

PicoCell™ 2000 Single/Three Phase Solar AC Motor Controller

Product Highlights:

- Run installed or new AC motor/pump/compressor with free solar power
- Universal controller for ¾ - 1½ HP motors – single/three phase, 50/60Hz, 120V/240Vac
- Smart technology that is easy to use and can provide significant cost savings
- Small sized box, simple hook up, weather proof, durable and automatic starting capacity
- Maximize solar panel efficiency, allow for 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 low solar output extending the useful operating time
- Solar Projects can qualify for Tax Credits, Grants or other State and Local Rebates
- WiFi communication/control modules available as optional accessories
- 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 ¾ - 1 HP motor single-phase, and up to 1½ HP three-phase. Designed to handle remote off-grid installations, the weather proof 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 inputs allowing for a variety of sophisticated installation scenarios.

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Technical Specifications

Electrical		Mechanical	
MPPT operating voltage:	100-380V	Degree of protection:	NEMA4/IP66
Max PV panels open circuit voltage:	400V	Enclosure material:	Aluminum
Minimum operating PV voltage:	100V	Operating temperature:	-40°C to 50°C
Maximum PV panel current:	9A	Dimensions:	10"x5.5"x4"
Single-phase max AC motor power:	8A	Solar terminal:	AWG#10-14
Three-phase max AC motor power:	6A	Motor terminal:	AWG#10-14
		Sensor terminal:	AWG#14-18
		Cooling:	Passive/no fan

Over current, overvoltage and over temperature protections
Optional: WiFi communication module

ENVIRONMENTAL IEC 60068-2-2 – Cold IEC 60068-2-14 – Change of temperature
Compliance with IEC 60068: IEC 60068-2-2 – Dry Heat IEC 60068-2-30 – Damp Heat

Solar Array Configurator

Service Factor Nominal Pump Current			Recommended Solar PV Capacity		
1-ph; 120Vac (Amps)	1-ph; 230Vac (Amps)	3-ph; 230Vac (Amps)	Recommended PV Power Capacity (Watts)	Minimum Solar MPP Voltage (min Vmpp)	Absolute Maximum Open Circuit Voltage (max Voc)
4 - 6	2 - 4	2 - 3	750 - 1000	80/120*	400
6 - 8	4 - 5	3 - 4	1000 - 1500	100/150*	400
8 - 10	5 - 6	4 - 5	1500 - 2000	150	400
-	6 - 8	5 - 6	2000 - 2500	200	400

* Higher min Vmpp voltage is for 230Vac rated motor loads

This chart acts as a general guideline for solar sizing for common U.S. Motor Manufactures. Please contact SunTech Drive for your specific application as solar sizing varies based on location and duty cycle.

Typical Applications

- Crop irrigation
- Livestock Watering
- Pool Pumping & Recirculation Systems
- Lake and Pond Aeration & Fountains
- Aquaculture and De-Icing
- Solar Hot Water Heating & Recirculation
- Salt Water/Residual H2O evaporation
- Village & residential drinking water

Optional Accessories

- Float switches for well pumps and tank overflow
- SolSwitch - Manual transfer switch for generator or grid alternate AC power source
- Analog sensors adapter board
- Communication module with web services
- Pumps
- Solar PV panels and racks
- DC Rated Disconnects

* PicoCell installation requires DC Disconnect.

* 2 Wire surface motors with starting capacitors require Accessory Power Cable retrofit, available from SunTech Drive.