SOLAR POOL PUMPS

CEDAR PUMPS®

Instruction Manual





SP500
SP900

Version 1.2 25/10/2026

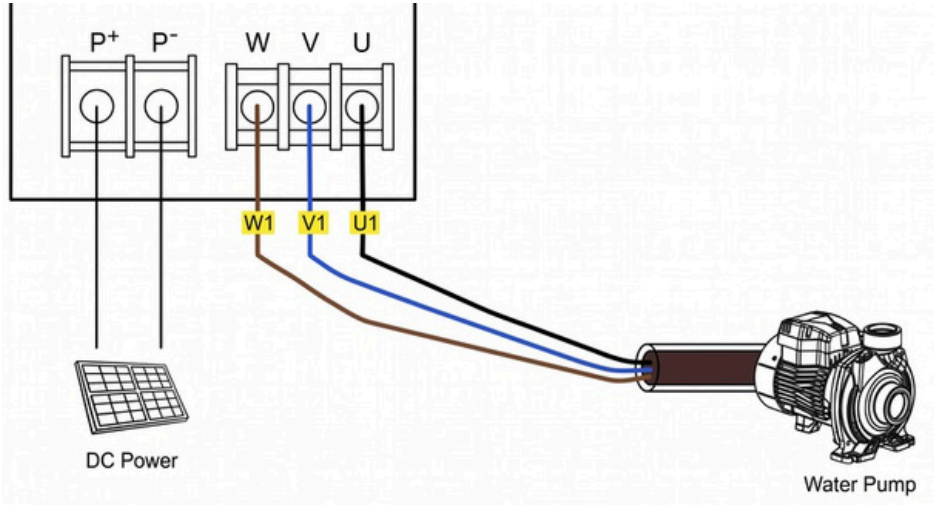
Pump Specs

Model	Pump Rating	Max Current	Max Voc	MPPT Voltage Range	Max Head	Max Flow	Working Temperature (°C)	Panels
SP500	48V - 500W	17A	**105V**	60-90V	14m	15m3/h	-15 to 60	2 x 450W
SP900	72V - 900W	17A	**160V**	90-120V	19m	20m3/h	-15 to 60	3 x 450W

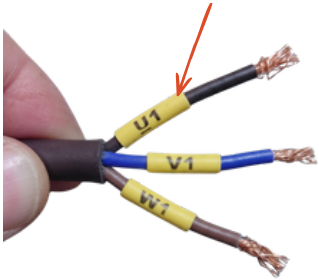
Panels in series add up their voltage. Add the Voc of every panel in the string — the total must stay below the max Voc shown.

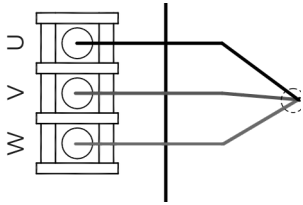
Example: 3 panels × 51 V Voc = 153 V. This total must stay below the max Voc shown.

Wiring Diagram



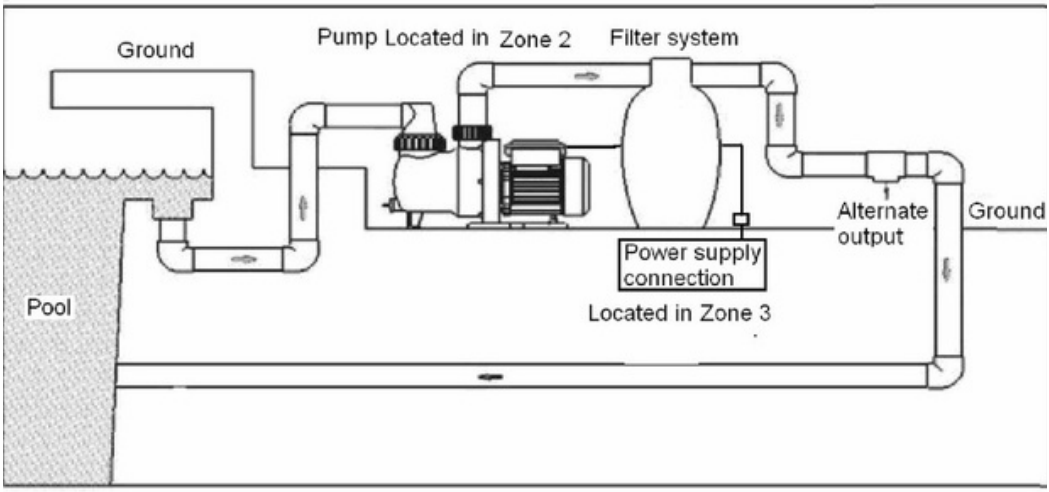
***NB! Follow W V U labels (not traditional wire colours)**







