

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	5.7 m3/hr @ 140 m
Flow Range	2.2 ~ 9.7 m3/hr
Head Range	20 ~ 200 m

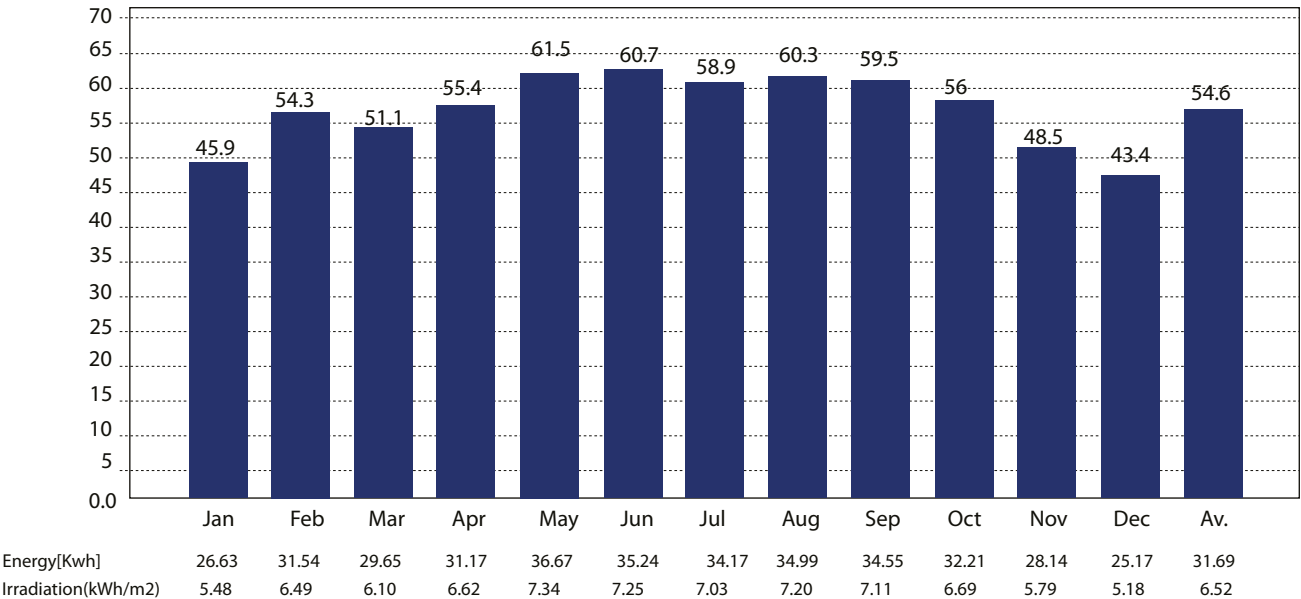
Parameter

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

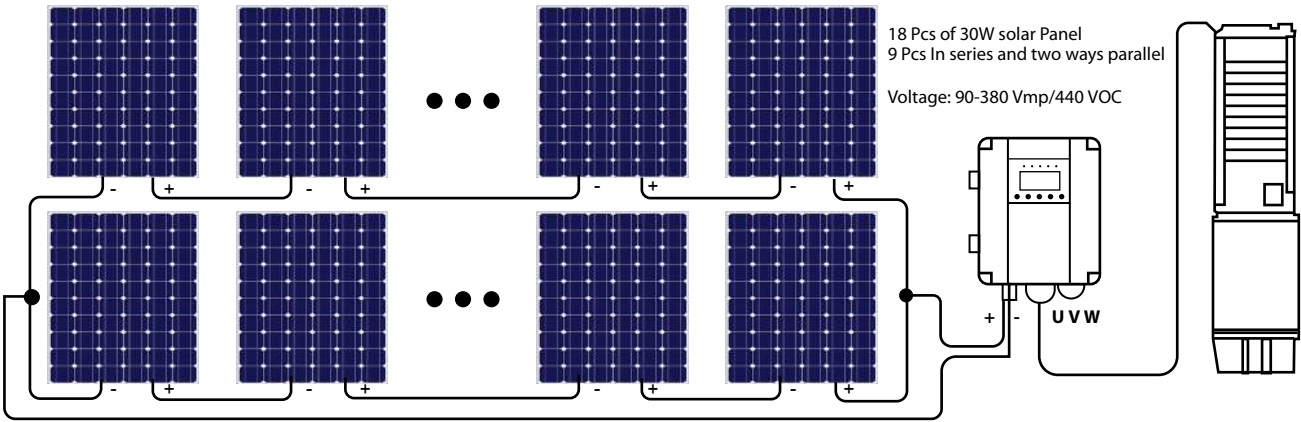
Products

