

SUNNY CENTRAL 2200 / 2500-EV / 2750-EV

SC-2200-10 / SC-2500-EV-10 / SC-2750-EV-10



Efficient

- More power per cubic meter
- Up to 4 inverters can be transported in one standard shipping container
- DC/AC Over-dimensioning up to 250%*

Robust

- Proven high-precision air-cooling system for intelligent, effective cooling
- Can be installed outdoors anywhere in the world in any ambient condition

Flexible

- Conforms to all known grid requirements worldwide
- Provides Q on demand
- Available as a stand-alone or turn-key solution with medium-voltage block

Easy to Use

- Improved DC connection area
- Bay for connecting customer equipment
- Integrated voltage supply for internal consumption and external loads

SUNNY CENTRAL 2200 / 2500-EV / 2750-EV

The new Sunny Central: maximum power density and integration

With an output of up to 2750 kVA and system voltage of 1000 volts DC or 1500 volts DC, SMA's central inverters allow for more efficient system design. An integrated transformer and additional space is available for the installation of customer equipment. The Sunny Central has been optimized for outdoor installation. The air cooling system OptiCool™ ensures smooth operation, even in extreme ambient temperatures. Sand and dust particles are effectively kept away. The Sunny Central is the central component of SMA Utility Power Systems. In combination with the medium-voltage block, DC technology, power plant controlling system and SMA Service, it is also available as compact platform solution.

* depending on location and module technology (1000 Vdc to 200%)

SUNNY CENTRAL 1000 V

Technical Data	Sunny Central 2200
Input (DC)	
MPP voltage range V_{DC} (at 25 °C / at 50 °C)	570 to 950 V / 850 V
Min. input voltage $V_{DC, min}$ / Start voltage $V_{DC, Start}$	545 V / 645 V
Max. input voltage $V_{DC, max}$	1100 V
Max. input current $I_{DC, max}$ (at 25 °C / at 50 °C)	3960 A / 3600 A
Max. short-circuit current $I_{DC, sc}$	6400 A
Number of DC inputs	24
Max. number of DC cables per DC input (for each polarity)	2 x 800 kcmil, 2 x 400 mm ²
Integrated zone monitoring	○
Available DC fuse sizes (per input)	200 A, 250 A, 315 A, 350 A, 400 A, 450 A, 500 A
Output (AC)	
Nominal AC power at $\cos \varphi = 1$ (at 25 °C / at 40 °C / at 50 °C)	2200 kVA / 2080 kVA / 2000 kVA
Nominal AC power at $\cos \varphi = 0.8$ (at 25 °C / at 40 °C / at 50 °C)	1760 kW / 1664 kW / 1600 kW
Nominal AC current $I_{AC, nom}$ = Max. output current $I_{AC, max}$	3300 A
Max. total harmonic distortion	< 3% at nominal power
