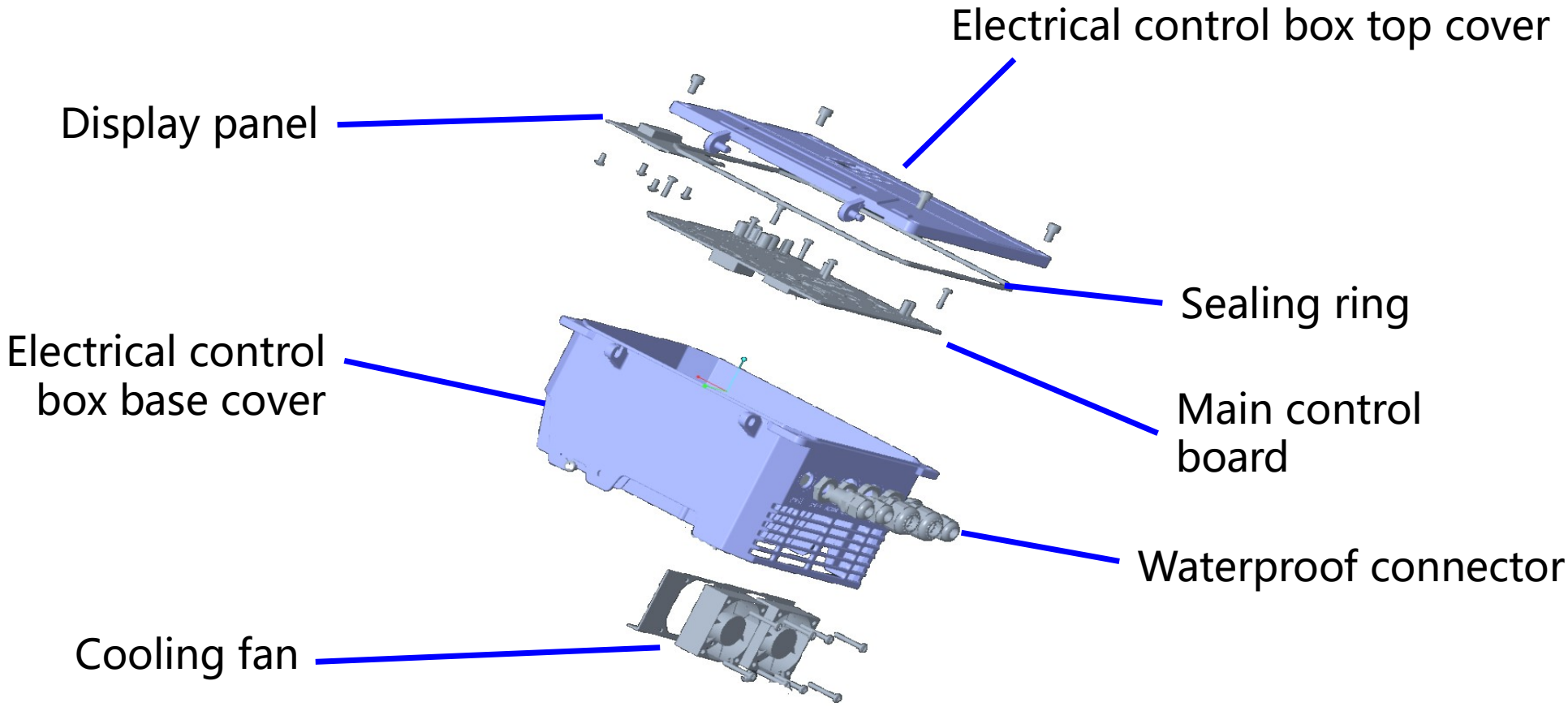






Indicator	Status	Explanation
DC	On	DC input ≥ 50W
	Off	DC input < 50W
AC	On	With AC input, AC voltage > 200V.
	Off	No AC input, AC voltage ≤ 200V
NORMAL	On	Under normal operating/Testing， Pump speed ≥ 600 rpm
	Off	Stop operating
ALARM	On	Faults
	Off	No Faults
	Quick flashing	Water level too high (fault)
	Slow flashing	The well is running out of water.

