

# SUNNY CENTRAL 500CP-JP

SC 500CP-JP-10



## Outdoor

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

## Efficient

- Peak efficiency of 98 %
- Higher profit 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 FRT)

## 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. The Sunny Central 500CP-JP is also available with the option noise reduction.

# SUNNY CENTRAL 500CP-JP

## WITH OPTION NOISE REDUCTION

Technical data	Sunny Central 500CP-JP
<b>Input (DC)</b>	
Max. DC power (@ $\cos \varphi = 1$ )	511 kW
Max. input voltage	600 V
MPP voltage range (50 Hz) / MPP voltage range (60 Hz)	332 V – 600 V <sup>1</sup> / 332 V – 600 V <sup>1</sup>
DC voltage range (50 Hz) / DC voltage range (60 Hz)	311 V – 600 V / 321 V – 600 V
Rated input voltage	365 V
Max. input current	1400 A
Max. DC short-circuit current	2500 A
$V_{MPPmin}$ at $I_{MPP} < I_{DCmax}$	311 V (50 Hz) / 321 V (60 Hz)
Number of independent MPP inputs	1
Number of DC inputs	9
<b>Output (AC)</b>	
Rated power (@ 25 °C) / Nominal AC power (@ 50 °C)	500 kVA / 341 kVA
AC nominal voltage / range	205 V / 185 V – 235 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
<b>Efficiency<sup>2</sup></b>	
Max. efficiency / European weighted efficiency / CEC efficiency	98.0 % / 97.6 % / 97.5 %
<b>Protective devices</b>	
Input-side disconnection device	Motor-driven DC switch disconnecter
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 communication interface/string current monitoring	○ / ○
Surge arrester for auxiliary supply	Type I and type II surge arrester
Protection class (according to IEC 62103) / overvoltage category (according to IEC 60664-1)	I / III
<b>General data</b>	
Dimensions (W / H / D)	2562 / 2272 / 1210 mm
Weight	1822 kg
Operating temperature range	-25 °C ... +62 °C
Noise emission <sup>3</sup>	53 db(A)
Max. self-consumption (operation) <sup>4</sup> / consumption (night)	1950 W / < 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 / to IEC 60721-3-4)	IP54 / IP43 / 4C2, 4S2
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 m <sup>3</sup> /h
<b>Features</b>	
DC connection / AC connection	Ring terminal lug / Ring terminal lug
Display	HMI touchscreen
Communication protocols	Ethernet (optical fiber optional), Modbus
DC current monitoring (Zone monitoring / String monitoring)	○ / ○
Color enclosure, door, base, roof, silencer	RAL 9016 / 9016 / 7004 / 7004 / 7035
Configurable grid management functions	Power reduction, reactive power setpoint, dynamic grid support (e.g. FRT)
Certificates and approvals (additional on request)	EN 61000-6-2, EN 61000-6-4, CE-conformity, Renewable Energy Source Act-compliant, BDEW-MSRL / JETGR0002-1-2.0 (2011) / JETGR0003-1-2.0 (2011) <sup>5</sup> , 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

