

SUNNY CENTRAL 500CP-US / 630CP-US / 720CP-US / 750CP-US / 800CP-US / 850CP-US / 900CP-US



SC 500CP-US-10 / SC 630CP-US-10 / SC 720CP-US-10 / SC 750CP-US-10 / SC 800CP-US-10 / SC 850CP-US-10 / SC 900CP-US-10



Economical

- Savings in balance of system costs due to 1,000 V operating voltage
- Outdoor enclosure allows for direct field deployment
- Small footprint and light weight for easy shipping and installation

Efficient

- Highest efficiency in its power class
- Full nominal power at ambient temperatures up to 50 °C
- 10% additional power for continuous operation at ambient temperatures up to 25 °C

Flexible

- Configurable DC voltage range
- Integrated AC disconnect for NEC 2011 compliance
- Optional DC disconnects

Reliable

- Easy and safe installation and with large, separate connection area
- Powerful grid management functions (incl. Low Voltage Ride Through)
- Full UL1741 and IEEE 1547 compliance

SUNNY CENTRAL 500CP-US / 630CP-US / 720CP-US / 750CP-US / 800CP-US / 850CP-US / 900CP-US

UL listed for commercial and utility-scale projects

The Sunny Central CP-US series delivers outstanding performance. In combination with an external transformer, the Sunny Central CP-US can be connected to any utility grid or three-phase commercial service while directly providing grid management functions. The CP-US family is UL listed at 1,000 V DC and features an integrated AC disconnect in accordance with NEC 2011 requirements. Both the outdoor enclosure with the OptiCool™ cooling concept and the separate connection area ensures simple installation while maximizing returns. With a peak efficiency of 98.7 percent, it outperforms all other inverters in its class. The Sunny Central CP-US can also be integrated with the Power Plant Controller as well as the Medium-voltage Power Platform for utility-scale applications.