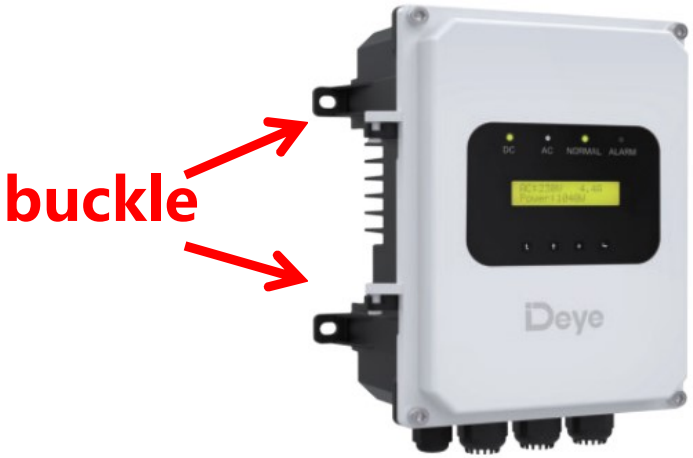
6、Exploded view — water pump controller



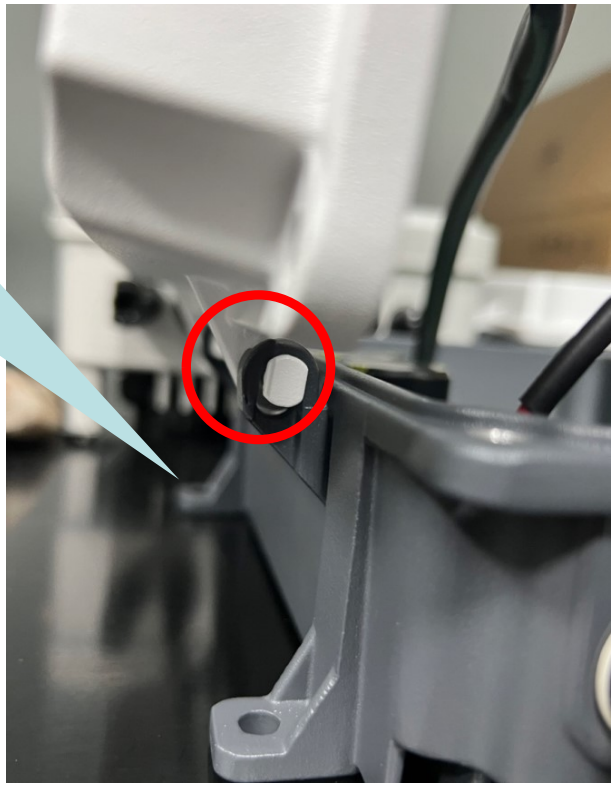
B、Disassembly and Assembly

1、Disassembly steps

Step 1: Remove the top cover



Snap fastener Rotate to align



Steps: Remove the four hex socket head screws on the top cover, open the top cover to the left, align the rotating clips on the left side, disconnect the internal display panel cable, and then remove the top cover.

Tools: Hex wrench

Disassembly steps

Step 2: Display panel removal



step: Remove the four screws indicated by the arrows;

