

SUNNY CENTRAL

500CP / 630CP / 720CP / 760CP / 800CP



SC 500CP-10 / SC 630CP-10 / SC 720CP-10 / SC 760CP-10 / SC 800CP-10



Economical

- Optiprotect ensures maximum plant availability
- Outdoor-rated enclosure allows for direct field deployment

Efficient

- Full nominal power at ambient temperatures up to 50° C
- 110% rated power at ambient temperatures up to 25° C

Flexible

- Configurable DC voltage range
- Optional: Extended input voltage range up to 1,100 V

Reliable

- Safe and easy installation due to separate connection area
- Powerful grid management functions (including LVRT)

SUNNY CENTRAL

500CP / 630CP / 720CP / 760CP / 800CP

Unmatched performance for utility-scale PV

The Sunny Central CP series maximizes project investment returns through innovative technology and time-saving features. Optiprotect integrates string failure detection into the inverter and centrally monitors up to 1,600 module strings without requiring conventional communication wiring in the field. The self-learning monitoring system significantly simplifies commissioning. Up to 32 motor-driven, adjustable DC inputs ensure maximum plant availability. And, thanks to its compact and weatherproof enclosure, the inverters can be loaded and transported with ease and set up almost anywhere.

Technical data	Sunny Central 500CP	Sunny Central 630CP
Input Data (DC)		
Max. DC power (@ cos φ=1)	560 kW	713 kW
Max. input voltage ¹⁾	1000 V / 1100 V optional	1000 V / 1100 V optional
MPP voltage range (@ 25 °C / @ 50 °C at 50 Hz)	449 V – 820 V / 430 V – 820 V ²⁾	529 V – 820 V / 500 V – 820 V ²⁾
MPP voltage range (@ 25 °C / @ 50 °C at 60 Hz)	449 V – 820 V / 436 V – 820 V ²⁾	529 V – 820 V / 505 V – 820 V ²⁾
Rated input voltage	480 V	550 V
Max. input current	1250 A	1350 A
Minimum input voltage / V_{MPP_min} at $I_{MPP} < I_{DCmax}$	429 V / 430 V	498 V / 500 V
Number of independent MPP inputs	1	1
Number of DC inputs	9 / 32 (Optiprotect)	9 / 32 (Optiprotect)
Output (AC)		
Rated power (@ 25 °C) / nominal AC power (@ 50 °C)	550 kVA / 500 kVA	700 kVA / 630 kVA
Nominal AC voltage / range	270 V / 243 V – 297 V	315 V / 284 V – 347 V
AC frequency / range	50 Hz, 60 Hz / 47 Hz ... 63 Hz	50 Hz, 60 Hz / 47 Hz ... 63 Hz
Rated frequency / rated voltage	50 Hz / 270 V	50 Hz / 315 V
Max. output current	1176 A	1283 A
Max. THD	< 3 %	< 3 %
Power factor at rated power / adjustable shift factor	1 / 0.9 leading ... 0.9 lagging	
Feed-in phases / connection phases	3 / 3	3 / 3
Efficiency ⁷⁾		
Max. efficiency / European efficiency / CEC efficiency	98.6 % / 98.4 % / 98.5 %	98.7 % / 98.5 % / 98.5 %
Protection		
Input side disconnection device	Motor-driven switch-disconnector / circuit breaker (Optiprotect)	
Output side disconnection device	AC circuit breaker	
DC overvoltage protection / AC overvoltage protection	Surge arrester type I / surge arrester type I	
Grid monitoring	●	●
Ground fault monitoring / Remote ground fault monitoring	○ / ○	○ / ○
Insulation monitoring	○	○
Surge arrester for auxiliary supply	●	●
Protection class (as per IEC 62103) / overvoltage category (as per IEC 60664-1)	I / III	I / III
General Data		
Dimensions (W / H / D)	2562 / 2279 / 956 mm (101 / 90 / 38 inch)	
Weight	1800 kg	1800 kg
Operating temperature range	-20 °C ... +50 °C	
Noise emission ⁵⁾	60 db(A)	
Max. self-consumption (in operation) / self-consumption (at night)	1700 W ⁴⁾ / < 100 W	1700 W ⁴⁾ / < 100 W
External auxiliary supply voltage	230 / 400 V (3 / N / PE)	230 / 400 V (3 / N / PE)
Cooling concept	OptiCool	
Degree of protection: electronics / connection area (as per IEC 60529)	IP54 / IP23	IP54 / IP23
Application	Unprotected outdoors	
Maximum permissible value for relative humidity (non-condensing)	15 % ... 95 %	
Maximum operating altitude above MSL	2000 m	
Fresh air consumption	3000 m ³ /h	
Features		
DC terminal	Ring terminal lug / cage terminal (Optiprotect)	Ring terminal lug / cage terminal (Optiprotect)
AC terminal	Ring terminal lug	Ring terminal lug
Display	○	○
Communication protocols	Ethernet (optical fiber optional), modbus	Ethernet (optical fiber optional), modbus
Sunny String-Monitor	RS485 / is not required (Optiprotect)	RS485 / is not required (Optiprotect)
Color of enclosure, door, base, roof	RAL 9016 / 9016 / 7005 / 7004	
Certificates and approvals (more upon request)	EN 61000-6-2, EN 61000-6-4, EEG conformity, Arrêté du 4/23/08, R.D. 1.663 / 2000, R.D. 661 / 2007, BDEW-MSRL / FGW / TR8 ⁶⁾	
Classification of the ambient conditions (according to IEC 60721-3-4)	4S2, 4C2	
● Standard features ○ Optional features – Not available		
Type designation	SC 500CP-10	SC 630CP-10

