

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: 8m³/day

Dirt loss: 3%

Motor lenght: 50

Pipe type: Plastic

Static Head: 55m

Pipe length: 20m

Products

Submersible pump 1pc;4SPW2-13 (2HP DC)

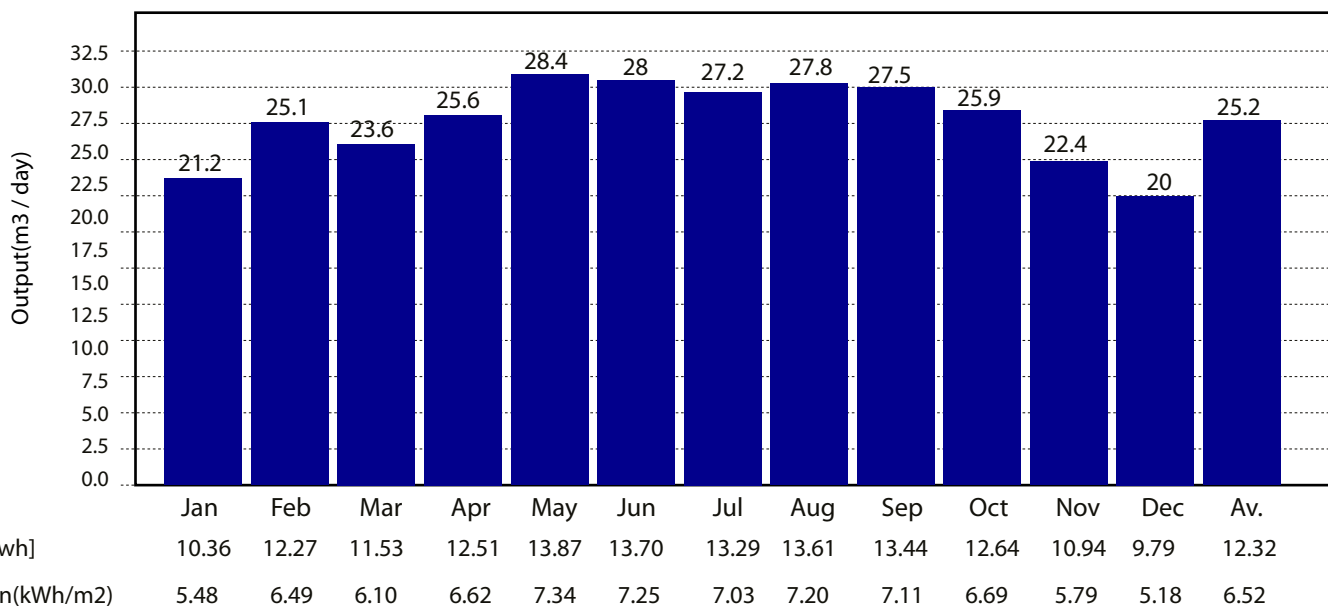
