

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	2.0 m ³ /hr @ 130 m
Flow Range	1.4 ~ 5.1 m ³ /hr
Head Range	30 ~ 140 m

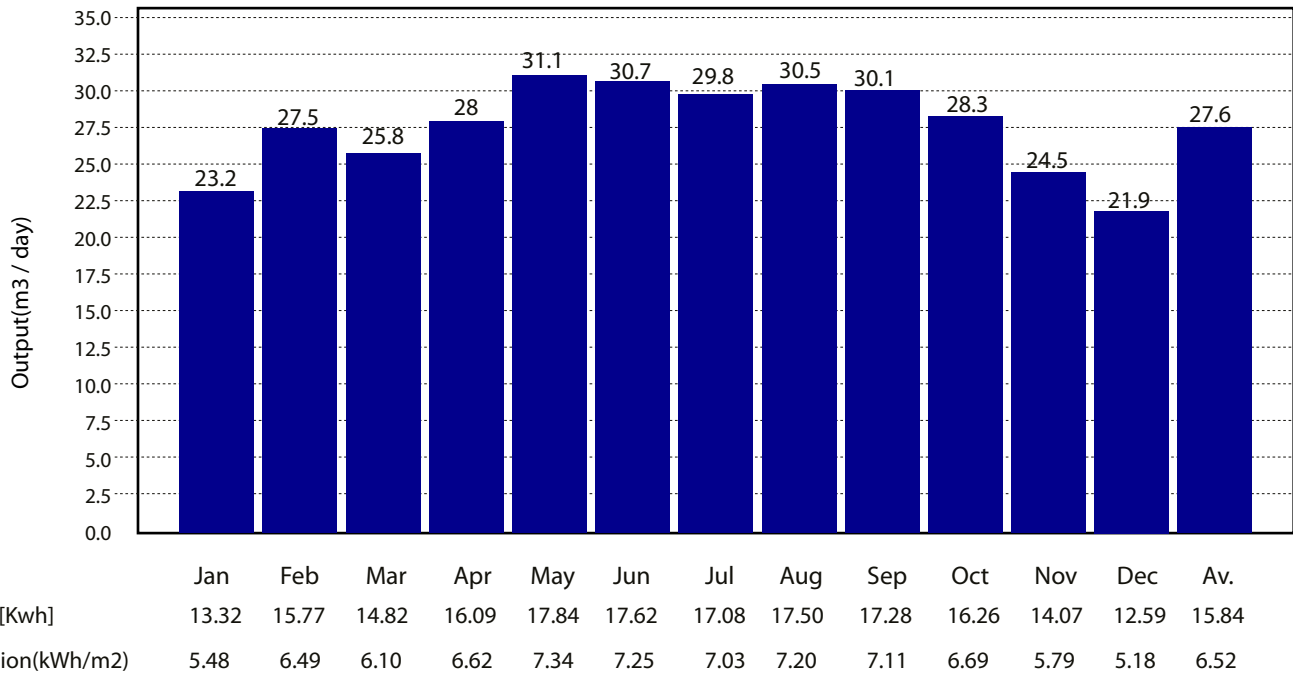
Parameter

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