Technical data	Sunny Central 500CP-US	Sunny Central 630CP-US	Sunny Central 720CP-US
Input (DC)			
Max. DC power (@ cos φ = 1)	560 kW	713 kW	808 kW
Max. input voltage ⁽¹⁾	1000 V	1000 V	1000 V
MPP voltage range (@ 25 °C / @ 50 °C at 60 Hz)	430 V - 820 V / 430 V - 820 V ^{(1) (2)}	500 V - 820 V / 500 V - 820 V ^{(1) (2)}	525 V - 820 V / 525 V - 820 V ^{(1) (2)}
Rated input voltage	480 V	550 V	565 V
Max. input current	1250 A	1350 A	1600 A
Min. input voltage / V _{MPP_min} at I _{MPP} < I _{DCmax}	429 V	498 V	515 V
Number of independent MPP inputs	1	1	1
Number of DC inputs: busbar / fuses	Busbar / 6 - 9	Busbar / 6 - 9	Busbar / 6 - 9
Output (AC)			
Rated power (@ 25 °C) / nominal AC power (@ 50 °C)	550 kVA / 500 kVA	700 kVA / 630 kVA	792 kVA / 720 kVA
Rated grid voltage / nominal AC voltage range	270 V / 243 V - 297 V	315 V / 284 V - 347 V	324 V / 292 V - 356 V
AC power frequency / range	50 Hz, 60 Hz / 47 Hz ... 63 Hz	50 Hz, 60 Hz / 47 Hz ... 63 Hz	50 Hz, 60 Hz / 47 Hz ... 63 Hz
Rated power frequency / rated grid voltage	50 Hz, 60 Hz / 270 V	50 Hz, 60 Hz / 315 V	50 Hz, 60 Hz / 324 V
Max. output current	1176 A	1283 A	1411 A
Max. total harmonic factor	< 3 %	< 3 %	< 3 %
Power factor at rated power / displacement power factor adjustable		1 / 0.8 leading ... 0.8 lagging	
Feed-in phases / connection phases	3 / 3	3 / 3	3 / 3
Efficiency ⁽³⁾			
Max. efficiency / European weighted efficiency / CEC efficiency	98.5 % / 98.3 % / 98.0 %	98.5 % / 98.3 % / 98.0 %	98.6 % / 98.4 % / 98.0 %
Protective devices			
DC disconnect device		DC contactor	
AC disconnect device		AC circuit breaker	
DC overvoltage protection		Surge Arrester Type II	
Grid monitoring	●	●	●
Ground-fault monitoring	○	○	○
Ungrounded PV array ⁽⁴⁾	○	○	○
Lightning protection	Lightning protection level III	Lightning protection level III	Lightning protection level III
Insulation monitoring	○	○	○
Surge arresters for auxiliary power supply	●	●	●
Protection class / overvoltage category	I / IV	I / IV	I / IV
General data			
Dimensions (W / H / D)	2562 / 2272 / 956 mm (101 / 90 / 38 inches)		
Weight	< 1870 kg (4123 lb)	< 1870 kg (4123 lb)	< 1870 kg (4123 lb)
Operating temperature range	-25 °C ... +50 °C / -13 °F ... +122 °F	-25 °C ... +50 °C / -13 °F ... +122 °F	-25 °C ... +50 °C / -13 °F ... +122 °F
Noise emission ⁽⁵⁾	60 db(A)	60 db(A)	60 db(A)
Max. self-consumption (in operation) ⁽⁷⁾ / self-consumption (at night) ⁽⁶⁾	< 1800 W / < 150 W	< 1800 W / < 150 W	< 1800 W / < 150 W
Auxiliary power supply via external 208 V / external 400 V / external 480 V / integrated green power	○ / ○ / ○ / ○	○ / ○ / ○ / ○	○ / ○ / ○ / ○
Cooling concept	OptiCool	OptiCool	OptiCool
Degree of protection: electronics / connection area	NEMA 3R / NEMA 3R	NEMA 3R / NEMA 3R	NEMA 3R / NEMA 3R
Degree of protection	4C2, 4S2	4C2, 4S2	4C2, 4S2
Application	In unprotected outdoor environments	In unprotected outdoor environments	In unprotected outdoor environments
Max. permissible value for relative humidity (non-condensing)	15 % ... 95 %	15 % ... 95 %	15 % ... 95 %
Max. operating altitude above mean sea level	2000 m	2000 m	2000 m
Fresh-air consumption (inverter)	3000 m ³ /h	3000 m ³ /h	3000 m ³ /h
Features			
DC connection	Ring terminal lug	Ring terminal lug	Ring terminal lug
AC connection	Ring terminal lug	Ring terminal lug	Ring terminal lug
HMI touchscreen	●	●	●
Communication / protocols	Ethernet (optical fiber optional), Modbus	Ethernet (optical fiber optional), Modbus	Ethernet (optical fiber optional), Modbus
Communication with Sunny String-Monitor	RS485	RS485	RS485
SC-COM	●	●	●
Color of enclosure, door, base, roof	RAL 9016 / 9016 / 7004 / 7004		
Warranty: 5 / 10 / 15 / 20 / 25 years	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○
Certificates and approvals (more available on request)	EMC conformity according to FCC, Part 15, Class A, UL 1741, UL 1998, IEEE 1547		
● Standard equipment ○ Optional features – Not available			
*Preliminary information, last updated June 2013			
Type designation	SC 500CP-US-10	SC 630CP-US-10	SC 720CP-US-10

