

# Solar pumping System

## Note:

MAXIMA solar motor powers the new system for the supply of clean water based on the most widely available renewable energy, the sun. It is designed for easy use and requires no maintenance. It is the ideal solution for supplying water in remote areas, where the normal power supply of electricity from the power grid is inconsistent or completely unavailable

## Parameter

Location: UAE Water Temp: 25°C

Required daily output: 10m<sup>3</sup>/day

Pipe type: Plastic

Dirt loss: 3%

Static Head: 55m

Motor lenght: 50

Pipe length: 20m

## Products

Submersible pump 1pc;3SPW2-11 (1.5HP DC)

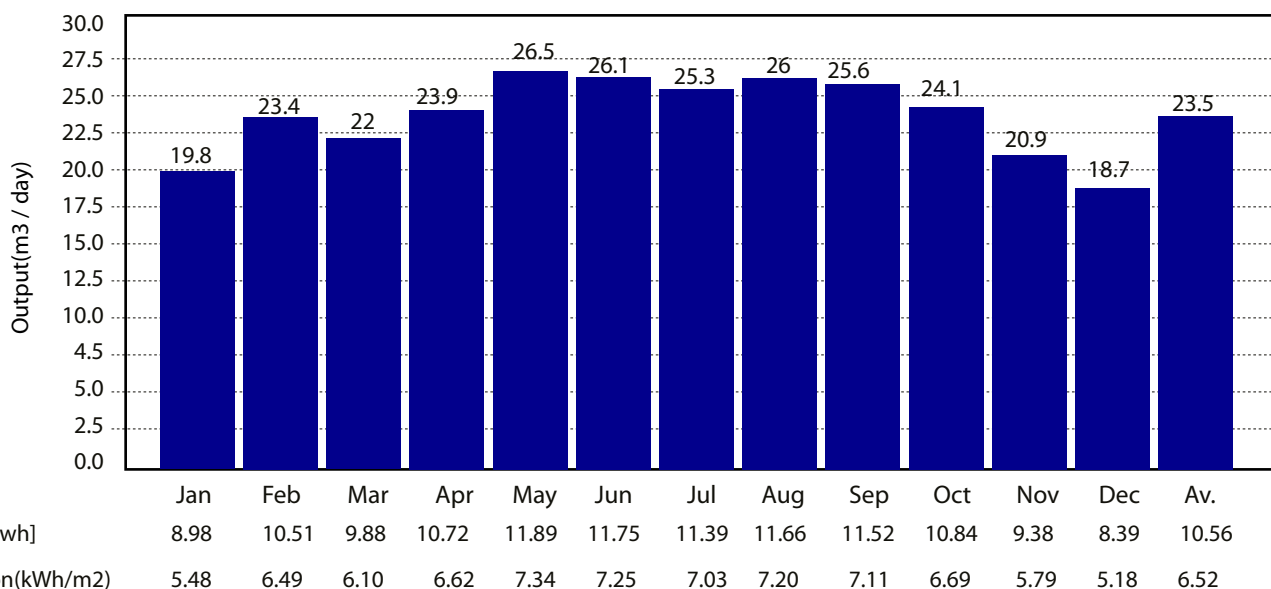
Solar panel 6pc;1800Wp;300w × 6pcs

Motor cable

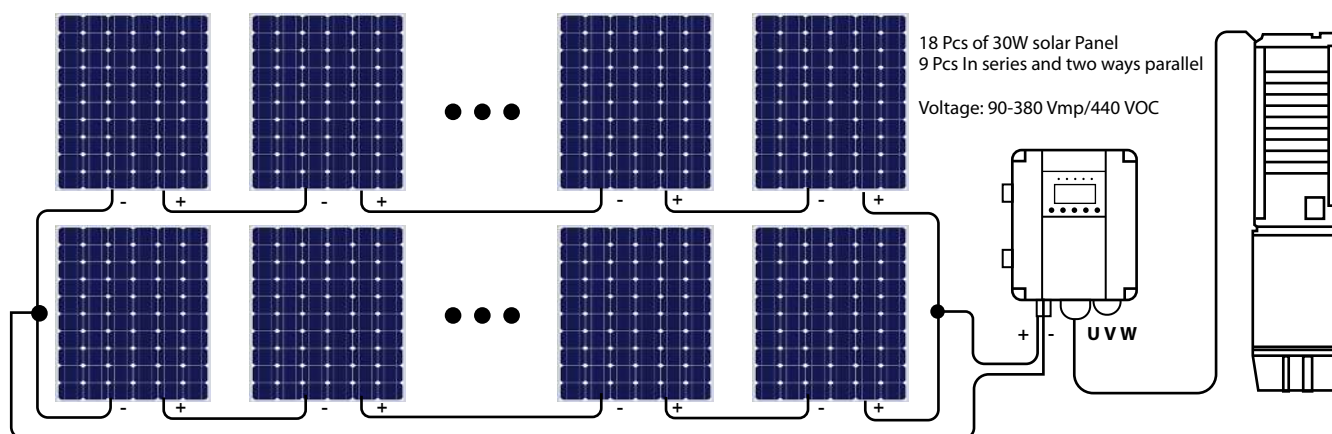
Pipeline 20m;Pipeline

Accessories

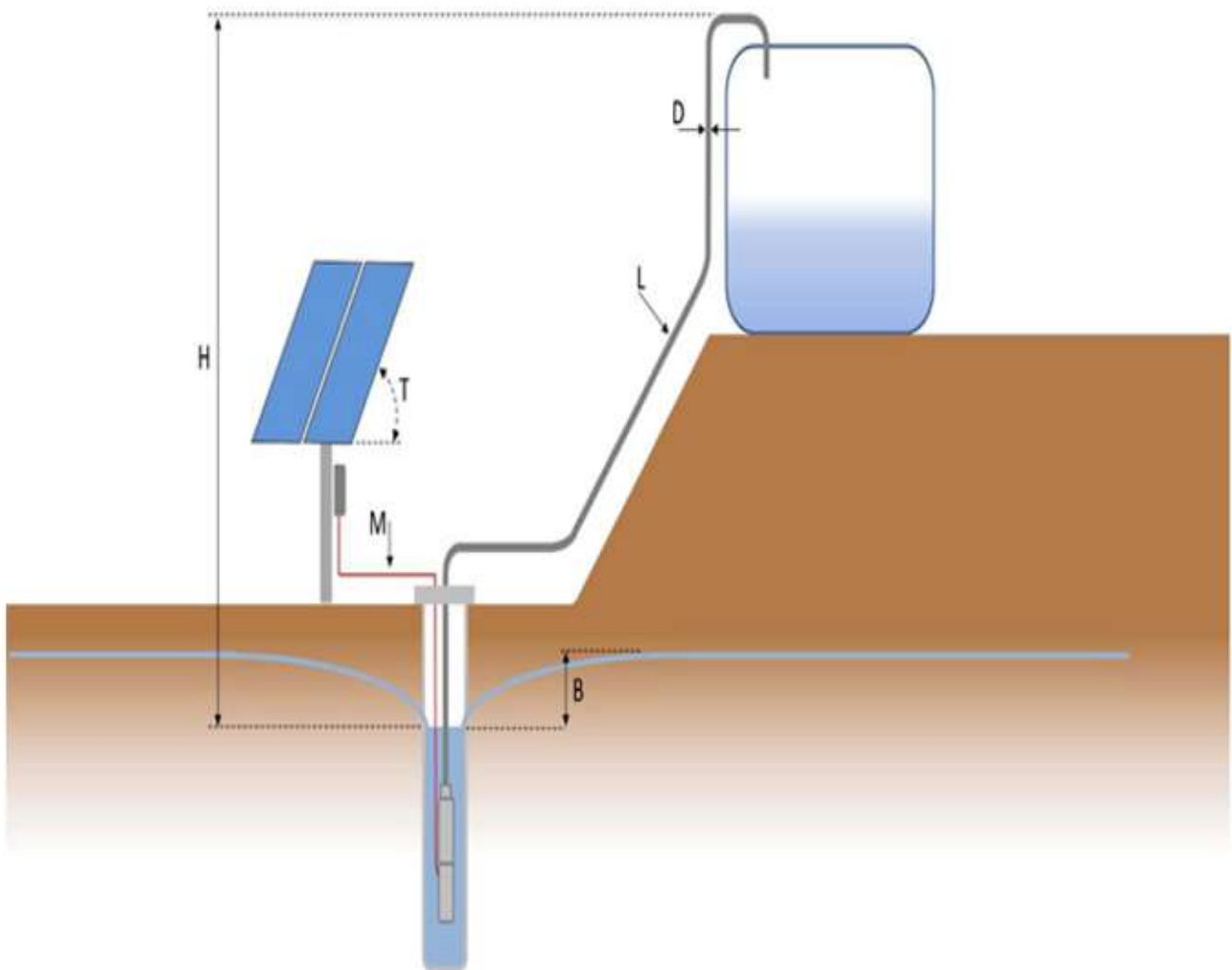
## Daily output in average month (23.5) m<sup>3</sup>/day