Nominal AC voltage / nominal AC voltage range ¹⁾⁷⁾	385 V / 308 V to 462 V
AC power frequency / range	50 Hz / 47 Hz to 53 Hz 60 Hz / 57 Hz to 63 Hz
Min. short-circuit ratio at the AC terminals	> 2
Power factor at rated power / displacement power factor adjustable ⁷⁾	1 / 0.8 overexcited to 0.8 underexcited
Efficiency	
Max. efficiency / European efficiency / CEC efficiency ²⁾	98.6% / 98.4% / 98.0%
Protective Devices	
Input-side disconnection point	DC load break switch
Output-side disconnection point	AC circuit breaker
DC overvoltage protection	Surge arrester, type I
AC overvoltage protection (optional)	Surge arrester, class I
Lightning protection (according to IEC 62305-1)	Lightning Protection Level III
Ground-fault monitoring / remote ground-fault monitoring	○ / ○
Insulation monitoring	○
Degree of protection: electronics / air duct / connection area (as per IEC 60529)	IP65 / IP34 / IP34
General Data	
Dimensions (W / H / D)	2780 / 2318 / 1588 mm (109.4 / 91.3 / 62.5 inch)
Weight	< 3400 kg / < 7496 lb
Self-consumption (max. ³⁾ / partial load ⁴⁾ / average ⁵⁾	< 8100 W / < 1800 W / < 2000 W
Self-consumption (standby)	< 300 W
Internal auxiliary power supply	Integrated 8.4 kVA transformer
Operating temperature range ⁷⁾	-25 °C to 60 °C / -13 °F to 140 °F
Noise emission ⁶⁾	66.4 dB(A)
Temperature range (standby)	-40 °C to 60 °C / -40 °F to 140 °F
Temperature range (storage)	-40 °C to 70 °C / -40 °F to 158 °F
Max. permissible value for relative humidity (condensing / non-condensing)	95% to 100% (2 month/year) / 0% to 95%
Maximum operating altitude above MSL ⁷⁾ 2000 m / 3000 m / 4000 m	● / ○ / ○ (earlier temperature-dependent de-rating)
Fresh air consumption	6500 m ³ /h
Features	
DC connection	Terminal lug on each input (without fuse)
AC connection	With busbar system (three busbars, one per line conductor)
Communication	Ethernet, Modbus Master, Modbus Slave
Communication with SMA string monitor (transmission medium)	Modbus TCP / Ethernet (FO MM, Cat-5)
Enclosure / roof color	RAL 9016 / RAL 7004
Display	HMI touchscreen (10.1")
Supply transformer for external loads	○ (2.5 kVA)
Standards and directives complied with	CE, IEC / EN 62109-1, IEC / EN 62109-2, UL1741, BDEW-MSRL, IEEE1547, UL 840 Cat. IV, Arrêté du 23/04/08
EMC standards	IEC / EN 61000-6-4, IEC / EN 61000-6-2, EN 55022, CISPR 22:2008 modified class A, FCC Part 15 Class A
Quality standards and directives complied with	VDI/VDE 2862 page 2, DIN EN ISO 9001
● Standard features ○ Optional	
Type designation	SC-2200-10

