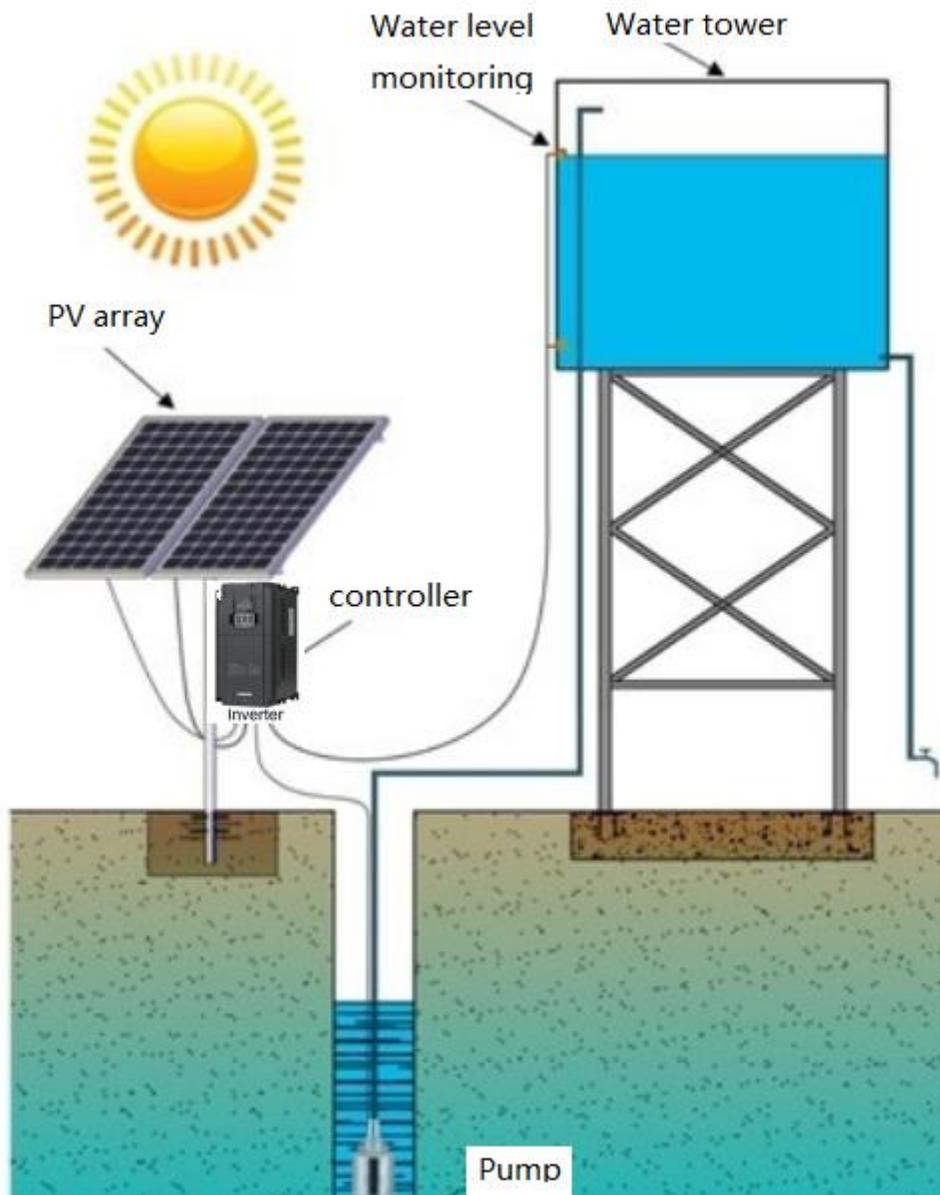


# Introduction of PV Water System

INTRODUCTION OF PV WATER SYSTEM



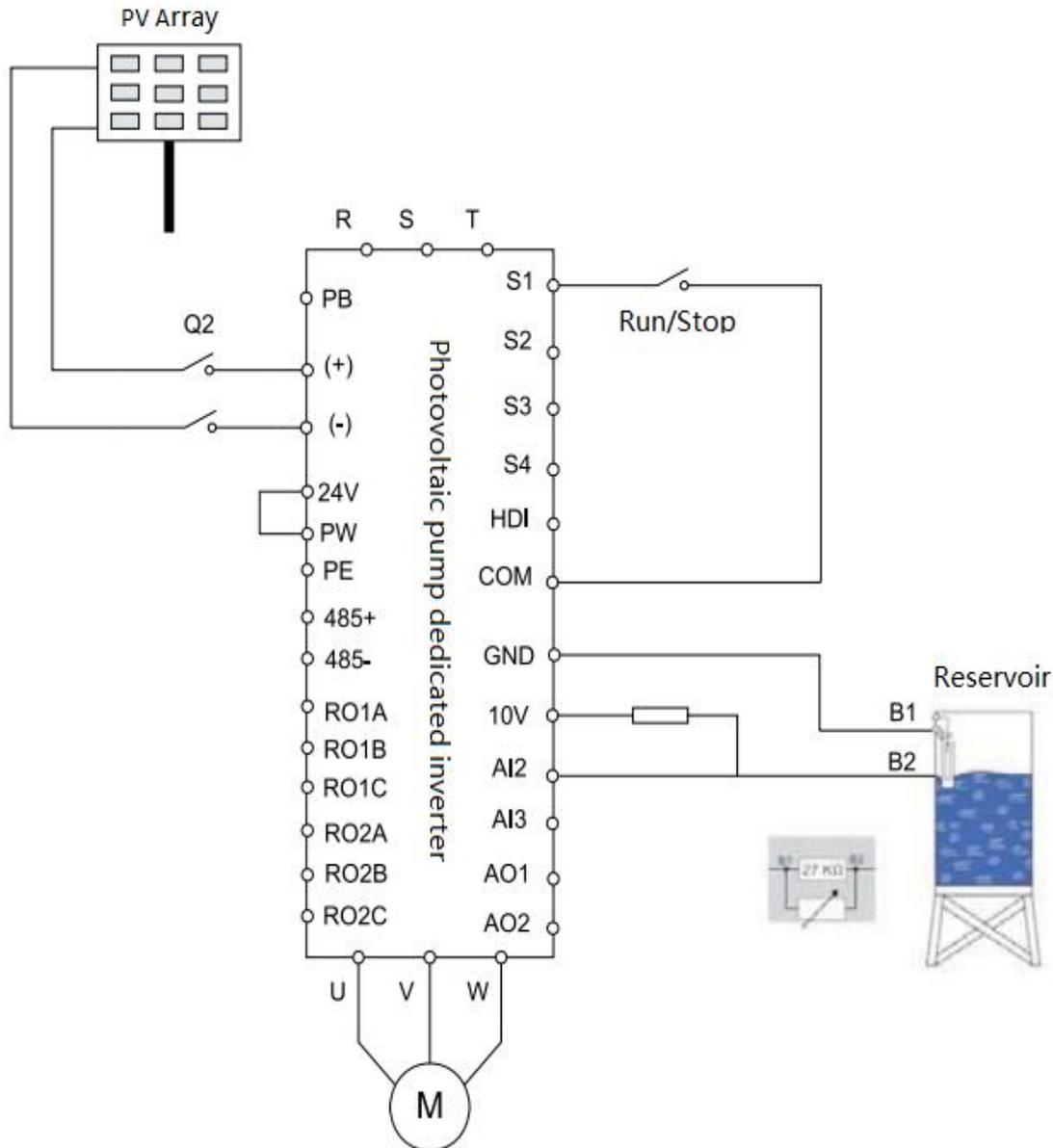
Industry Profile:

Energizing industries, with clean solar energy to solve energy problems

Application: agricultural water conservancy, desert control, domestic water, urban water features

