

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	5.9 m ³ /hr @ 50 m
Flow Range	1.8 ~ 9.1 m ³ /hr
Head Range	10 ~ 100 m

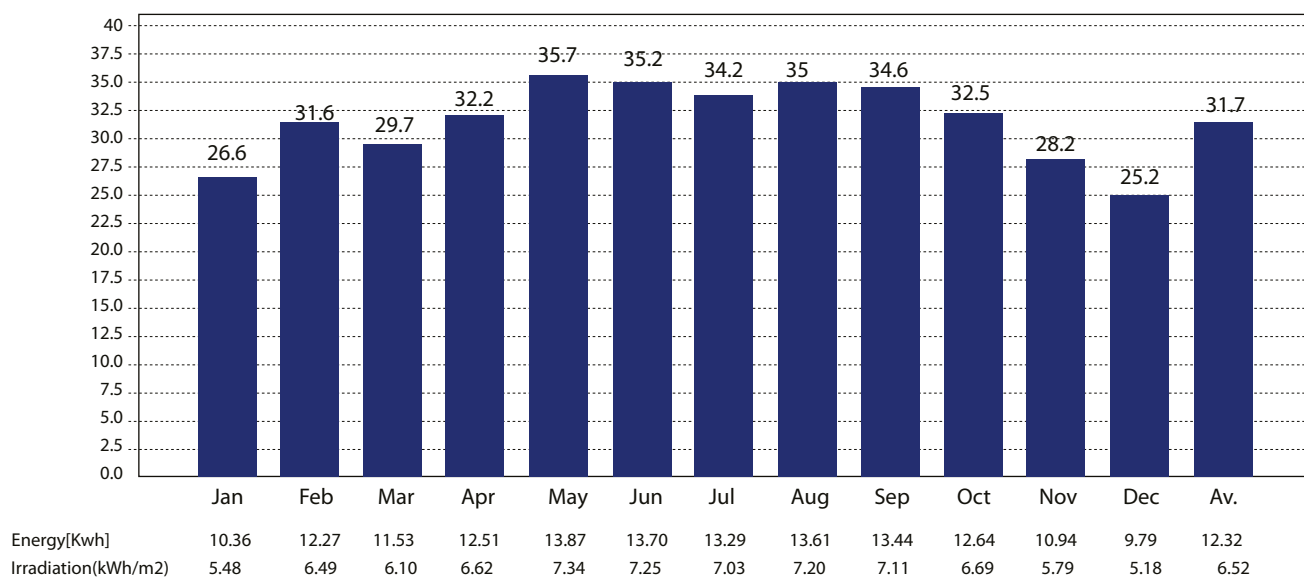
Parameter

Location:	UAE	Water Temp:	25°C		
Required daily output:	15m ³ /day	Dirt loss:	3%	Motor lenght:	50
Pipe type:	Plastic	Static Head:	55m	Pipe length:	20m

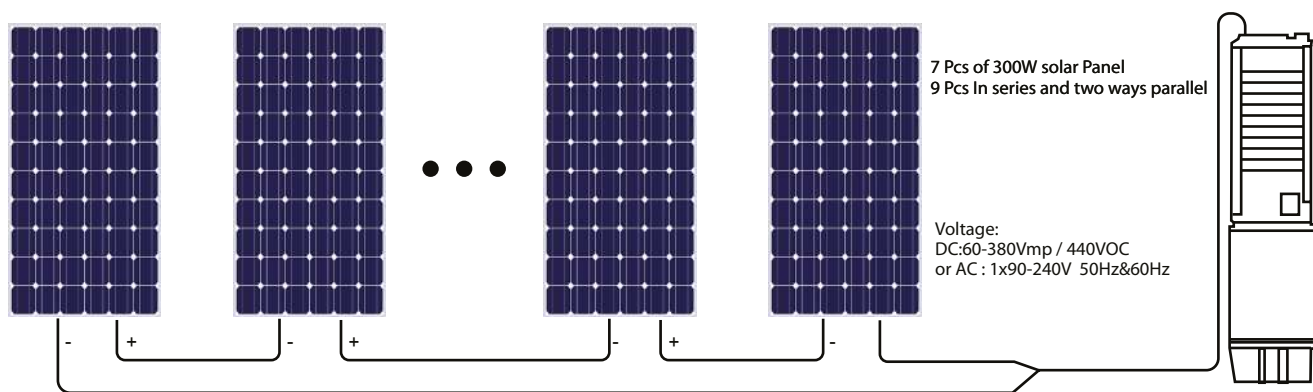
Products

Submersible pump	1pc;4SPN5-10 (2HP DC)
Solar panel	7pc;2100Wp;300w ×7pcs
Motor cable	
Pipeline	20m;Pipeline
Accessories	