Sunny Central 720CP	Sunny Central 760CP	Sunny Central 800CP	
808 kW	853 kW	898 kW	
1000 V / 1100 V optional	1000 V / 1100 V optional	1000 V / 1100 V optional	
577 V – 820 V / 525 V – 820 V ²⁾³⁾	609 V – 820 V / 554 V – 820 V ²⁾³⁾	641 V – 820 V / 583 V – 820 V ²⁾³⁾	
577 V – 820 V / 525 V – 820 V ²⁾³⁾	609 V – 820 V / 554 V – 820 V ²⁾³⁾	641 V – 820 V / 583 V – 820 V ²⁾³⁾	
565 V	595 V	620 V	
1400 A	1400 A	1400 A	
515 V / 515 V	545 V / 545 V	568 V / 570 V	
1	1	1	
9 / 32 (Optiprotect)	9 / 32 (Optiprotect)	9 / 32 (Optiprotect)	
792 kVA / 720 kVA	836 kVA / 760 kVA	880 kVA / 800 kVA	
324 V / 292 V – 356 V	342 V / 308 V – 376 V	360 V / 324 V – 396 V	
50 Hz, 60 Hz / 47 Hz ... 63 Hz	50 Hz, 60 Hz / 47 Hz ... 63 Hz	50 Hz, 60 Hz / 47 Hz ... 63 Hz	
50 Hz / 324 V	50 Hz / 342 V	50 Hz / 360 V	
1411 A	1411 A	1411 A	
< 3 %	< 3 %	< 3 %	
	1 / 0.9 leading ... 0.9 lagging		
3 / 3	3 / 3	3 / 3	
98.6 % / 98.4 % / 98.5 %	98.6 % / 98.4 % / 98.5 %	98.6 % / 98.4 % / 98.5 %	
Motor-driven switch-disconnector / circuit breaker (Optiprotect)			
AC circuit breaker			
Surge arrester type I / surge arrester type I			
●	●	●	
○ / ○	○ / ○	○ / ○	
○	○	○	
●	●	●	
I / III	I / III	I / III	
2562 / 2279 / 956 mm (101 / 90 / 38 inch)			
1800 kg	1800 kg	1800 kg	
-20 °C ... +50 °C	-20 °C ... +50 °C	-20 °C ... +50 °C	
60 db(A)	60 db(A)	61 db(A)	
1700 W ⁴⁾ / < 100 W	1700 W ⁴⁾ / < 100 W	1700 W ⁴⁾ / < 100 W	
230 / 400 V (3 / N / PE)	230 / 400 V (3 / N / PE)	230 / 400 V (3 / N / PE)	
OptiCool	OptiCool	OptiCool	
IP54 / IP23	IP54 / IP23	IP54 / IP23	
Unprotected outdoors	Unprotected outdoors	Unprotected outdoors	
15 % ... 95 %	15 % ... 95 %	15 % ... 95 %	
2000 m	2000 m	2000 m	
3000 m ³ /h	3000 m ³ /h	3000 m ³ /h	
Ring terminal lug / cage terminal (Optiprotect)	Ring terminal lug / cage terminal (Optiprotect)	Ring terminal lug / cage terminal (Optiprotect)	
Ring terminal lug	Ring terminal lug	Ring terminal lug	
○	○	○	
Ethernet (optical fiber optional), modbus RS485 / is not required (Optiprotect)	Ethernet (optical fiber optional), modbus RS485 / is not required (Optiprotect)	Ethernet (optical fiber optional), modbus RS485 / is not required (Optiprotect)	
RAL 9016 / 9016 / 7005 / 7004			
EN 61000-6-2, EN 61000-6-4, EMC conformity, CE conformity, Arrêté du 4/23/08, R.D. 1663 / 2000, R.D. 661 / 2007, BDEW-MSRL / FGW / TR8 ⁶⁾			
4S2, 4C2			
SC 720CP-10	SC 760CP-10	SC 800CP-10	

