

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	3.4 m ³ /hr @ 60 m
Flow Range	2.2 ~ 6.3 m ³ /hr
Head Range	10 ~ 70 m

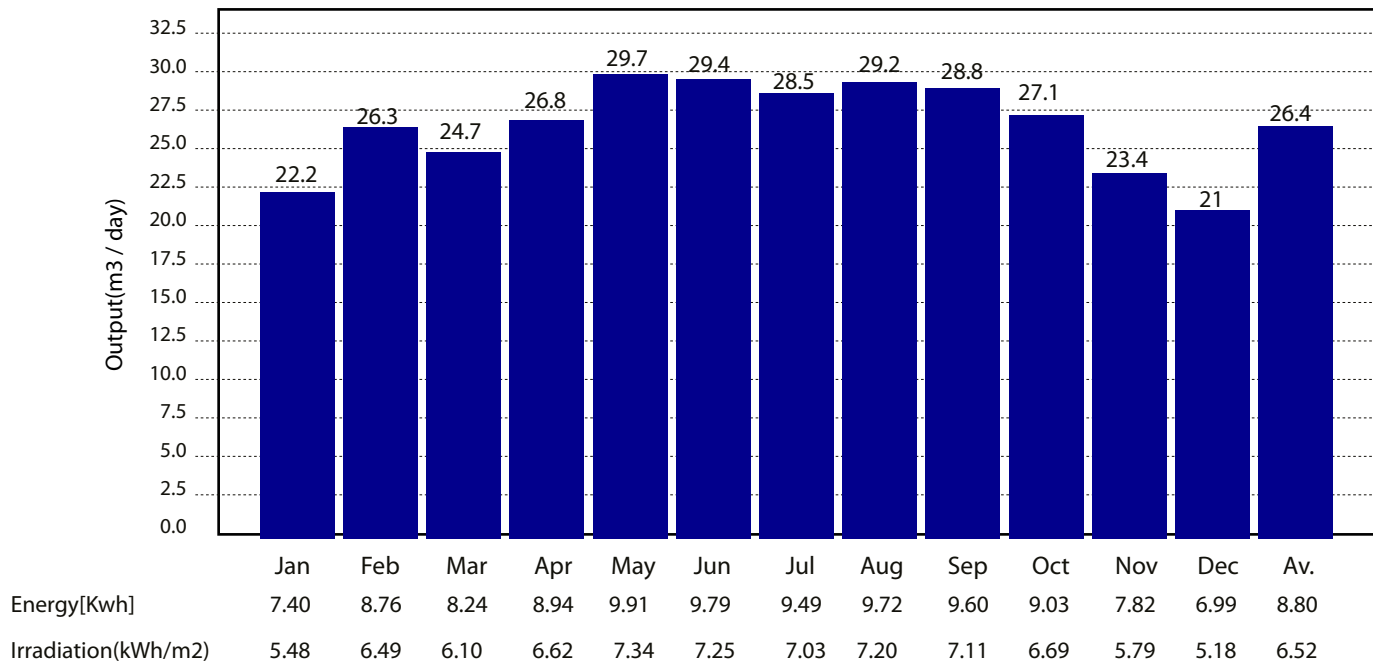
Parameter

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