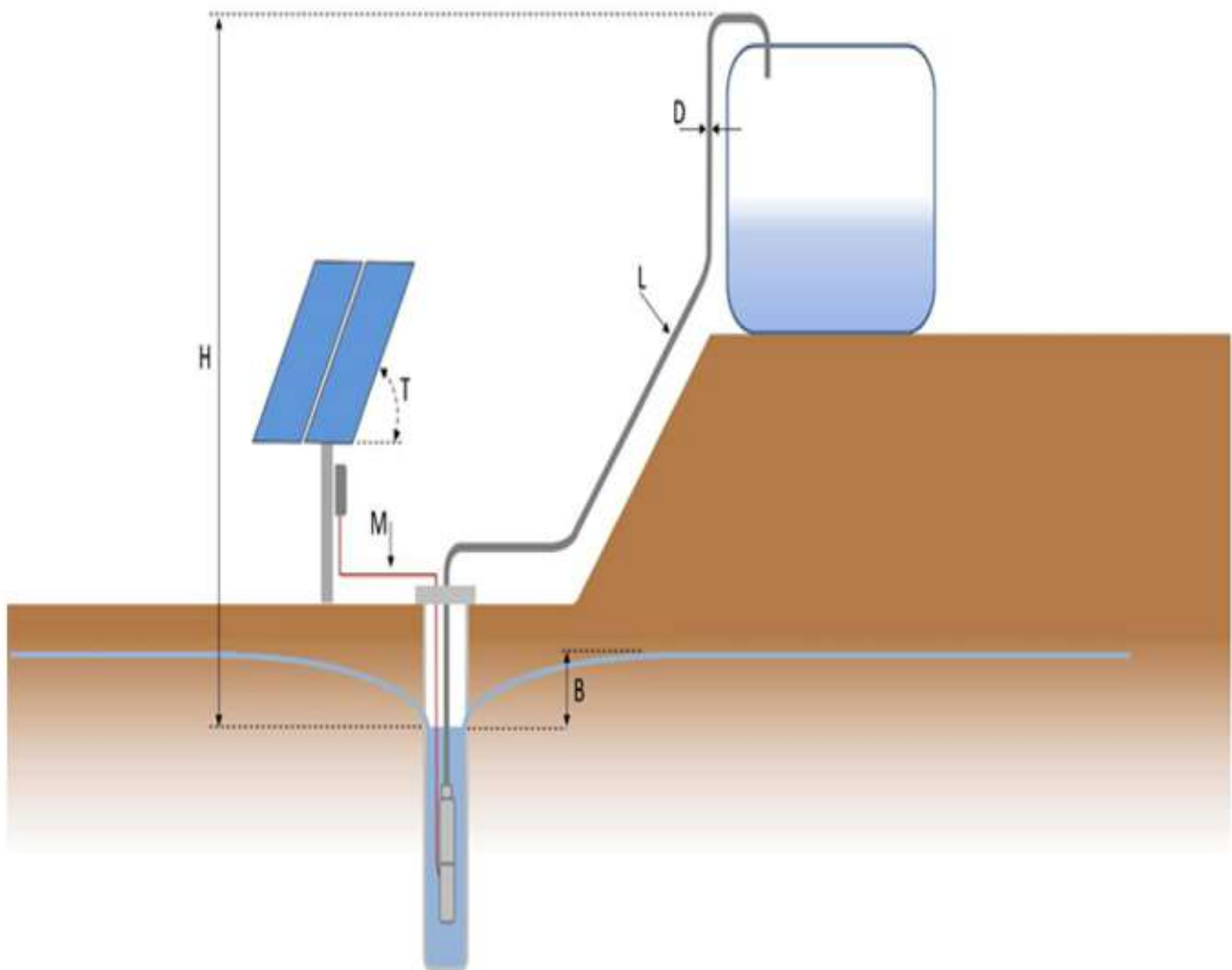
Daily output in average month (31.7) m³/day