## Solar Panel Wiring

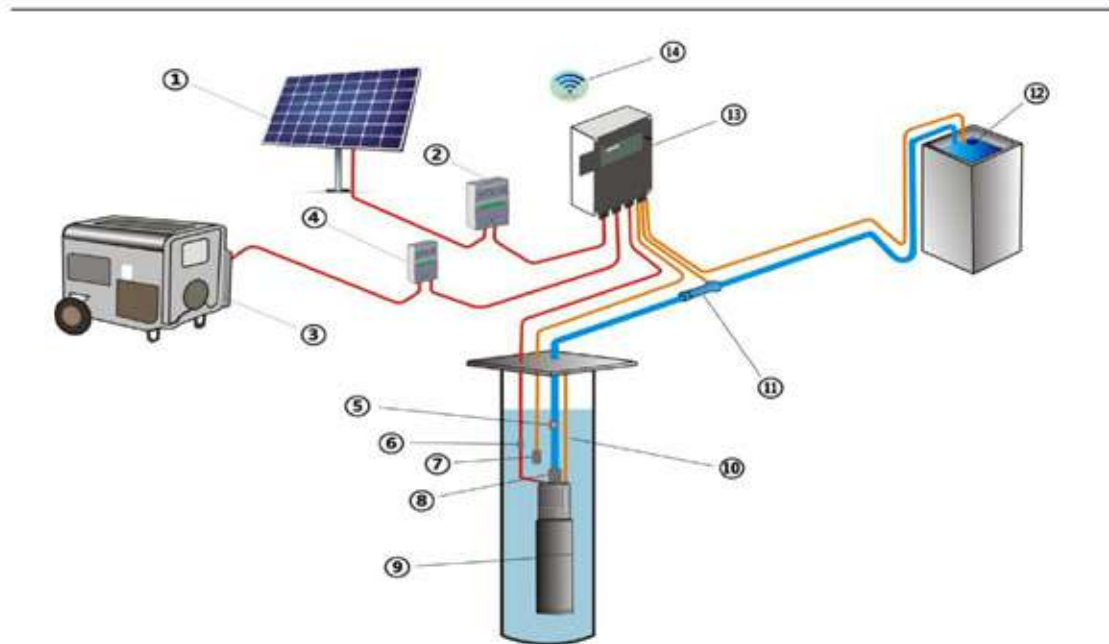


## Sizing Layout



|                              |                                                                                                                                         |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| H (Static head):             | Vertical height from the dynamic water level to the highest point of delivery..                                                         |
| B (Drawdown):                | Lowering of water level depending on flow rate and recovery rate of the well.                                                           |
| D (Pipeline inner diameter): |                                                                                                                                         |
| L (Pipe length):             | Entire pipeline from the pump outlet to the point of delivery. Ellbows and armatures must be added as an equivalent length of pipeline. |
| M (Motor cable):             | The cable between controller and pump unit.                                                                                             |
| T (Tilt angle):              | Angle of the PV generator surface from the horizontal plane.                                                                            |

## System Layout



- |                                                                                      |                                |
|--------------------------------------------------------------------------------------|--------------------------------|
| 1. Solar panels                                                                      | 8. Sacrificial Anode(optional) |
| 2. SPD(DC) Surge Protection Device(optional)                                         | 9. Solar water pump            |
| 3. Generator or Grid (optional)                                                      | 10. Traction rope              |
| 4. SPD(AC) Surge Protection Device (optional)                                        | 11. Flow meter(optional)       |
| 5. Check valve (optional)                                                            | 12. Float Switch (For Tank)    |
| 6. Wiring Package(Epoxy Resin Wiring Package or Heat Shrinkable Tube Wiring Package) | 13. Monitor(optional)          |
| 7. Float Switch (For Dry Protection, Optional)                                       | 14. GPRS (optional)            |