Features: no personnel care, no need for diesel, no power grid

# Structure of PV Pump System



## 1. PV array

Paralleling each group panels from required power. We suggest the panel power is the 1.3-2.0 times of matching pump rated power.  
For example:

Solar panel voltage	24V	12V solar panel connection
System voltage		
220V pump	8 pcs panels in series	16 pcs panels in series
380V pump	16 pcs panels in series	16 pcs panels in series

Choose pump of 220V/1.5KW, solar panel of 80W/24V, the selection and installation of panel as following:

According to the above sheet, system of 220V choose 8pcs 24V panels in series, series power is  $8 \times 80 = 640W$ . The panel power range is 2.25KW-3.0KW, so we suggest paralleling in 4 groups.

# Structure of PV Pump System

Main Type of Solar Panels:

200W/36V poly-crystalline solar module			
Product	poly-crystalline solar module	Model	TSD-M200W
		Max. Power (W)	200W
		Max. Voltage (V)	36V
		Max. Working current (A)	5.84A
		Open Circuit (V)	42.48V
		Short circuit current (A)	6.42A
		Max. system voltage (V)	1000V
		Cell Convert Rate (%)	16.5%
		Module Convert Rate (%)	16%
		Cell Type	Mono
		Max. Coefficient of Power Temp (Pm) (%/°C)	-0.45%/°C
		Open circuit Voltage temp (Voc) (%/°C)	-0.35%/°C
		Short circuit current temp(Isc) (%/°C)	+0.05%/°C
		Tolerance (%)	±5%
Working temp range	-40°C~90°C	Test condition	Am1.5 25°C 1000W/m <sup>2</sup>
Net weight (Kg)	4.2Kg	Module size (mm)	1320*990*35
Gross weight (Kg)	23Kg	Packing and package size (mm)	5PCS 1320 x 990 x 35
Component	Toughened glass + EVA +solar cell + EVA + TPT + aluminium frame+ International standard junction box		
Glass	Low iron toughened high penetrate rate glass	Frame	25mm aluminium frame
Junction box type	International standard junction box	Life cycle	<b>25 year</b>
Certificate	CE ; ROHS ; IEC61215		

# Structure of PV Pump System

## 2. Photovoltaic pump dedicated Inverter

This product is suitable for solar photovoltaic water pump system, located in environmental protection, economic photovoltaic products market to replace water storage, no battery components. Solar components generated by the DC input PV pump inverter, converted to alternating current, direct drive a variety of pumps, and according to changes in the intensity of sunlight in real time to adjust the output frequency.



### Features:

- 1, the use of advanced MPPT control technology, the maximum play solar power generation efficiency
- 2, according to changes in the intensity of sunlight, rapid adjustment of the pump water
- 3, with the automatic sleep and wake up function:
  - (1) high water level sleep, low water level automatically wake up to achieve water level control
  - (2) sunrise, sunset sun is weak when the sleep, light automatically wake up
- 4, with underload protection, water level sensor fault protection and other functions, to prevent the water dry after the pump empty pumping

