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
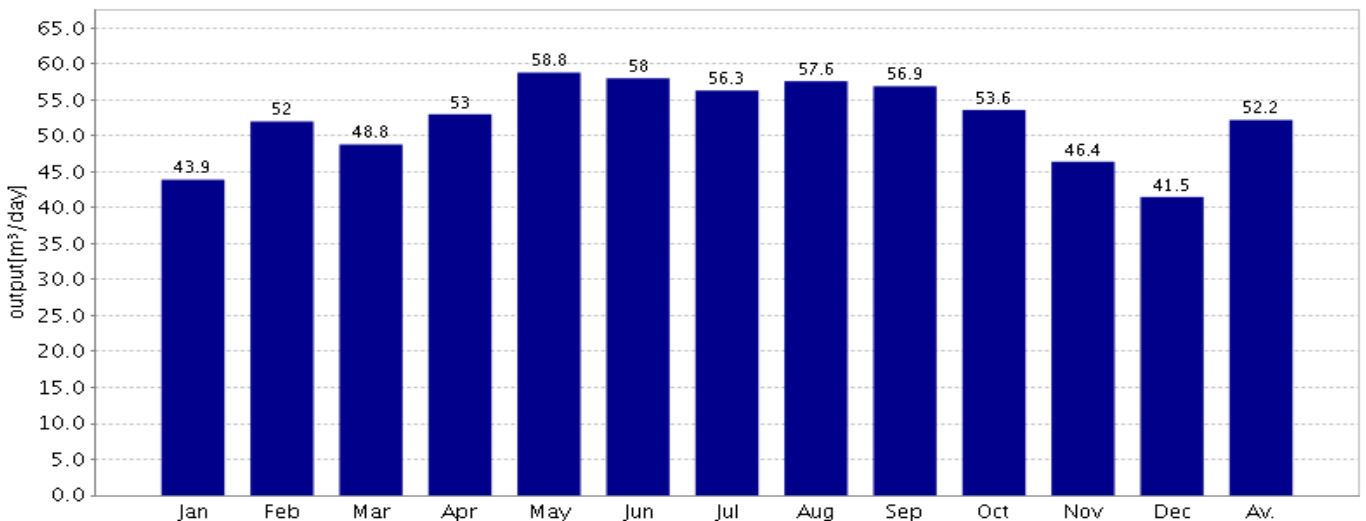
Parameter

Location:	UAE	Water Temp:	25°C		
Required daily output:	45m³/day	Dirt loss:	3%	Motor lenght:	50
Pipe type:	Plastic	Static Head:	50m	Pipe length:	20m

Products

Submersible pump	1pc;4SP8-8 (3HP)
Solar panel	10pc;3000Wp;300w ×10pcs
Motor cable	50m*2.5mm²
Pipeline	20m;Pipeline
Accessories	

Daily output in average month   (52.2) m³/day

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Av.
Energy[kWh]	14.80	17.52	16.47	17.87	19.82	19.58	18.98	19.44	19.20	18.06	15.63	13.99	17.60
Irradiation[kWh/m2]	5.48	6.49	6.10	6.62	7.34	7.25	7.03	7.20	7.11	6.69	5.79	5.18	6.52

