

# 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

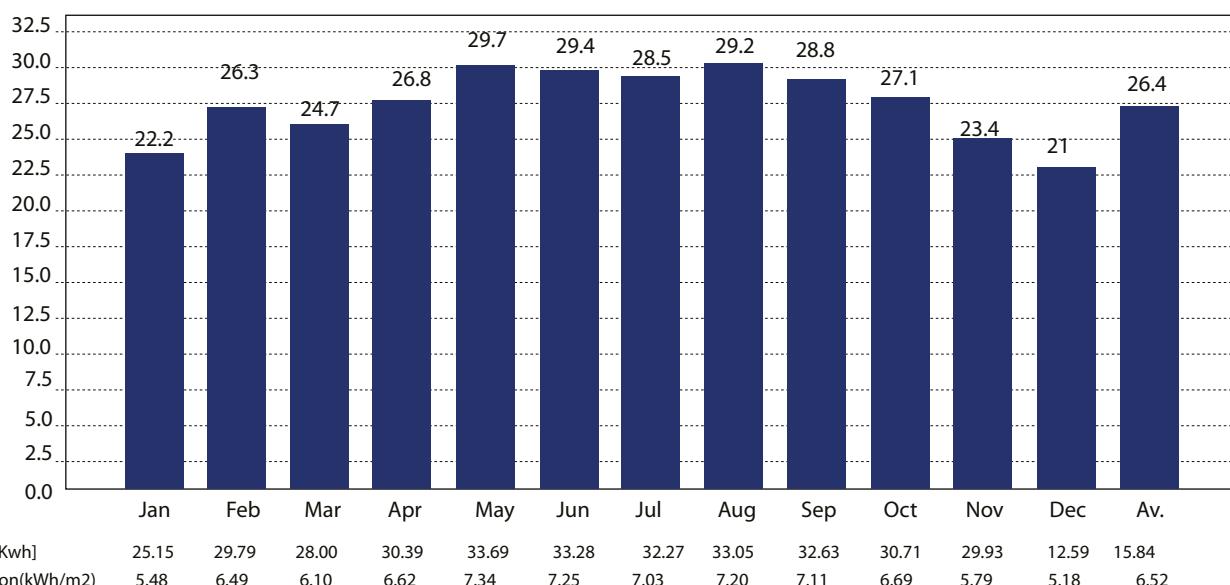
## Parameter

Location:	UAE	Water Temp:	25°C
Required daily output:	10m <sup>3</sup> /day	Dirt loss:	3%
Pipe type:	Plastic	Static Head:	55m

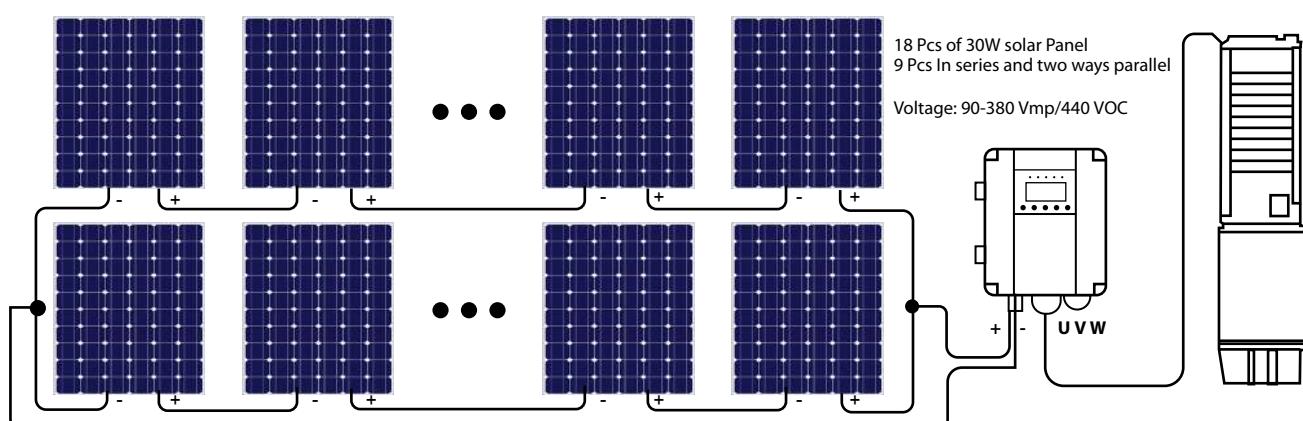
## Products

Submersible pump	1pc;4SP2-48 (5HP DC)
Solar panel	17c;5100Wp;300w ×17pcs
Motor cable	50m*4mm <sup>2</sup>
Pipeline	20m;Pipeline
Accessories	