1) Startup at DC voltage < 1000 V

2) At 1.05 V_{AC, nom} and cos φ = 1

3) Further AC voltages, DC voltages and power classes can be configured (for more detailed information, see technical information "Innovations_CP" at www.SMA.de)

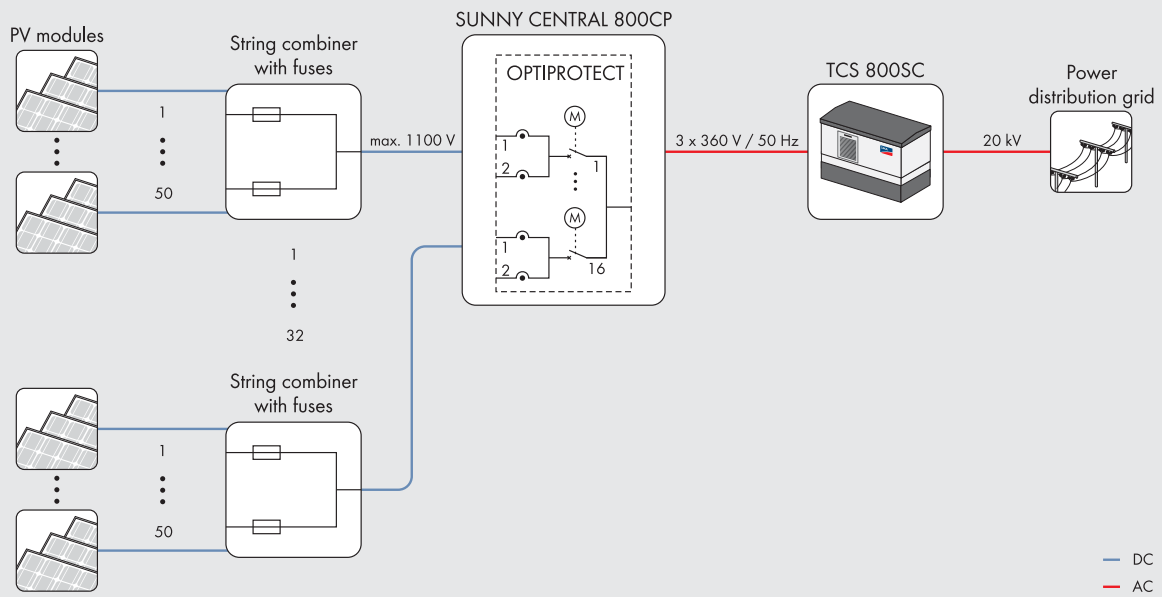
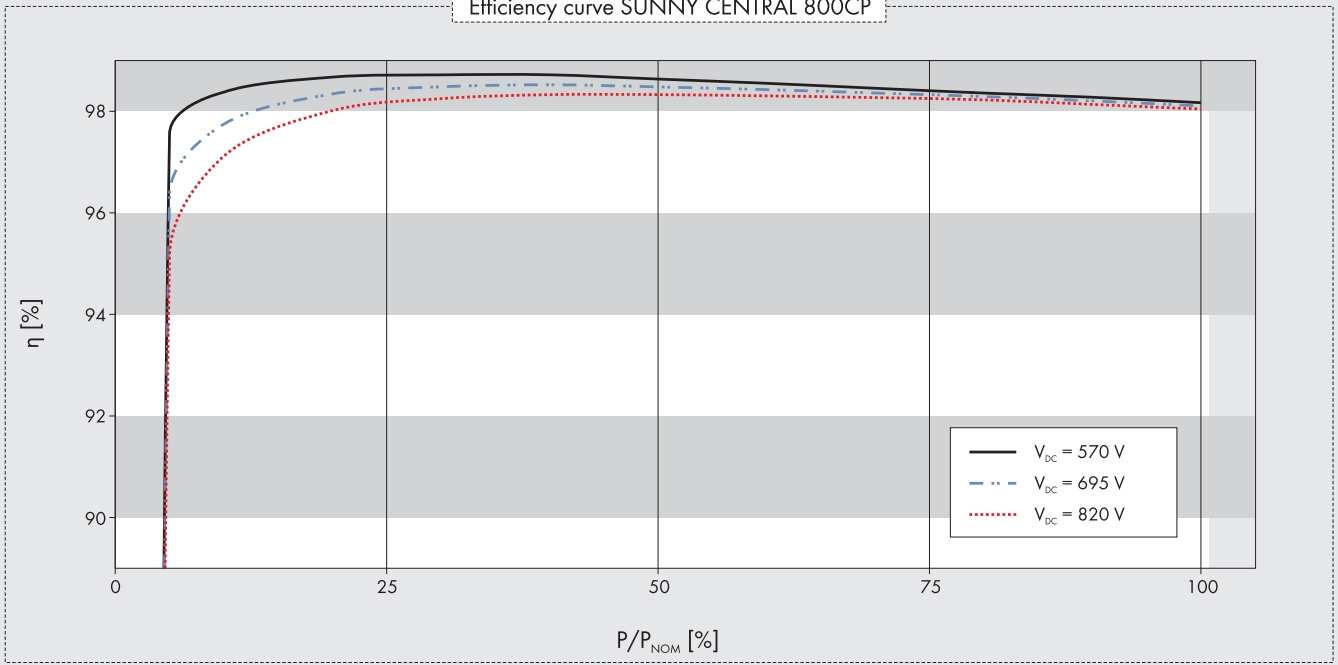
4) Self-consumption during nominal operation

5) Sound pressure level at a distance of 10 m

6) With complete dynamic grid support

7) Efficiency measured without internal power supply

Efficiency curve SUNNY CENTRAL 800CP



SCCPALDUST113913 SMA and Sunny Central are registered trademarks of SMA Solar Technology AG. Text and illustrations conform to technical standards on printing. Technical modifications reserved. No liability for printing errors. Printed on chlorine-free paper.