

SDMS-0125-400-MFIC

5-12% Improvement in Total Energy Harvest

20-25% Reduction in Balance of System Expense

The industry's first complete power-harvesting and array management solution for utility class solar power plants.

Satcon™ Solstice™ enables centralized, intelligent management of the entire PV system along with the flexibility of localized control over every component in the array, from the panel, to a single string, to the inverter, to the grid – thus serving as a total system solution.



String Level Maximum Power Point Tracking (MPPT) ensures that the negative effects of module shading, soiling and aging mismatch are minimized and contained within the string.

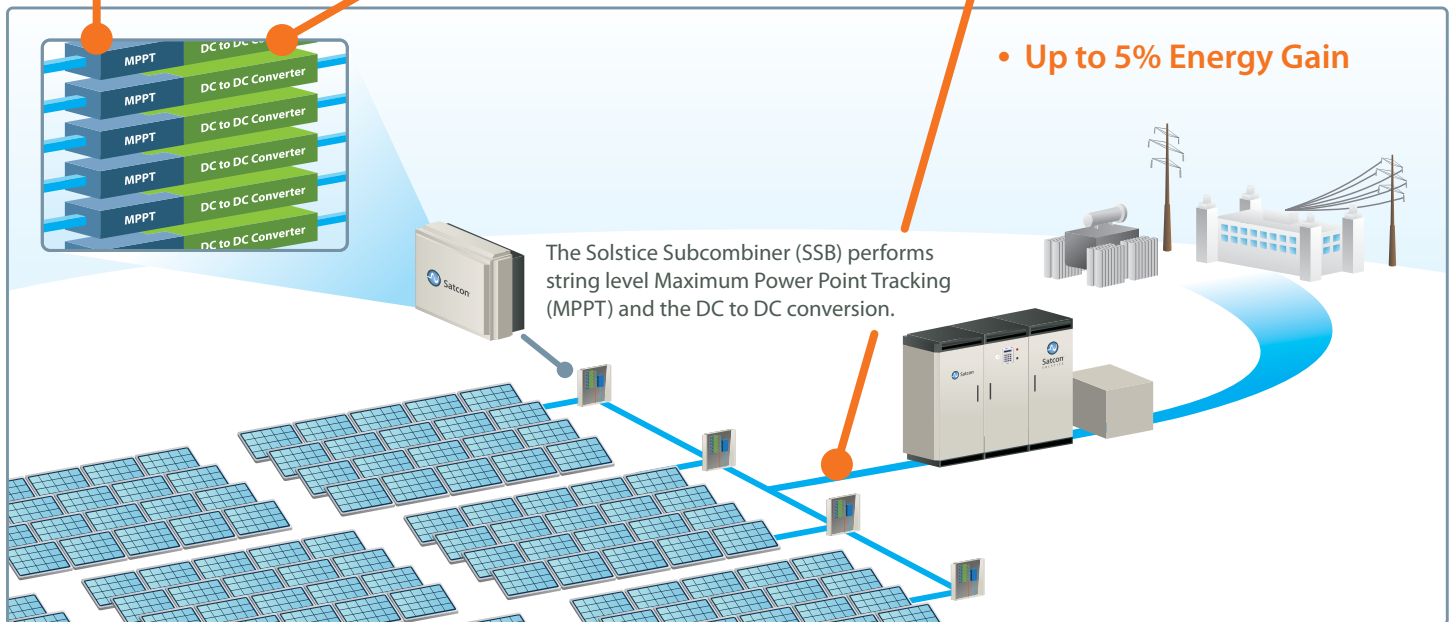
• **1-5% Energy Gain**

String level DC to DC conversion boosts string voltages to a higher, fixed level, reducing line losses and allowing the inverter to operate more efficiently. Higher voltages result in lower current, permitting the use of smaller gauge cable, and a reduction in wiring costs. The entire DC/DC conversion is accomplished with an efficiency of 99%.

• **Up to 2% Energy Gain**

Reduced Balance of System Expense by 20-25% While Gaining Greater Design Flexibility

- Utilize smaller gauge, lower cost cable
- Decreased conduit size requirements
- Lower installed costs due to factory integrated total system design
- Greater design flexibility by ability to use different panel technologies, power ratings, vintages, sizes, mounts and brands in the same array