**Daily output in average month (26.4) m<sup>3</sup>/day**

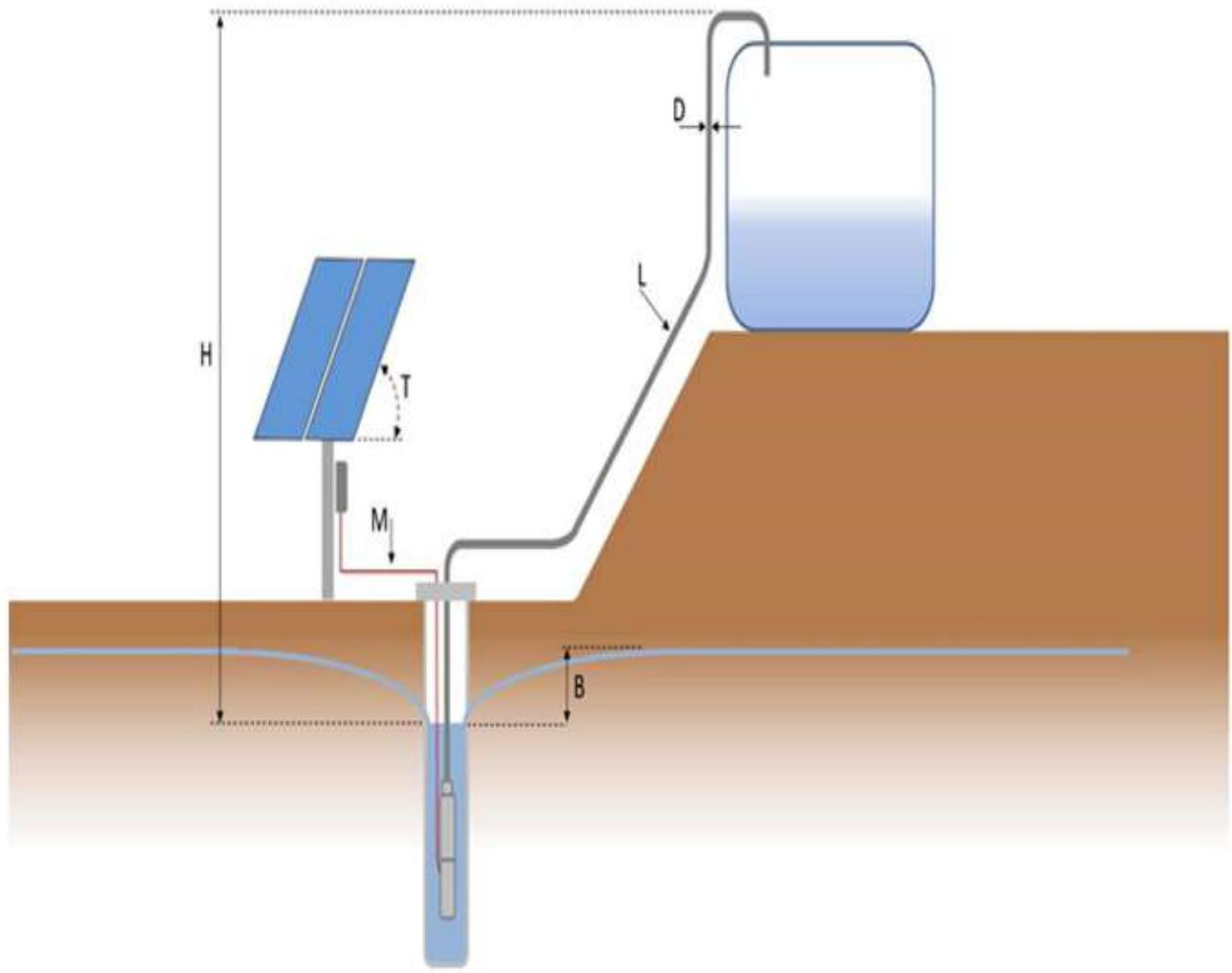


## Solar Panel Wiring



## Sizing Layout

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**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).**