# SUNNY CENTRAL 500CP-JP

Technical data	Sunny Central 500CP-JP
<b>Input (DC)</b>	
Max. DC power (@ $\cos \varphi = 1$ )	511 kW
Max. input voltage	600 V
MPP voltage range (50 Hz) / MPP voltage range (60 Hz)	332 V – 600 V <sup>1)</sup> / 332 V – 600 V <sup>1)</sup>
DC voltage range (50 Hz) / DC voltage range (60 Hz)	311 V – 600 V / 321 V – 600 V
Rated input voltage	365 V
Max. input current	1400 A
Max. DC short-circuit current	2500 A
$V_{MPPmin}$ at $I_{MPP} < I_{DCmax}$	311 V (50 Hz) / 321 V (60 Hz)
Number of independent MPP inputs	1
Number of DC inputs	9
<b>Output (AC)</b>	
Rated power (@ 25 °C) / Nominal AC power (@ 50 °C)	500 kVA / 455 kVA
AC nominal voltage / range	205 V / 185 V – 235 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
<b>Efficiency<sup>2)</sup></b>	
Max. efficiency / European weighted efficiency / CEC efficiency	98.0 % / 97.7 % / 97.4 %
<b>Protective devices</b>	
Input-side disconnection device	Motor-driven DC switch disconnecter
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 communication interface/string current monitoring	○ / ○
Surge arrester for auxiliary supply	Type I and type II surge arrester
Protection class (according to IEC 62103) / overvoltage category (according to IEC 60664-1)	I / III
<b>General data</b>	
Dimensions (W / H / D)	2562 / 2272 / 956 mm
Weight	approx. 1 800 kg
Operating temperature range	-25 °C ... +62 °C
Noise emission <sup>3)</sup>	61 db(A)
Max. self-consumption (operation) <sup>4)</sup> / consumption (night)	1950 W / < 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 / to IEC 60721-3-4)	IP54 / IP43 / 4C2, 4S2
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 m <sup>3</sup> /h
<b>Features</b>	
DC connection / AC connection	Ring terminal lug / Ring terminal lug
Display	HMI touchscreen
Communication protocols	Ethernet (optical fiber optional), Modbus
DC current monitoring (Zone monitoring / String monitoring)	○ / ○
Color enclosure, door, base, roof	RAL 9016 / 9016 / 7004 / 7004
Configurable grid management functions	Power reduction, reactive power setpoint, dynamic grid support (e.g. FRT)
Certificates and approvals (additional on request)	EN 61000-6-2, EN 61000-6-4, CE-conformity, Renewable Energy Source Act-compliant, BDEW-MSRL / JETGR0002-1-2.0 (2011) / JETGR0003-1-2.0 (2011) <sup>5)</sup> , 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

1) At 1.05  $V_{AC, nom}$  and  $\cos \varphi = 1$  and Nominal power  $P_{nom}$

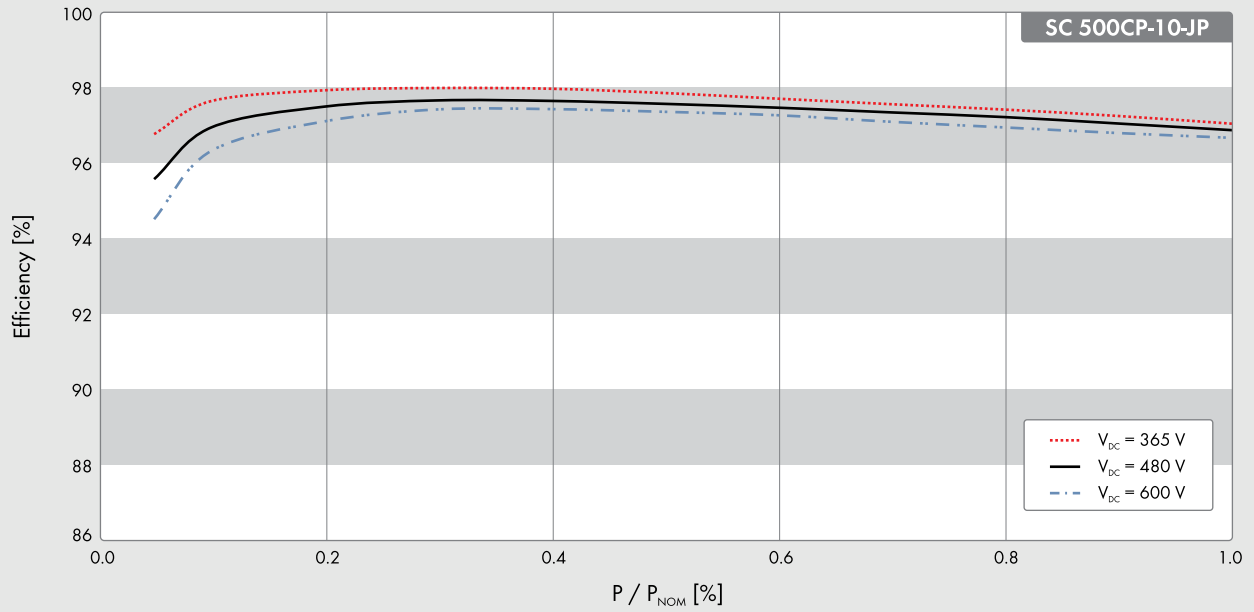
2) Efficiency measured without internal power supply

3) Sound pressure level at a distance of 10 m

4) Self-consumption at rated operation

5) Type-tested by producer in accordance with JET (Japan Electrical Safety & Environment Technology Laboratories Foundation)

## EFFICIENCY CURVE [without noise reduction]



## PLANT DIAGRAM

