

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: 10m³/day

Pipe type: Plastic

Dirt loss: 3%

Static Head: 15m

Motor lenght: 50

Pipe length: 20m

Products

Submersible pump 1pc;4SPK2-9 (1HP AC&DC)

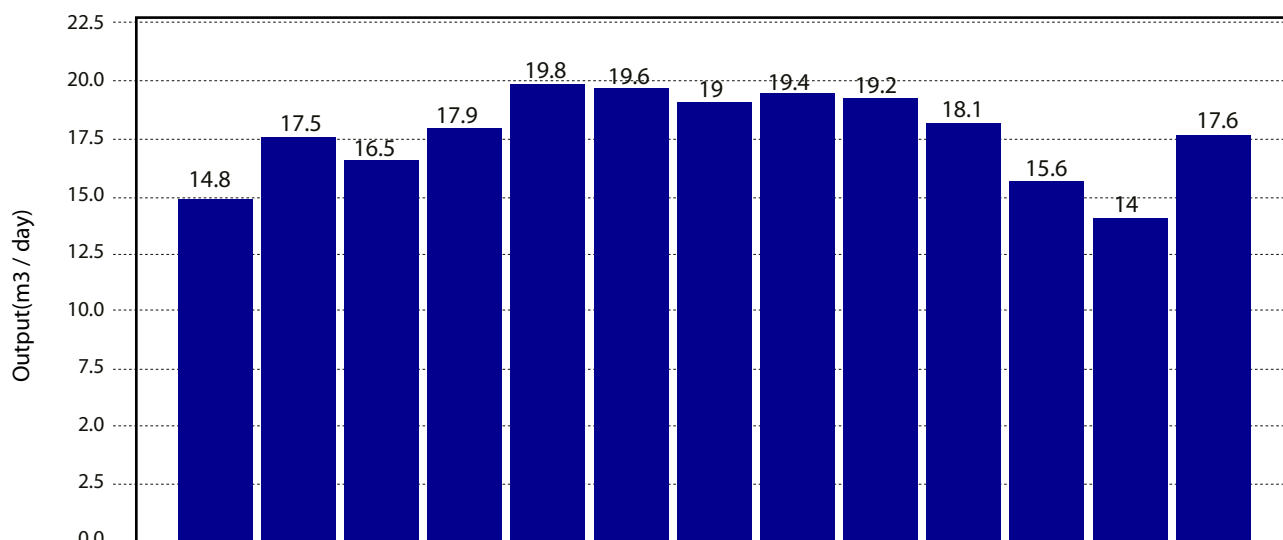
Solar panel 4pc;1200Wp;300w × 4pcs

Motor cable

Pipeline 20m;Pipeline

