

# USPC 2000/5000

## Universal Solar Pump Controller

### Applications

The AeroVironment® Universal Solar Pump Controller is a versatile, high performance, variable speed motor controller for solar powered pumping applications using pumps from 1/3 HP to 5 HP.

- **livestock watering**
- **village water supply**
- **irrigation**

The USPC-2000 delivers up to 2200 watts, the USPC-5000 delivers up to 5500 watts.

### Versatility

The USPC will power ANY standard three phase or three wire single phase pump motor. Less costly, locally made and serviceable pumps may be used.

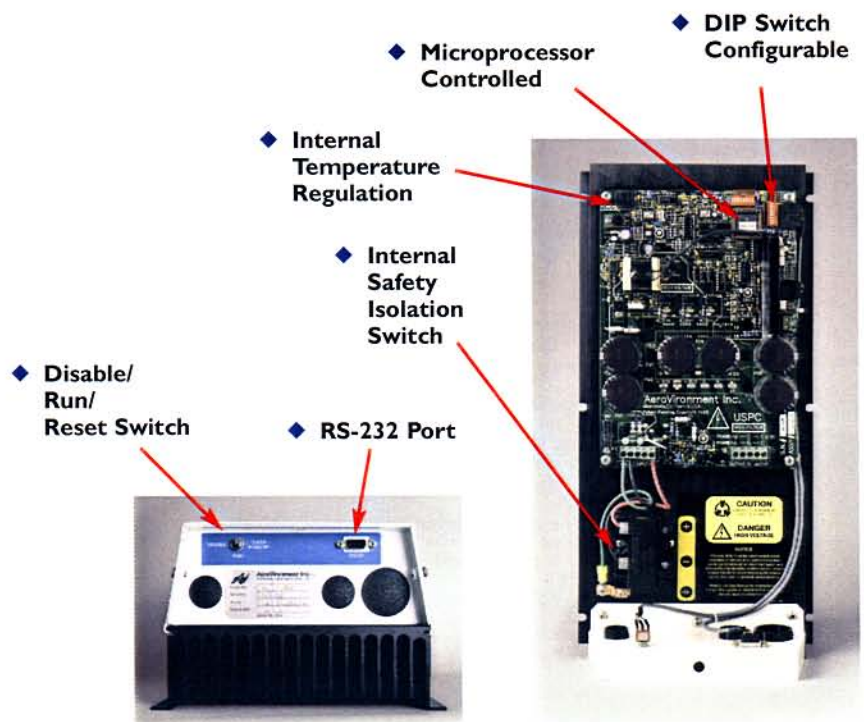
The USPC can be powered by ANY photovoltaic technology including single or poly-crystalline silicon and thin-film arrays.

### Performance

A power conversion efficiency of 97%, peak-power tracking and variable speed operation maximizes your system performance to get the most water from your installation.

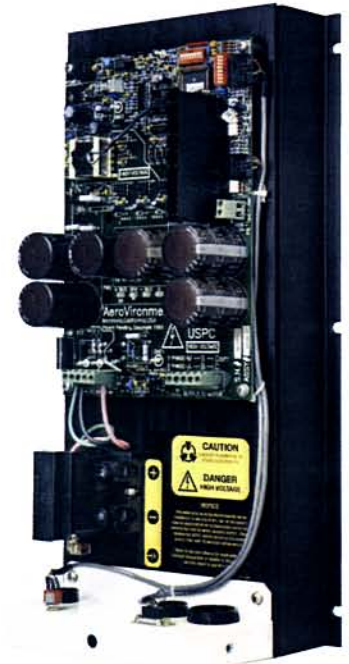
### Standard Features

- ◆ **Fault Detection and LED Display**
- ◆ **System Protection**
  - Dry well
  - Output overload
  - Over voltage
  - Over temperature
- ◆ **No Starting Box Required**
- ◆ **Selectable Minimum Speed**
- ◆ **Selectable Maximum Speed**
- ◆ **Local and Remote Monitoring**
- ◆ **Rugged Construction**
- ◆ **Lockable NEMA 3 Enclosure**
- ◆ **2-Year Standard Warranty**



# USPC 2000 / USPC 5000 Specifications

<b>Input</b>	Max. PV Array Voc	600	VDC	
	Max. PV Array Isc	18	Amps	
	PV Array Optimal Voltage (for 60 Hz operation)	210	VDC, (115 VAC motors)	
		385	VDC, (230 VAC 3ph motors)	
		395	VDC, (230 VAC 1ph motors)	
<b>Output</b>	Power Max. Sustained	USPC 2000 (2.2 kw)	USPC 5000 (5.5 kW)	
	Rating Motor / VAC	<b>HP</b>	<b>1ph</b>	
			<b>3ph</b>	
		0.33	115, 208, 230	208, 230
		0.50	115, 208, 230	208, 230
		0.75	115, 208, 230	208, 230
		1.00	208, 230	208, 230
		1.50	208, 230	208, 230
		2.00	208, 230	208, 230
		3.00	-	208, 230
	5.00	-	208, 230	
	Max. Current	USPC 2000 (9.5 amps RMS)	USPC 5000 (24 amps RMS)	
	Selectable Min. Speeds	10, 20, 30 or 40 Hz		
	Nominal Motor Speeds	50, or 60 Hz		
	Selectable Incr. Speed	+5 Hz		
	Waveform	PWM Sine-wave		



<b>Efficiency</b>	97% at full power, 3ph 95% at full power, 1ph
<b>Noise</b>	No audible noise
<b>Environmental</b>	Ambient Temperature -20 to +60°C Vibr./Humidity/Corrosion MIL-STD-883, MIL-STD-202F
<b>Unit Dimensions</b>	18" X 9" X 6" (46 X 23 X 16 cm)
<b>Shipping Dimensions</b>	20" X 12" X 10" (51 X 31 X 26 cm)
<b>Weight</b>	17 pounds (8 kg)
<b>Pump Motors</b>	Any three phase motor. Any single phase 3-wire motor (USPC provides start winding). No starter box required (USPC provides over current / temperature protection).
<b>Normal Operation Modes</b>	Peak power tracking, variable speed operation at constant V/Hz. Fault detection and system monitoring. System protection. Internal temperature regulation.
<b>Fault Detection Modes</b> (Externally displayed)	System Disabled ..... Switch OFF or reset mode. System Fault ..... Module overcurrent, overtemperature, or system problem. Remote Shutdown ..... Remote switch open. Low Input Power ..... Insufficient solar power. Output Underload ..... Dry well, disconnected or bad motor. Output Overload ..... Locked / fouled rotor, electrical short.
<b>Protection Modes</b>	Overtemperature ..... Internal temperature regulated and power device protected. Overcurrent ..... Maximum current regulation and power device protected. Input Overvoltage ..... Clamping circuit protection (patent pending). Lightning ..... Additional lightning protection kit (optional). Installation ..... Reverse polarity DC connection and output short circuit.
<b>Local &amp; Remote Capability</b> (via RS-232 port)	System monitoring. Data downloading.
<b>Construction</b>	Rugged, lockable NEMA 3 steel enclosure.
<b>Serviceability</b>	Easy field replacement for upgrade / service of parts and software.
<b>Maintenance</b>	Virtually no maintenance required.



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