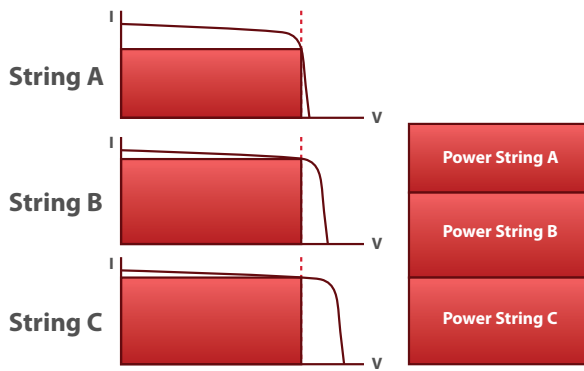
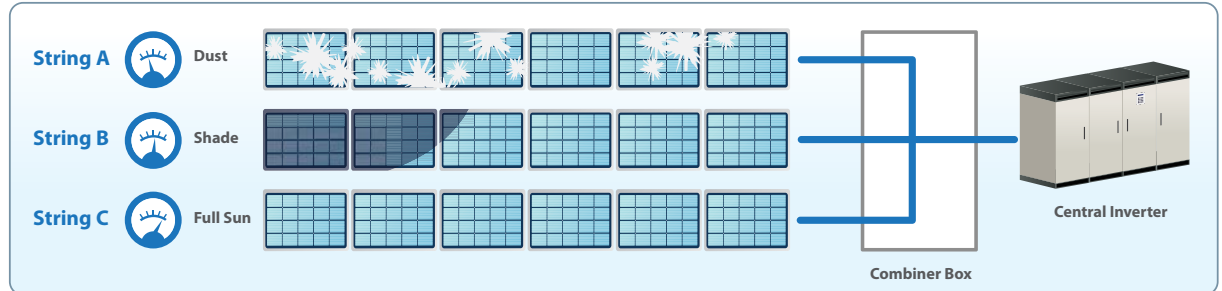
Total system monitoring, diagnostics and control

- String level instrumentation provides greater visibility to poorly behaving elements in the system
- Bidirectional communication allows you to send commands, and receive status and operating characteristics from the inverter.
- Ability to sense, identify and mitigate ground faults as they occur - in milliseconds

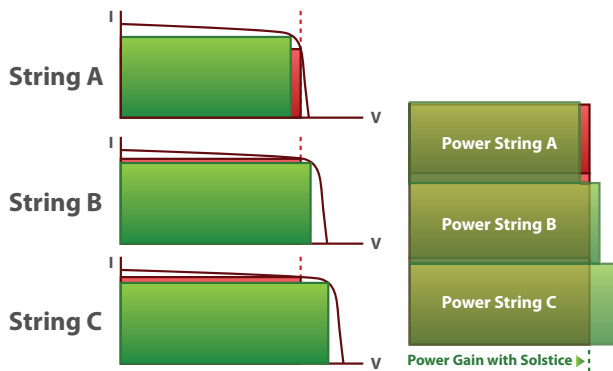
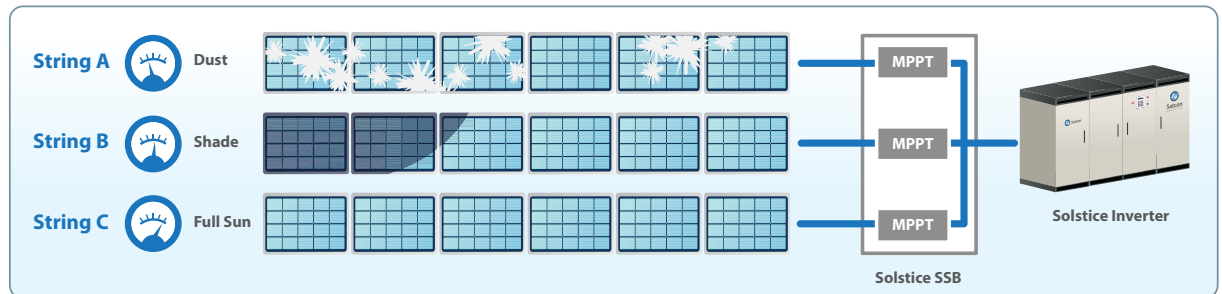
AC Side System Value

- Control of real and reactive power
- Ability to stop, start and restart a solar PV power plant remotely
- Controllable ride-thru
- Dynamic VAR generation
- Simplified Utility SCADA system integration via the Solstice PV site controller

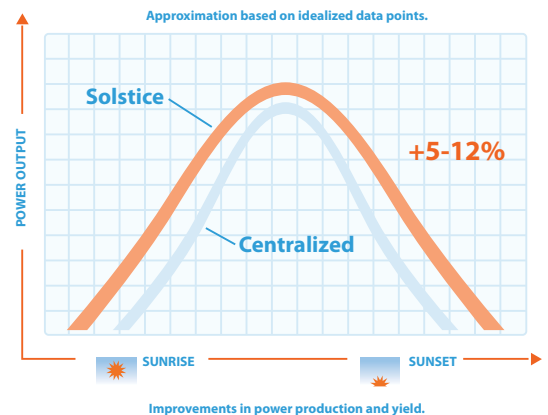
How Solstice Works



In any system, individual string IV curves are seldom identical due to shading, soiling or other causes of module mismatch. In a centralized system, this results in each string operating below its maximum power point, leading to suboptimal energy production from the whole system.