Sunny Central 750CP-US	Sunny Central 800CP-US	Sunny Central 850CP-US*	Sunny Central 900CP-US*
853 kW	898 kW	954 kW	1010 kW
1000 V	1000 V	1000 V	1000 V
545 V - 820 V / 545 V - 820 V ^{(1) (2)}	570 V - 820 V / 570 V - 820 V ^{(1) (2)}	620 V - 820 V / 620 V - 820 V ^{(1) (2)}	655 V - 820 V / 655 V - 820 V ^{(1) (2)}
595 V	620 V	620 V	620 V
1600 A	1600 A	1600 A	1600 A
545 V	568 V	568 V	568 V
1	1	1	1
Busbar / 6 - 9	Busbar / 6 - 9	Busbar / 6 - 9	Busbar / 6 - 9
825 kVA / 750 kVA	880 kVA / 800 kVA	850 kVA / 935 kVA	900 kVA / 990 kVA
342 V / 308 V - 376 V	360 V / 324 V - 396 V	386 V / 347 V - 425 V	405 V / 364 V - 446 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, 60 Hz / 47 Hz ... 63 Hz
50 Hz, 60 Hz / 342 V	50 Hz, 60 Hz / 360 V	50 Hz, 60 Hz / 360 V	50 Hz, 60 Hz / 360 V
1411 A	1411 A	1411 A	1411 A
< 3 %	< 3 %	< 3 %	< 3 %
1 / 0.8 leading ... 0.8 lagging			
3 / 3	3 / 3	3 / 3	3 / 3
98.6 % / 98.4 % / 98.0 %	98.7 % / 98.4 % / 98.5 %	98.7 % / 98.4 % / 98.5 %	98.7 % / 98.4 % / 98.5 %
DC contactor			
AC circuit breaker			
Surge Arrester Type II			
●	●	●	●
○	○	○	○
○	○	○	○
Lightning protection level III	Lightning protection level III	Lightning protection level III	Lightning protection level III
○	○	○	○
●	●	●	●
I / IV	I / IV	I / IV	I / IV
2562 / 2272 / 956 mm (101 / 90 / 38 inches)			
< 1870 kg (4123 lb)	< 1870 kg (4123 lb)	< 1870 kg (4123 lb)	< 1870 kg (4123 lb)
-25 °C ... +50 °C / -13 °F ... +122 °F	-25 °C ... +50 °C / -13 °F ... +122 °F	-25 °C ... +50 °C / -13 °F ... +122 °F	-25 °C ... +50 °C / -13 °F ... +122 °F
60 db(A)	63 db(A)	63 db(A)	63 db(A)
< 1800 W / < 150 W	< 1800 W / < 150 W	< 1800 W / < 150 W	< 1800 W / < 150 W
○ / ○ / ○ / ○	○ / ○ / ○ / ○	○ / ○ / ○ / ○	○ / ○ / ○ / ○
OptiCool	OptiCool	OptiCool	OptiCool
NEMA 3R / NEMA 3R	NEMA 3R / NEMA 3R	NEMA 3R / NEMA 3R	NEMA 3R / NEMA 3R
4C2, 4S2	4C2, 4S2	4C2, 4S2	4C2, 4S2
In unprotected outdoor environments	In unprotected outdoor environments	In unprotected outdoor environments	In unprotected outdoor environments
15 % ... 95 %	15 % ... 95 %	15 % ... 95 %	15 % ... 95 %
2000 m	2000 m	2000 m	2000 m
3000 m ³ /h	3000 m ³ /h	3000 m ³ /h	3000 m ³ /h
Ring terminal lug	Ring terminal lug	Ring terminal lug	Ring terminal lug
Ring terminal lug	Ring terminal lug	Ring terminal lug	Ring terminal lug
●	●	●	●
Ethernet (optical fiber optional), Modbus	Ethernet (optical fiber optional), Modbus	Ethernet (optical fiber optional), Modbus	Ethernet (optical fiber optional), Modbus
RS485	RS485	RS485	RS485
●	●	●	●
RAL 9016 / 9016 / 7004 / 7004			
● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○
EMC conformity according to FCC, Part 15, Class A, UL 1741, UL 1998, IEEE 1547			
SC 750CP-US-10	SC 800CP-US-10	SC 850CP-US-10	SC 900CP-US-10

(1) At 1.00 U_{AC, nom} and cos φ = 1

(2) The inverter will track MPP to 850V before self-protecting

(3) Measured efficiency includes all auxiliary power

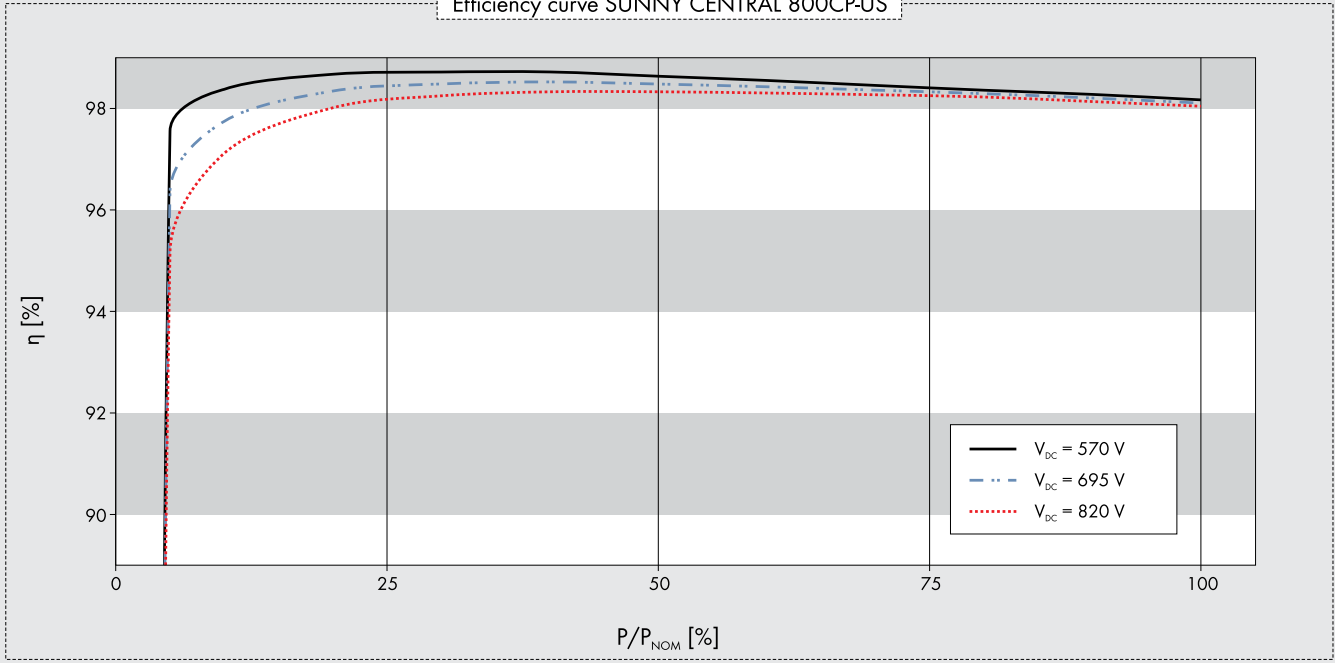
(4) Included in the inverter's UL listing