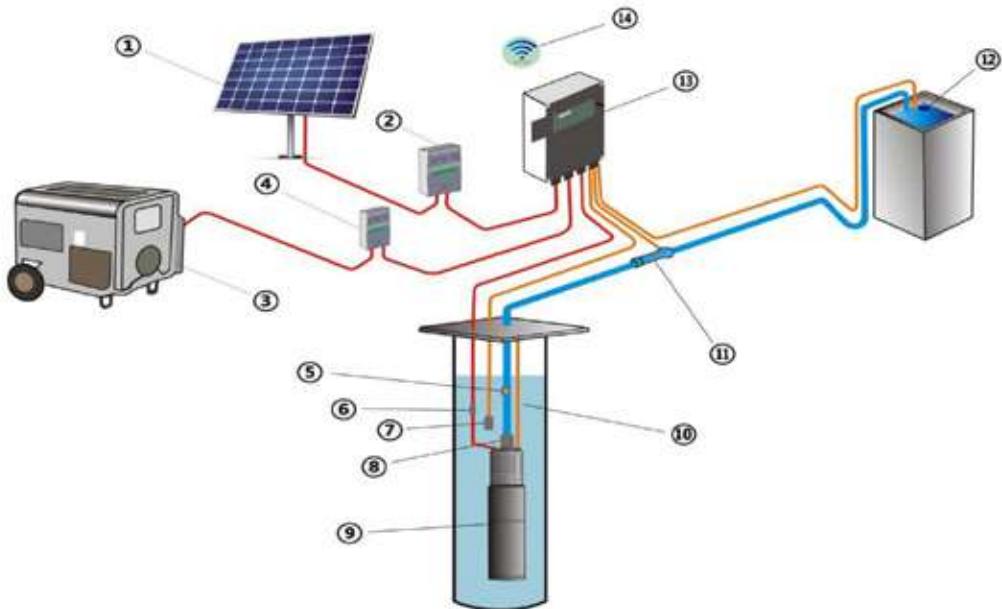
**L (Pipe length):** Entire pipeline from the pump outlet to the point of delivery. Ellbows and armatures must be added as an equivalent length of pipeline.

**M (Motor cable):** The cable between controller and pump unit.

**T (Tilt angle):** Angle of the PV generator surface from the horizontal plane.

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## System Layout



- 1. Solar panels
- 2. SPD(DC) Surge Protection Device(optional)
- 3. Generator or Grid (optional)
- 4. SPD(AC) Surge Protection Device (optional)
- 5. Check valve (optional)
- 6. Wiring Package(Epoxy Resin Wiring Package or Heat Shrinkable Tube Wiring Package)
- 7. Float Switch (For Dry Protection, Optional)
- 8. Sacrificial Anode(optional)
- 9. Solar water pump
- 10. Traction rope
- 11. Flow meter(optional)
- 12. Float Switch (For Tank)
- 13. Monitor(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.

## 4SP2-48 (5HP DC)

### Solar Submersible Pump System

#### System Overview

Head	max. 440m
Flow	max 77L/min
Recommend Max Input Power	max. 5.1 kW
Minimum well diameter	min 4 inch
Pump discharge	Rp 1.25"
Efficiency Max	45%

#### Product advantage

Stainless steel: 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 4SP2-48 (5HP DC)

Controller Built-in:

Lost-Phase Protection;

Over-load / Over-current / Over-Voltage / Over-Power protection:

Over temperature protection

#### Motor 4SP(5HP DC)

Voltage	DC max VOC 450V
	DC max.Vmp 90-380V

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

Stainless steel: AISI 304 (316 optional):

Non-return valve:

Centrifugal pump

#### Standards



#### Note:

\*Recommended 28 pcs 300W solar panels in series and then 2 ways in parallel:

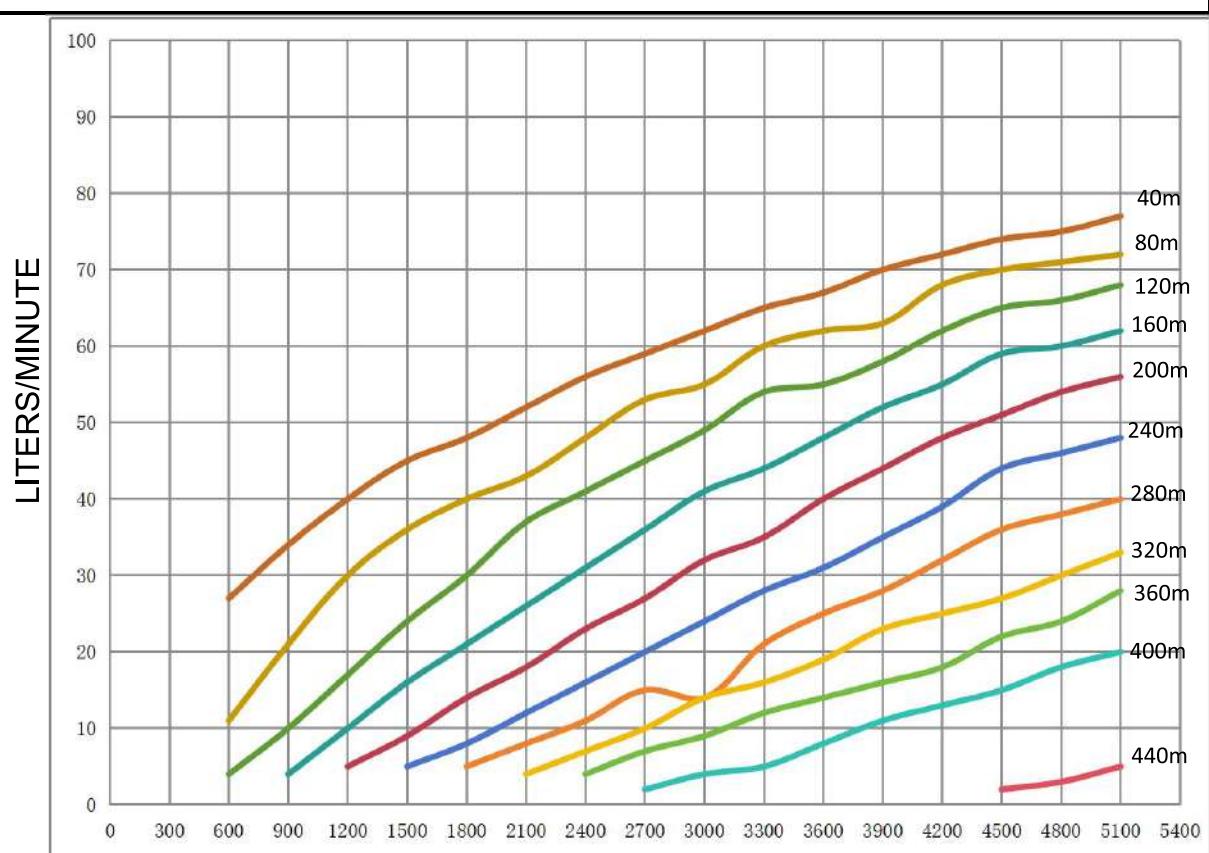
\*The Controller is IP 65 Rated however it is recommended that it is not mounted in direct sunlight;

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



## 4SP2-48 5HP

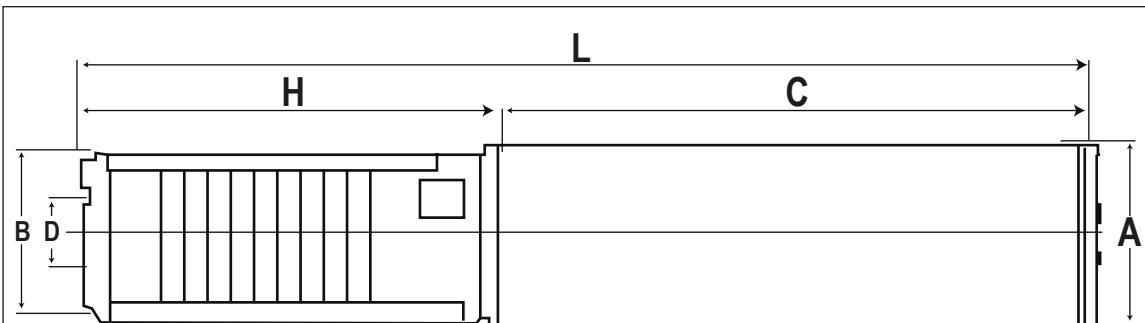
Flow max.81 L/min, Head max 440m, BSP 2.5", Centrifugal pump (Stainless steel impeller)



### INPUT POWER(WATTS)

HEAD (m)	INPUT POWER (WATTS)															
	600	900	1200	1500	1800	2100	2400	2700	3000	3300	3600	3900	4200	4500	4800	5100
	FLOW(LITERS/MINUTE)															
40	27	34	40	45	48	52	56	59	62	65	67	70	72	74	75	77
80	11	21	30	36	40	43	48	53	55	60	62	63	68	70	71	72
120	4	10	17	24	30	37	41	45	49	54	55	58	62	65	66	68
160		4	10	16	21	26	31	36	41	44	48	52	55	59	60	62
200			5	9	14	18	23	27	32	35	40	44	48	51	54	56
240				5	8	12	16	20	24	28	31	35	39	44	46	48
280					5	8	11	15	14	21	25	28	32	36	38	40
320						4	7	10	14	16	19	23	25	27	30	33
360							4	7	9	12	14	16	18	22	24	28
400								2	4	5	8	11	13	15	18	20
440														2	3	5

## Dimensions and Weights



Dimension (mm)	A	B	C	H	L	D
099	90	620	426	1046	1 $\frac{1}{4}$	

Weight (kg)	Pump Unit	Motor	Pump End	Package Unit	Package Volume
17	12.5	4.5	20.5		1.12m*0.16*0.2m

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