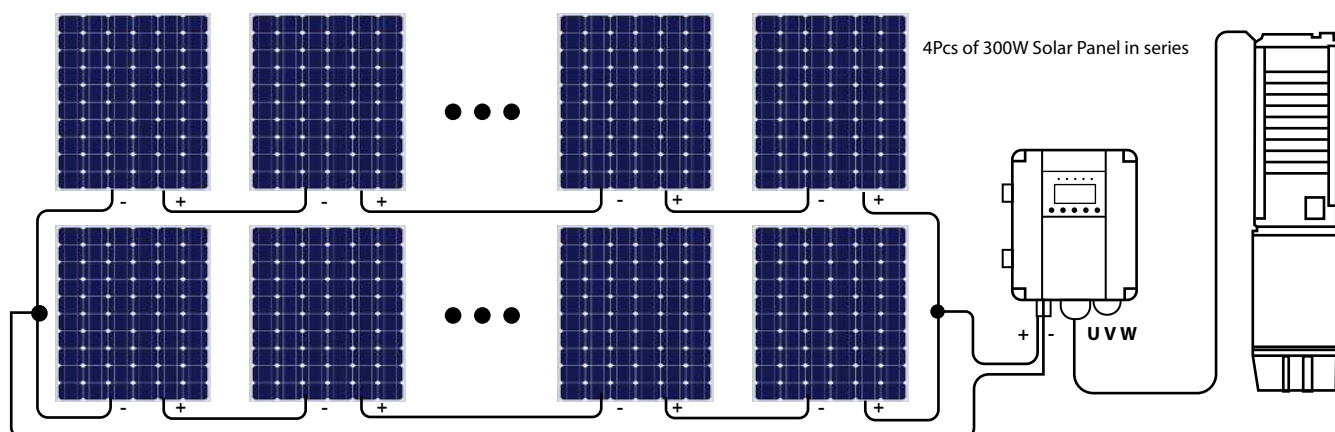
Accessories

Daily output in average month (17.6) m³/day

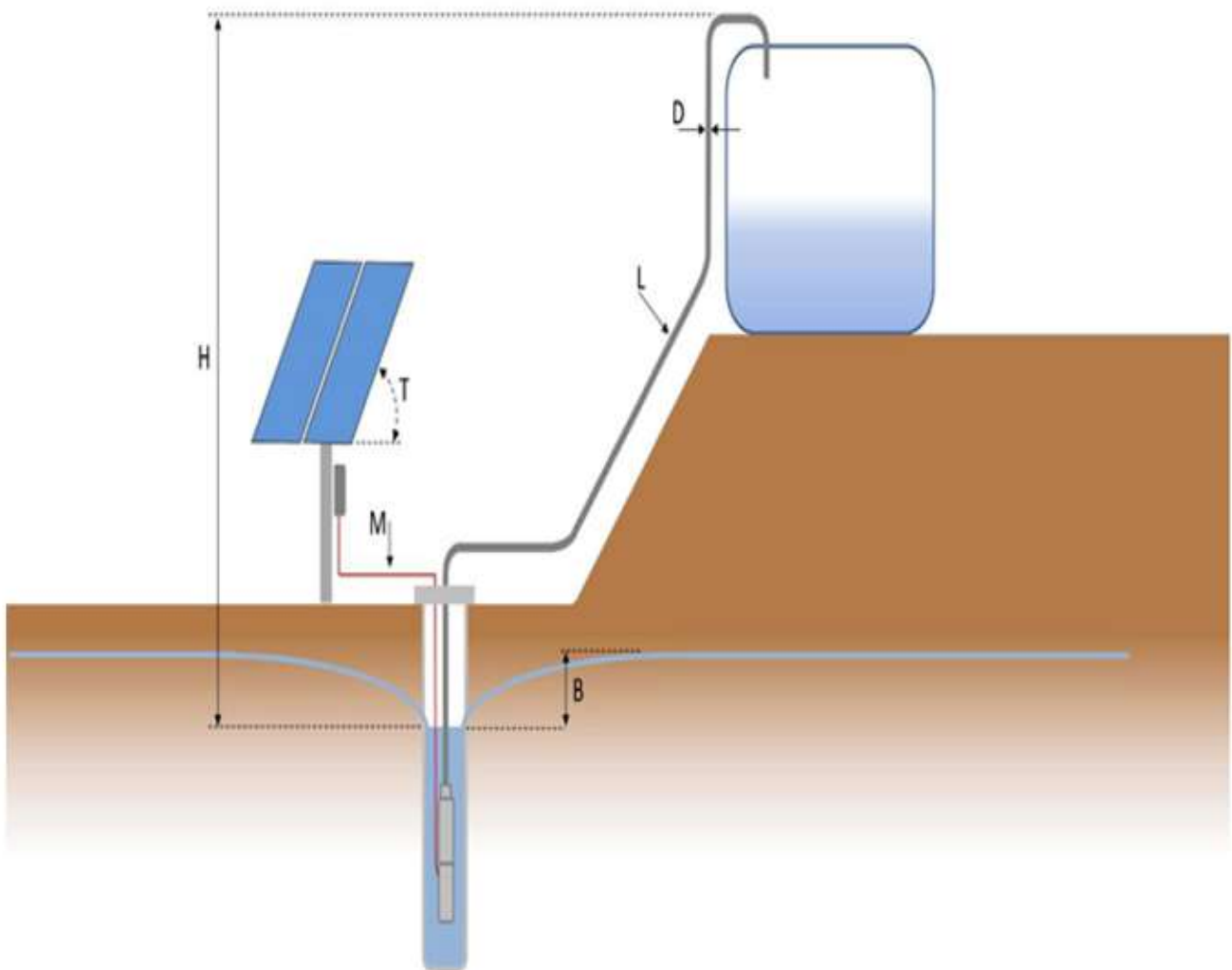


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Av.
Energy[Kwh]	5.92	7.01	6.59	7.15	7.93	7.83	7.59	7.78	7.68	7.23	6.25	5.29	7.04
Irradiation(kWh/m2)	5.48	6.49	6.10	6.62	7.34	7.25	7.03	7.20	7.11	6.69	5.79	5.18	6.52

