SMA

UTILITY GRADE

Outdoor
- Compact and weatherproof enclosure for outdoor installation
- OptiCool™ cooling system for ambient temperatures of up to 62 °C

Efficient
- Peak efficiency of 98 %
- Cost reduction thanks to low self-consumption

Durable
- Resistant to salt corrosion
- Resists sand and dust
- Suitable for all climate zones

Reliable
- High operational safety and easy to maintain
- Powerful grid management functions (including LVRT)

SUNNY CENTRAL 500CP-JP
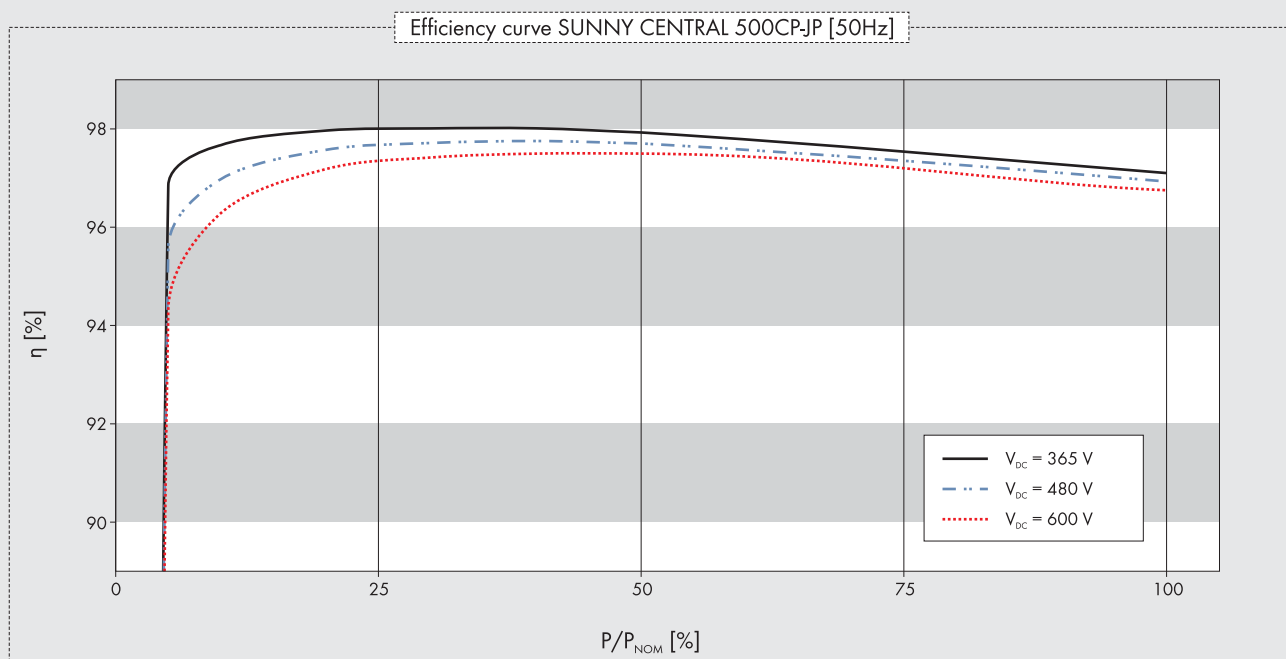The perfect solution for PV power plants in Japan

The durable and high-performance Sunny Central 500CP-JP guarantees maximum yields in all climate zones. This has been clearly demonstrated in numerous stress tests. With the integrated OptiCool™ cooling system, the Sunny Central 500CP-JP can continue to feed solar power into the power distribution grid even at ambient temperatures up to 62 °C. The compact and durable enclosure for the equipment allows easy and uncomplicated outdoor installation – without complex enclosures and external cooling systems. This significantly reduces costs and self-consumption. With its comprehensive grid management functions, the Sunny Central 500 CP-JP already fulfills future requirements for grid operators.

SUNNY CENTRAL 500CP-JP

Technical data	Sunny Central 500CP-JP
Input (DC)	
Max. DC power (@ cos φ = 1)	511 kW
Max. input voltage	600 V
MPP voltage range (50 Hz)	311 V – 600 V[1]
MPP voltage range (60 Hz)	321 V – 600 V[1]
Min. input voltage	365 V
Max. input current	1400 A
Number of independent MPP inputs	1
Number of DC inputs	9
Output (AC)	
Rated output power (@ 25°C) / Rated AC output power (@ 50°C)	500 kVA / 455kVA
AC nominal voltage / range	205 V / 185 V – 225 V
AC frequency / range	50 Hz, 60 Hz / 47 Hz ... 63 Hz
Rated frequency / rated grid voltage	50 Hz / 205 V
Max. output current	1411 A
Max. THD	< 3 %
Power factor at rated power/adjustable shift factor	1 / 0.9 leading – 0.9 lagging
Feed-in phases / connection phases	3 / 3
Efficiency[4]	
Max. efficiency / European weighted efficiency / CEC efficiency	98 % / 97.7 % / 97.4 %
Protective devices	
DC disconnect device	Motor-driven DC switch disconnector
Output-side disconnection device	AC circuit breaker
DC overvoltage protection	Type I surge arrester
Lightning protection (according to IEC 62305-1)	Lightning protection level III
Grid monitoring	●
Stand-alone grid detection	active, passive
Ground-fault monitoring/remote-controlled ground-fault monitoring	○ / ○
Insulation Monitoring	○
Surge arrester for auxiliary supply	●
Protection class (according to IEC 62103) / overvoltage category (according to IEC 60664-1)	I / III
General data	
Dimensions (W / H / D)	2562 / 2272 / 956 mm
Weight	approx. 1 900 kg
Operating temperature range	-25°C ... +62°C
Noise emission[3]	60 db(A)
Max. self-consumption (operation) / consumption (night)	1700 W[2] / < 100 W
External auxiliary supply voltage	230 / 400 V (3/N/PE)
Cooling concept	Opticool
Degree of protection: electronics / connection area (according to IEC 60529)	IP54 / IP43
Application	In unprotected outdoor environments
Max. permissible value for relative humidity (non-condensing)	15 % ... 95 %
Max. operating altitude above MSL	2000 m
Fresh-air consumption	3000 m³/h
Features	
DC connection	Ring terminal lug
AC connection	Ring terminal lug
Display	HMI touchscreen
Communication protocols	Ethernet (optical fiber optional), Modbus
Sunny String-Monitor	RS485
Color enclosure, door, base, roof	RAL 9016 / 9016 / 7004 / 7004
Configurable grid management functions	Power reduction, reactive power setpoint, dynamic grid support (e.g. LVRT)
Certificates and approvals (additional on request)	EN 61000-6-2, EN 61000-6-4, CE-conformity, Renewable Energy Source Act-compliant, BDEW-MSRL / FGW / TR8, Arrêté du 23/04/08, R.D. 1663 / 2000, R.D. 661 / 2007
● Standard feature ○ Optional feature — Not available	
Type designation	SC 500CP-10-JP

Efficiency curve SUNNY CENTRAL 500CP-JP [50Hz]

η [%] vs **P/P_NOM [%]**

Legend:
- V_{DC} = 365 V
- V_{DC} = 480 V
- V_{DC} = 600 V

PLANT DIAGRAM

PV modules

Sunny String-Monitor

SUNNY CENTRAL 500CP-JP

max. 600 V

3 x 205 V / 50 or 60 Hz

Medium voltage transformer

6.6 kV

Power distribution grid

Sunny String-Monitor

- DC
- AC

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