tool: Phillips screwdriver

Step 3: Main control board removal



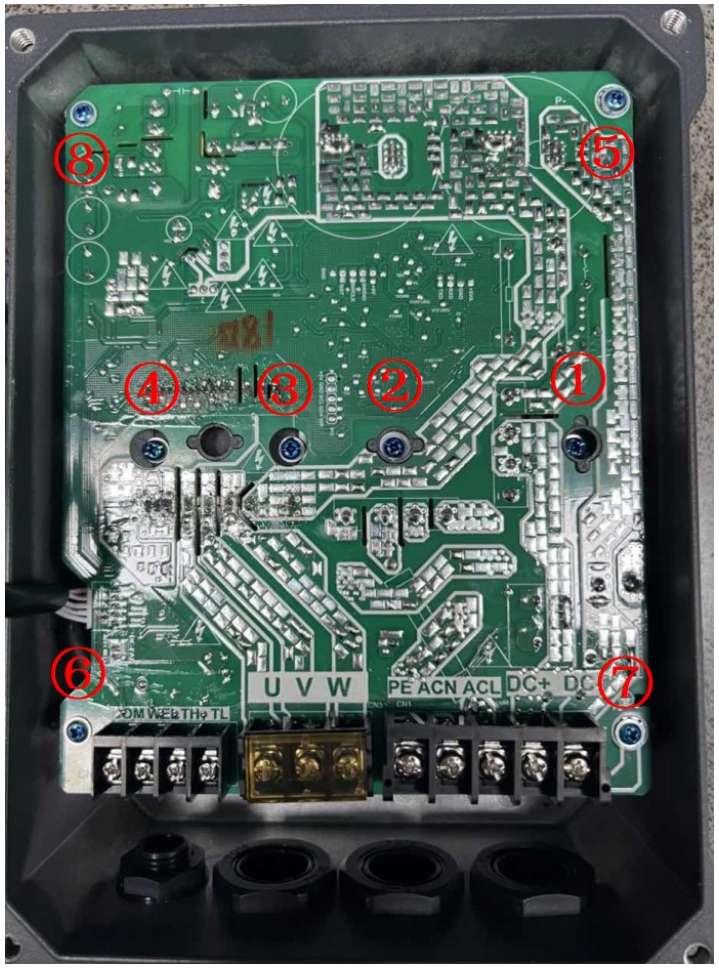
step: First, remove the screw in the center of the main control board, then remove the screws around the edges, and lift the main control board upwards;

tool: Phillips screwdriver

2、Assembly steps

Generally, reverse the above steps.

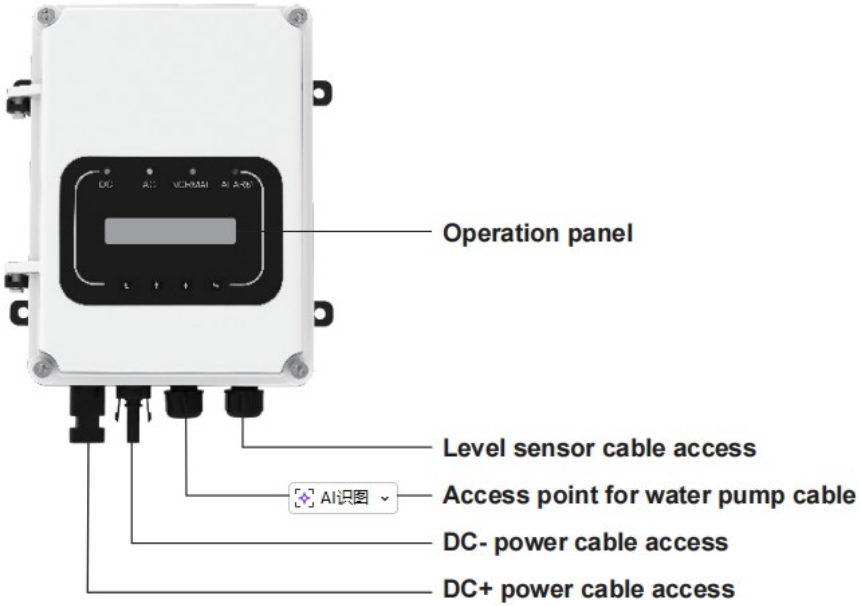
For the main control board screws, tighten them according to the sequence shown in the attached diagram: first tighten the middle screw, then tighten the four corner screws (diagonally), and control the tightening torque to **0.55-0.65N.m**， excessive torque can lead to device damage;Please also ensure that all components are installed correctly; otherwise, it may lead to improper assembly of other components, resulting in malfunctions and other problems.

