

PVS-500 (MVT)

PVS-500 (480 V)

PVS-500 (265 V) CE

Peak Efficiency 97.6%

Power Efficiency

Power Level	Output Power ¹	Efficiency ²
10%	50 kW	92.2%
20%	100 kW	95.6%
30%	150 kW	96.2%
50%	250 kW	96.5%
75%	375 kW	96.4%
100%	500 kW	96.0%

¹ 320V minimum ² 480V model

Power Efficiency without Transformer

Power Level	Output Power ¹	Efficiency
10%	50 kW	97.08%
20%	100 kW	97.52%
30%	150 kW	97.58%
50%	250 kW	97.46%
75%	375 kW	97.09%
100%	500 kW	96.52%

¹ 310V minimum

Unparalleled Performance

With their advanced system intelligence, next-generation Edge MPPT technology, and industrial-grade engineering, PowerGate Plus inverters maximize system uptime and power production, even in cloudy conditions.

Edge MPPT

Provides rapid and accurate control that boosts PV plant kilowatt yield

Provides a wide range of operation across all photovoltaic cell technologies

Printed Circuit Board Durability

Wide thermal operating range: -40° C (-40° F) to 85° C (185° F)

Conformal coated to withstand extreme humidity and air-pollution levels

PV Inverters | PowerGate Plus 500 kW



Profitable PV Power

The Satcon™ PowerGate® Plus 500 kW PV inverter has a significant impact on the profitability dynamic of large-scale solar PV systems. With its unparalleled system intelligence, next-generation Edge™ MPPT technology, and industrial-grade engineering, the PowerGate Plus 500 kW inverter maximizes system uptime and power production, even in the harshest environments.

Commercial and Utility Scale

The world's largest solar power installations depend on Satcon PowerGate Plus PV inverters to provide efficient and stable power—even in the harshest climates.

Advanced, Rugged, and Reliable

Engineered from the ground up to meet the demands of large-scale installations, Satcon PV inverters feature an outdoor-rated enclosure, advanced monitoring and control capabilities, and Edge, Satcon's next-generation MPPT solution.

Proven Performance

The proven leader in solar PV inverter solutions for commercial installations, Satcon sets the standards for efficient large-scale power conversion.

Increased PV Plant Yield

At the heart of PowerGate Plus is Edge, Satcon's next-generation power optimization solution. With rapid and accurate MPPT control, Edge increases PV plant kilowatt yield by extending the production window of arrays, enabling them to operate at optimal voltage and current levels for longer periods of time—even in varied sun conditions. To maximize efficiency, Edge improves the performance of all PV technologies, including fixed and tracking solar arrays, enabling you to get the most from your investment.

Proven Reliability

Rugged and reliable, PowerGate Plus PV inverters are engineered from the ground up to meet the demands of large-scale installations.

Low Maintenance

Modular components make service efficient

Dual cooling fans

Safety

UBC Seismic Zone 4 compliant

Built-in DC and AC disconnect switches

Integrated DC two-pole disconnect switch isolates the inverter (with the exception of the GFDI circuit) from the photovoltaic power system to allow inspection and maintenance

Protective covers over exposed power connections

PowerGate Plus 500 kW Specifications			UL/CSA	CE
Input Parameters				
Maximum Array Input Voltage	600 VDC		•	
	900 VDC			•
PV Array Configuration	Positive Ground		◦	◦
	Negative Ground		•	◦
	Floating			•
Input Voltage Range (MPPT; Full Power)	320/333–600 VDC	200/208 VAC ¹	•	
	420–850 VDC	265 VAC ¹		•
	320–600 VDC	480 VAC	•	
Maximum Input Current	1,628 ADC/ 1,565 ADC	200/208 VAC ¹	•	
	1,228 ADC	265 VAC ¹		•
	1,628 ADC	480 VAC	•	
Output Parameters				
Output Voltage Range (L-L)	176–220 VAC/ 183–229 VAC	200/208 VAC ¹	•	
	233–292 VAC	265 VAC ¹		•
	422–528 VAC	480 VAC	•	
	Nominal Output Voltage	200/208 VAC ¹	•	
Nominal Output Voltage	265 VAC ¹			•
	480 VAC		•	
	Output Frequency Range	59.3–60.5 Hz		•
Output Frequency Range	49.3–50.5 Hz			•
	AC Voltage Range (Standard)	-12%/+10%	•	•
Nominal Output Frequency	60 Hz		•	
	50 Hz			•
Number of Phases	3		•	•
Maximum Output Current per Phase	1,443/1,388 A	200/208 VAC ¹	•	
	1090 A	265 VAC ¹		•
	602 A	480 VAC	•	

• Standard ◦ Optional



The integrated external transformer is standard on the 480 VAC models only; custom transformer solutions are also available.

