

# Power Blending with PicoPanel™

## PRODUCT HIGHLIGHTS

- Run installed or new AC motor/pump/compressor with free solar power
- Intelligently blends energy input from solar PV and power grid
- Maintains full power 24/7 while minimizing power costs
- Simple installation, weather proof, durable and automatic
- No circuit panel installation required, plugs in as simple outlet load
- Universal compatibility – single/three phase, 50/60Hz, 120Vac/230Vac
- Intelligent design automatically improves operation and life of motor
- Maintains full variable frequency drive (VFD) operation while blending inputs
- Corrects poor quality grid power/voltage
- Patented and made in the USA



## DESCRIPTION

### UNIVERSAL POWER BLENDING

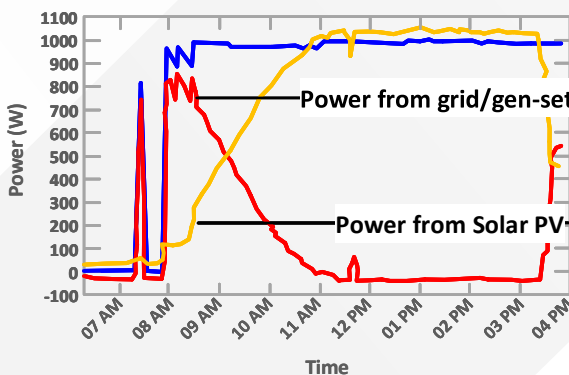
The unique power decoupling of the Blending Controller allows it to universally convert incoming phase and AC voltage to that required by the motor. Both phase decoupling and voltage transformation make it possible to run single or three phase motors off of solar and single phase grids, and change the grid voltage and frequency to motor requirements.

The Power Blending Controller™ is a PicoCell accessory that seamlessly blends energy between a solar array and the power grid. It is ideally suited for applications that require 24/7 or some night time operation, particularly in areas with high energy costs. The combination of the PicoCell controller and the optional Power Blending Controller represents a cost effective way to intelligently supplement solar power with controllable night time operation without the expense of adding batteries.

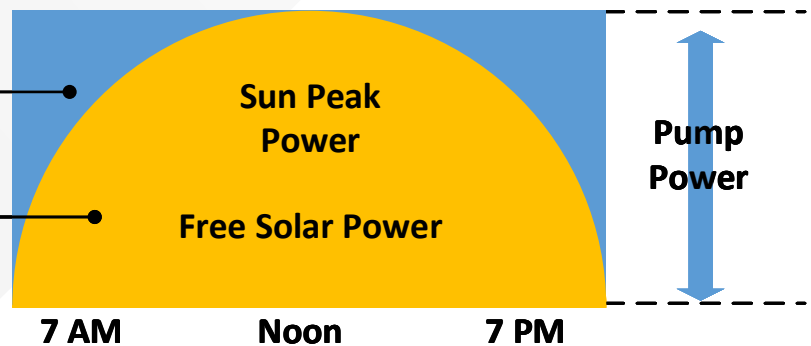
If there is full solar irradiance, the PicoCell and Power Blending Controller will draw maximum power from the PV array. As cloud cover or impending darkness reduce the level of solar irradiance, the system automatically makes up the difference by drawing from the grid. As darkness descends, the system can draw all of its power from the grid. In high energy cost areas this allows for both power firming during the day and full nighttime operation while consuming as little power from the grid as possible.

Typical applications include swimming pool pumps, well pumps, solar decorative fountains, aerators and waste water treatment systems.

### Field validation:



### Conceptual:



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# PicoCell™ with Power Blending

## TECHNICAL SPECIFICATIONS

### ELECTRICAL

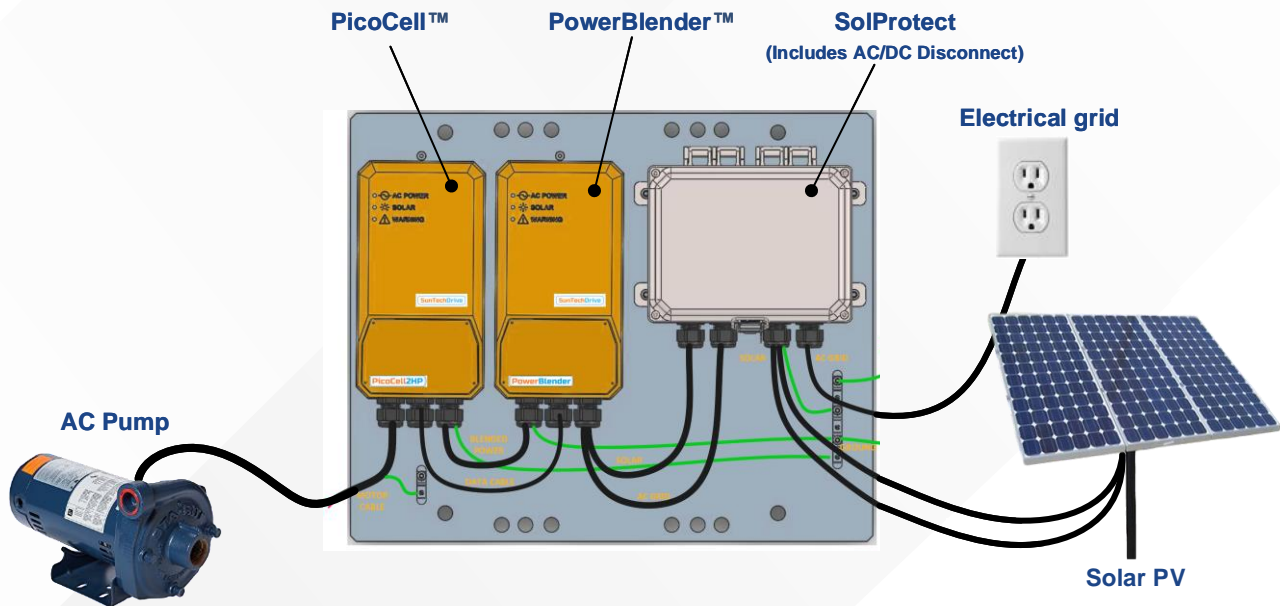
AC input voltage range: **120-240Vac single phase**  
 AC input maximum current: **12Aac**  
 Solar PV operating voltage range: **100-400Vdc**  
 Solar PV operating current: **9Adc**  
 Auxiliary DC power: **12Vdc, 0.5A**

### MECHANICAL

Degree of protection: **NEMA4/IP66**  
 Enclosure material: **Die Cast Aluminum**  
 Operating temperature: **-40°C to 65°C**  
 Dimensions: **10"x5.5"x4"**  
 Power terminals: **AWG#10-14**  
 Control/Sensor terminal: **AWG#14-22**

Remote control enabled by PicoCell or Programmable timer relay

## WIRING CONFIGURATION



### Modes of Operation:

**Blended Mode:** In this mode the system utilizes as much power as is available from the solar array at any instant, supplementing as needed from the power grid as clouds come over or day fades to night.

**Solar Only Mode:** By activating the switch to manually override the use of the power grid the system can be easily put into a mode where it will not draw power from the grid. This is typically used to optimize the cost of operation based on different seasonal needs.

**Timed Grid Mode:** Sometimes it is only necessary to run a device for certain times at night, perhaps until a facility closes or periodically during the night to drive devices like aerators or filters. This mode provides complete flexibility in the scheduling of the use of grid power.