

Solar Pump Controller

PRODUCT HIGHLIGHTS

- Run installed or new AC motor/pump/compressor with free solar power
- Smart technology that is easy to use and can provide long term cost savings
- Universal controller – single/three phase, 50/60Hz, 120V/230Vac
- Small sized box, simple hook up, weather proof, durable and automatic
- Maximizes solar panel efficiency allowing fewer panels to supply the needed power
- Changes a 1 or 2 speed motor/pump into a soft start, VFD (Variable Frequency Drive)
- VFD will run motors even at lower solar output extending the useful pumping time
- An affordable solar power project addition to homes, businesses and community
- WiFi, Cellular and LoRa communication/control modules are optional
- Patented and made in the USA



One easy to install, universal controller can power motors, pumps, compressors or other inductive loads regardless of whether it is single or three phase AC, 50 or 60Hz, 120 or 230Vac. Power any 1/3 – 1 1/2 HP motor, and up to 2HP three phase. Designed to handle remote off-grid installations, the all aluminum chassis is IP66 rated for harsh outdoor environments and can operate in high temperatures, humidity and corrosive environments.

SunTech Drive engineers have improved on the functions and features of traditional solar controllers to run inductive loads (motors) by replacing old electromagnetic designs with high voltage silicon components intelligently controlled by patented adaptive firmware. One small device now integrates the functions of an inverter, VFD, MPPT controller, phase initiator and voltage boost with automatic control.

PicoCell supports up to 2 digital and 4 analog sensor inputs allowing for a variety of sophisticated installation scenarios. Optional WiFi, Cellular, and LORA communication modules facilitate ease of integration for IoT and data analytics applications.



TECHNICAL SPECIFICATIONS

ELECTRICAL

MPPT operating voltage: **100-380V**
 Max PV panels open circuit voltage: **400V**
 Minimum operating PV voltage: **100V**
 Maximum PV panel current: **9A**
 Single phase AC motor power: **1.5HP**
 Three phase AC motor power: **2HP**

Over current, overvoltage and over temperature protections

Optional: WiFi, cellular or LoRa communication module

ENVIRONMENTAL

Compliance with IEC 60068:

IEC 60068-2-2 – Cold

IEC 60068-2-2 – Dry Heat

MECHANICAL

Degree of protection: **NEMA4/IP66**

Enclosure material: **Aluminum**

Operating temperature: **-40°C to 50°C**

Dimensions: **10"x5.5"x4"**

Solar terminal: **AWG#10-14**

Motor terminal: **AWG#10-14**

Sensor terminal: **AWG#14-18**

Cooling: **Passive/no fan**

IEC 60068-2-14 – Change of temperature

IEC 60068-2-30 – Damp Heat

SOLAR ARRAY CONFIGURATOR

Nominal Pump Power	S.F. Nominal Pump Current			Recommended solar PV module specification		
	1-ph; 120Vac	1-ph; 230Vac	3-ph; 200-240Vac	Recommended PV power capacity	Minimum MPP Voltage	Absolute Maximum Open Circuit Voltage
HP	Amps	Amps	Amps	Watt	min Vmpp	max Voc
1/2	4 - 5	2 - 4	2 - 3	750-1000	115	400
3/4	5 - 6	4 - 5	3 - 4	1000-1400	115/165	400
1	6 - 8	5 - 6	4 - 5	1400-1800	115/165	400
1 1/2	-	6 - 8	5 - 6	1800-2300	165	400
2	-	-	6 - 8	2300-2800	165	400

TYPICAL APPLICATIONS

- Crop irrigation
- Livestock watering
- Pool pumping
- Pond aeration & fountains
- Aquaculture
- Solar hot water
- Produced & salt water evaporation
- Village & residential drinking water

* **PicoCell installation requires DC Disconnect.**

* **PicoCell does not power pumps with starting capacitors.**

OPTIONAL ACCESSORIES

- Float switch for well pumps and tank overflow
- Auto transfer switch for generator, battery, or power assist operation
- Analog sensors adapter board
- Communication module with web services
- Pumps
- Solar PV panels and racks

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