Solar Panel Wiring

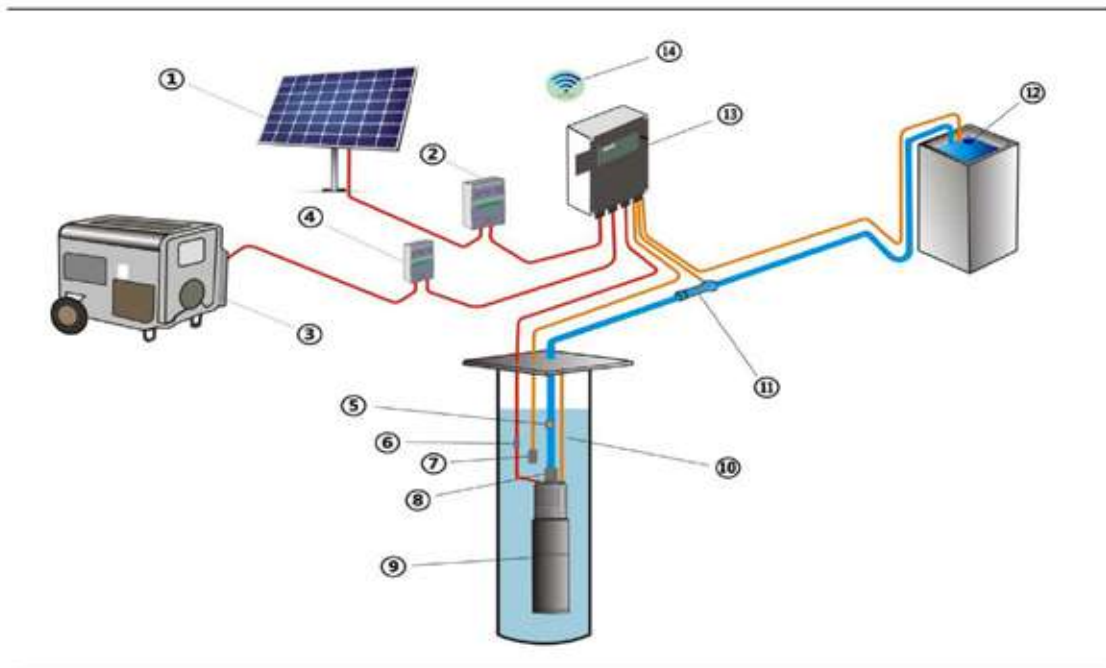


Sizing Layout



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.

4SPN5-10 (2HP DC)

Solar Submersible Pump System

System Overview

Head	max. 112m
Flow	max 162L/min
Recommend Max Input Power	max. 2.2 kW
Minimum well diameter	min 4 inch
Pump discharge	Rp 1.5"
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 4SPN5-10 (2 HP DC)

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

Motor 4SPN-2HP DC

Voltage	DC max. VOC 450V 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



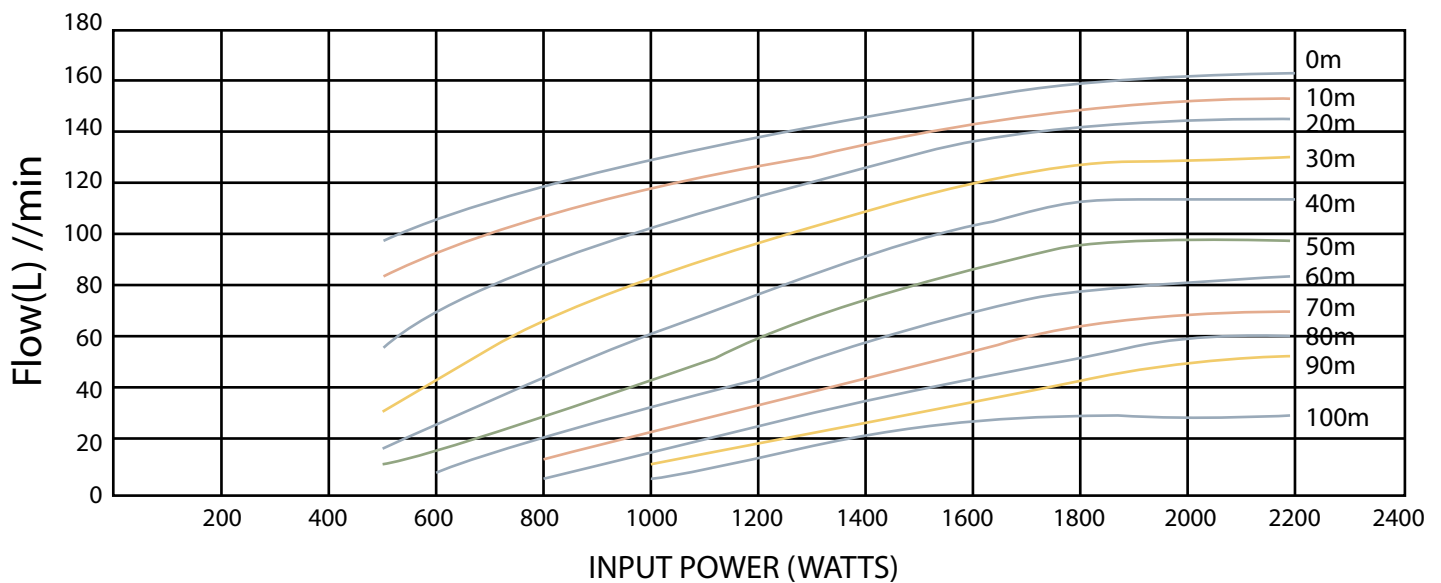
Note:

*Accept 2-10 PCS 340W panel best 7-10 Pcs

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



4SPN5-10 (2HP DC) Solar Pumping Project Pump chart



	INPUT POWER (WATTS)									
	500	600	800	1000	1200	1400	1600	1800	2000	2200
Head (m)	FLOW RATE (LITERS / MINUTES)									
0	98	107	118	129	138	145	153	159	162	162
10	84	92	107	118	127	134	142	148	152	152
20	57	70	89	102	114	126	135	142	145	145
30	32	44	66	83	97	109	120	127	129	129
40	17	28	44	62	77	92	103	119	114	114
50	11	17	30	43	59	75	87	96	98	98
60		8	22	34	44	59	70	78	83	83
70			13	24	35	44	55	64	70	70
80			6	16	26	36	45	52	61	61
90				11	19	28	36	44	54	54
100				5	13	22	29	30	30	30

Dimensions and Weights

