



SMA DC-DC Converter

Greater efficiency for large
PV power plants



Flexible

- Wide range for battery and PV voltages
- Scalable
- Retrofittable (storage solution can be integrated anytime)

4-Quadrant Operation

- Step-up/step-down converter with battery charge/discharge function
- Limits high short-circuit currents of the battery
- Compatible with 1,500-V batteries

Integrated Solution

- Intelligent power flow control of the system in the Sunny Central
- Coordinated protection concept with Sunny Central
- Uniform warranty and service concept

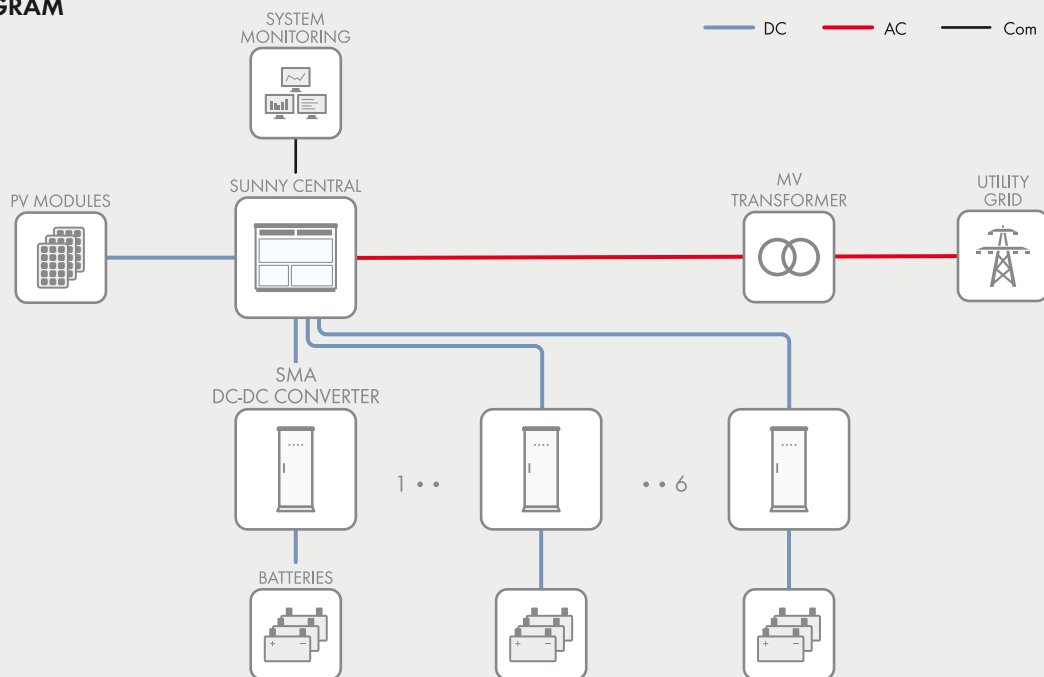
Efficient

- Enables new business models
- High efficiency at different DC voltages as well as partial and full load
- Overnight charging/discharging

The new SMA DC-DC converter allows designers to increase their PV power plant's yields by oversizing the DC array without compromising energy losses.

This is accomplished with the new DC-coupling option and the generous DC-AC ratios of the Sunny Central EV and Sunny Central UP inverter series. The inverter can intelligently control the flow of power for many different use-cases, including clipped-loss capturing. The stored energy can be fed in at attractive times, for example, in the morning or at night, to achieve a better price-point for the energy. Grid operators are able to benefit from grid services, such as frequency control or time-based feed-in schedules. Up to six DC-DC converters can be connected and operated simultaneously on the Sunny Central inverter. This minimizes battery short-circuits currents for high energy applications and avoids the need for additional and expensive protection measures inside the battery container.

SYSTEM DIAGRAM



Technical Data	SMA DC-DC CONVERTER without installed Metering Kit	SMA DC-DC CONVERTER with installed Metering Kit
Electrical Data		
Max. continuous power (at 35 °C)	500 kW at 1000 VDC 600 kW at 1200 VDC to 1500 VDC	
Battery input voltage range	550 V to 1500 V	
PV input voltage range	550 V to 1500 V	
Max. continuous current (at 35 °C)	+/- 500 A	
Supply voltage	120 V, 1-ph, 60 Hz, 600 VA 230 V, 1-ph, 50 Hz, 600 VA 277 V, 1-ph, 60 Hz, 600 VA	
Accuracy on power and energy measurements	<1.5 %	<0.5 %
Battery technology	compatible with all common battery technologies	
Efficiency		
Average efficiency	98.2 %	
Protective devices		
Battery-side disconnection point	Circuit breaker in the battery system and/or internal converter fusing	
PV-side disconnection point	Fusing inside the Sunny Central	
Ground-fault monitoring and insulation monitoring	Use of monitoring in the Sunny Central	
Overvoltage protection for auxiliary supply	●	
General Data		
Dimensions (W / H / D)	960.1 / 2029.5 / 983.0 mm (37.8 / 79.9 / 38.7 in)	
Weight	653 kg (1440 lb)	
Operating temperature	-25 °C to 55 °C (-13 °F to 131 °F)	
Storage temperature	-40 °C to 70 °C (-40 °F to 158 °F)	
Noise emission (sound pressure level at a distance of 10 m)	< 65 db(A)	
Cooling method	Forced air-cooling	
Degree of protection of enclosure	IP54 / UL Type 3R	
Application in unprotected outdoor environments	●	
Max. permissible value for relative humidity (non-condensing)	95%	
Maximum operating altitude above MSL 1000 m / 2000 m / 3000 m	● / ○ / ○ (earlier temperature-dependent de-rating)	
Fresh air consumption	2720 m³/h (96000 ft³/h)	
Equipment		
Cable entry	Bottom	
Communication / protocols	Modbus TCP / IP	
System monitoring	Real-time monitoring with automated alerts and data storage	
Status lights	On the front for operating mode, alert and error state	
Factory-installed DC meter (Metering Kit) with high accuracy (0.2%)	-	
Warranty: 5 / 10 / 15 years	● / ○ / ○	
Certificates and approvals	CE Label, CISPR 11:2015+A1:2016, CSA 22.2 #107, EN 62109-1, FCC Part 15 Class A, IEC-ES-AS156, IEC 61000-6-2, IEC 62109-1, IEEE 693, UL 1741, UL 62109-1	
Type designation and material number	DPS-500 without installed Metering Kit 205607-00.01	DPS-500 with installed Metering Kit 205606-00.01

● Standard features ○ Optional features - Not available