

Friday, 24 January 2014

New project

Solar pumping project

Parameter

Location:	Serbia, Novi Sad (45° North; 19° East)	Total dynamic head:	50 m
Required daily output:	30 m ³ ; Sizing for May	Motor cable:	55 m
Dirt loss:	5.0 %	Pipeline:	-
Water temperature:	20 °C		

Products

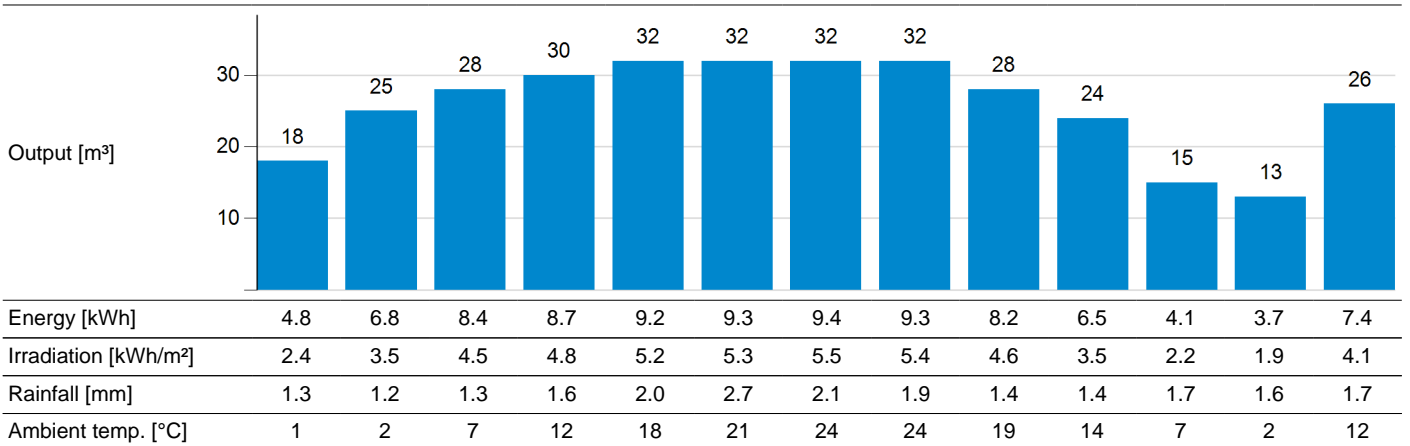
Quantity Details

PS1800 HR-23-1	1 pc.	Submersible pump system including controller, motor and pump end
STC 245W	8 pc.	1,960 Wp; 4 x 2 modules; 45 ° tilted
Motor cable	55 m	4 mm ² 3-phase cable
Accessories	1 set	Well Probe, PV Disconnect 200V/20A