- 1) At nominal AC voltage < 385 V, nominal AC power decreases in the same proportion
- 2) Efficiency measured with internal power supply
- 3) Self-consumption at rated operation
- 4) Self-consumption at < 75% Pn at 25 °C

- 5) Self-consumption averaged out from 5% to 100% Pn at 25 °C
- 6) Sound pressure level at a distance of 10 m
- 7) Values apply only to inverters. Permissible values for SMA MV solutions from SMA can be found in the corresponding data sheets.

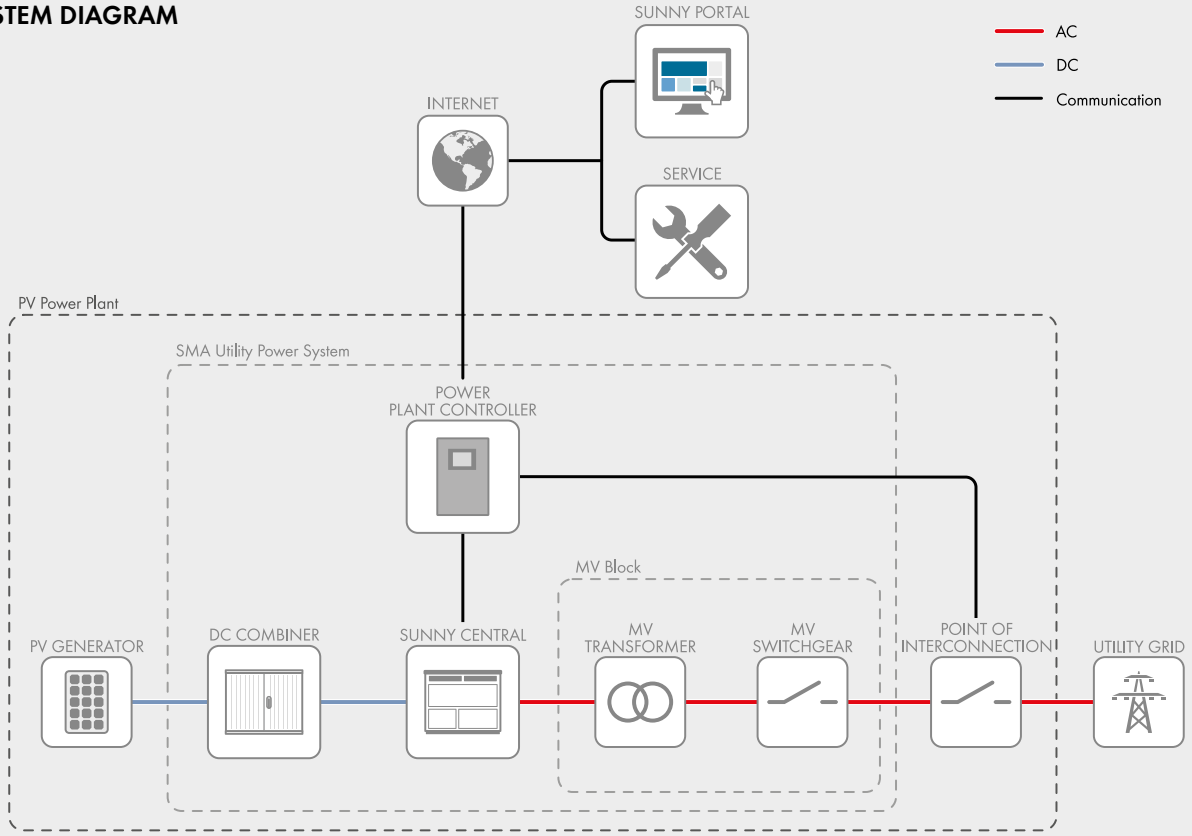
SUNNY CENTRAL 1500 V

Technical Data	Sunny Central 2500-EV	Sunny Central 2750-EV
Input (DC)		
MPP voltage range V_{DC} (at 25 °C / at 50 °C)	850 V to 1425 V / 1275 V	875 V to 1425 V / 1275 V
Min. input voltage $V_{DC, min}$ / Start voltage $V_{DC, Start}$	778 V / 878 V	849 V / 949 V
Max. input voltage $V_{DC, max}$	1500 V	1500 V
Max. input current $I_{DC, max}$ (at 25 °C / at 50 °C)	3000 A / 2700 A	3206 A / 2914 A
Max. short-circuit current rating	6400 A	6400 A
Number of DC inputs	24	24
Max. number of DC cables per DC input (for each polarity)	2 x 800 kcmil, 2 x 400 mm ²	2 x 800 kcmil, 2 x 400 mm ²
Integrated zone monitoring	○	○
Available DC fuse sizes (per input)	200 A, 250 A, 315 A, 350 A, 400 A, 450 A, 500 A	
Output (AC)		
Nominal AC power at $\cos \varphi = 1$ (at 25 °C / at 40 °C / at 50 °C)	2500 kVA / 2350 kVA / 2250 kVA	2750 kVA / 2600 kVA / 2500 kVA
Nominal AC power at $\cos \varphi = 0.8$ (at 25 °C / at 40 °C / at 50 °C)	2000 kW / 1880 kW / 1800 kW	2200 kW / 2080 kW / 2000 kW
Nominal AC current $I_{AC, nom} = \text{Max. output current } I_{AC, max}$	2624 A	2646 A
Max. total harmonic distortion	< 3% at nominal power	< 3% at nominal power
Nominal AC voltage / nominal AC voltage range ^{1) 8)}	550 V / 440 V to 660 V	600 V / 480 V to 690 V
AC power frequency	50 Hz / 47 Hz to 53 Hz 60 Hz / 57 Hz to 63 Hz	50 Hz / 47 Hz to 53 Hz 60 Hz / 57 Hz to 63 Hz
Min. short-circuit ratio at the AC terminals	> 2	> 2 ⁹⁾
Power factor at rated power / displacement power factor adjustable ⁸⁾	1 / 0.8 overexcited to 0.8 underexcited	
Efficiency		
Max. efficiency ²⁾ / European efficiency ²⁾ / CEC efficiency ³⁾	98.6% / 98.3% / 98.0%	98.7% / 98.6% / 98.5%*
Protective Devices		
Input-side disconnection point	DC load-break switch	
Output-side disconnection point	AC circuit breaker	
DC overvoltage protection	Surge arrester, type I	
AC overvoltage protection (optional)	Surge arrester, class I	
Lightning protection (according to IEC 62305-1)	Lightning Protection Level III	