## NOTE

1. Please read the manual carefully for all installation accessories, Please contact factory if you need all the above accessories.
2. Float Switch for Dry Protection is Optional, Because the pump system has its own dry protection;
3. Monitor is not a necessary part of pump system .but it provides more functions and protections for pump system. Making the system more convenient and intelligent. For example intelligent switching of AC/DC power supply; Floating ball interface terminal etc.
4. The pump shall be installed at least 1.5m away from the bottom of the well:
5. It is recommended to install a check valve every 70m of the vertical height of the pipeline.

## 4SPW2-11 (1.5HP DC)

### Solar Submersible Pump System

#### System Overview

|                           |              |
|---------------------------|--------------|
| Head                      | max. 116m    |
| Flow                      | max 101L/min |
| Recommend Max Input Power | max. 1.8 kW  |
| Minimum well diameter     | min 4 inch   |
| Pump discharge            | Rp 1.25"     |
| Efficiency Max            | %            |

#### Product advantage

Stainless steel: AISI 304  
 BLDC High Efficiency Motor,  
 External Controller:  
 Only could powered by DC power:  
 Voltage/Current/Power/Rpm/Controller temperature Display  
 Encapsulated water filled motor (No pollution risk ):  
 Soft start running makes system's life longer:  
 Thrust bearing system  
 Reverse protection (reverse + and - is fine):  
 Over load protection/over current protection/over power protection:  
 Wide voltage: 90-380V mp/440VOC:  
 Dry protection(No additional float sensor required):  
 Dry protection(No additional float sensor required):  
 GPRS(Optional):

#### Technical Data:

##### Controller 4SPW2-11 (1.5HP DC)

Built in controller;  
 MPPT Efficiency Max. 98%  
 Voltage 90-380Vmp/440VOC  
 Enclosure class: IP65  
 Error Report  
 Lacking-Phase protection  
 Over temperature protection;

##### Motor 3SPW-96V-1HP DC

|                       |                                    |
|-----------------------|------------------------------------|
| Voltage               | DC max. VOC 180V<br>DC Vmp 60-380V |
| Current               | max. DC 10A                        |
| Motor Efficiency      | max 85%                            |
| WaterTemp             | max40°C                            |
| Insulation class      | F                                  |
| Enclosure class       | IP X8                              |
| Submersion            | max. 150m                          |
| Required cooling flow | 0.8L/s                             |
| Speed                 | 500-4000                           |