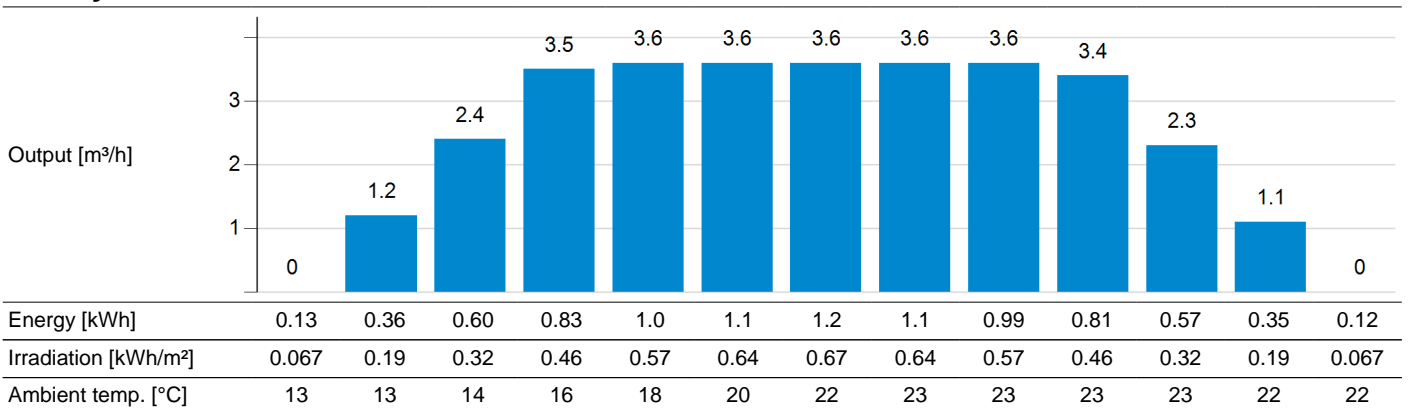
Daily output in May

32 m³

Daily values



Hourly values

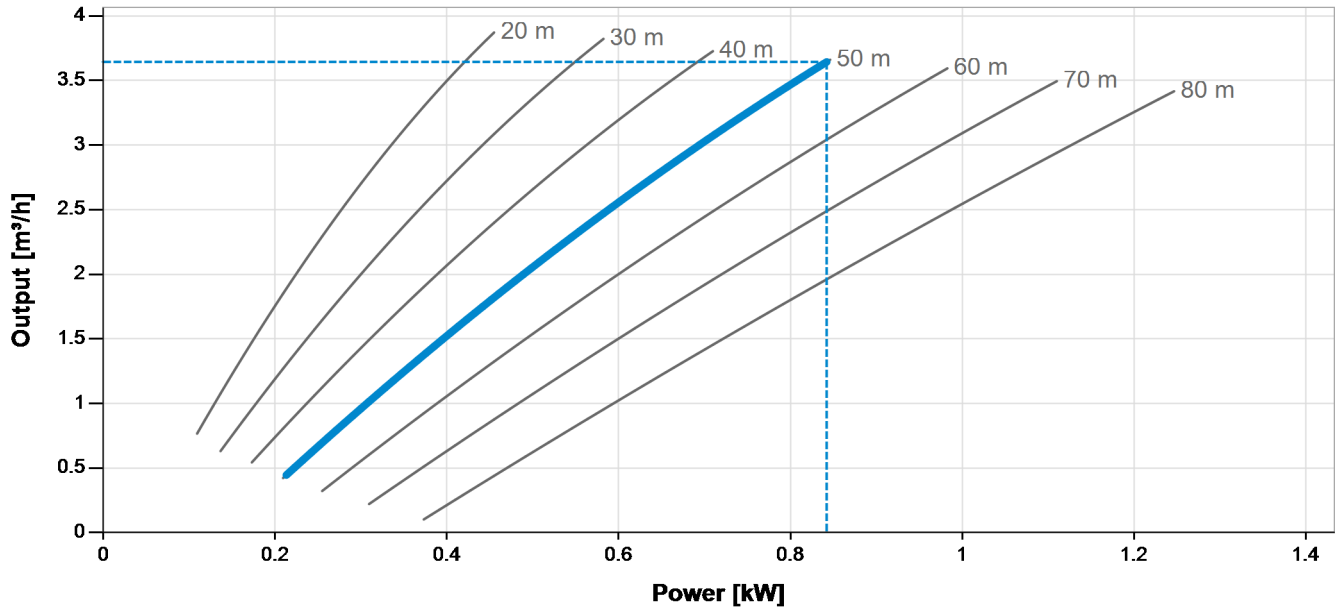


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System characteristic



			Min.	800 W/m², 20 °C	Max./STC*
PV generator	Cell temperature	[°C]		46	25
	Temperature loss	[%]		8.8	-
	Dirt loss	[%]		5.0	-
	Pmax	[Wp]		1,360	1,960
	Vmp	[V]		109	120
	Imp	[A]		12	16
	Voc	[V]		139	151
	Isc	[A]		13	17
	Pout	[W]		877	-
	Vout	[V]		127	-
	Iout	[A]		6.9	-
	Motor cable	Power loss	[%]	2.9	2.9
Pump system					
	Motor power	[W]	213	842	842
	Motor voltage	[V EC]	35	117	117
	Motor current	[A]	6.1	7.2	7.2
	Motor speed	[rpm]	940	3,275	3,275
	Flow rate	[m³/h]	0.45	3.6	3.6
	Efficiency	[%]	26	57	57

