Solar pumping System

Nominal Flow	2.5 m3/hr @ 100 m
Flow Range	2.5 ~ 4.8 m3/hr
Head Range	40 ~ 100 m

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

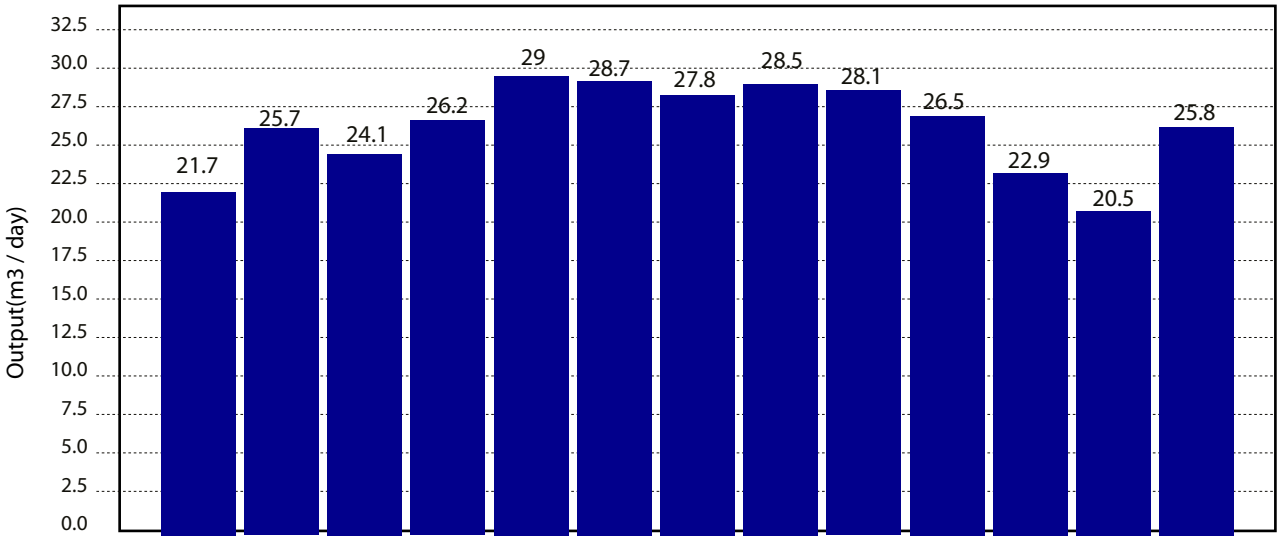
Parameter

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

Products

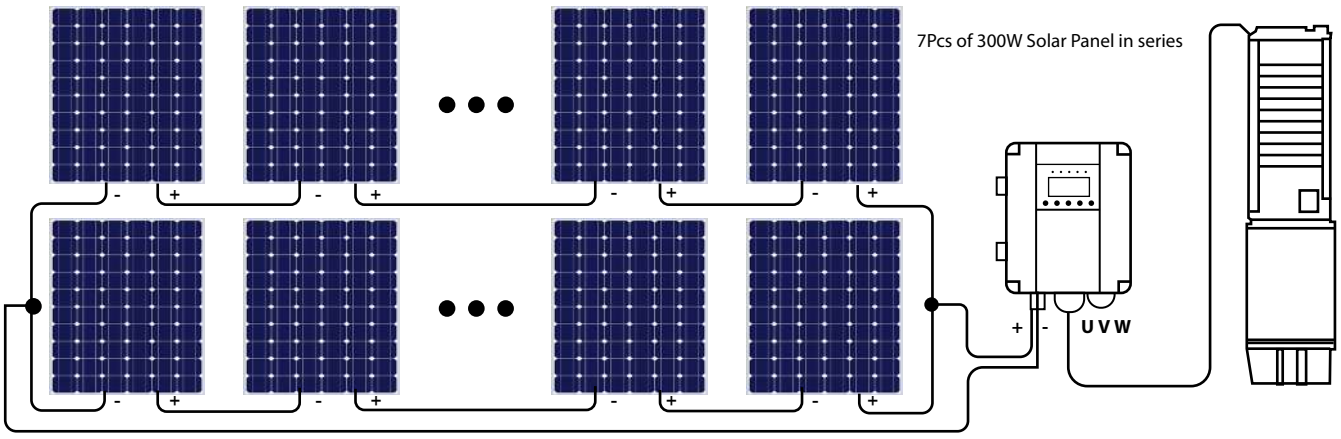
Submersible pump	1pc;4SPK2-13 (2HP AC/DC)
Solar panel	7pc;2100Wp;300w × 7pcs
Motor cable	
Pipeline	20m;Pipeline
Accessories	