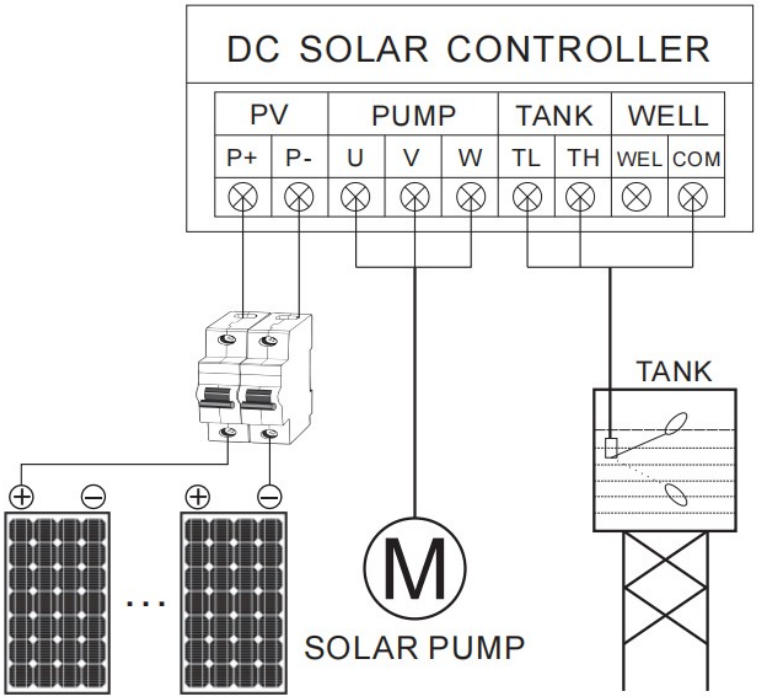


C、Wiring Diagram

Wiring diagram

1、Wiring diagram---Water pump controller (DC) 400-1500W



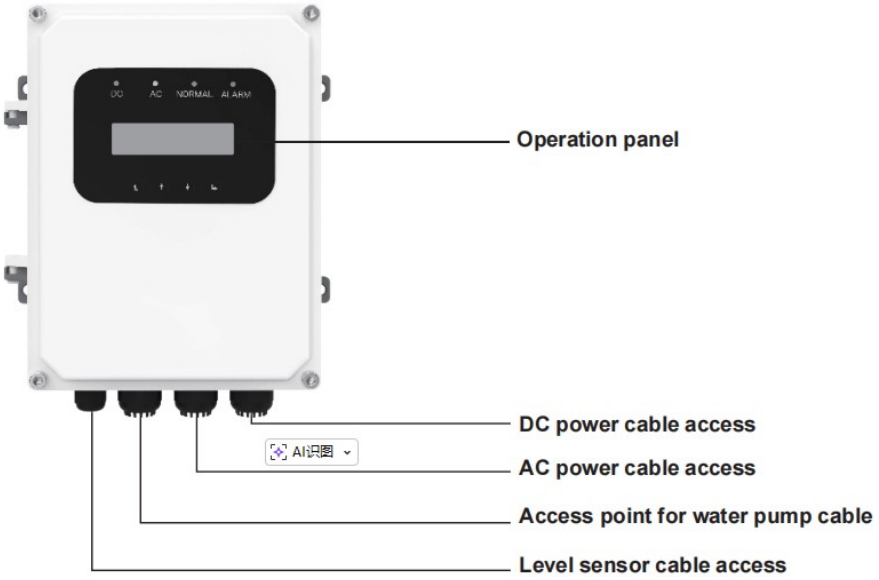


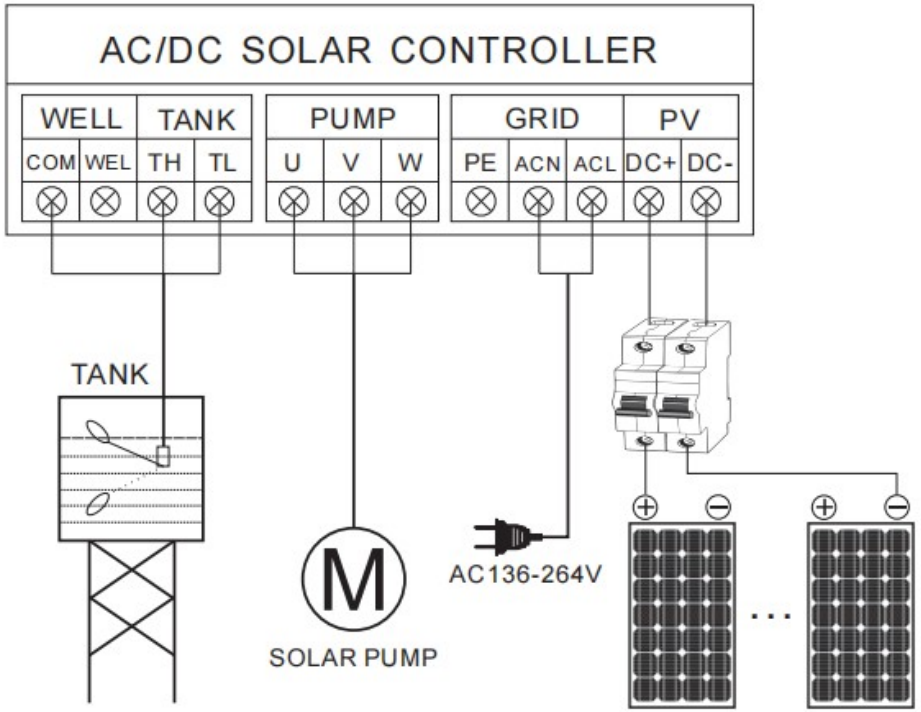
Tip 1: Please do not connect the two poles of the power supply backwards. otherwise the product will not run.