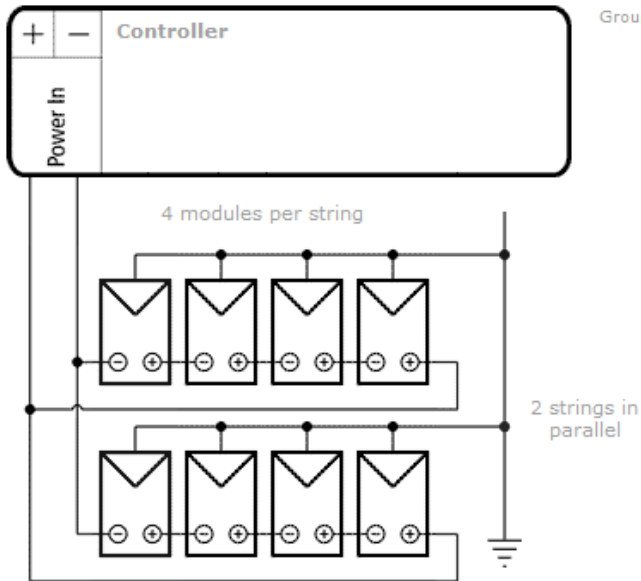
*STC: Standard test conditions for photovoltaic modules, 1000 W/m² solar irradiance, 25 °C cell temperature

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Wiring diagram



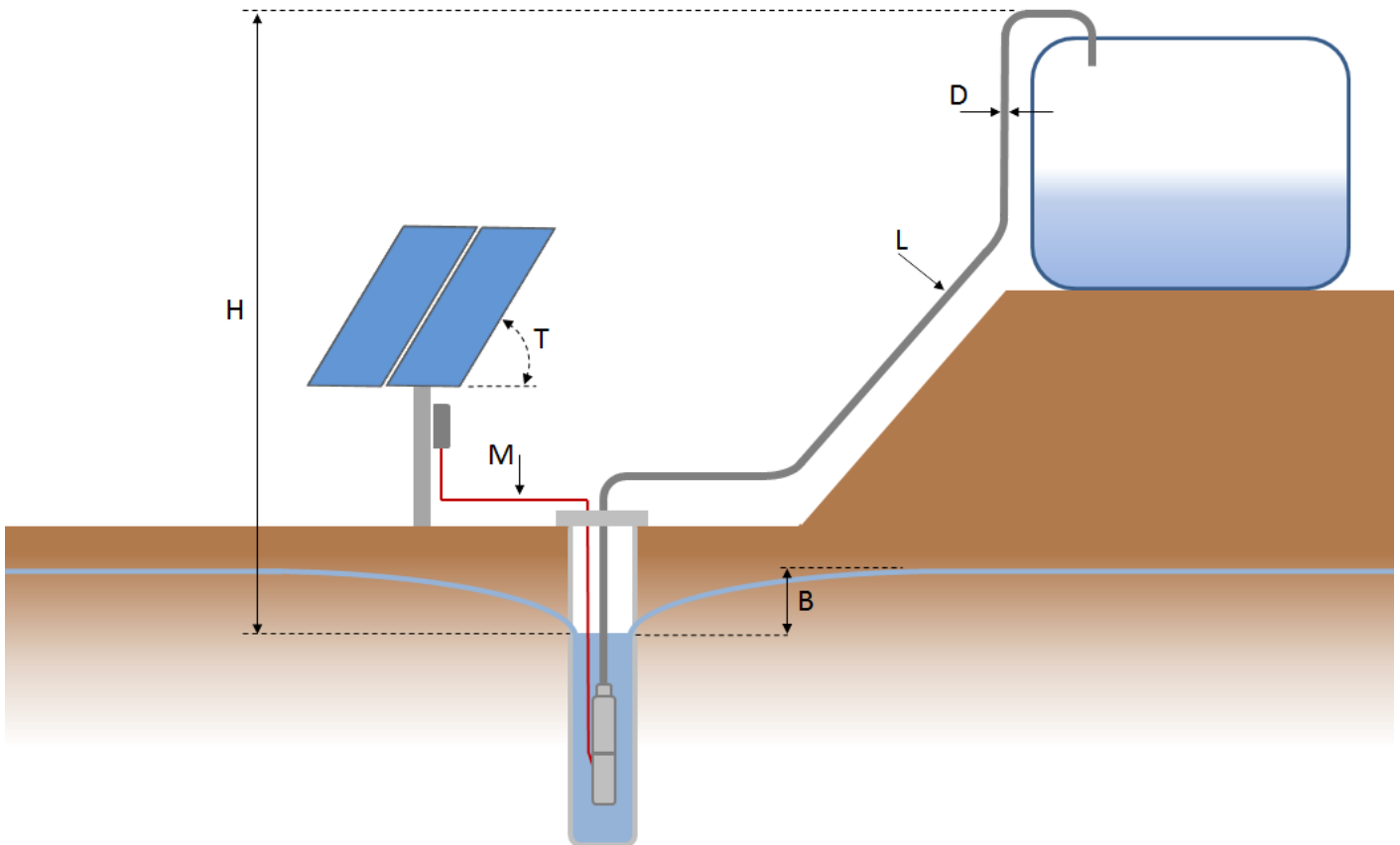
Grounding should be done according to the instructions of the module manufacturer.