#### Pump End

Stainless steel: AISI 304 ;  
 Non-return valve:  
 Centrifugal pump

#### Standards



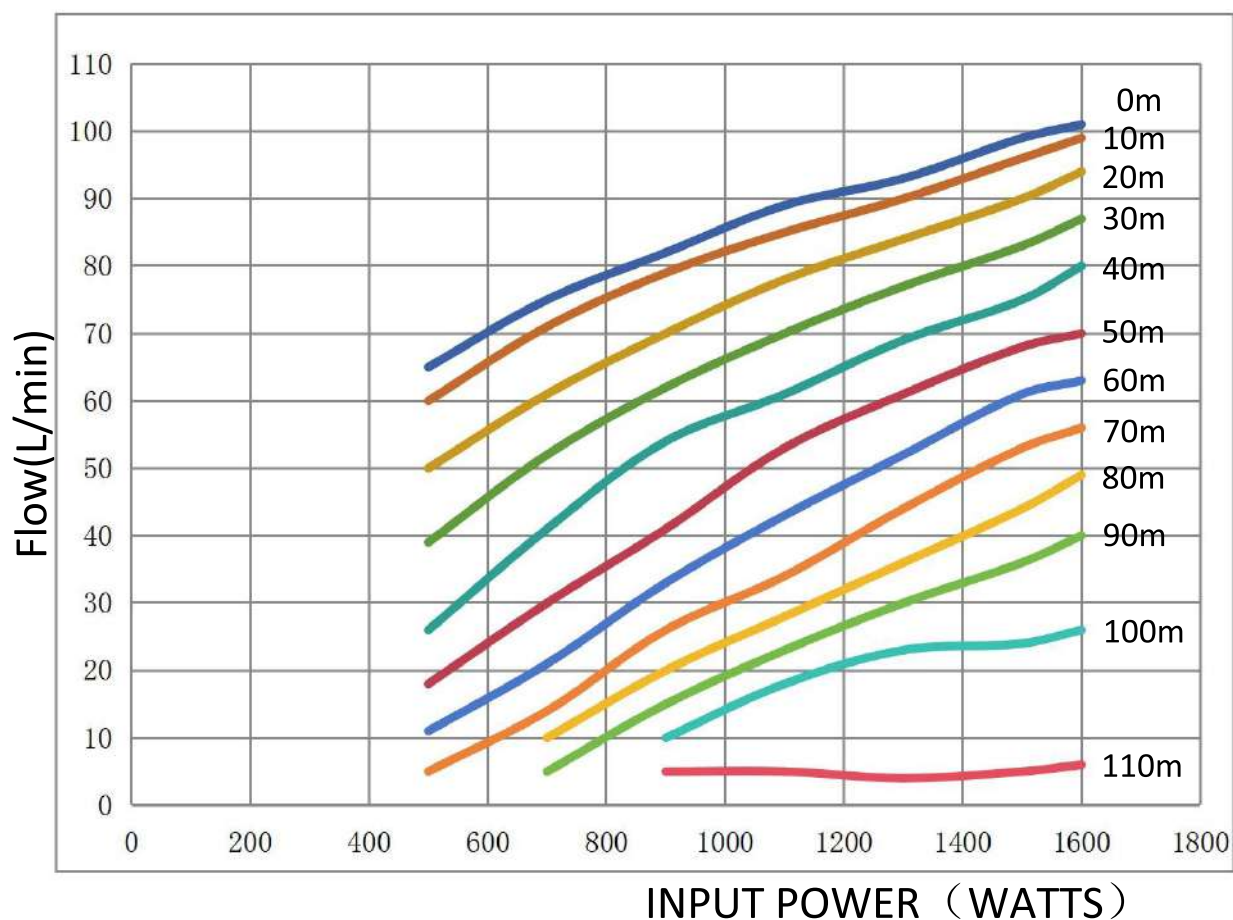
#### Note:

\*Accept 2-10 PCS 340W Panel best 4-6Pcs

\*VOC (V) Volts open circuit nothing connected;Vmp (V) Volts maximum power point under load;Exceeding limits may cause serious harm or irreparable damage.



# 4SPW2-11 (1.5HP DC) Solar Pumping Project Pump Chart



| D   | INPUT POWER (WATTS) |     |     |      |      |      |      |
|-----|---------------------|-----|-----|------|------|------|------|
|     | 500                 | 700 | 900 | 1100 | 1300 | 1500 | 1600 |
|     | Flow (L/min)        |     |     |      |      |      |      |
| 0   | 65                  | 75  | 82  | 89   | 93   | 99   | 101  |
| 10  | 60                  | 71  | 79  | 85   | 90   | 96   | 99   |
| 20  | 50                  | 61  | 70  | 78   | 84   | 90   | 94   |
| 30  | 39                  | 52  | 62  | 70   | 77   | 83   | 87   |
| 40  | 26                  | 41  | 54  | 61   | 69   | 75   | 80   |
| 50  | 18                  | 30  | 41  | 53   | 61   | 68   | 70   |
| 60  | 11                  | 21  | 33  | 43   | 52   | 61   | 63   |
| 70  | 5                   | 14  | 26  | 34   | 44   | 53   | 56   |
| 80  |                     | 10  | 20  | 28   | 36   | 44   | 49   |
| 90  |                     | 5   | 15  | 23   | 30   | 36   | 40   |
| 100 |                     |     | 10  | 18   | 23   | 24   | 26   |
| 110 |                     |     | 5   | 5    | 4    | 5    | 6    |

## 4SPW2-11 (1.5HP DC) Solar Pumping Project

### Dimensions and Weights