Submersible pump	1pc;4SP5-20 (5HP DC)
Solar panel	18pc;5400Wp;300w ×18pcs
Motor cable	50m*4mm²
Pipeline	20m;Pipeline
Accessories	

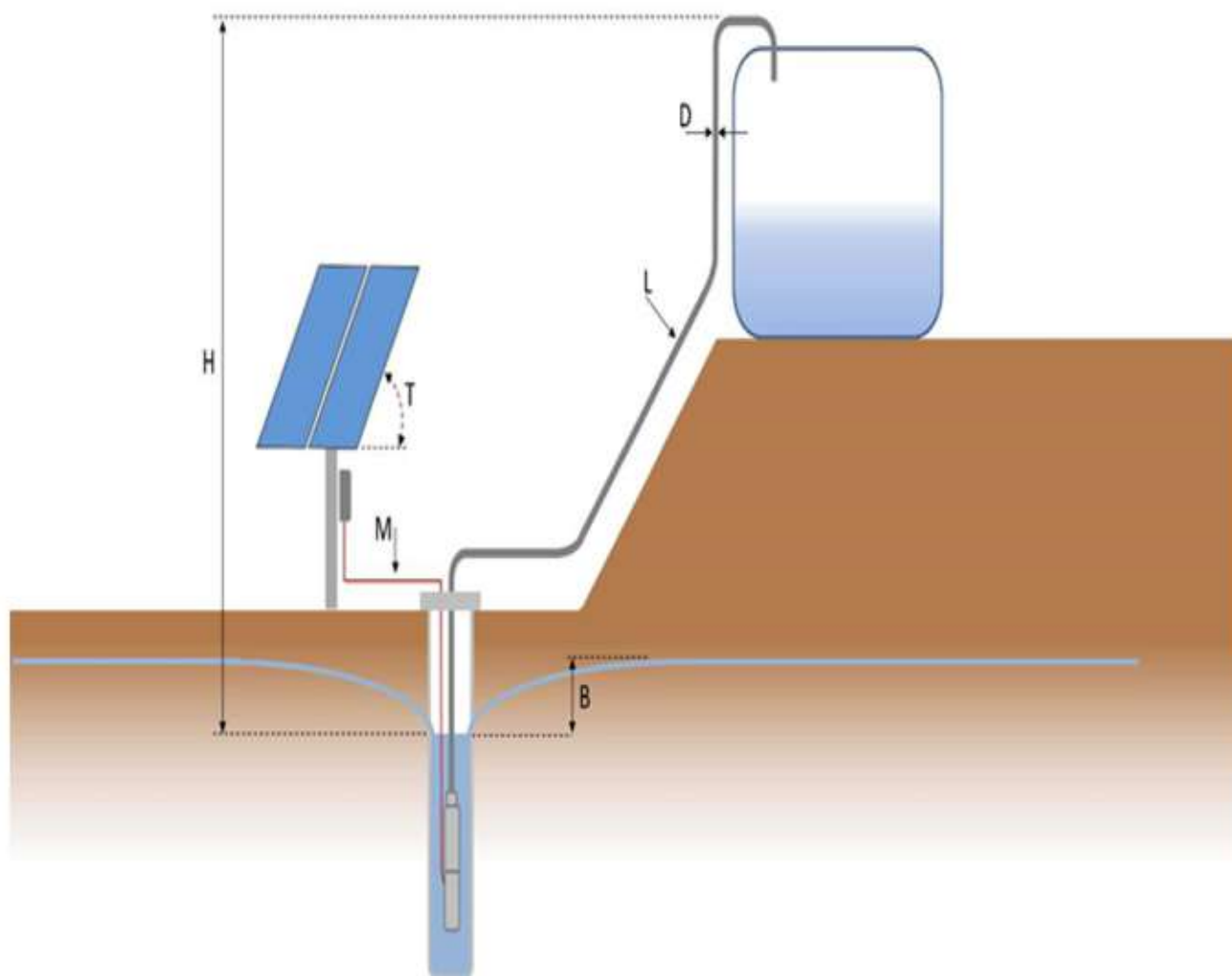
Daily output in average month (54.6) m³/day



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.