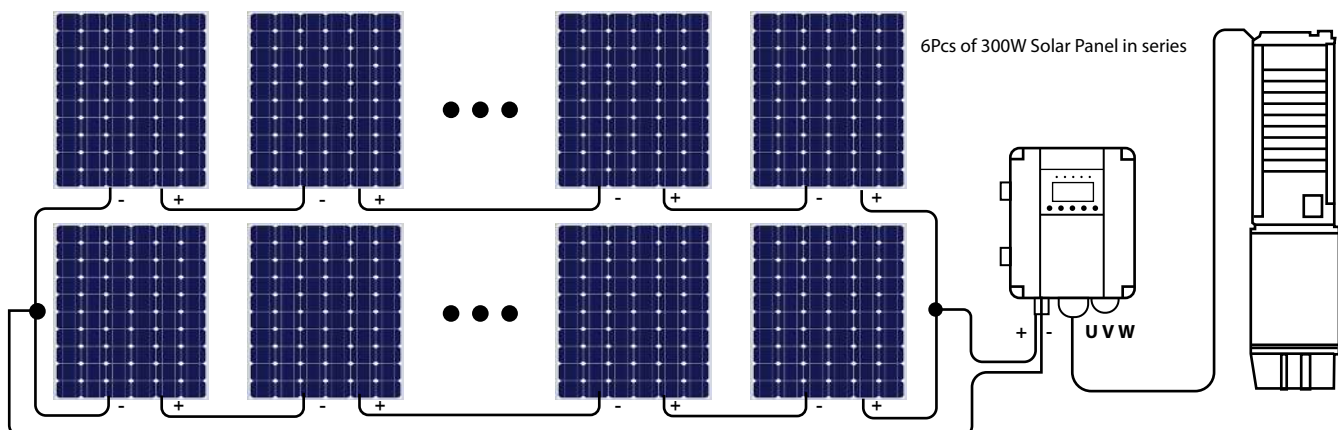
Products

Submersible pump	1pc;4SPK3-8 (1.5HP AC&DC)
Solar panel	5pc;1500Wp;300w × 5pcs
Motor cable	
Pipeline	20m;Pipeline
Accessories	

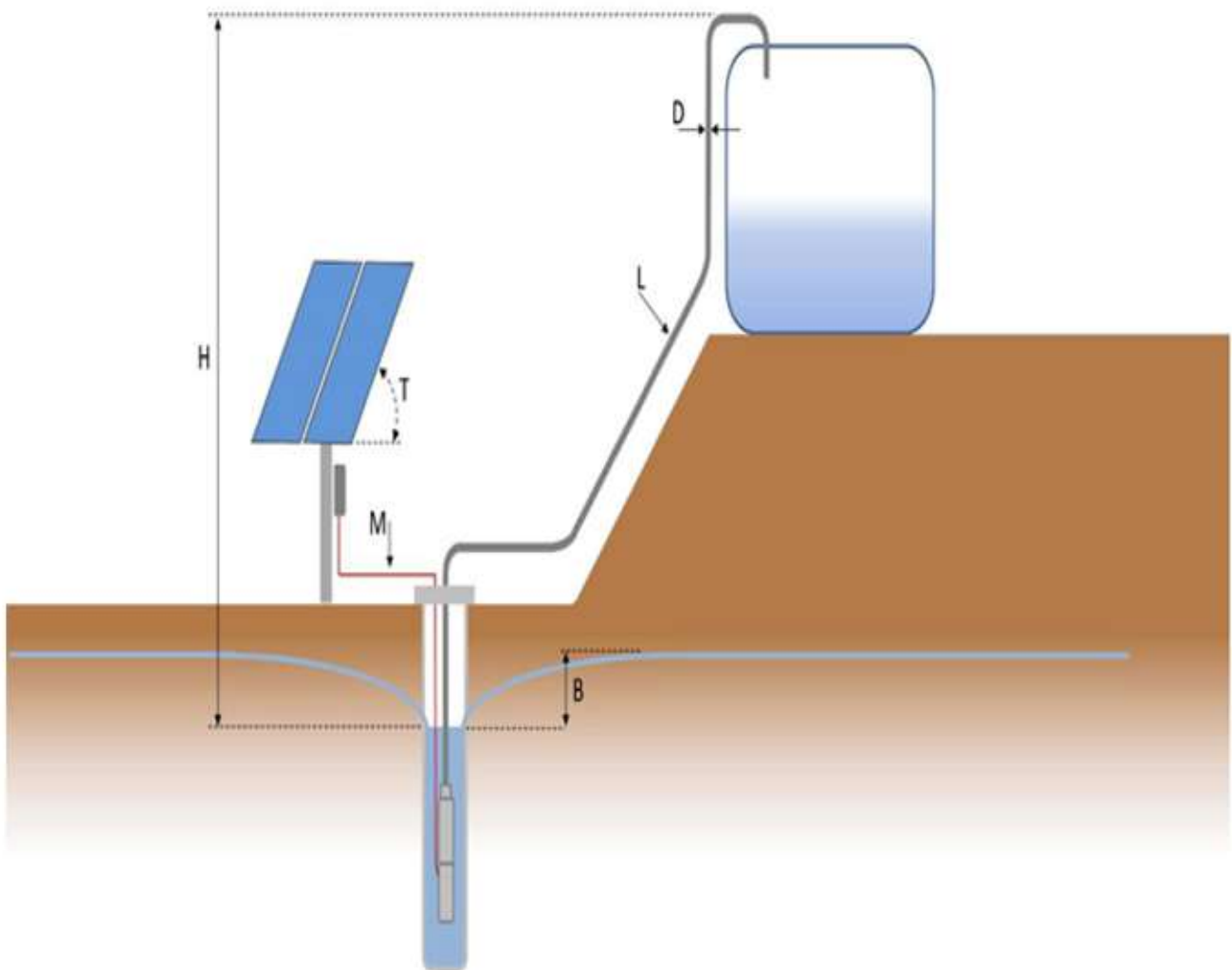
Daily output in average month (26.4) m³/day