Tip 2: Before starting, please check whether the switch is in the "off" state

Wiring diagram

2、Wiring diagram---Water pump controller（AC/DC） 1100-3000W





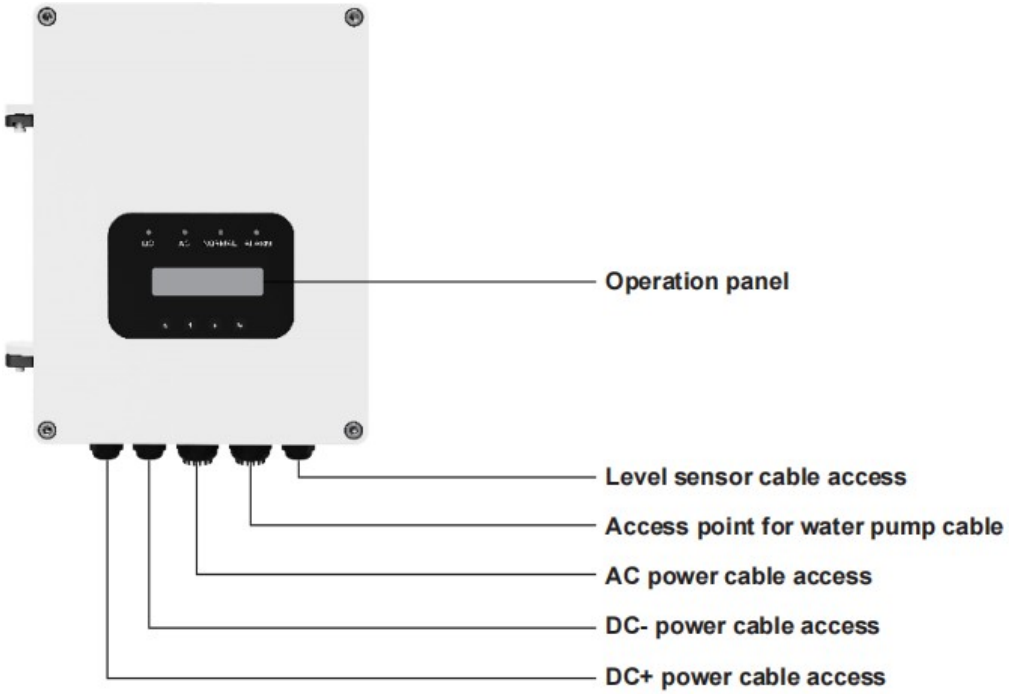
Tip 1: Please do not connect the two poles of the power supply in reverse, otherwise, the product will not function.