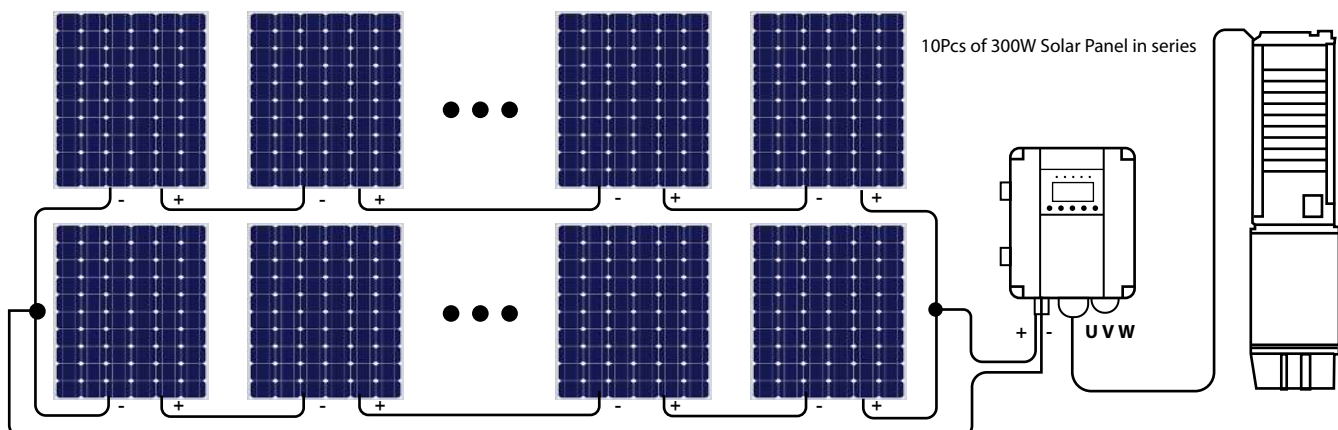
Products

Submersible pump	1pc;4SPK2-16 (2.5HP AC/DC)
Solar panel	9pc;2700Wp;300w × 9pcs
Motor cable	
Pipeline	20m;Pipeline
Accessories	

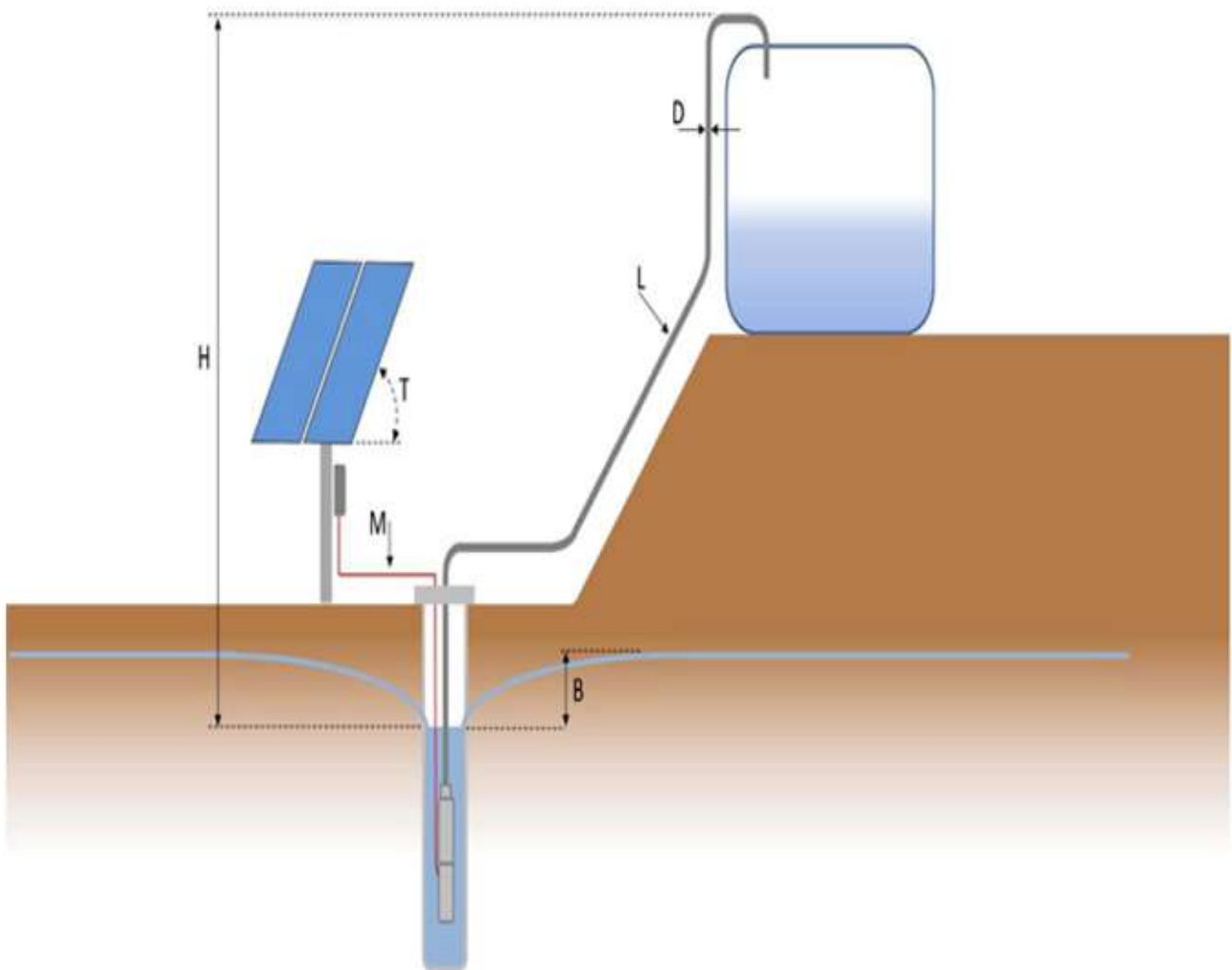
Daily output in average month (27.6) m³/day