Solar panel 7pc;2100Wp;300w × 7pcs

Motor cable

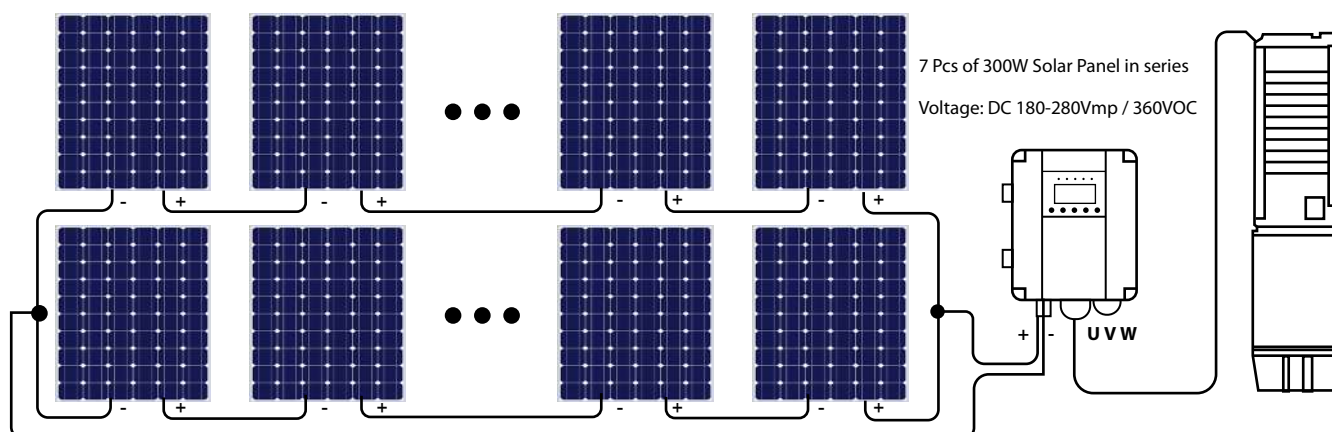
Pipeline 20m;Pipeline

Accessories

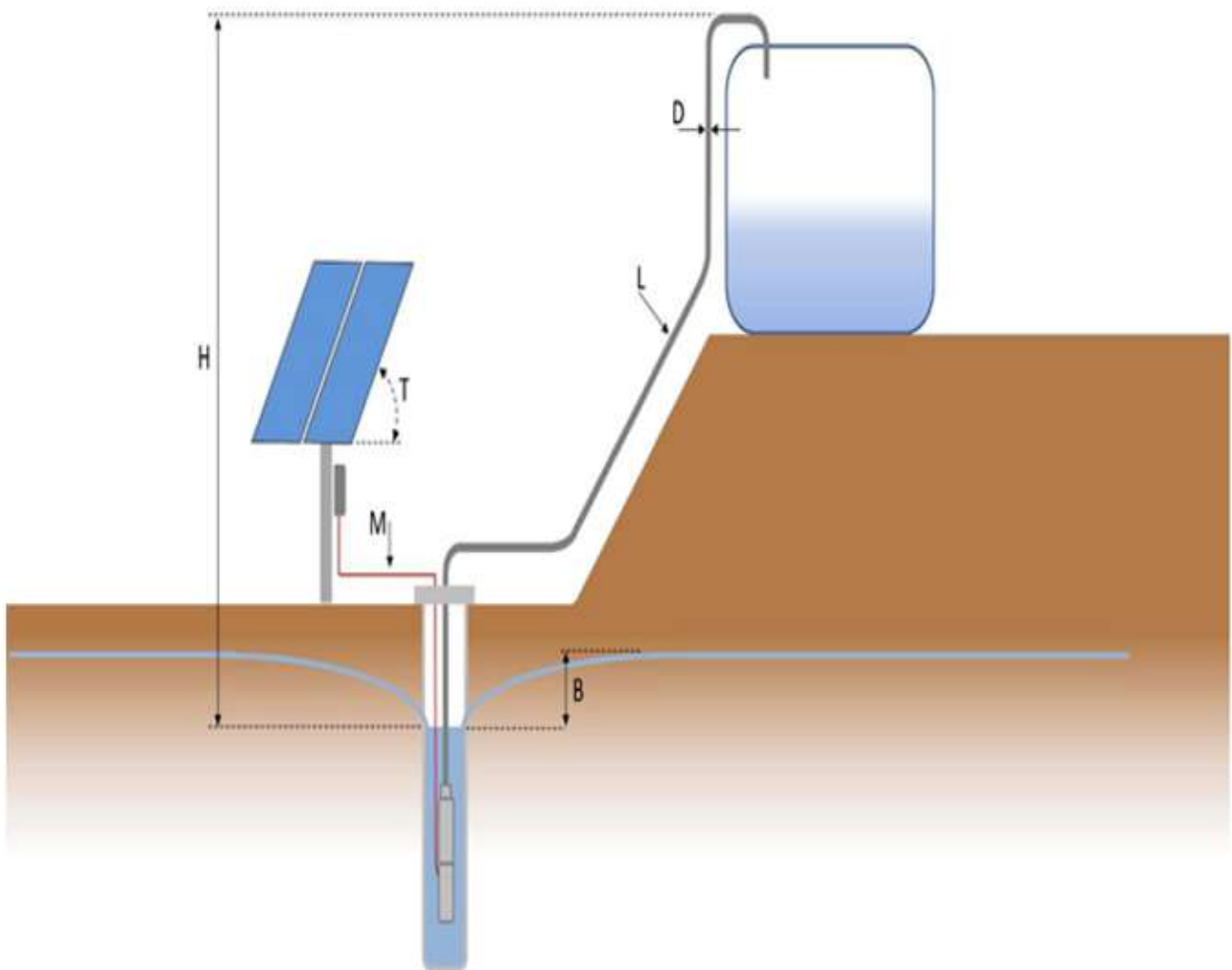
Daily output in average month (25.2) m³/day