Solar Panel Wiring

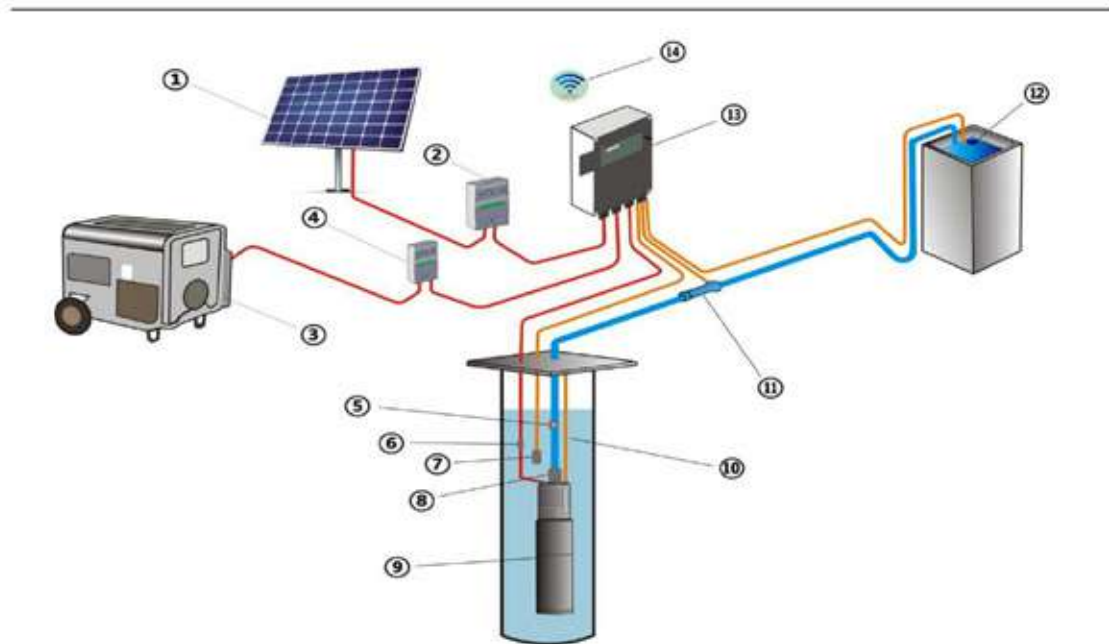


Sizing Layout



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.

4SPK3-8 (1.5HP AC&DC)

Solar Submersible Pump System

System Overview

Head	max. 72m
Flow	max 175L/min
Recommend Max Input Power	max. 1.2 kW
Minimum well diameter	min 4 inch
Pump discharge	Rp 1.5"
Efficiency Max	%

Product advantage

Stainless steel: AISI 304
 BLDC High Efficiency Motor,
 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 4SPK5-6 (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:

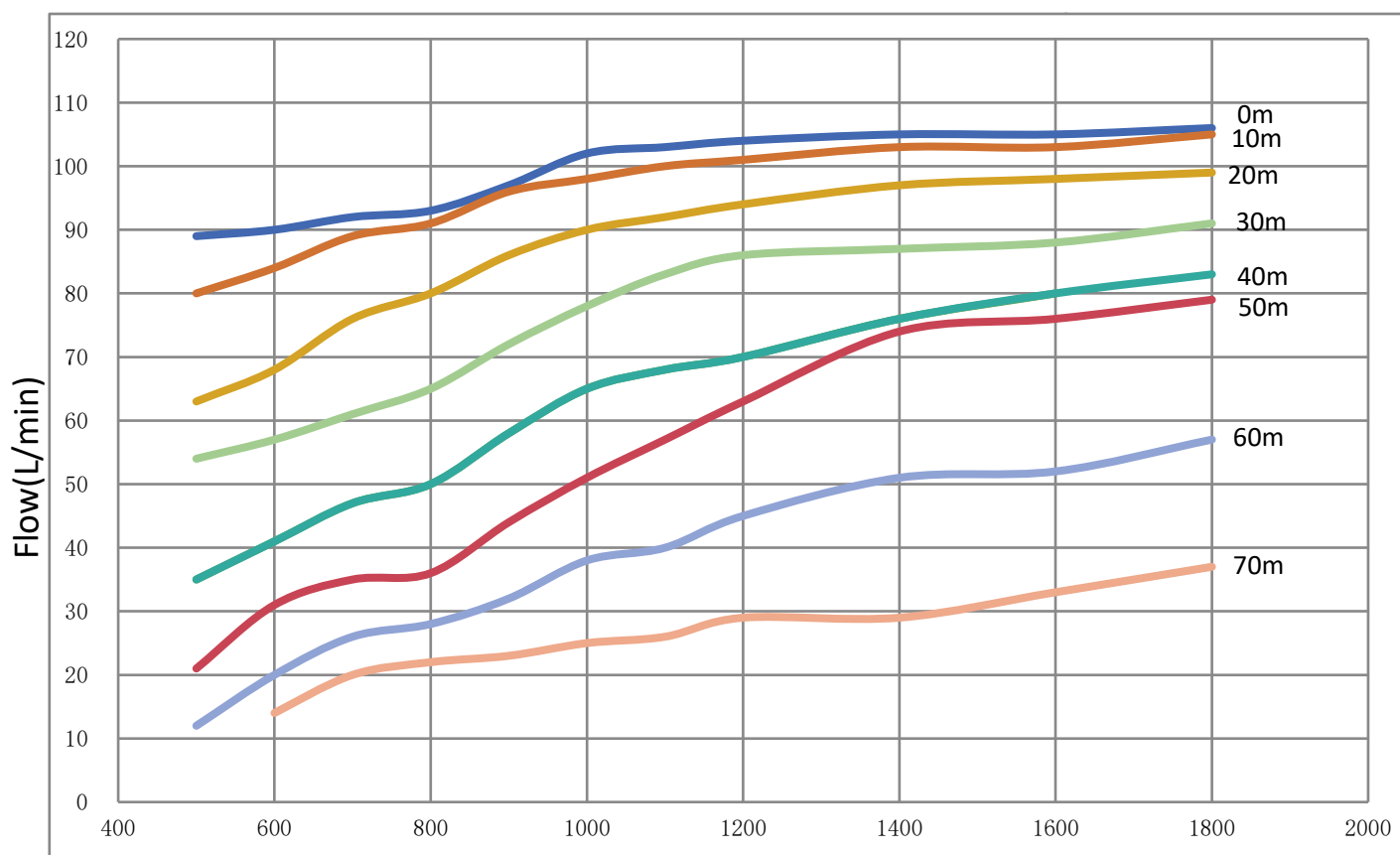
*AC / DC switching needs to wait 1 minute

*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.



4SPK3-8 (1.5HP AC&DC) Solar Pumping Project Pump Chart



INPUT POWER (WATTS)

HEAD (m)	INPUT POWER (WATTS)										
	500	600	700	800	900	1000	1100	1200	1400	1600	1800
0	89	90	92	93	97	102	103	104	105	105	106
10	80	84	89	91	96	98	100	101	103	103	105
20	63	68	76	80	86	90	92	94	97	98	99
30	54	57	61	65	72	78	83	86	87	88	91
40	35	41	47	50	58	65	68	70	76	80	83
50	21	31	35	36	44	51	57	63	74	76	79
60	12	20	26	28	32	38	40	45	51	52	57
70		14	20	22	23	25	26	29	29	33	37

4SPK3-8 (1.5HP AC&DC)

Dimensions and Weights