Daily output in average month (25.8) m³/day



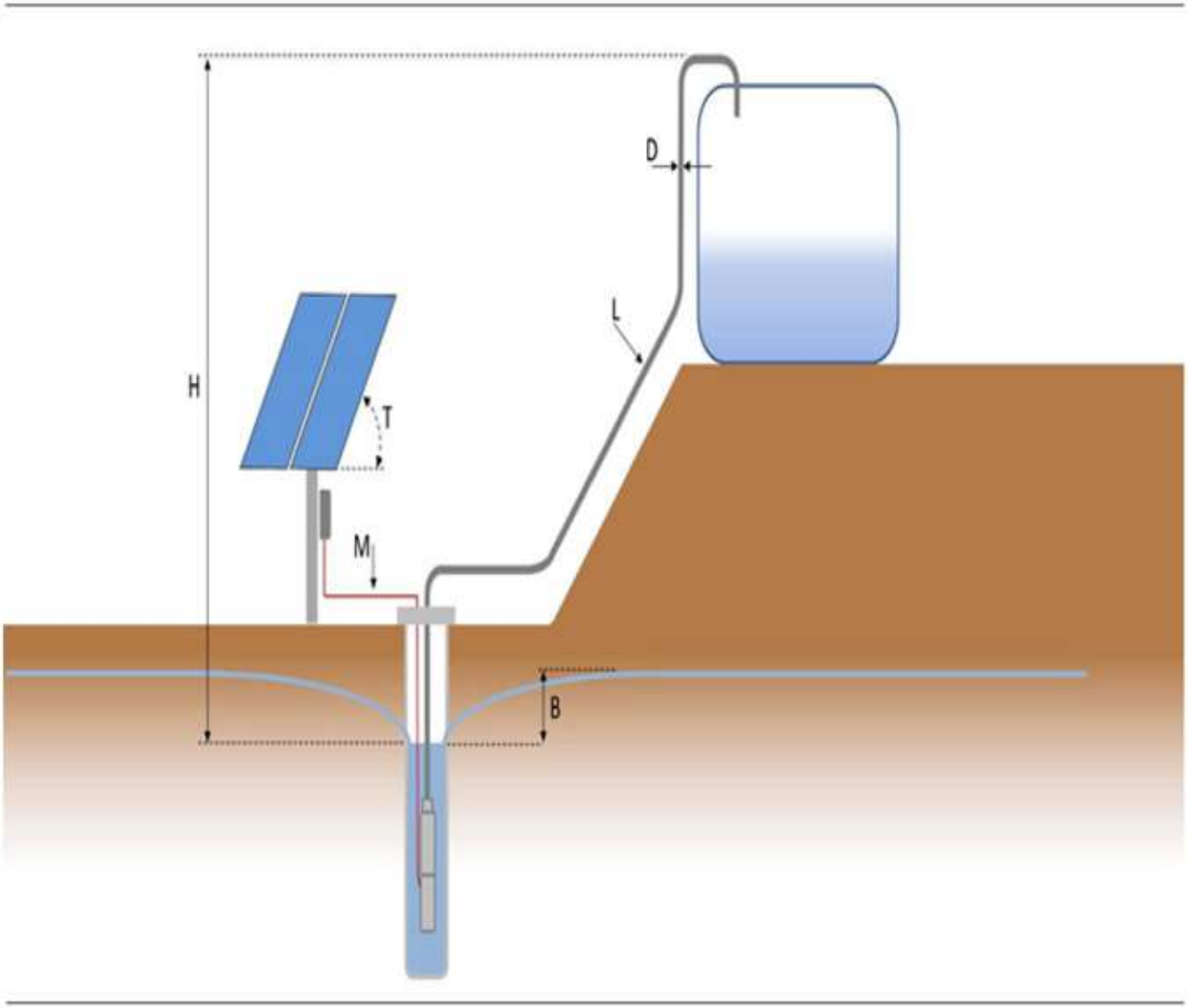
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Av.
Energy[Kwh]	10.36	12.27	11.53	12.51	13.87	13.70	13.29	13.61	13.44	12.64	10.94	9.79	12.32
Irradiation(kWh/m2)	5.48	6.49	6.10	6.62	7.34	7.25	7.03	7.20	7.11	6.69	5.79	5.18	6.52