Solar Panel Wiring

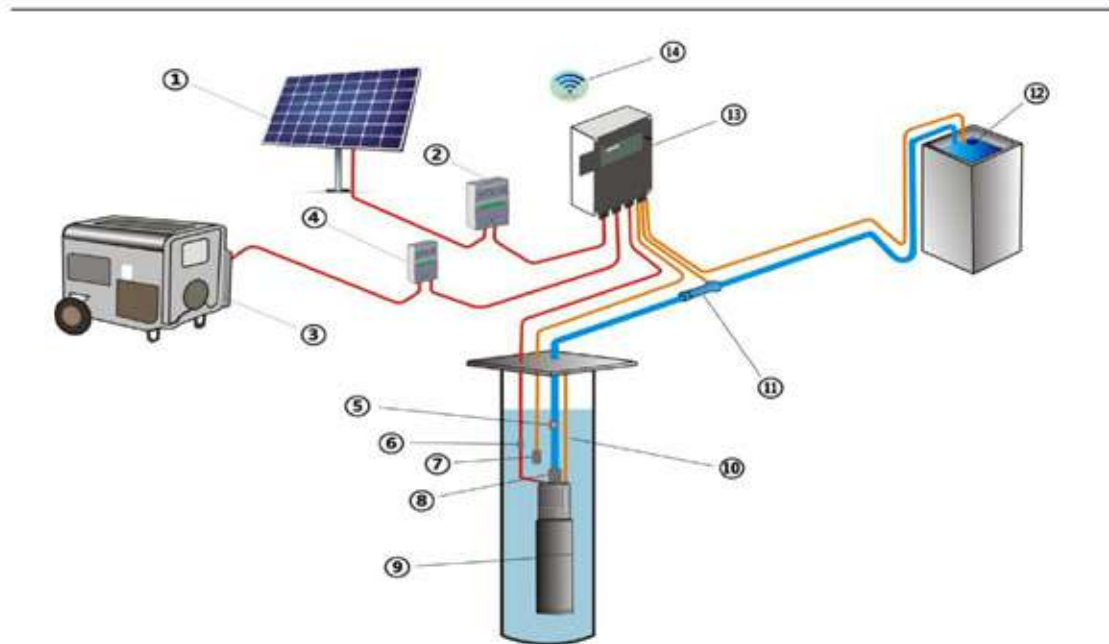


Sizing Layout



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 | 12. GPRS (Optional) |
| 2. SPD(DC), Surge Protection Device (Optional) | 13. Generator (Single Phase, Optional) |
| 3. Check valve (Optional) | |
| 4. Wiring waterproof assembly | |
| 5. The Low-Level Float (For Well, Optional) | |
| 6. Sacrificial Anode (Optional) | |
| 7. Water Pump End and BLDC Motor | |
| 8. Safety Rope | |
| 9. The High Level Float (For Tank, Optional) | |
| 10. External Controller | |
| 11. Grounding pile (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.