Solar Panel Wiring

10 Pcs of 300W solar Panel in series

Voltage:
 DC : 60-380 Vmp / 440 VOC
or AC : 1 x 90-240V 50Hz&60Hz
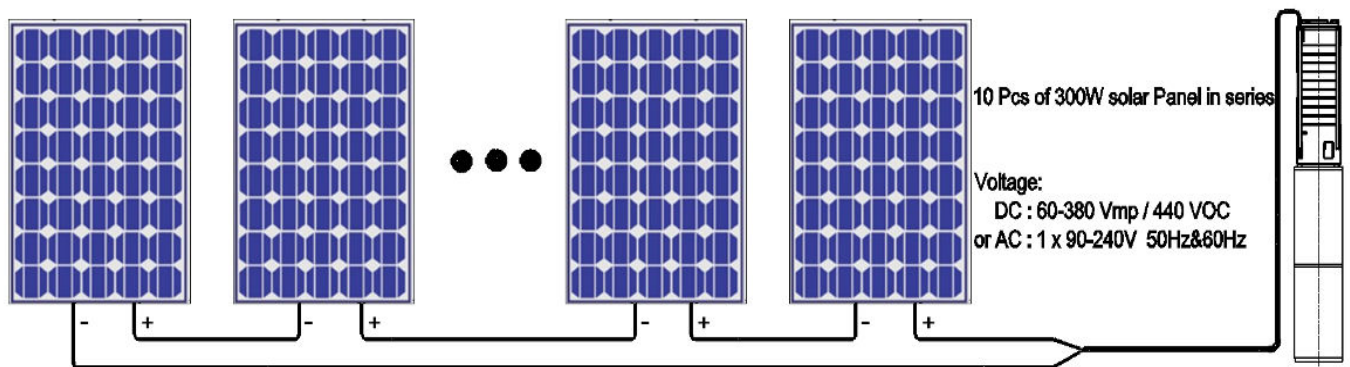
Sizing Layout
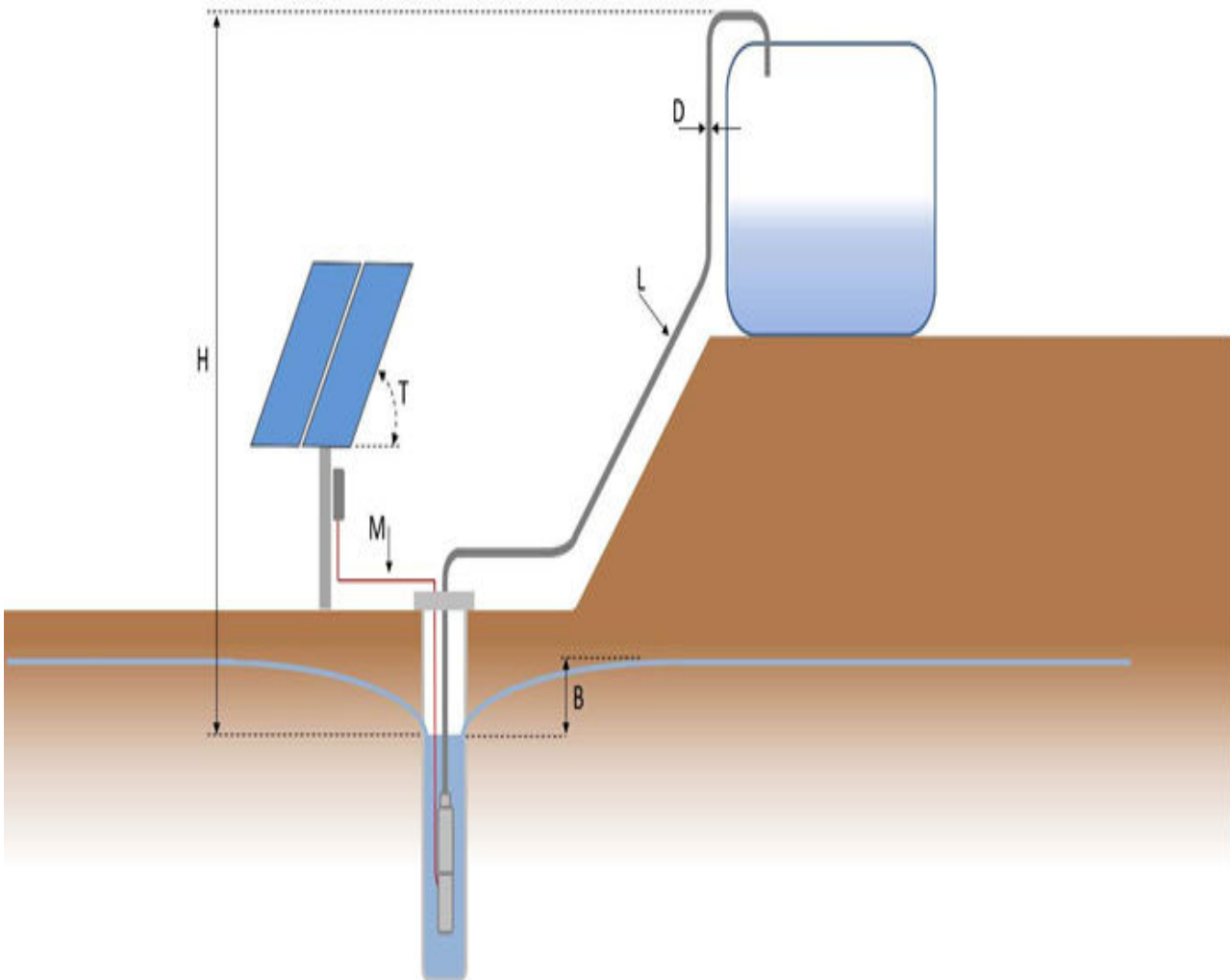
H (Static head):	Vertical height from the dynamic water level to the highest point of delivery.
B (Drawdown):	Lowering of water level depending on flow rate and recovery rate of the well.
D (Pipeline inner diameter)	
L (Pipe length):	Entire pipeline from the pump outlet to the point of delivery. Ellbows 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
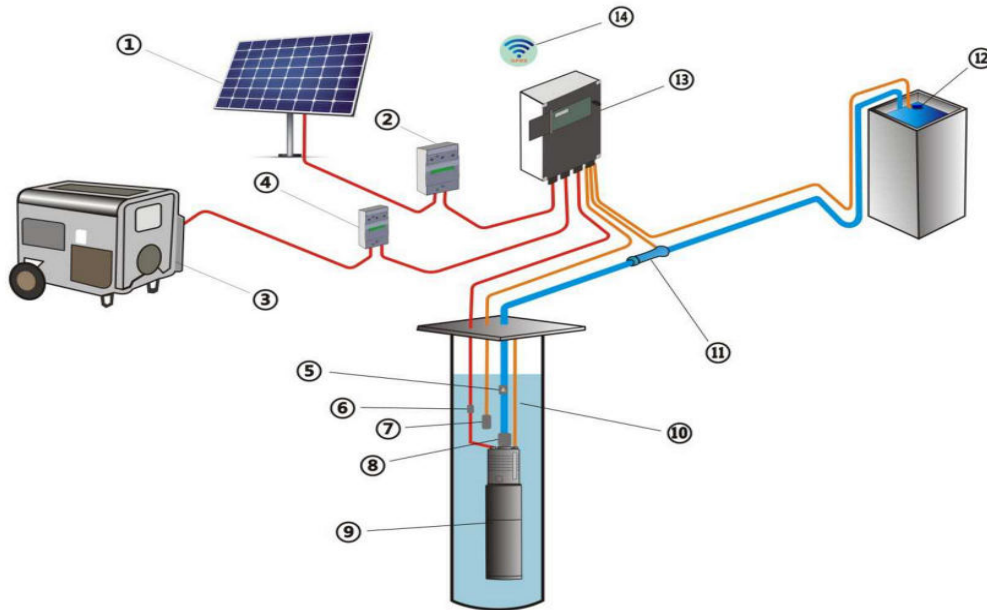
1、	Solar panels	8、	Sacrificial Anode(optional)
2、	SPD(DC) Surge Protection Device(optional)	9、	Solar water pump
3、	Generator or Grid (optional)	10、	Traction rope
4、	SPD(AC) Surge Protection Device (optional)	11、	Flow meter(optional)
5、	Check valve (optional)	12、	Float Switch(For Tank)
6、	Wiring Package(Epoxy 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。*

