

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 2000 watts, the USPC-5000 delivers up to 5000 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.

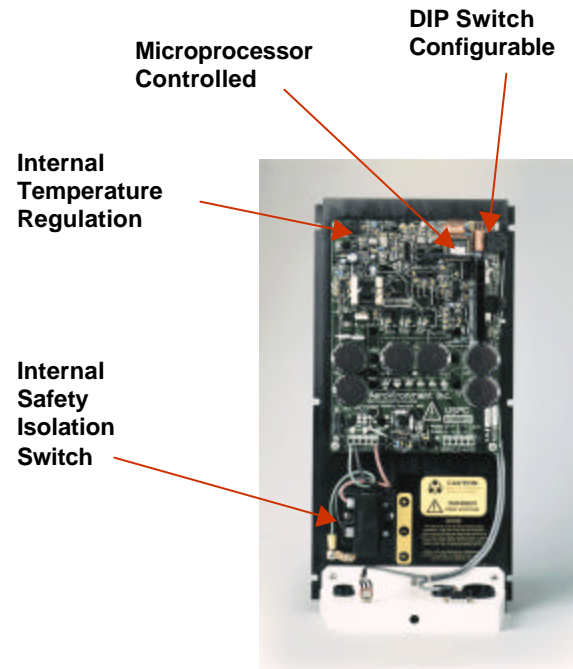
The USPC can be powered by ANY photovoltaic technology including single or poly-crystalline silicon and thin-film arrays.

Performance

A power conversion efficiency of 97%, peak-power tracking and variable speed operations 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 Monitoring**
- ◆ **Rugged Construction**
- ◆ **Lockable NEMA 3 Enclosure**
- ◆ **Float Switch Compatible**
- ◆ **2-Year Standard Warranty**



USPC 2000 / USPC 5000 Specifications

Input	Max. PV Array Voc	600 VDC		
	Max. PV Array Isc	20 Amps		
	PV Array Optimal Voltage (for 60 Hz operations)	210 VDC, (115 VAC motors) 385 VDC, (230 VAC 3ph motors) 395 VDC, (230 VAC 1ph motors)		
Output	Power Max. Sustained	USPC 2000 (2.0 kW) USPC 5000 (5.0 kW)		
	Rating Motor/VAC	HP	1ph	3ph
		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 Speed Increase	+5 Hz		
	Waveform	PWM Sine-wave		
Efficiency	97% at full power, 3ph 95% at full power, 1ph			
Noise	No audible noise			
Environmental	Ambient Temperature	-20 to +60°C		
	Vibration./Humidity/Corrosion	MIL-STD-883, MIL-STD-202F		
Unit Dimensions	18" x 9" x 6" (46 x 23 x 16 cm)			
Shipping Dimensions	20" x 12" x 10" (51 x 31 x 26 cm)			
Weight	17 pounds (8 kg)			
Pump Motors	Any three phase induction motor 208-230V 50 or 60Hz Any single phase 3-wire induction motor 115 or 230V 50 or 60Hz (USPC powers start winding) No starter box required (USPC provides start circuit and over current/temperature protection)			
Normal Operation Modes	Peak power tracking, variable speed operation at constant V/Hz Fault detection and system monitoring System protection Internal temperature regulation			
Fault Detection Modes	System Disabled	Switch OFF or reset mode		
<i>(Externally displayed)</i>	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		
Protection Modes	Overtemperature	Internal temperature regulated and power device protected		
	Overcurrent	Maximum current regulation and power device protected		
	Input Overvoltage	Clamping circuit protection (patent No.)		
	Installation	Reverse polarity DC connection and output short circuit		
Local Data Monitoring	System status, faults, DC volts current power, frequency, temperature <i>(via RS-232 port)</i>			
Construction	Rugged, lockable NEMA 3 steel enclosure			
Serviceability	Easy field replacement for upgrade/service of parts and software			
Maintenance	Virtually no maintenance required (only maintenance needed is periodic obstruction clearing from heat sink)			