Solar Panel Wiring

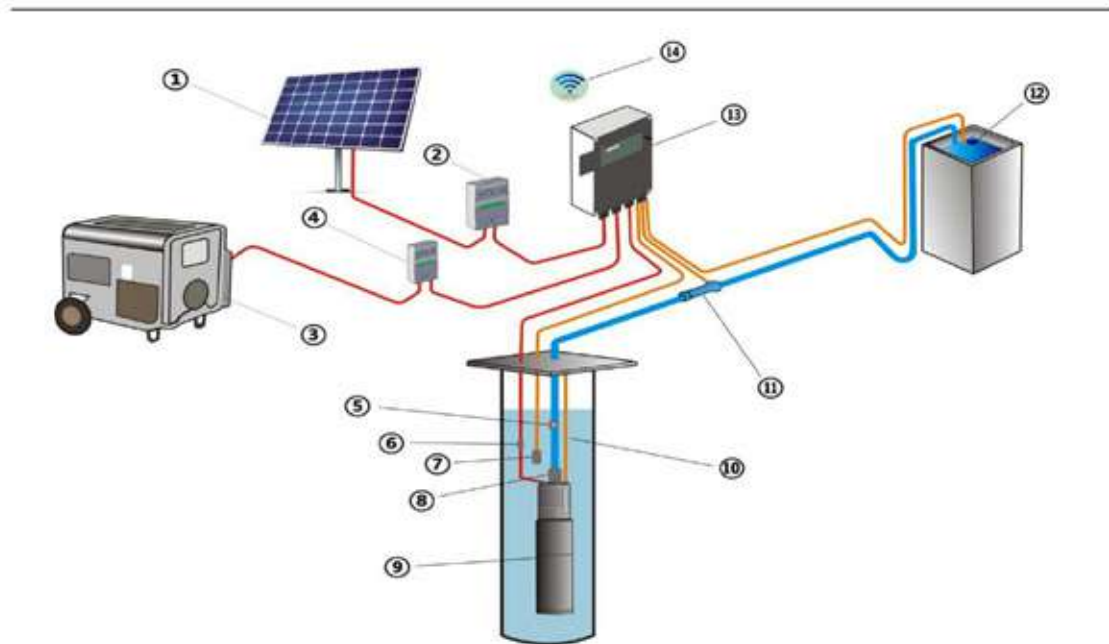


Sizing Layout



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.

4SPW2-13 (2HP DC)

Solar Submersible Pump System

System Overview

Head	max. 130m
Flow	max 92L/min
Recommend Max Input Power	max. 2.1 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 4SPW2-13 (2HP DC)

External Controller: 4SPW-2HP
 MPPT Efficiency Max. 98%
 Voltage 60-380Vmp/450VOC
 Enclosure class: IP65
 Error Report
 Lacking-Phase protection
 Over temperature protection;

Motor 3SPW-96V-1HP DC

Voltage	DC max. VOC 450V DC Vmp 60-380V
Current	max. DC 10A
Motor Efficiency	max 85%
WaterTemp	max 40°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



