SOLAR POOL PUMP

TSP

The TSP solar pool pump is changing energy consumption, operating costs, water quality, and decreased CO^2 emissions for swimming pools and ponds, thanks to its highly advanced motor technology. Along with its many other benefits, the TSP is built with silent operation in mind.

The TSP system is easy to install and operate that makes it ideal for the domestic and industrial market. It features latest MPPT technology that optimise's the power supplied by the PV panels.

Product Feature:

- Permanent magnet, brush-less motor, saving energy and offering maximum efficiency.
- NSK bearing with alloy mechanical seal.
- MPPT software offers higher utilization rate of solar energy.
- Automatic Stop | Start.
- Over Voltage Protection
- Soft start protection.
- Over current protection.
- Max Flow: 11 000L/h
- Max Head: 13m
- Motor Speed 500 - 4000rpm
- Discharge 40mm
- Power ` 500watt
- Voltage DC48

Working Conditions:

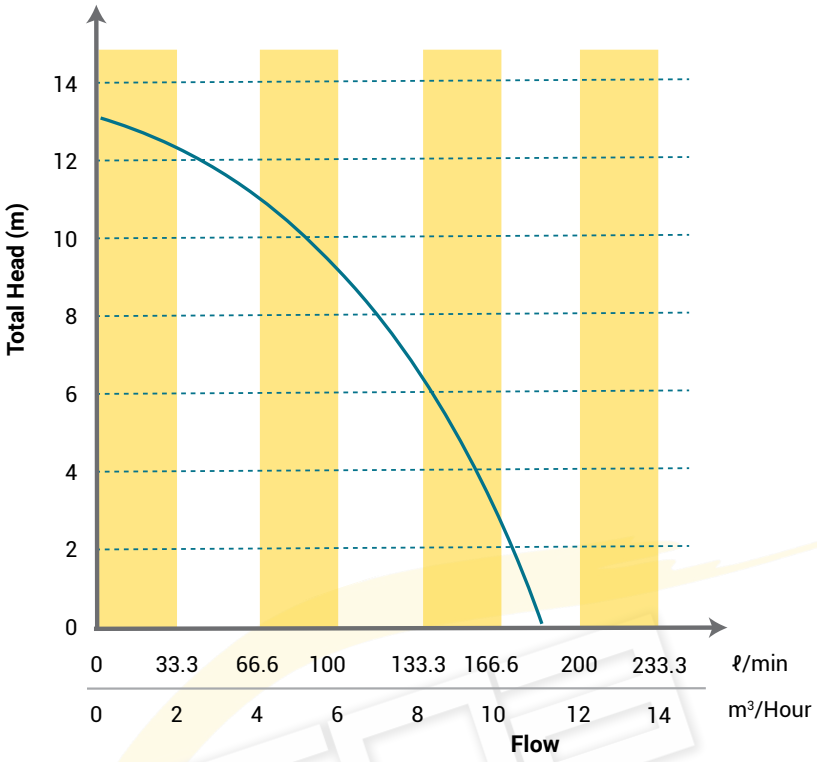
- Max pumped liquid temperature: 60°C
- Max control box temperature: 60°C

MODEL	DC MOTOR VOLTAGE (V)	MAX INPUT DC V.O.C (V)	MAX INPUT AMPERAGE	POWER (WATT)	MAX FLOW (m^3/h)	MAX HEAD (m)	OUTLET (INCH)	CABLE SIZE
TSP500-13/11B	48	96	17	500	11	13	1½"	3 Core 2mm²

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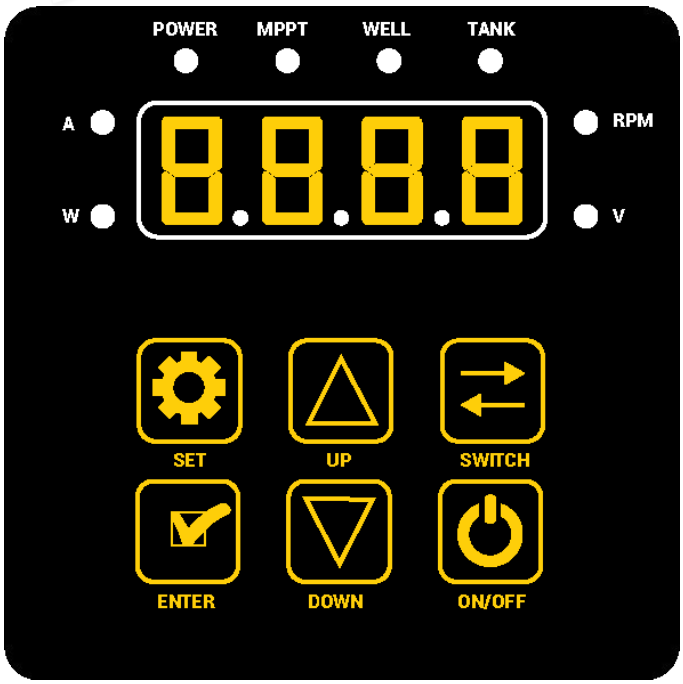
Performance Data:



