

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

| | |
|--------------|------------------|
| Nominal Flow | 2.0 m3/hr @ 70 m |
| Flow Range | 0.7 ~ 4.8 m3/hr |
| Head Range | 10 ~ 100 m |

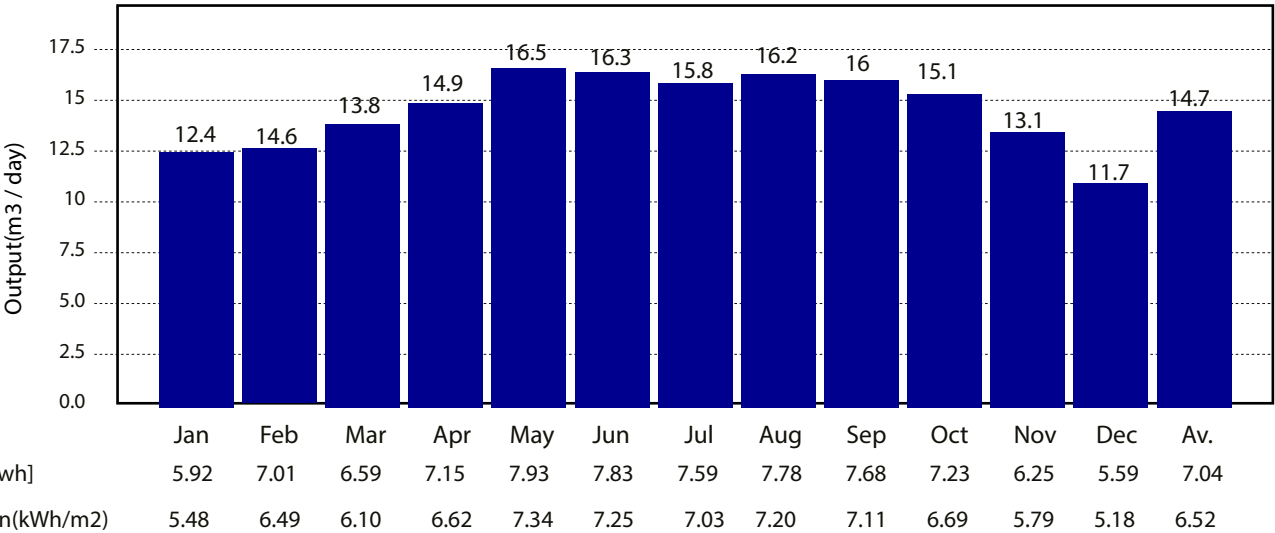
Parameter

| | | | | | |
|------------------------|----------|--------------|------|---------------|-----|
| Location: | UAE | Water Temp: | 25°C | | |
| Required daily output: | 10m³/day | Dirt loss: | 3% | Motor length: | 50 |
| Pipe type: | Plastic | Static Head: | 55m | Pipe length: | 20m |

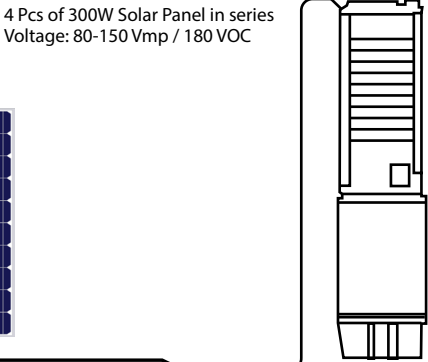
Products

| | |
|------------------|-----------------------|
| Submersible pump | 1pc;4SPW2-9P (1HP DC) |
| Solar panel | 4pc;1200Wp;300w ×4pcs |
| Motor cable | |
| Pipeline | 20m;Pipeline |
| Accessories | |

