AC/DC Hybrid solar pump with brushless motor

Making • Life • Easier

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ENGLISH MANUAL

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AC/DC Hybrid solar pump has very wide application, it can be used to irrigation, house using water, animal drinking water and so on. Meanwhile, AC/DC Hybrid solar pump motor is brushless dc motor which have very higher working efficiency compared with AC motor. The speed range of motor is 600-3700RPM depending on the power input and the impeller load.

Energy supply:

1. Solar panels（DC))
2. Battery (DC)
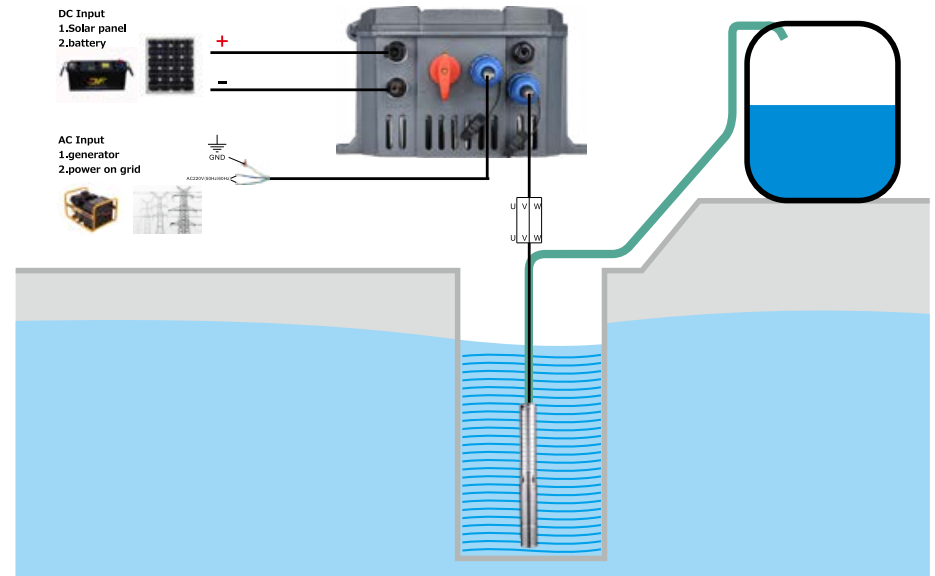3. Generator (AC)
4. AC power grid (AC)

Advantage as following:

1. Brushless permanent magnetic motor, efficiency improved by 20%-40%, frequency conversion and controller outside
2. Soft start running, make motor life longer
3. Powered by AC/DC (AC power include: grid electricity and generator electricity; DC power include: solar panel and battery)
4. Supply voltage range: 90~460V DC (Solar panel Voc voltage); 90~240V AC at 50/60Hz
5. Reverse protection
6. MPPT built inside
7. Over current protection
8. Locked rotor protection
9. Phase deficiency protection
10. Low water level sensor protection
11. High water level sensor protection
12. AC/DC input option by manual or automatic
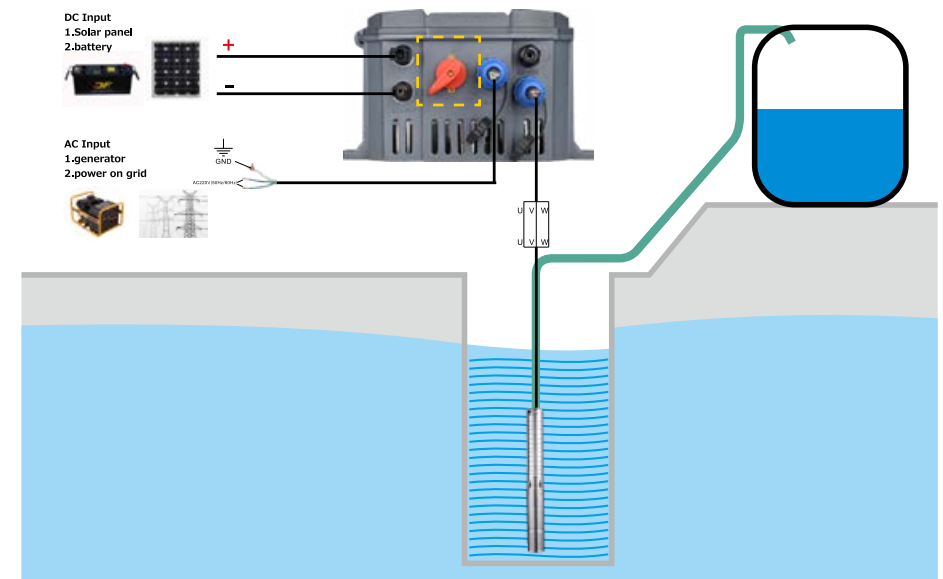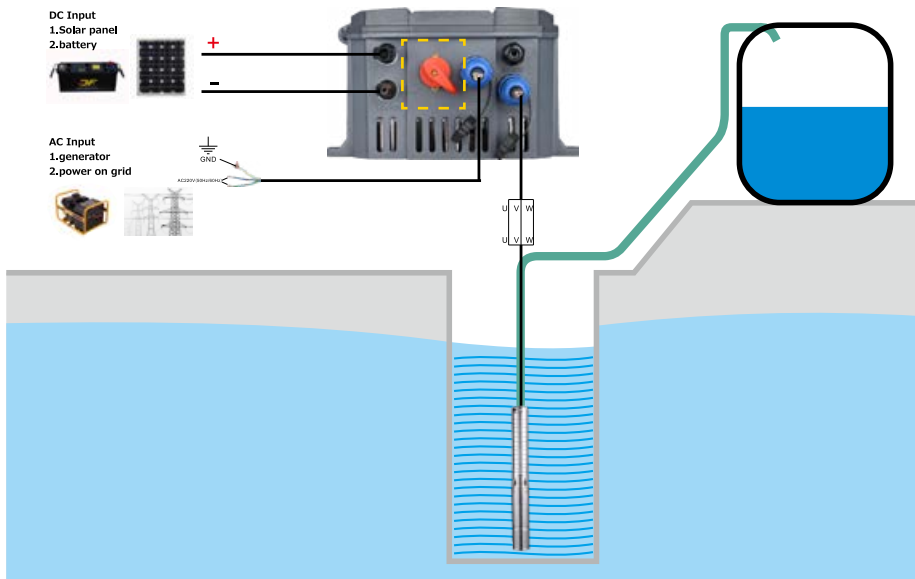13. Remote control system (option)