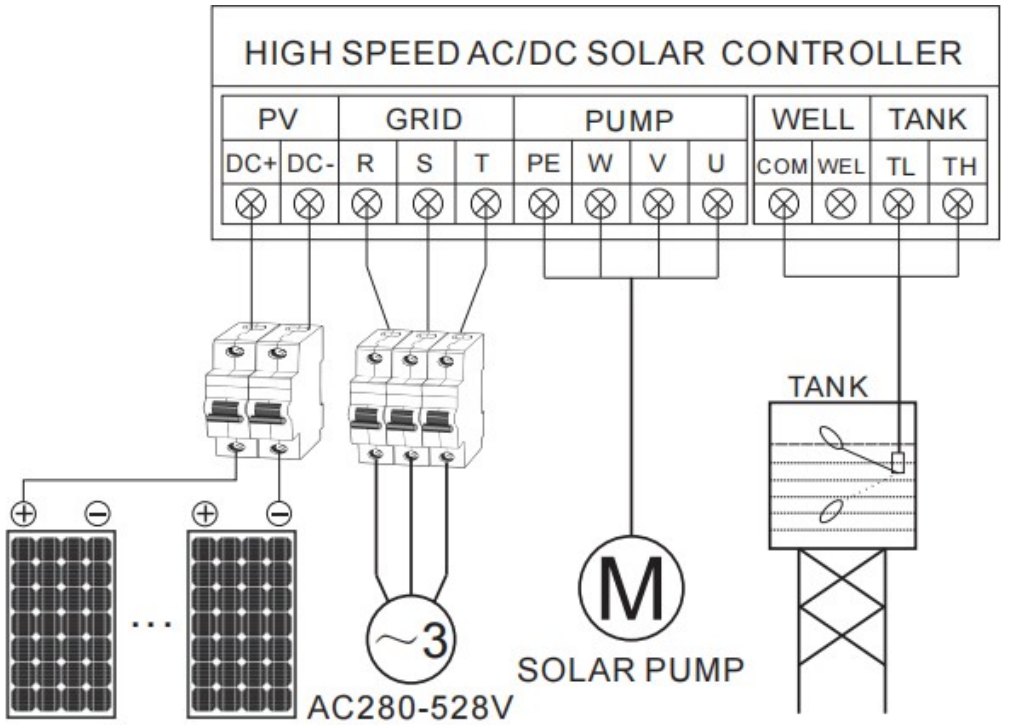
Tip 2: For safe AC/DC connection, please install an air switch.

Tip 3: Before starting, please check if the switch is in the "off" state.

Wiring diagram

3、Wiring diagram---Water pump controller（AC/DC） 5500-13000W





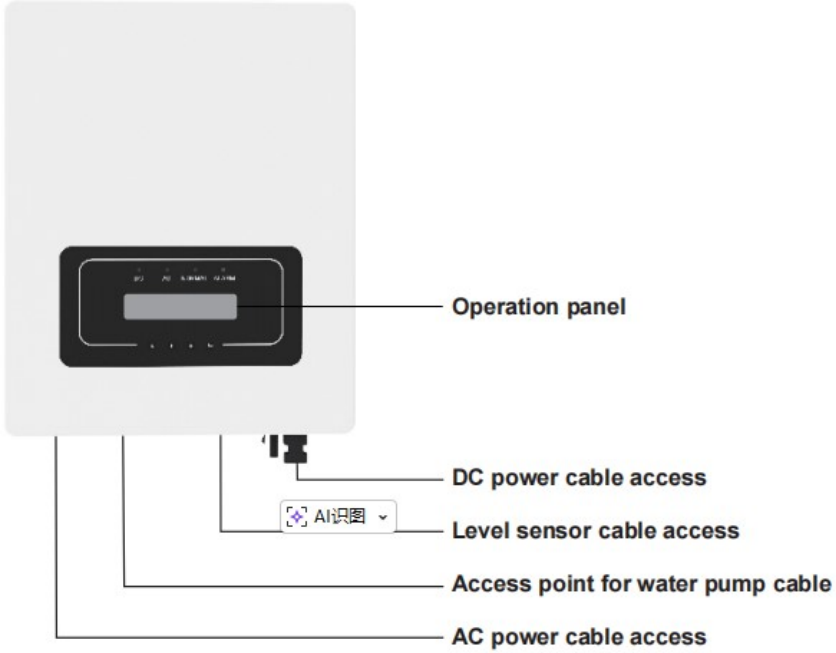
Tip 1: Please do not connect the two poles of the power supply in reverse, otherwise, the product will not function.