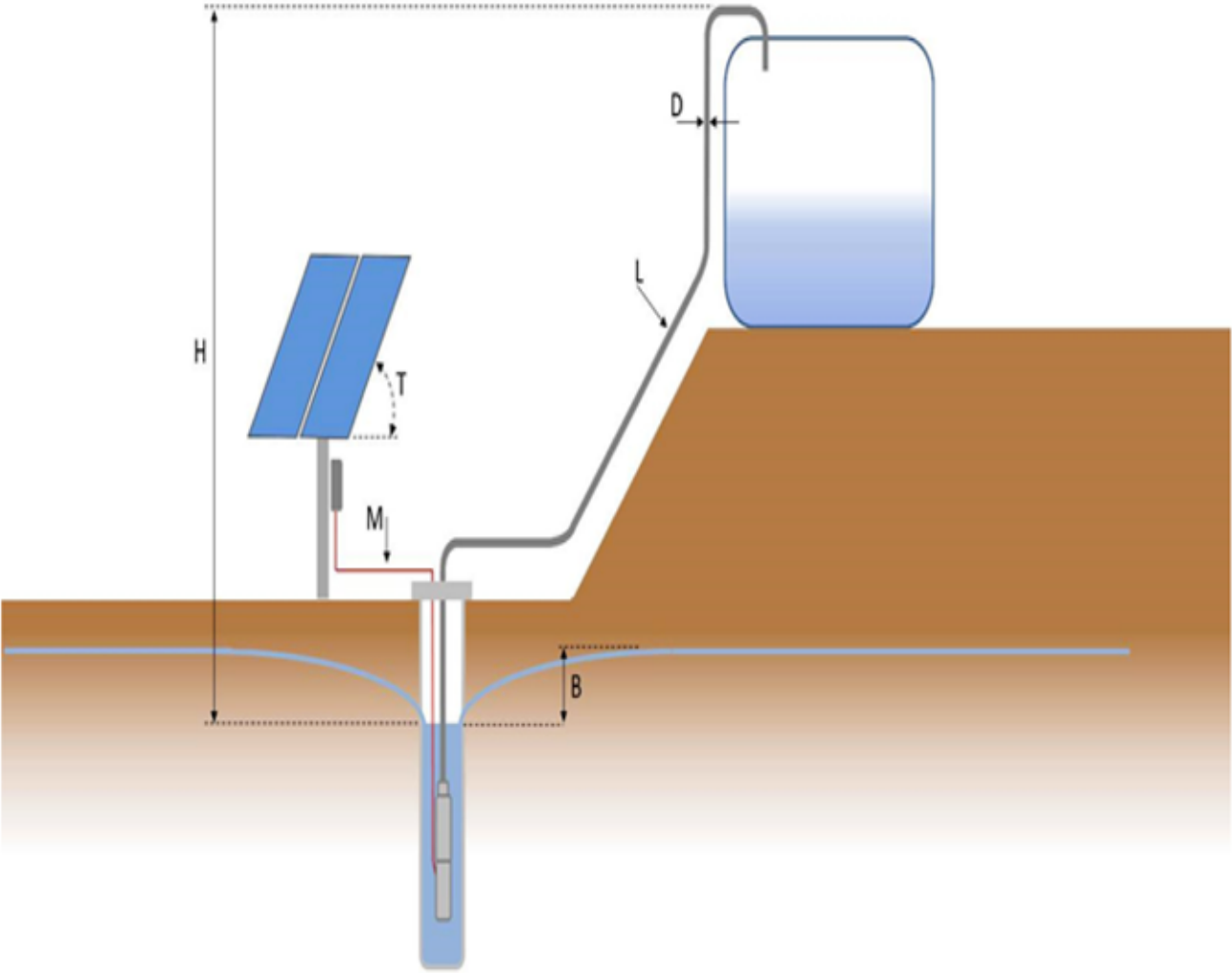
Daily output in average month (14.7) m³/day