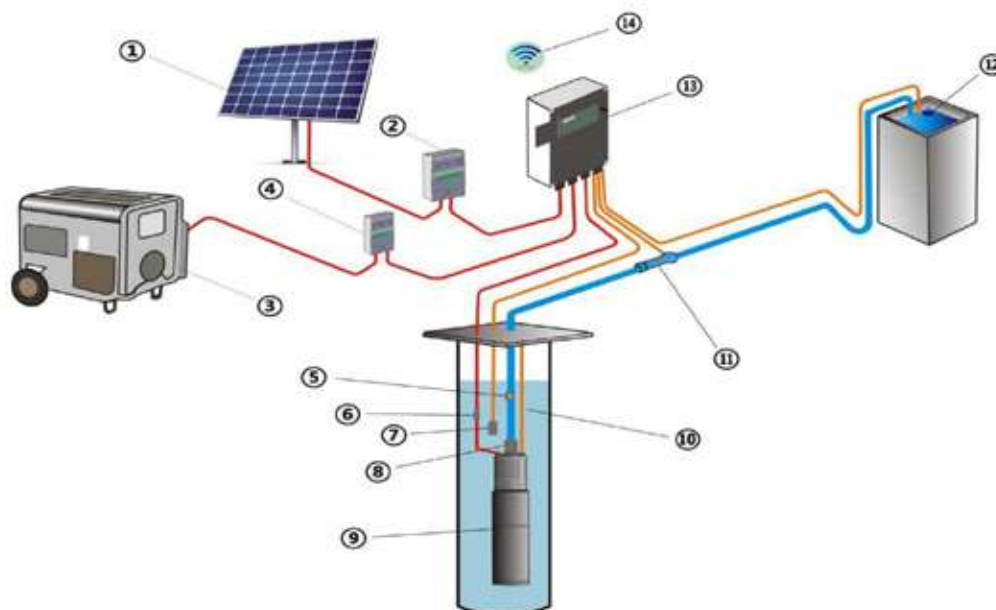
D (Pipeline inner diameter).

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.

4SP5-20 (5HP DC)

Solar Submersible Pump System

System Overview

Head	max. 210m
Flow	max 179/min
Recommend Max Input Power	max. 5.1 kW
Minimum well diameter	min 4 inch
Pump discharge	Rp 1"
Efficiency Max	45%

Product advantage

- Stainless steek: AISI 304(316 optional):
- 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 floar sensor required):
- GPRS(Optional):

Technical Data:

- Controller 4SP5-20 (5HP DC)
- Controller Built-in:
- Losting-Phase Protection;
- Over-load / Over-current / Over-Voltage / Over-Power protection:
- Over temperature protection

Motor 4SP(0.5-3HP AC&DC)

Voltage	DC max. VOC 450V DC Vmp 90-380V
Current	max. DC 18.5A
Motor Efficiency	max 90%
WaterTemp	max40°C
Insulation class	F
Enclosure class	IP X8
Submersion	max. 150m
Required cooling flow	0.8L/s
Connect Standard	4" NEMA
Speed	500-3600

Pump End

- Stainless steel: AISI 304 (316 optional):
- Non-return valve:
- Centrifugal pump