(5) Sound pressure level at a distance of 10 m

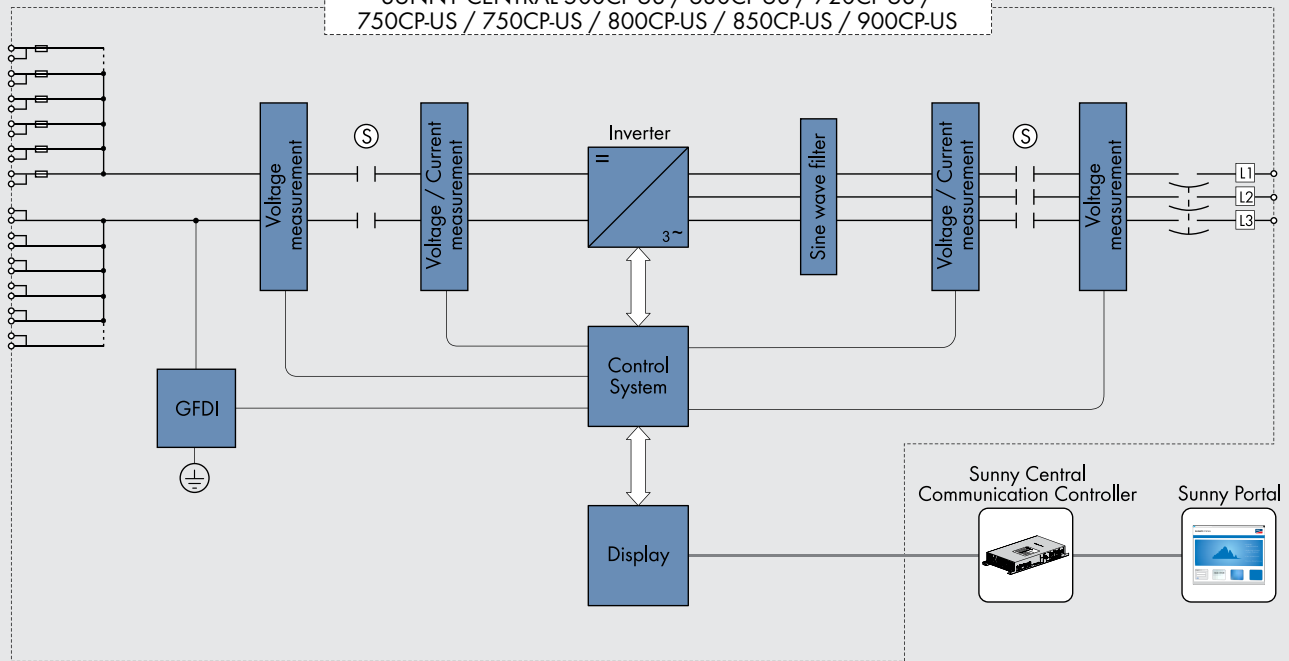
(6) Self-consumption at rated operation

(7) By external 400 V auxiliary power supply

Efficiency curve SUNNY CENTRAL 800CP-US



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