4SPK2-16 (2.5HP AC&DC)

Solar Submersible Pump System

System Overview

Head	max. 165m
Flow	max 94L/min
Recommend Max Input Power	max. 2.7 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
 Losing-Phase
 Overvoltage and other protection

Technical Data:

Controller 4SPK2-16 (2.5HP AC/DC)

Controller External
 Over load ? Over Current / Over Voltage / Over Power Protection
 Losing-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;

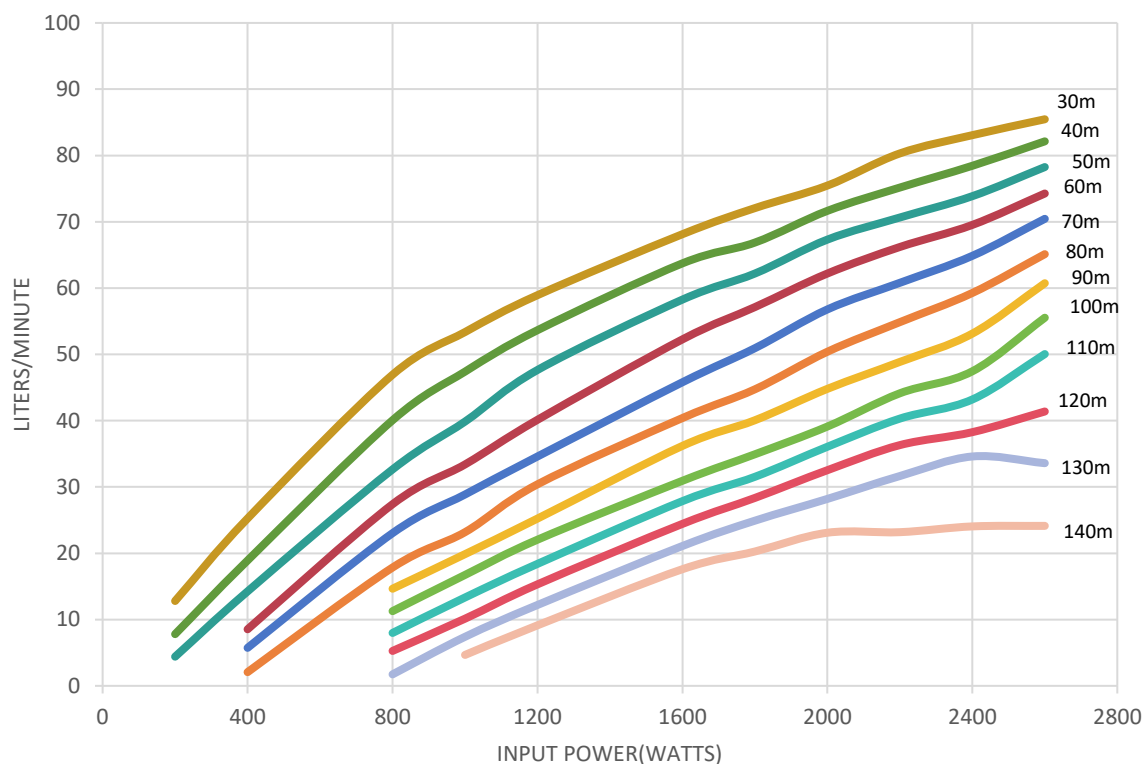
*VOC (V) Volts open circuit nothing connected;Vmp (V) Volts maximum power point under load;Exceeding limits may cause serious harm or irreparable damage.



4SPK2-16 (2.5HP AC&DC)

Solar Pumping Project

Pump Chart



INPUT POWER (WATTS

	INPUT POWER (WATTS)										
	200	400	800	1000	1200	1600	1800	2000	2200	2400	2600
HEAD (M)	FLOW RATE (LITERS/MINUTE)										
30	13	25	47	53	59	68	72	75	80	83	85
40	8	19	40	47	54	64	67	72	75	78	82
50	4	14	33	40	48	58	62	67	71	74	78
60		9	27	33	40	52	57	62	66	70	74
70		6	23	29	35	46	51	57	61	65	70
80		2	18	23	30	40	45	50	55	59	65
90			15	20	25	36	40	45	49	53	61
100			11	17	22	31	35	39	44	47	56
110			8	13	18	28	32	36	40	43	50
120			5	10	15	24	28	33	36	38	41
130			2	7	12	21	25	28	32	35	34
140				5	9	18	20	23	23	24	24

4SPK2-16 (2.5HP AC&DC)

Dimensions and Weights