Standards

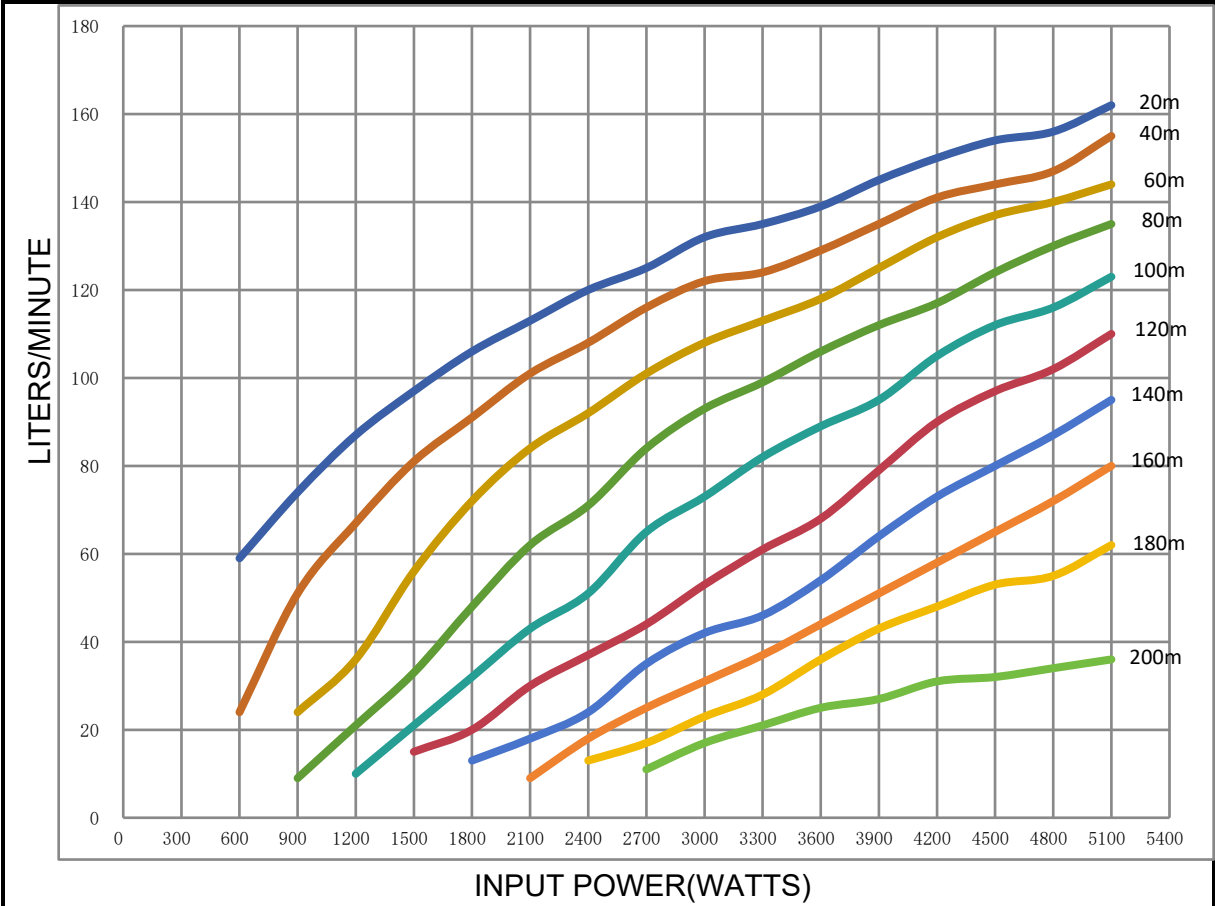


Note:

- *Recommended 2*8 pcs 300W solar panels in series and then 2 ways in parallel:
- *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.



4SP5-20 (5HP DC)
Solar Pumping Project
Pump chart



HEAD (m)	INPUT POWER (WATTS)															
	600	900	1200	1500	1800	2100	2400	2700	3000	3300	3600	3900	4200	4500	4800	5100
	FLOW(LITERS/MINUTE)															
20	59	74	87	97	106	113	120	125	132	135	139	145	150	154	156	162
40	24	51	67	81	91	101	108	116	122	124	129	135	141	144	147	155
60		24	36	56	72	84	92	101	108	113	118	125	132	137	140	144
80		9	21	33	48	62	71	84	93	99	106	112	117	124	130	135
100			10	21	32	43	51	65	73	82	89	95	105	112	116	123
120				15	20	30	37	44	53	61	68	79	90	97	102	110
140					13	18	24	35	42	46	54	64	73	80	87	95
160						9	18	25	31	37	44	51	58	65	72	80
180							13	17	23	28	36	43	48	53	55	62
200								11	17	21	25	27	31	32	34	36