Streamlined Design

With all components encased in a single, space-saving enclosure, PowerGate Plus PV inverters are easy to install, operate, and maintain.

Single Cabinet with Small Footprint

Convenient access to all components

Large in-floor cable glands make access to DC and AC cables easy

Rugged Construction

Engineered for outdoor environments

Output Transformer

Provides galvanic isolation

Matches the output voltage of the PV inverter to the grid

Quiet Operation

65 dB(A) standard

PowerGate Plus 500 kW Specifications			UL/CSA	CE
Peak Efficiency				
	97.6%			
CEC-Weighted Efficiency ³	97%	200/208 VAC ¹	•	
	97%	265 VAC ¹		•
	96%	480 VAC	•	
Maximum Continuous Output Power	500 kW (500 kVA)		•	•
Tare Losses	138.12 W	200/208 VAC ¹	•	
	170 W	265 VAC ¹		•
	138.12 W	480 VAC	•	
Power Factor at Full Load	>0.99		•	•
Harmonic Distortion	<3% THD		•	•
Temperature				
Operating Ambient Temperature Range (Full Power)	-20° C to +50° C		•	•
Storage Temperature Range	-30° C to +70° C		•	•
Cooling	Forced Air		•	•
Noise				
Noise Level	<65 dB(A)		•	•
Combiner				
Number of Inputs and Fuse Rating (2 fuses/input for floating)	20 (160 ADC)		◦	
	30 (100 ADC)		◦	
	20 (160 ADC)			◦
	20 (125 ADC)			◦
Transformer				
Integrated External Transformer		480 VAC	•	
Low Tap Voltage ²	20%		•	
External Transformer ²			◦	◦
Inverter and Integrated External Transformer Cabinets				
Enclosure Rating	NEMA 3R		•	
	IP54			•
Enclosure Finish (11 Gauge CRS, painted, base zinc coated)	RAL-7032		•	•
Stainless Steel Finish			◦	◦
Cabinet Dimensions (Height x Width x Depth)	Inverter		92.6" x 138.8" x 43.1"	92.6" x 153.8" x 43.1"
			(235 cm x 352 cm x 109 cm)	(235 cm x 391 cm x 109 cm)
	Transformer	480 VAC	77" x 49" x 30.5" (195.58 cm x 124.46 cm x 77.47 cm)	
Cabinet Weight	Inverter		5,900 lbs.	2,676 kg
	Transformer	480 VAC	3,200 lbs.	1,451 kg

◦ Standard • Optional



Output Options

PowerGate Plus 500 kW

UL/CSA	208 VAC ¹ Output 480 VAC Output
CE	265 VAC ¹ Output

¹ External transformer

PowerGate Plus 500 kW Specifications

	UL/CSA	CE
Testing and Certification		
UL1741, CSA 107.1-01, IEEE 1547, IEEE C62.41.2, IEEE C62.45, IEEE C37.90.1, IEEE C37.90.2	•	
CE Certification (EN 50178, EN 61000-6-2, EN 61000-6-4)		•
UBC Zone 4 Seismic Rating	•	•
Warranty		
Five Years	•	•
Extended Warranty (up to 10, 15, or 20 years)	○	○
Extended Service Agreement	○	○
Uptime Guarantee	○	○
Intelligent Monitoring		
Satcon PV View® Plus	○	○
Satcon PV Zone®	○	○
Third-Party Compatibility	•	•

- Standard
- Optional

¹ Options designed to be used with external transformer.

² The 20% boost tap on the isolation transformer increases the AC voltage output range for applications where the solar array DC operating voltage is at or near the lower end of the DC input range. This boost allows for continued inverter operation at lower DC voltage input levels.

³ For 265 VAC and 200/208 VAC models efficiency is listed as "Inverter Only" efficiency.

Note: Specifications are subject to change.

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