System Layout



Fault Codes and Troubleshooting

PL	Insufficient power	**1.** Insufficient illumination **2.** Solar panel configuration issues **3.** There are surrounding obstacles that hinder its progress.	**1.** Wait for better lighting conditions. **2.** Check the solar panel configuration according to the inverter's recommended input voltage. **3.** Exclude the shading factor. If the shading object can't be removed, adjust the installation position of the solar panels.	For the first 5 times, clear after 30 seconds. After that, clear after 30 minutes.
No code display after power-on	Incomplete display	**1.** The keyboard display panel is abnormal. **2.** The connecting cable is loose or damaged.	**1.** The display circuit of the keyboard display board has a problem. Replace the keyboard display board **2.** Check and replace the connecting wire between the keyboard and the PCB circuit board.	
	No Display	**1.** No power input. **2.**PCB board is damaged	**1.** Check if the input power supply is normal. **2.**If the buffer circuit, IGBT, or switching power supply circuit is damaged, professional repair skills are required. In such cases, it is recommended to replace the PCB board directly.	

Fault Code	Fault Description	Fault Cause	Solutions	Recovery Process
E12	Water dry protection	1. The customer short-circuited the WEL and COM terminals. 2. The dry water terminal circuit is damaged.	1.Remove the WEL and COM terminals. Except for the LDG series, other series generally do not need to connect the water dry float switch for protection. 2. Replace the inverter circuit board.	Automatically clear 30 seconds after troubleshooting.
E13	Water full protection	1. The full-water signal of the water tank is connected. 2. The water tank is not full but an alarm is triggered. 3. The circuit of the full-water terminal is damaged.	1. Confirm whether it is a normal full-water warning. 2. Check if the float ball and relevant sensor are normal. 3. Verify whether the float ball signal and the power signal are routed together, as this may lead to false alarms caused by interfer- ence. 4. Check if it is due to poor grounding conditions and eliminate false alarms caused by poor grounding. 5. Replace the inverter circuit board.	Automatically clear 300 seconds after troubleshooting.
P0	Hardware overcurrent	1. Impediment of the transmission mechanism and excessive motor load 2. Short circuit at the inverter output or three-phase voltage imbalance 3. Aging of inverter devices, malfunction of current transformers or current detection ICs, etc. 4. Inter-turn short-circuits in the motor, overheating of cables or insulation damage	1. Check and address issues with the transmission mechanism and motor load to ensure they operate smoothly without stalling. 2. Check the connection wires from the inverter output to the motor to ensure there are no short circuits and the three-phase voltages are balanced. 3. Replace the damaged components or the entire inverter. 4. Check and replace the damaged external devices.	Automatically clear 30 seconds after troubleshooting
P43	Phase loss protection	1. Motor problems cause the inverter output to have a phase loss. 2. An internal fault in the inverter.	1. Repair or replace the motor. 2. Replace the inverter circuit board.	Automatically clear 300 seconds after troubleshooting.

P46	Stall protection	1. The motor starts under a heavy load, causing the speed to drop rapidly. 2. The motor stalls during operation, leading to an abnormal rise in current. 3. Low grid voltage causes increased current draw, which may trigger a false stall alarm from the inverter. 4. The pump cable is excessively long or undersized	1. Check and adjust the load appropriately to ensure that the motor load is within the rated range. 2. Check if the impeller or bearing is stuck. 3. Check the power grid voltage. 4. Configure the cable specifications according to the minimum allowable voltage drop; reduce the water pump cable length by extending the DC input cable.	Automatically clear 30 seconds after troubleshooting.
P48	Dry pumping protection	1. Air in the water pump or the pipeline. 2. Water pool is lack of water. 3. Valve of the inlet pipe is not opened.	**1.** Remove the air from the pipeline. **2.** Check the water source. It will automatically resume 30 minutes after water is available. **3.** Open the valve.	Automatically clear after 30 minutes or clear by powering on again.
P49	Software overcurrent	**1.** Motor coil short circuit or phase imbalance. **2.** Sudden load increase during startup or operation, causing the current to exceed the preset threshold. **3.** Loose wiring or damaged cables lead to abnormal current. **4.** Damaged PCB board.	**1.** Check for short circuit phenomena and eliminate short circuit conditions. **2.** Check if the impeller or bearing is stuck. **3.** Check the current circuit to confirm if it is a wiring problem. **4.** Replace the PCB board.	Automatically 30 seconds after troubleshooting.
P50	Low voltage protection	**1.** Insufficient input voltage **2.** PCB board is damaged.	**1.** Check if it is within the recommended input voltage range of the inverter. **2.** Replace the PCB board.	Clear immediatelywhenthe voltage returns to normal
P51	High voltage protection	**1.** Excessive voltage input **2.** The ambient temperature is too low.	**1.** Check if it is within the recommended input voltage range of the inverter. **2.** Check the actual input voltage and troubleshoot	Clear immediately when the voltage returns to normal
P60	High temperature protection	The temperature of the controller MCU has surpassed 90 degrees.	**1.** Add a heat dissipation system. **2.** Place the inverter in an area not exposed to direct sunlight.	Automatically clear after the temperature returns to normal.