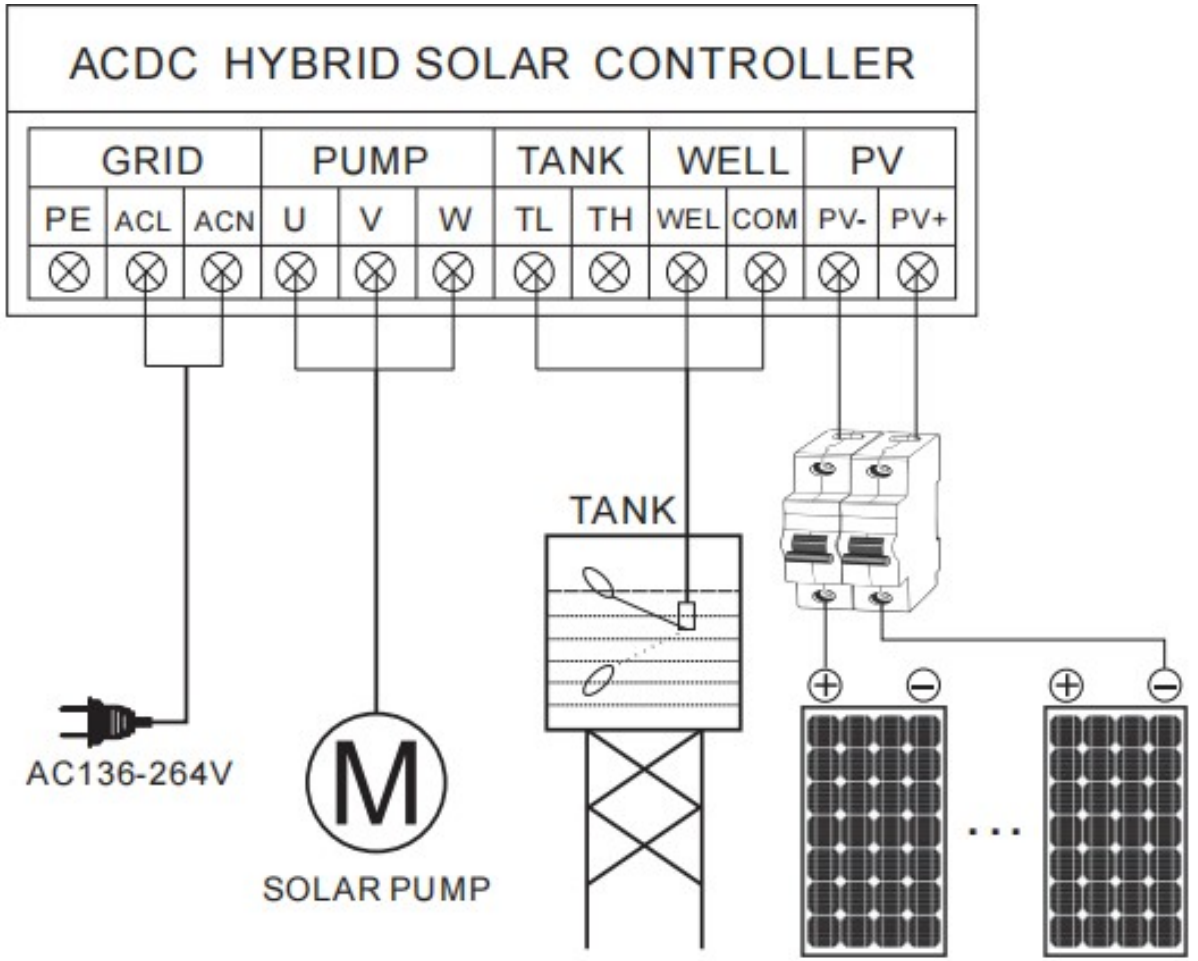
Tip 2: For safe AC/DC connection, please install an air switch.