Solar Panel Wiring



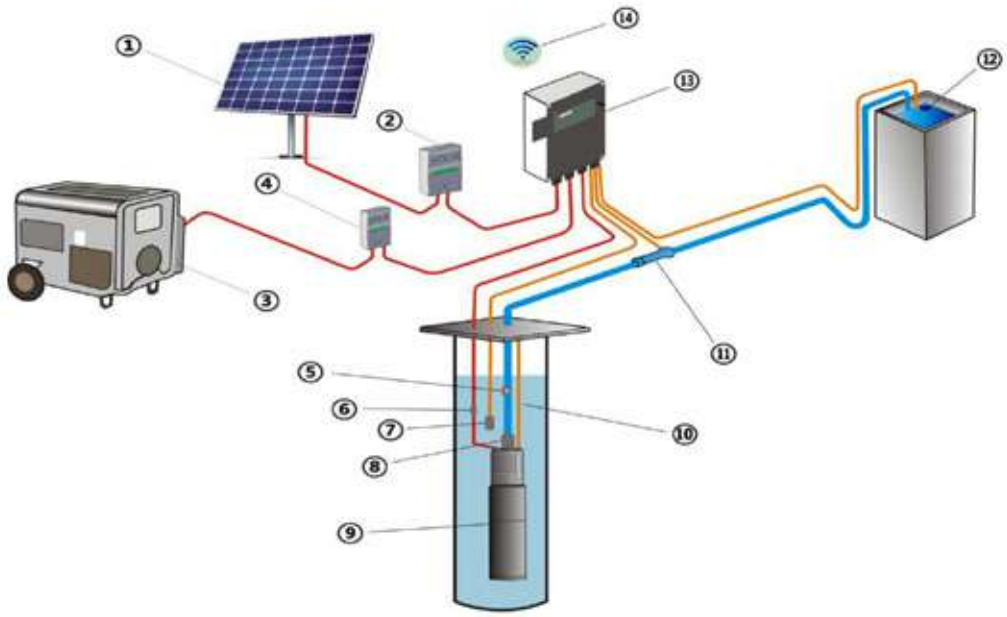
Maxima SOLAR

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
2. SPD(DC), Surge Protection Device (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 Tandk, Optional)
10. External Controller
11. Grounding pile (Optional)
12. GPRS (Optional)
13. Generator (Single Phase, 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.

4SPK2-13 (2HP AC&DC)

Solar Submersible Pump System

System Overview

Head	max. 138m
Flow	max 93L/min
Recommend Max Input Power	max. 2.1 kW
Minimum well diameter	min 4 inch
Pump discharge	Rp 1.25”
Efficiency Max	45%

Product advantage

Stainless steek: 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 intellignet switching
Losting-Phase
Overvoltage and other protection

Technical Data:

Controller 4SPK2-13 (2HP AC/DC)

Controller External
Over load ? Over Current / Over Voltage / Over Power Protection
Losting-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