Ground-fault monitoring / remote ground-fault monitoring	○ / ○	
Insulation monitoring	○	
Degree of protection: electronics / air duct / connection area (as per IEC 60529)	IP65 / IP34 / IP34	
General Data		
Dimensions (W / H / D)	2780 / 2318 / 1588 mm (109.4 / 91.3 / 62.5 inch)	
Weight	< 3400 kg / < 7496 lb	
Self-consumption (max. ⁴⁾ / partial load ⁵⁾ / average ⁶⁾	< 8100 W / < 1800 W / < 2000 W	
Self-consumption (standby)	< 370 W	
Internal auxiliary power supply	Integrated 8.4 kVA transformer	
Operating temperature range ⁸⁾	-25 to 60 °C / -13 to 140 °F	
Noise emission ⁷⁾	64,3 dB(A)	
Temperature range (standby)	-40 to 60 °C / -40 to 140 °F	
Temperature range (storage)	-40 to 70 °C / -40 to 158 °F	
Max. permissible value for relative humidity (condensing / non-condensing)	95% to 100% (2 month / year) / 0 % to 95%	
Maximum operating altitude above MSL ⁸⁾ 2000 m / 3000 m	● / ○ (earlier temperature-dependent de-rating)	
Fresh air consumption	6500 m ³ /h	
Features		
DC connection	Terminal lug on each input (without fuse)	
AC connection	With busbar system (three busbars, one per line conductor)	
Communication	Ethernet, Modbus Master, Modbus Slave	
Communication with SMA string monitor (transmission medium)	Modbus TCP / Ethernet (FO MM, Cat-5)	
Enclosure / roof color	RAL 9016 / RAL 7004	
Display	HMI touchscreen (10.1")	
Supply transformer for external loads	○ (2.5 kVA)	
Standards and directives complied with	CE, IEC / EN 62109-1, IEC / EN 62109-2, BDEW-MSRL, IEEE 1547, Arrêté du 23/04/08	
EMC standards	EN 55011:2011-4, IEC / EN 61000-6-2, EN 55022, CISPR 22:2008 modified class A, FCC Part 15 Class A	
Quality standards and directives complied with	VDI/VDE 2862 page 2, DIN EN ISO 9001	
● Standard features ○ Optional *preliminary		
Type designation	SC-2500-EV-10	SC-2750-EV-10

- 1) At nominal AC voltage, nominal AC power decreases in the same proportion
- 2) Efficiency measured without internal power supply
- 3) Efficiency measured with internal power supply
- 4) Self-consumption at rated operation
- 5) Self-consumption at < 75% P_n at 25 °C

- 6) Self-consumption averaged out from 5% to 100% P_n at 25 °C
- 7) Sound pressure level at a distance of 10 m
- 8) Values apply only to inverters. Permissible values for SMA MV solutions from SMA can be found in the corresponding data sheets.
- 9) A short-circuit ratio of < 2 requires a special approval from SMA

SYSTEM DIAGRAM



TEMPERATURE BEHAVIOR