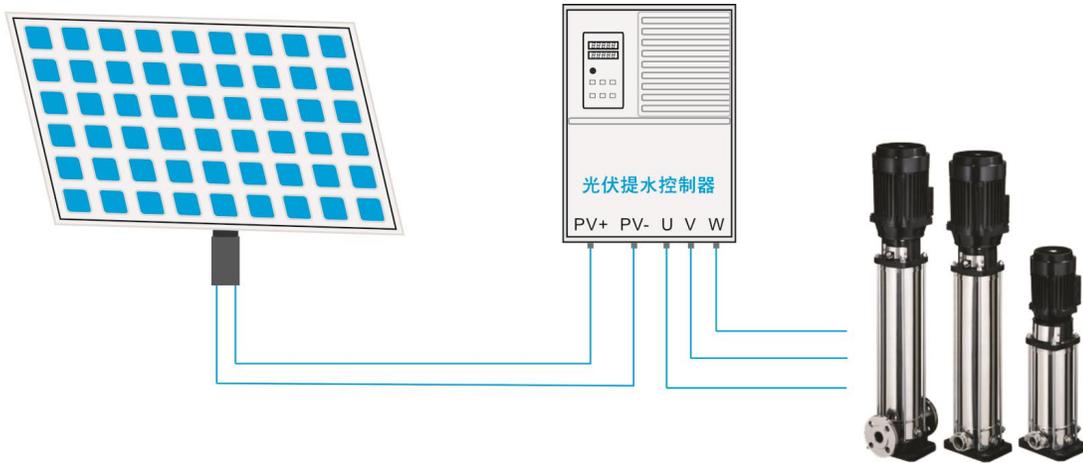
# Structure of PV Pump System

Power level:

Controller model	Input voltage	Rated output power (kW)	Rated input current (A)	Rated output current (A)	Apply to pump size	Head	Rate of flow	
HV500P-R40G2	3-phase 220V±15%	0.4	5.4	2.3	0.4	47-32m	1-10m <sup>3</sup>	
HV500P-R75G2		0.75	5.0	4.5	0.55	70-48m	1-10m <sup>3</sup>	
HV500P-1R5G2		1.5	7.7	7	0.75	81-56m	1-10m <sup>3</sup>	
HV500P-0040G3		4.0	10	9	1.5	128-87m	1-10m <sup>3</sup>	
HV500P-5R5G3		5.5	15	13	4.0	225-149m	10-20m <sup>3</sup>	
HV500P-R75G3		7.5	20	17	5.5	172-111m	20-40m <sup>3</sup>	
HV500P-011G3		11.0	26	25	7.5	237-147m	20-40m <sup>3</sup>	
HV500P-015G		15.0	35	32	11.0	159-97m	40-100m <sup>3</sup>	
HV500P-018G3		18.5	38	37	15.0	208-127m	40-100m <sup>3</sup>	
HV500P-022G3		22.0	46	45	18.5	83-39m	150-500m <sup>3</sup>	
HV500P-030G3	3-phase 380V±15%	30.0	62	60	22.0	86-70m	210-270m <sup>3</sup>	
HV500P-037G3		37.0	76	75	30.0	125-105m	210-270m <sup>3</sup>	
HV500P-045G3		45.0	90	90	37.0	150-125m	210-270m <sup>3</sup>	
HV500P-055G3		55.0	105	110	45.0	180-145m	210-270m <sup>3</sup>	
HV500P-075G3		75.0	140	150	55.0	200-170m	210-270m <sup>3</sup>	
HV500P-090G3		90.0	160	176	75.0	Make another solution	Make another solution	
HV500P-110G3		110.0	210	210	90.0			
HV500P-132G3		132.0	240	250	110.0			
HV500P-160G3		160.0	290	300	132.0			
HV500P-185G3		185.0	330	340	160.0			
HV500P-200G3		200.0	370	380	185.0			
HV500P-220G3		220.0	410	415	200.0			
HV500P-250G3		250.0	460	470	220.0			
HV500P-280G3		280.0	500	520	250.0			
HV500P-315G3		315.0	580	600	280.0			
				315.0				

# Structure of PV Pump System

## 3. Solar Pump



PV+: Connect with the positive pole of solar panel  
PV-: Connect with the negative pole of solar panel  
U, V, W: Connect with U, V, W of pump

### Main Points:

1. When choosing ground installation pumps, should rational select installation position, structure firm basis, configure water absorption and pumping pipeline, confirm if build pump room based on pumps protection grade.
2. Pumping by deep well, drilling and cleaning from requirements, the internal diameter of borehole must be greater than the minimum size of pumps required. Pumps installation depth should meet the following demand: Lower than dynamic water level at least 1m, higher than well pipe inlet filtering hole, at least 5m from the bottom of the well.
3. Pumping from other water source, assure stable installation, avoid pump transverse force.

# Application

Mainly used for agriculture and forestry irrigation, desert control, grassland animal husbandry, urban water and other fields.