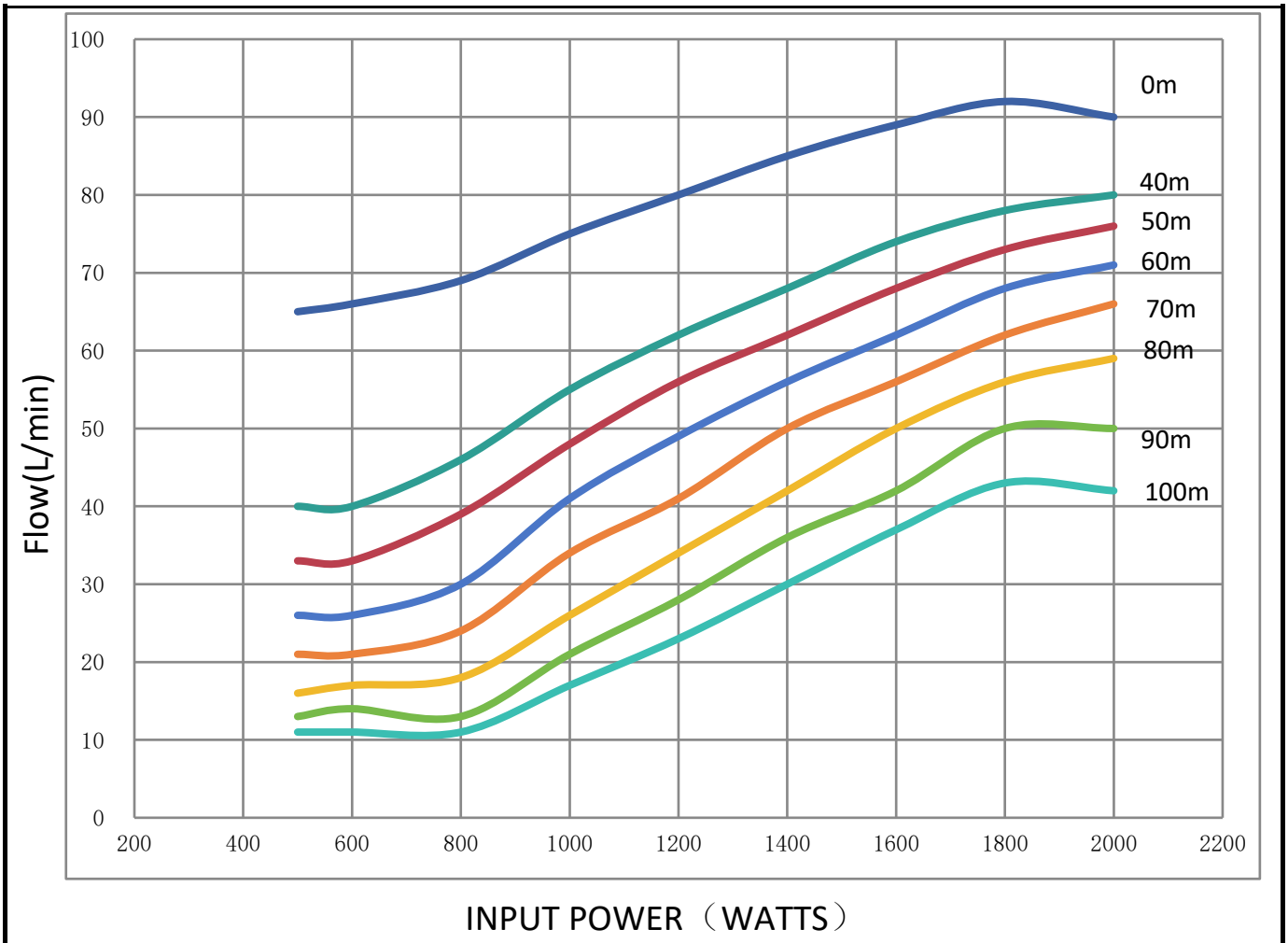
Stainless steel: AISI 304 (316 Optional);
Non-return valve:
Centrifugal pump

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.