Accessory picture:

AC 220V Input Cable

Pump U V W Cable

Connecting diagram:

DC Input
1.Solar panel
2.battery

AC Input
1.generator
2.power on grid

GND

AC/DC working selection diagram:

1.DC working

DC Input
1.Solar panel
2.battery

AC Input
1.generator
2.power on grid

GND

2.AC working

DC Input
1.Solar panel
2.battery

+
−

AC Input
1.generator
2.power on grid

3.System stop working (OFF)

DC Input
1.Solar panel
2.battery

+
−

AC Input
1.generator
2.power on grid
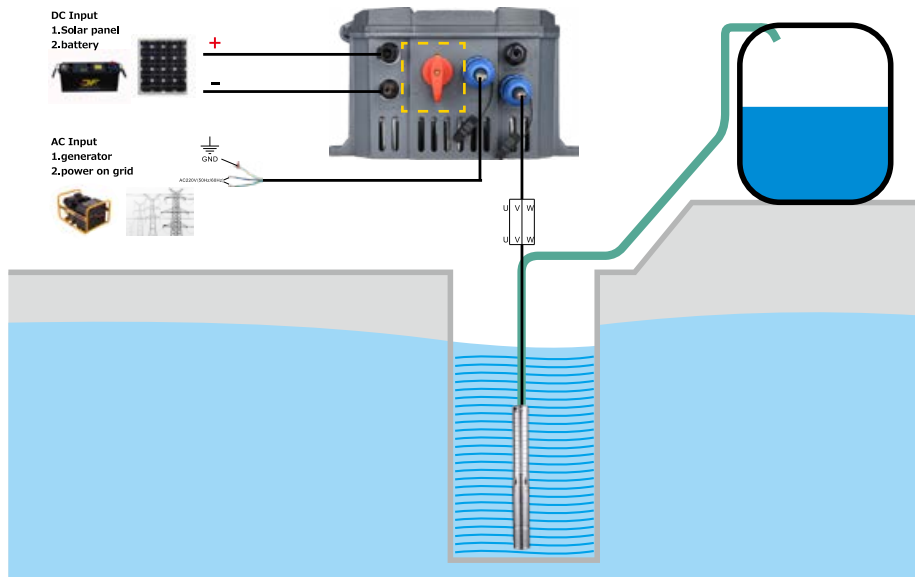
Note: after you finish connecting the system, when you want to choose the input power way, pls read above three diagram carefully. the main thing which you should do is to move the read switch .
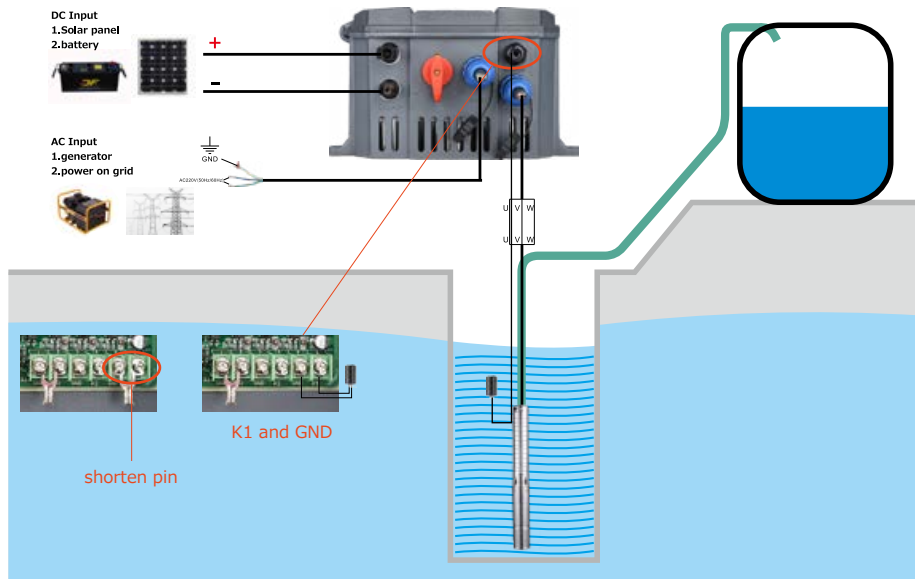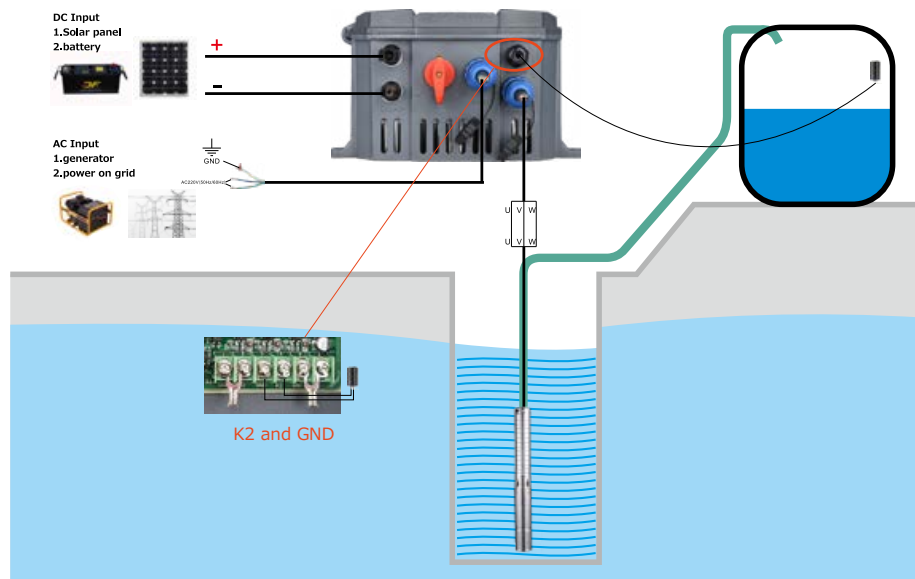
Controller inside diagram:

WATER LEVEL SENSOR INSTALLATION:

If you want to use water level sensor to control the high water level and low water level. It can be done. When your tank is full or your well has no water, the system can stop and work again automatically.
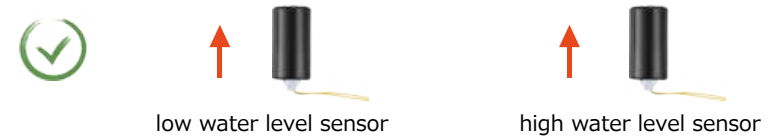
In the controller, **K1 and GND** is used to control low water level, if your well has no water, it can stop automatically and protect the pump. you can installed sensor, if the water level is lower than sensor, then the pump will stop automatically. When you connect the low water level sensor, you should take away the **shorten pin** between K1 and GND, then connect the water level sensor two feet to KI and GND. If you no need the low water level sensor, should put shorten pin between K1 and GND again, otherwise, the pump will not work. When the water level go up again, then pump will start working again after 10 munites.

DC Input
1.Solar panel
2.battery

+
-

AC Input
1.generator
2.power on grid

GND
AC220V/50Hz/60Hz

U V W
U V W

K1 and GND

shorten pin

In the controller, **K2 and GND** is used to control high water level. If your tank is full, the pump will stop working automatically. you just connect the water level sensor two feet to K2 and GND. Then install the water level sensor to the location which you think is highest in the tank. If you no need the high water level sensor, you just take away the sensor two feet from K2 and GND. When the water level go down again, then the pump will start working again after 10 munites.

DC Input
1.Solar panel
2.battery

+
-

AC Input
1.generator
2.power on grid

GND
AC220V/50Hz/60Hz

U V W
U V W

K2 and GND

E.Water Level Sensor Installation Position drawing

low water level sensor   high water level sensor

Note : two water level sensors are the same,can be used to anyone.

Solar panels information:

1.250W Solar panel data

Rate Power	Open loop voltage	Max.Current	Dimensions
250W	36.5V	9.09A	L1640mm*W992mm*H35mm

2.System solar panels connection information

all the solar panels should be connected in series, and the solar panels input power should be according to following suggestion power. normally, the solar panels input power should be less than 1.5 times of motor power

motor voltage(v)	motor power (w)	solar panel (w)	solar panel quantity(pcs)	connection
72	600	250	3	in series
96	750	250	4	in series
120	900	250	5	in series
144	1100	250	6	in series
192	1500	250	8	in series
280	2200	250	12	in series