Solar Panel Wiring

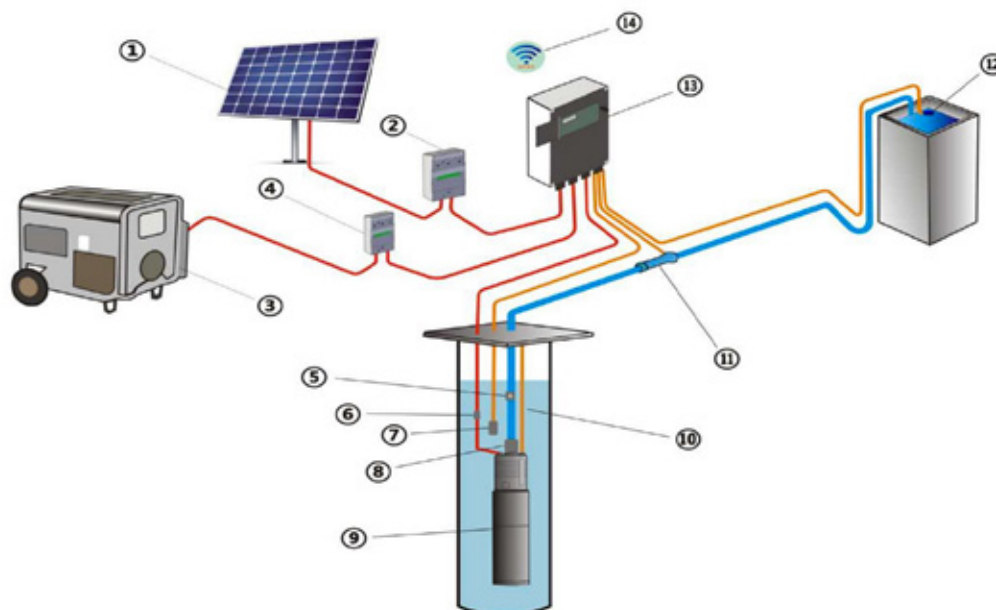


Sizing Layout



| | |
|-------------------------------------|---|
| 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.

4SPW2-9P (1HP DC)

Solar Submersible Pump System

System Overview

| | |
|---------------------------|--------------|
| Head | max. 112m |
| Flow | max. 84L/min |
| Recommend Max Input Power | max. 1.2 kW |
| Minimum well diameter | min 4 inch |
| Pump discharge | Rp 2" |
| Efficiency Max | % |

Product advantage

Motor Stainless steel: AISI 304
 BLDC High Efficiency Motor
 Built in Controller
 Only could powered by DC power
 Encapsulated water filled motor(No pollution risk)
 Soft start running makes system's life longer
 Thrust bearing system
 Positive and negative pole reverse connection alarm
 Over load protection/over current protection/over power protection
 Fault reporting
 Dry Protection (No additional float sensor required)
 Accessories such as Heat Shrinkable Tube Wiring Package\Rope installation etc.

Technical Data:

Controller 4SPW2-9P (1HP DC)

External Controller: 3SPW-1HP
 MPPT Efficiency Max.98%
 Voltage:80-150Vmp/180VOC
 Enclosure class:IP65
 Error report

Losting-Phase protection
 Over temperature protection

Motor 3SPW-96V-1HP DC

| | |
|-----------------------|-----------------------------------|
| Voltage | DC max.VOC 180V DC Vmp 80-150V |
| Current | max.DC 15A |
| Motor Efficiency | max.85% |
| WaterTemp | max40°C |
| Insulation class | F |
| Enclosure class | IP X8 |
| Submersion | max. 150m |
| Required cooling flow | 0.5L/s |
| Speed | 1000-4000 |

Pump End

Plastic impeller stainless steel shell
 Non-return valve:
 Centrifugal pump

Standards



Note:

