



# POWERGATE™ Photovoltaic 225kW Power Converter System

SatCon's **PowerGate™** power converter for photovoltaic applications (AE-PV Series), available in both 208 Volt and 480 Volt versions is a 225 kW grid-tie interactive inverter designed to convert power generated by PV arrays into utility grade power for export to the utility grid.

## **PowerGate™ AE-PV Series Features**

- Fully integrated system, Complete electrical conversion installation in one box
- Intelligent wake up and sleep algorithms at dusk and dawn squeeze out maximum kWhr exported
- Use of film capacitors increases life up to four times over electrolytic capacitors used by others
- Low sleep mode power consumption increases net energy delivered to the grid
- Field wiring compartments reduce installation time and cost. No field interconnect between components
- Filtered top air entry/bottom exhaust reduces debris blockage
- Soft charge network limits AC inrush on system wake up
- Highest overall efficiency available on the market today
- Wider input Voltage range
- Highly accurate peak power tracking, revises every line cycle
- Smaller overall system footprint
- DC Contactor quickly isolates any faults that may occur on PV cabling.
- AC Line contactor isolates high efficiency transformer from the grid in sleep mode
- Full system monitoring and protection via front panel display and RS232/485 communication port.
- Discharge contactor removes stored energy on DC bus for customer safety
- Sloped roof prevents standing water
- Top, bottom and side cable entries

## **System Includes:**

- High efficiency isolation transformer
- Input fused disconnect & contactor
- AC line breaker & contactor
- Generating Power indicator
- Keypad with alpha-numeric four-line display
- Top lifting eye-bolts
- DC surge protection



SatCon's power converter software has been UL1741 certified for a number of grid-connect alternative energy applications. The AE-PV **PowerGate™** series power converter is designed to meet the requirements of IEEE1547 is pending UL 1741 certification and CEC listing. This ensures safe, reliable grid connection with **PowerGate's™** certified software for anti-island detection.



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## Model AE-225-60-PV-A Specifications:

<b>Rated output:</b>	225 kW
<b>AC Rated Voltage:</b>	480 Volts AC +/-10%, 3 ph. 60Hz
<b>AC Rated Current:</b>	270 Amps, 0.99pf Lag
<b>AC Breaker Interrupt:</b>	35kA @ 480Vac
<b>Nominal DC :</b>	400 Volts, 790Amps max with programmable current limit
<b>Min DC input for Rated kW:</b>	330 Vdc worst case, 300Vdc @ nom. line
<b>Power Tracking Window:</b>	270 to 660 VDC
<b>Current Harmonics:</b>	<3% THD
<b>Min Power for Wake/Sleep:</b>	900W
<b>Peak Inverter Efficiency:</b>	97%
<b>Peak System Efficiency:</b>	96%
<b>Max. Heat Dissipation</b>	9.5kW at 225kW delivery
<b>Enclosure type:</b>	NEMA 1 and NEMA 3R, Seismic Zone 4, 11 gauge steel
<b>Dimensions: (h x w x d)</b>	2134 x 2083 x 762 mm (84 x 82 x 30in)
<b>Weight:</b>	6800lbs, 3100kg
<b>Humidity: (relative)</b>	95% (non-condensing)
<b>Ambient Temp:</b>	-20 to +50°C (-4 to 122°F) @ 6000ft.
<b>Storage Temp:</b>	-40 to 85°C (-40 to 185°F)
<b>Array Configuration:</b>	Monopole grounded (See Other Options)
<b>AC Line Terminals</b>	250 - 350MCM
<b>DC Terminals</b>	2 x 2/0 – 350MCM
<b>Certification:</b>	Pending UL 1741 certification and CEC

<b>Standard Features</b>
Maximum peak power tracking
Overload on temperature permit
DC & AC voltage surge protection
Adjustable DC ground fault
Event log in non volatile memory
NC contact for AC line breaker trip
Automatic:
Wake up / sleep sequencing
Grid synchronization
Reconnect on grid restoration
<b>Local &amp; Remote Monitoring:</b>
Grid status
DC input power
DC input voltage
DC input current
Line kVAR
Line kW
Line kVA
Line kWhr.
Power Factor
Three Line to Neutral Voltages
Three Line + Neutral Currents
<b>Protection &amp; Diagnostics:</b>
Emergency stop
Control & power supply fault
Inverter over current
Input Over Voltage
Door open
Fan fault
Blown Fuse
Contactor Fault
Magnetics Over Temperature
Inverter Over Temperature
Line over/under voltage & frequency
Line & Neutral over current
Gating fault
<b>Options:</b>
12 p fused combiner. (-ve gnd.)
Various external combiners
2 pole DC disc. (Floating or center grounding available)
50 Hz & various line voltages
Condensation limiting heater
Higher Breaker interrupt ratings
CE Certification
Consult factory for other options

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