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Layout



H (Static head):	Vertical height from the dynamic water level to the highest point of delivery.
T (Tilt angle):	Angle between the PV generator pane and the horizontal pane.
M (Motor cable):	The cable between controller and pump unit.
L (Pipeline):	Entire pipeline from the pump outlet to the point of delivery. Ellbows and armatures must be added as an equivalent length of pipeline.
B (Drawdown):	Lowering of water level depending on flow rate and recovery rate of the well.
D (Pipeline inner diameter)	

Well Probe

Mechanically Activated Device for Dry Run Protection in Applications with LORENTZ Solar Pump Systems

The switch can be used to detect the water level within a well. When the water level in the well dropped below the level of the well probe, the LORENTZ Controller will stop the pump and indicates Source Low LED.

FEATURES

- Reliable dry run protection
- Simple to install
- Trouble free operation
- Corrosion-free
- Splicing kit included

TECHNICAL DATA

- Max. operating temperature 55 °C
- Enclosure class: IP68
Submersion depth: max 50 m
- Cable length: 1.5m
- Wire size: 2x 0.75mm² or AWG 19, waterproofed
- Mounted in vertical position

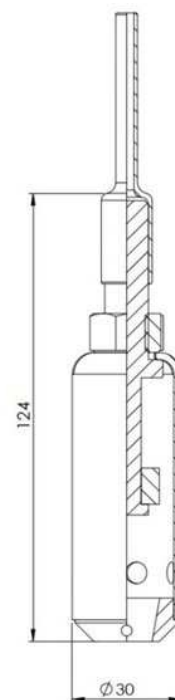
STANDARDS

- Meets the requirements for CE



DIMENSION/WEIGHT

- Packaging dimensions: 260 x 170 x 40 mm
10.3in x 6.7in x 1.6in
- Total weight: 0.1kg / 0.2lbs



PV Disconnect 200V / 20A

PV Disconnect to facilitate an easy Installation for PS 150 until PS 1800

FEATURES

- For quick installation without opening the Controller
- Cable conduit allows proper sealing of controller
- Extends the Controller terminals

TECHNICAL DATA

- 200V DC / 20A
- Flexible conduit 1x 90cm

STANDARDS

- Meets the requirements for CE



DIMENSION/WEIGHT

- 300mm x 300mm x 150mm
11.8in x 11.8in x 5.9in
- Total weight: 6.8kg / 15lbs