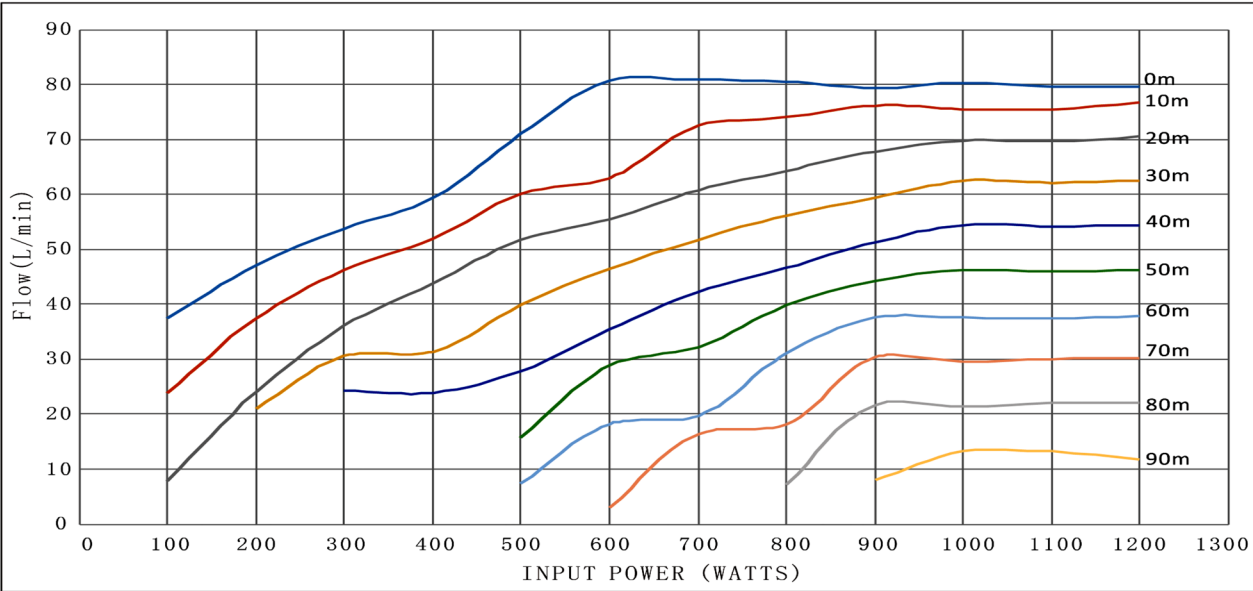
*Recommend 4 pcs of 340W solar panels in series

**The Controller is IP 65 Rated however it is recommended that it is not mounted in direct sunlight;

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



3SPW2-9P(1HP DC)
Solar Pumping Project
Pump Chart



| HEAD (m) | INPUT POWER (WATTS) | | | | | | | | | | | |
|-------------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 |
| | FLOW RATE (LITERS MINUTE) | | | | | | | | | | | |
| 0 | 37 | 47 | 54 | 59 | 71 | 81 | 81 | 80 | 79 | 80 | 80 | 80 |
| 10 | 24 | 37 | 46 | 52 | 60 | 63 | 72 | 74 | 76 | 75 | 75 | 77 |
| 20 | 8 | 24 | 36 | 44 | 52 | 55 | 61 | 64 | 68 | 70 | 70 | 70 |
| 30 | | 21 | 31 | 31 | 40 | 46 | 52 | 56 | 59 | 62 | 62 | 62 |
| 40 | | | 24 | 24 | 28 | 35 | 42 | 47 | 51 | 54 | 54 | 54 |
| 50 | | | | | 16 | 29 | 32 | 40 | 44 | 46 | 46 | 46 |
| 60 | | | | | 7 | 18 | 20 | 31 | 38 | 38 | 37 | 38 |
| 70 | | | | | | 3 | 16 | 18 | 30 | 30 | 30 | 30 |
| 80 | | | | | | | | 7 | 22 | 21 | 22 | 22 |
| 90 | | | | | | | | | 8 | 13 | 13 | 12 |

Dimensions and Weights