4SP8-8 (3HP)
Solar Submersible Pump System

System Overview

Head	max. 88m
Flow	max. 250L/min
Recommend Max input Power	max. 3.0 kW
Minimum well diameter	min 4" inch
Pump discharge	Rp 2"
Efficiency Max	45%

Product advantage

.Stainless steel: AISI 304 (316 optional);

.BLDC High Efficiency Motor;

.MPPT Efficiency Max.99%;

.Encapsulated water filled motor(No pollution risk);

.Thrust bearing system;

.Soft start running makes the system's life longer;

.Hybrid Powered by AC/DC;50Hz&60Hz both working;

.Wide voltage:1x90-240VAC;60-380Vmp/440VOC;

.Built-in electronic make system more reliable;

.Dry protection(No additional float sensor required);

.Reverse protection(reverse + and - is fine);

.Over-head protection(need monitor and flow meter);

.Lighting and surge protection(need monitor);

.Over voltage protection (need monitor)

Technical Data

Controller 4SP8-8 (3HP)

.Controller Built-in;

.Losting-Phase protection

.Over-load/Over-current/Over-voltage/Over-power protection;

.Over temperature protection.

Motor 4SP(0.5-3HP)

Voltage	AC 1×90-240V
	DC max.VOC 440V
	DC Vmp 60-380V
Current	max.AC 10A
	max.DC 12A
Motor Efficiency	max.88%
WaterTemp	max.40°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

CE   TÜV SÜD   ISO 9001:2015   IRAM

Note:

*AC/DC switching needs to wait 1 minute

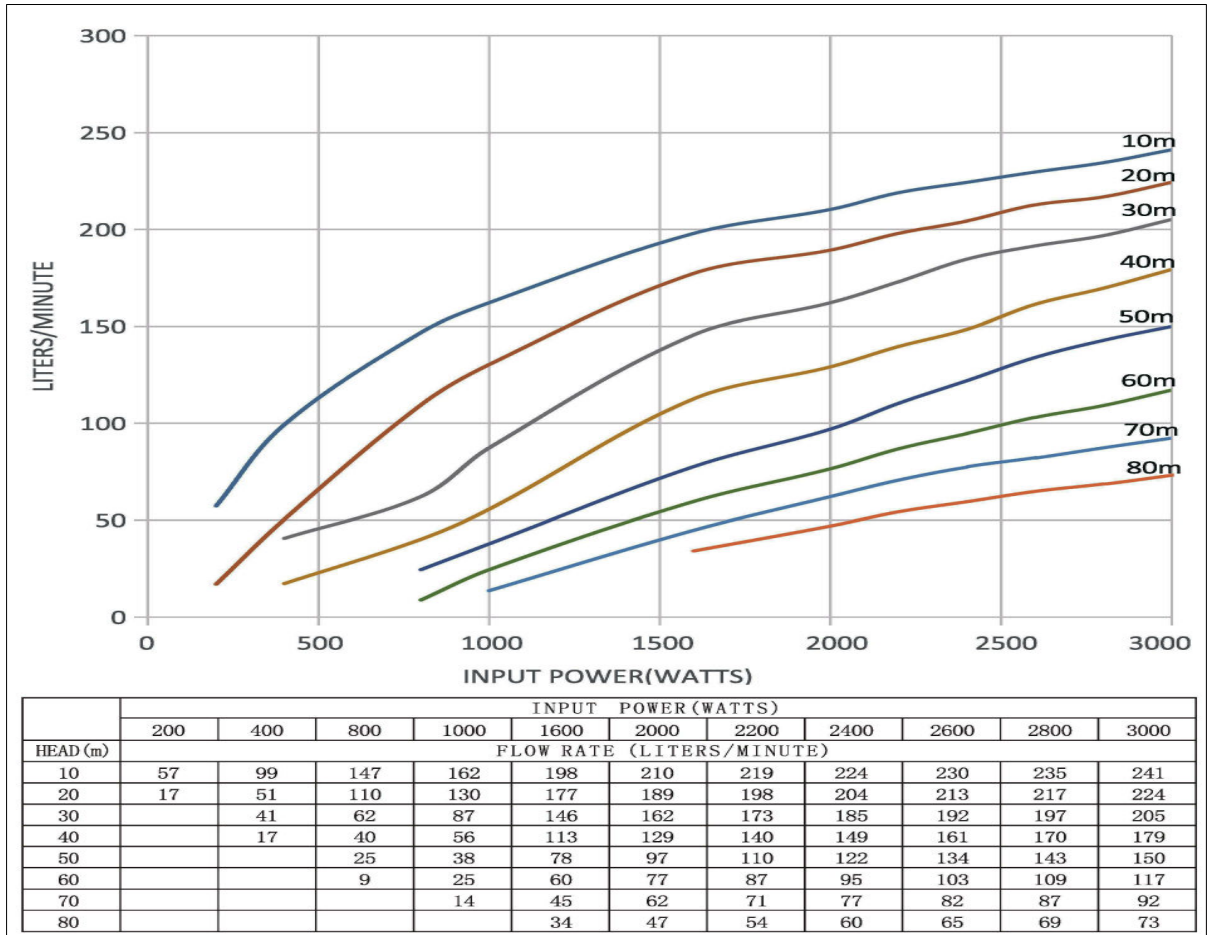*Recommended 10 Pcs of 300W Solar Panels in Series;

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

4SP8-8 (3HP)
Solar Pumping project
Pump chart

	INPUT POWER (WATTS)										
	200	400	800	1000	1600	2000	2200	2400	2600	2800	3000
HEAD (m)	FLOW RATE (LITERS/MINUTE)										
10	57	99	147	162	198	210	219	224	230	235	241
20	17	51	110	130	177	189	198	204	213	217	224
30		41	62	87	146	162	173	185	192	197	205
40		17	40	56	113	129	140	149	161	170	179
50			25	38	78	97	110	122	134	143	150
60			9	25	60	77	87	95	103	109	117
70				14	45	62	71	77	82	87	92
80					34	47	54	60	65	69	73

Dimensions and Weights

	A	B	C	H	L	D
Dimension (mm)	φ99	90	620	368	988	2"

	Pump Unit	Motor	Pump End	Package Unit		Package Volume
Weight (kg)	16.5	12.5	4	20		1.12m*0.16*0.2m

The size and weight information may be changed, please confirm with the factory.