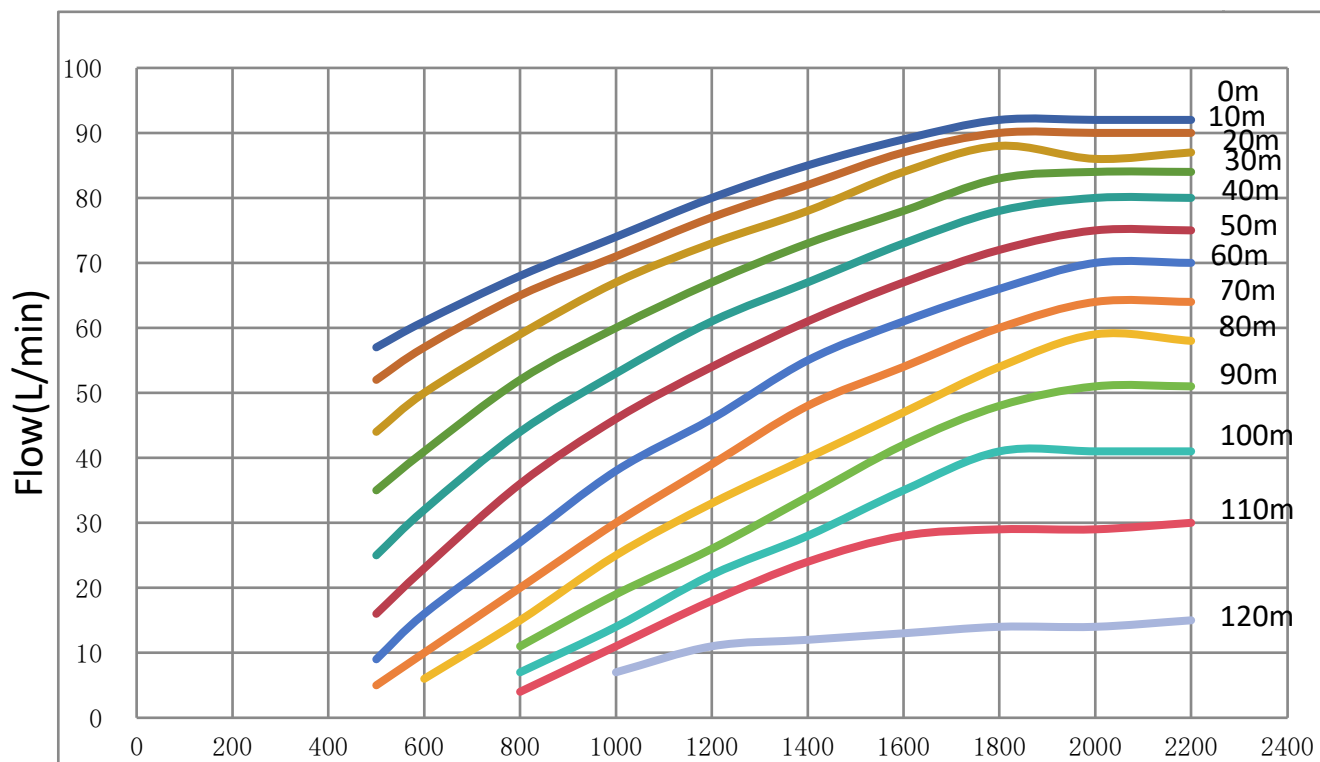
Note:

*Accept 2-10 PCS 340W Panel best 5-7Pcs

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



4SPW2-13 (2HP DC) Solar Pumping Project Pump Chart



INPUT POWER (WATTS)

INPUT POWER (WATTS)

HEAD (m)	INPUT POWER (WATTS)									
	500	600	800	1000	1200	1400	1600	1800	2000	2200
	Flow (L/min)									
0	57	61	68	74	80	85	89	92	92	92
10	52	57	65	71	77	82	87	90	90	90
20	44	50	59	67	73	78	84	88	86	87
30	35	41	52	60	67	73	78	83	84	84
40	25	32	44	53	61	67	73	78	80	80
50	16	23	36	46	54	61	67	72	75	75
60	9	16	27	38	46	55	61	66	70	70
70	5	10	20	30	39	48	54	60	64	64
80		6	15	25	33	40	47	54	59	58
90			11	19	26	34	42	48	51	51
100			7	14	22	28	35	41	41	41
110			4	11	18	24	28	29	29	30
120				7	11	12	13	14	14	15

4SPW2-13 (2HP DC) Solar Pumping Project

Dimensions and Weights