Model	Flow	l/min	0	33.3	66.6	100	133.3	166.6	200	233.3
		l/hour	0	2	4	6	8	10	12	14
TSP500-13/11	HEAD		13	12.5	11	9	6.5	2.5		

BOREHOLE DC SOLAR
Control Panel





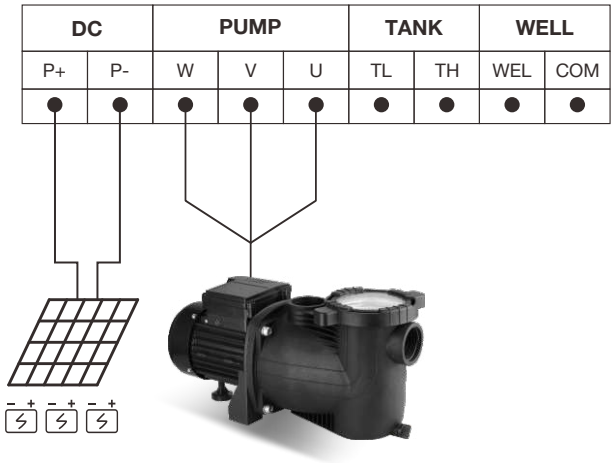
BOREHOLE DC SOLAR
Control Panel

Key	Function
Set	Factory setting. Do not open.
enter	Factory setting. Do not open
Up	RPM setting, to increase the RPM. In the Error State the key is used to turn the error display On or Off .
Down	RPM setting, to decrease RPM
Switch	In operation status this key is used to display the different values: Voltage | Speed | Current | Power
On/off	Power button - Switch unit On and Off manually.

Control Parameters:

Model	Pump Voltage	Max Input Current (A)	VOC (V)	Operating Voltage Range	Operating Temperature
CN24	24V	17	48V	21 - 48	-15°C - 60°C
CN48	48V	17	96V	42 - 96	-15°C - 60°C
CN72	72V	17	144V	63 - 144	-15°C - 60°C

Wiring Diagram:



BOREHOLE DC SOLAR
Control Panel

Error Codes:

No	Code	Description	Cause	Solution	Recovery process
1	P0	Hardware over-current	Incorrect motor voltage. UVW short circuit connection.	Replace with correct specification. Rewire according to diagram.	Automatically after 30sec.
2	P43	Phase protection	UVW open circuit.	Rewire according to diagram and ensure all wires are secured properly.	Automatically after 30sec.
3	P46	Operating protection	Incorrect motor cable Length. Pump bearing stuck.	Replace with correct specification. Decrease length or replace with larger diameter cable. (See Cable chart) Return unit to supplier for evaluation and repair.	Automatically after 30sec.
4	P49	Software over-current	Pump bearing stuck. UVW short circuit connection.	Return unit to supplier for evaluation and repair. Rewire according to diagram and ensure all wires are secured properly.	Automatically after 30sec.
5	P50	Low voltage protection	Low input voltage.	Check panel wiring and ensure panels provide sufficient voltage according to pump specification.	Immediately
6	P51	High voltage protection	Input voltage too high.	Check panel wiring and ensure panel voltage specification meets pump requirement.	Immediately
7	P48/E12	Dry-run protection	Water level below inlet of pump. Air trapped in pipework.	Lower the pump or wait until well refills. Switch unit off and wait for 30seconds.	Unit will automatically start after 30minutes.
8	P60	High temperature protection	High temperature protection.	Temperature of controller more than 90°C.	Unit will automatically start after temperature has stabilised.
9	E01-11	Current sampling failure		Switch power off and restart after 30 seconds.	Restart unit to clear error.
10	PL	Power shortage	PV Panel not receiving sufficient sunlight. PV Panels not wired correctly.	Unit will start up automatically as soon as sky clears. Check wiring and ensure that it is correct according to wiring diagram.	Unit will restart automatically after 30 seconds the first 5 times, there after it will restart after 30 minutes.
11	ALARM	Reverse wiring protection		Switch power off and rewire according to wiring diagram.	Alarm will not go off once wiring has been rectified.
12	E13	Tank Level	Tank Full / Empty	Switch pump off and restart after 30 seconds.	Automatically after 30 minutes.

Cable Chart: PV Panel to Control Box

Unit Voltage	Cable Length (m)											
	15	30	45	60	75	90	105	120	135	150	175	200
24V	4mm²	6mm²	10mm²	16mm²	16mm²	25mm²	25mm²	35mm²	35mm²	35mm²	50mm²	50mm²
48V	2.5mm²	4mm²	6mm²	10mm²	10mm²	16mm²	16mm²	25mm²	25mm²	25mm²	35mm²	35mm²
72V	2.5mm²	4mm²	6mm²	10mm²	10mm²	10mm²	10mm²	16mm²	16mm²	16mm²	25mm²	25mm²

Cable Chart: Control Box to Pump

		CABLE DIAMETER						
Watt		1.5 mm²	2.5 mm²	4 mm²	6 mm²	10 mm²	16 mm²	25 mm²
210	CABLE LENGTH		20	40	60	100		
300			20	40	60	120		
500			20	40	60	120		
750			40	60	100	120	140	
1200			40	60	100	120	140	