With Solstice, power output from each string is independently optimized, allowing each string to operate at its full potential all day long. As a result, energy production from the entire system is increased by 5-12%.



Advanced, Rugged, and Reliable

Engineered from the ground up to meet the demands of large-scale installations, Satcon Solstice features NEMA4 SSB enclosure, IP54 inverter enclosure, advanced monitoring and control capabilities, and Edge™, Satcon's next-generation MPPT solution.

Low Maintenance

Total system intelligence and modular components make service efficient

String level Maximum Power Point Tracking (MPPT)

Highly optimized DC to AC conversion

Total system monitoring, diagnostics and control

Advanced grid interconnection and utility control capabilities

Natural convection cooled SSB for simplicity and high reliability

Rugged Construction

Hermetically sealed NEMA 4 Cabinet for Subcombiner and IP54 rating for inverter enclosure

Output Transformer

Provides galvanic isolation

Matches the output voltage of the PV inverter to the grid

Safety

Subcombiner Specification

Solstice 25kW SSB Specifications		CE
Input Parameters		
Maximum Array Input Voltage	900 VDC	●
PV Array Configuration	Negative Ground	○
	Positive Ground	○
	Floating	●
Maximum Number of String Inputs	7	●
Input Voltage Range, Full Power	320-720 VDC ¹	●
Input Voltage Range, MPPT	65-750 VDC ²	●
Maximum String Input Current	12 ADC	●
Maximum String Power Output	3.7kW	●
Communications	DC Power Line Carrier	○
Output Parameters		
Distribution Voltage	725 VDC	●
Peak Efficiency	99.0%	●
Distribution Current	36 A	●
Temperature		
Operating Temp	-20° C to 55° C	●
Storage Temp	-40° to +85° C	●
Cooling	Natural Convection	●
SSB Cabinet		
Cabinet Finish	RAL 7035	●
Cabinet Dimensions	76 cm H x 101.6 cm W x 34.5 cm D	●
Cabinet Weight	125 kg	●
Cabinet Rating	NEMA 4/IP66	●

- Standard
- Optional

¹ Power output will be limited below 400V in high ambient temperature conditions.

² Open circuit voltage must be above 100VDC to start.

Note: Specifications are subject to change.

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

Output Options

Satcon Solstice 125kW System

CE 400V AC Output

Inverter Specification

Solstice 125kW Specifications		CE
Distribution Parameters		
Distribution Input Voltage	720 VDC	•
Distribution Input Voltage range	680-750 VDC	•
Maximum Input Current	189 A	•
Number of SSBs per Inverter	5	•
Output Parameters		
Nominal Output Voltage	400 VAC	•
Output Voltage Range (L-L)	400 VAC 352-440 VAC	•
Output Frequency Range	49.3-50.5 Hz	•
Nominal Output Frequency	50 Hz	•
Max Output Current/Phase	400 VAC 180A	•
CEC-Weighted Efficiency	400 VAC 96.5%	•
Max Continuous Power Output	125kW (KVA)	•
Tare Losses	400 VAC 65 W	•
Power Factor @ Full Load	>0.99	•
Harmonic Distortion	< 3% THD	•
Temperature		
Operating Temperature Range (Full Power)	-20° C to +55° C*	•
Storage Temperature Range	-30° C to +70° C	•
Cooling	Forced air	•
Noise		
Noise Level	<65 dB(A)	•
Inverter DC Combiner		
Number of Inputs and Fuse Ratings	6 x (125 A)	•
Inverter Cabinet		
Cabinet Finish	RAL 7035	•
Hood and Base Trim Finish	RAL 5001	•
Cabinet Dimensions	172.4 cm H x 217.7 cm W x 59.4 cm D	•
Cabinet Weight	1300 kg	•
Enclosure Rating	IP54	•
Transformer		
Integrated Internal Transformer		•
Testing and Certification		
CE Certification (IEC 62109-1, DIN V VDE V 0126-1-1, DIN V VDE V 0126-14-1, EN 61000-6-2, EN 61000-6-4)		•
UBC Zone 4 Seismic Rating		•

- Standard
- Optional

* 55° C with additional option package
Note: Specifications are subject to change.

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