Solar Panel Wiring

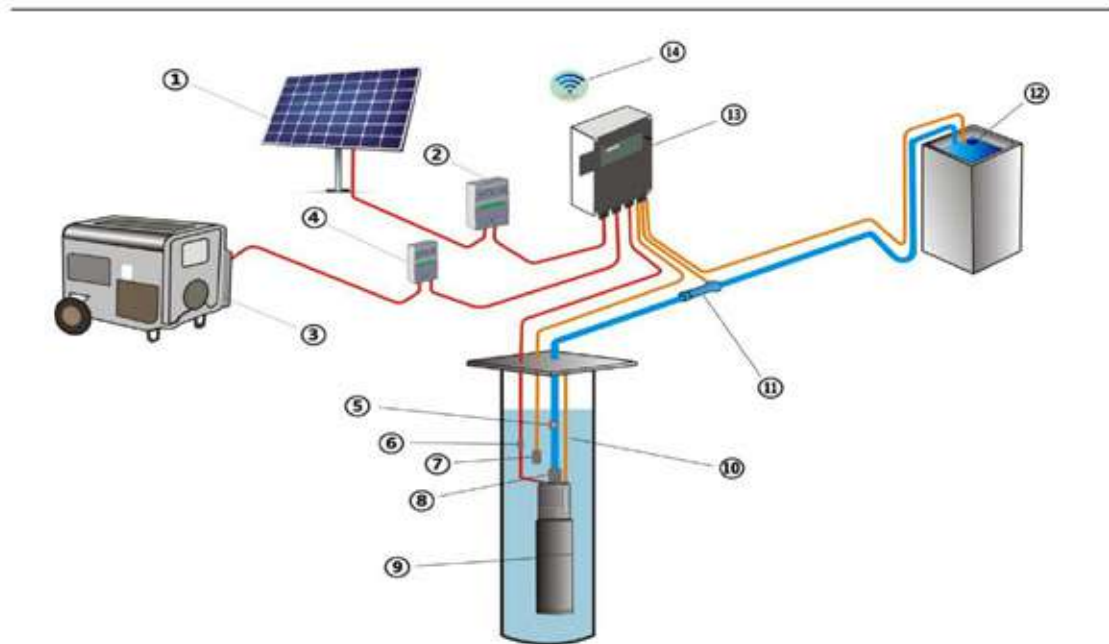


Sizing Layout



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.

4SPK2-9 (1HP AC&DC)

Solar Submersible Pump System

System Overview

Head	max. 80m
Flow	max 87L/min
Recommend Max Input Power	max. 1.2 kW
Minimum well diameter	min 4 inch
Pump discharge	Rp 1.25"
Efficiency Max	%

Product advantage

Stainless steel: AISI 304
 BLDC High Efficiency Motor,
 MPPT Efficiency Max.99%
 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:
 Voltage: 60-380V mp/450VOC:
 Hybrid Power by AC/DC 150-240V 50 Hz & 60 Hz both working:
 Dry Protection (No additional float sensor required)
 AC and DC intelligent switching
 Lifting-Phase
 Overvoltage and other protection

Technical Data:

Controller 4SPK2-9 (1HP AC/DC)

Controller External
 Over load ? Over Current / Over Voltage / Over Power Protection
 Lifting-Phase protection
 Over temperature protection;

Motor 4SPK. (0.5-3HP AC&DC)

Voltage
 AC 1x90-280V
 DC max. VOC 440V
 DC Vmp 60-380V

Current	max. AC 10A
	max. DC 12A
Motor Efficiency	max 88%
WaterTemp	max40°C
Insulation class	F
Enclosure class	IP X8
Submersion	max. 150m
Required cooling flow	0.8L/s
Connect Standard	4"NEMA
Speed	500-4000

Pump End

Stainless steel: AISI 304 (316 Optional);

Non-return valve:

Centrifugal pump

Standards



Note:

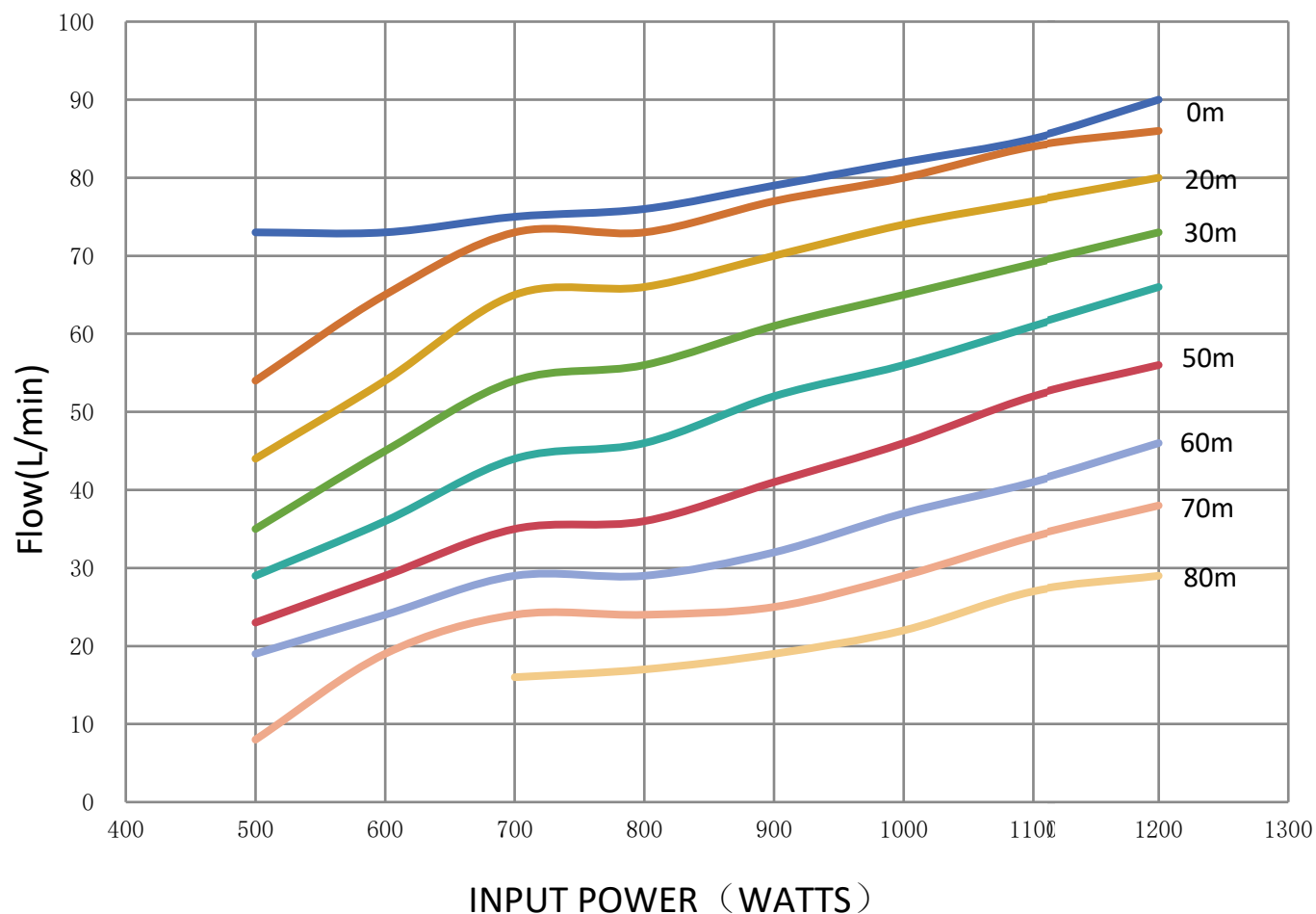
*AC / DC switching needs to wait 1 minute

*Recommended 4 Pcs of 300W Solar Panel in Series;

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



4SPK2-9 (1HP AC&DC) Solar Pumping Project Pump Chart



HEAD (m)	INPUT POWER (WATTS)							
	500	600	700	800	900	1000	1100	1200
0	73	73	75	76	79	82	85	90
10	54	65	73	73	77	80	84	86
20	44	54	65	66	70	74	77	80
30	35	45	54	56	61	65	69	73
40	29	36	44	46	52	56	61	66
50	23	29	35	36	41	46	52	56
60	19	24	29	29	32	37	41	46
70	8	19	24	24	25	29	34	38
80			16	17	19	22	27	29

4SPK2-9 (1HP AC&DC)

Dimensions and Weights