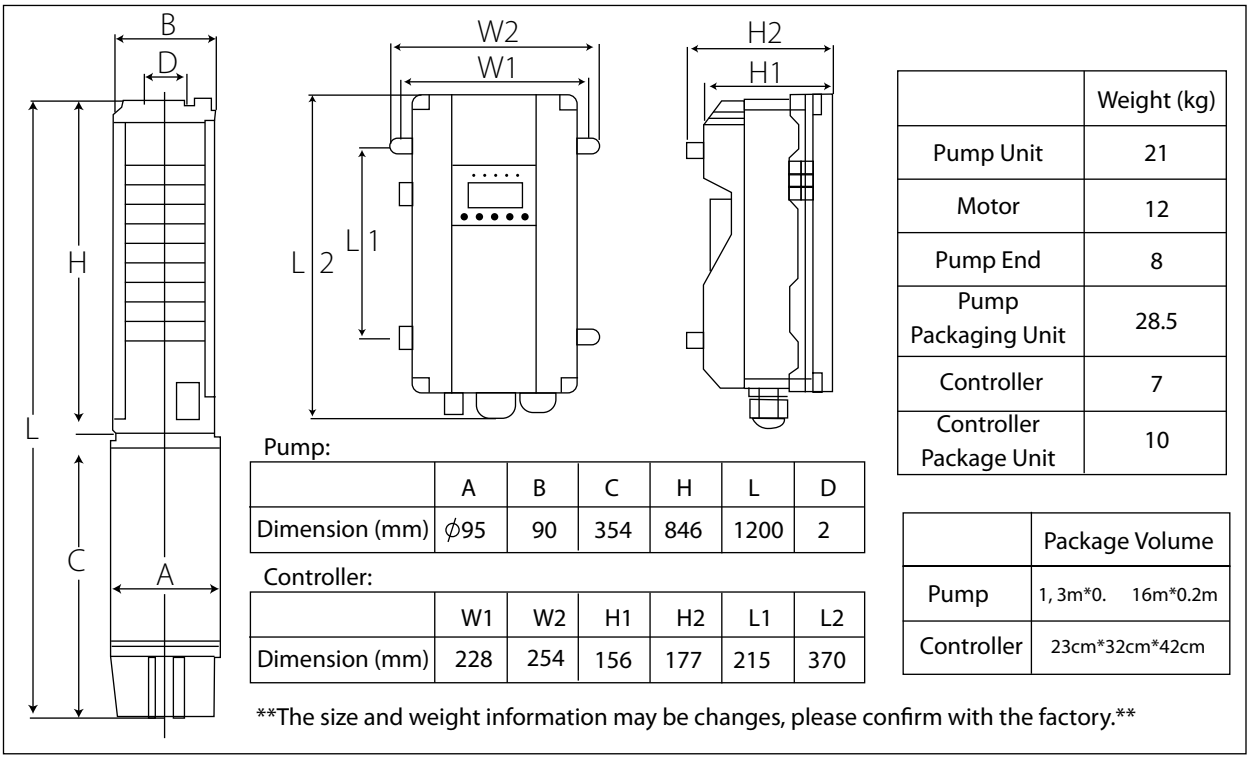
4SPK2-13 (2HP AC&DC)
Solar Pumping Project
Pump Chart



HEAD (m)	INPUT POWER (WATTS)								
	500	600	800	1000	1200	1400	1600	1800	2000
0	65	66	69	75	80	85	89	92	90
40	40	40	46	55	62	68	74	78	80
50	33	33	39	48	56	62	68	73	76
60	26	26	30	41	49	56	62	68	71
70	21	21	24	34	41	50	56	62	66
80	16	17	18	26	34	42	50	56	59
90	13	14	13	21	28	36	42	50	50
100	11	11	11	17	23	30	37	43	42

4SPK2-13 (2HP AC&DC)

Dimensions and Weights



Pump:

	A	B	C	H	L	D
Dimension (mm)	ϕ95	90	354	846	1200	2

Controller:

	W1	W2	H1	H2	L1	L2
Dimension (mm)	228	254	156	177	215	370

	Weight (kg)
Pump Unit	21
Motor	12
Pump End	8
Pump Packaging Unit	28.5
Controller	7
Controller Package Unit	10

	Package Volume
Pump	1, 3m*0. 16m*0.2m
Controller	23cm*32cm*42cm

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