Tip 3: Before starting, please check if the switch is in the "off" state.

Wiring diagram

4、Wiring diagram---Water pump controller（ACDC） Hybrid 1100-2200W





D、Fault maintenance

Fault maintenance

Error Codes and Troubleshooting

Error Codes	Error Description	Fault Causes and Solutions	Fault Recovery
E0	E-phase Fault	EEPROM Parameter Read Error. ---If the error remains after power-on,replace the controller.	Power-on again
P0	Hardware Overflow	Pump type mismatch. ---Select the matching pump. UVW three -phase short circuit detected. ---Rewire and ensure proper UVW connection.	Automatic return to normal after 30 seconds
P03	Communication Failure	The display module and the main control module have not established communication for 1 minute. ---If it cannot be cleared after powering on again, please replace the controller.	Automatically restore communication after repower-on
P30	Input AC power phase loss	One phase of the input power supply is not connected to the controller. ---Check if the AC input power cord is properly connected to the controller.	Automatically restore after both AC and DC power sources power-on again
P31	The AC input power is too low	If the AC input voltage is lower than the minimum voltage of the controller. ---Check whether the three-phase input power supply voltage is abnormally low, and whether the circuit is aging or the power supply capacity of the grid is insufficient.	Automatically restore after AC input voltage returns to normal.

Fault maintenance

Error Codes and Troubleshooting

Error Codes	Error Description	Fault Causes and Solutions	Fault Recovery
P43	Phase Loss Protection	UVW three -phase short circuit detected. ---Rewire and ensure reliable UVW connections.	Automatic return to normal after 30 seconds
P46	Stall Protection	Pump type mismatch. ---Select the matching pump. Pump extension cable too long. ---Reduce the cable length. Supply power too low. ---Increase the power supply. Pump bearing jammed. ---Clean the pump bearing.	Automatic return to normal after 30 seconds
P48	Dry Draw Protection	Air not fully vented in the pump. ---Turn off power, wait 30 seconds, then restart the pump to drain water. No water in the tank. ---Wait for water supply and restart.	Automatic return to normal after 30 seconds /Power-on again
P49	Software Overcurrent	Motor model mismatch. ---Select a matching pump. UVW three-phase short circuit detected. ---Rewire and ensure proper UVW connection.	Automatic return to normal after 30 seconds
P50	Low Voltage Protection	Input voltage is too low. ---Refer to the electrical specifications of the corresponding model for proper input power supply	Returns to normal when voltage is normal.
P51	High Voltage Protection	Input voltage is too high. ---Refer to the electrical specifications of the corresponding model for proper input power supply	Returns to normal when voltage is normal.

Error Codes and Troubleshooting

Error Codes	Error Description	Fault Causes and Solutions	Fault Recovery
P53	Current Sampling Fault	Internal current sampling fault solutions please reference voltage fault. ---If the error remains after power-on again, please replace the controller.	Power on again
P60	Over Temperature Protection	Controller MCU temperature exceeds 90℃. ---The controller automatically reduces operating power to lower the temperature.	Returns to normal when temperature is normal.
P73	AC Voltage Protection	AC voltage fluctuation. ---If the error remains after power-on again,please replace the controller.	Power on again
E51	Sensor Error	The heat sink temperature sensor is faulty. ---If the error remains after power-on again, please replace the controller.	Power on again
PL	Power Insufficient	No sunlight detected. ---Please wait for sunlight, restart again. Incorrect solar panel selection. ---Refer to the recommended solar panel selection guide for correct selection. The pump head or motor bearing is jammed and cannot start. ---Troubleshoot by disassembling the pump head and rotating the bearing.	The controller attempted to restart five times, with 30-second intervals between each attempt. After running stably for 15 minutes, the restart was cancelled.