

MV POWER STATION 630SC-JP / 800SC-JP / 1000SC-JP / 1250SC-JP / 1600SC-JP / 2000SC-JP



MVPS 630SC-JP / 800SC-JP / 1000SC-JP / 1250SC-JP / 1600SC-JP / 2000SC-JP



Flexible

- Power classes from 700 kVA to 2200 kVA
- For all grids from 22 kV to 33 kV
- Various options

Robust

- All components are type-tested
- 5-year statutory warranty
- Optimally suited to extreme ambient conditions

Easy to use

- Plug and play concept
- Ideally suited to be exported to overseas markets
- Transportation in standard shipping container
- Preinstalled and mechanically protected cabling

Cost-effective

- Easy planning and installation
- Increased system availability and longer service life
- Lower transportation costs due to standardized dimensions

MV POWER STATION

630SC-JP / 800SC-JP / 1000SC-JP / 1250SC-JP / 1600SC-JP / 2000SC-JP

Turnkey system solution with the Sunny Central CP-JP for PV power plants in Japan

With the power of one or two robust Sunny Central CP-JP inverter in the power class of your choice and with high efficiency transformers according to eco-design-standard, the SMA MV Power Station is a turnkey system solution that is very flexible. Equipped with the Sunny Central CP-JP inverters, the MV Power Station is the optimal system solution for PV power plants compatible with Q at Night. Transportation costs go down thanks to the standardized container design principle. Plug and play applies to installation and commissioning. Using type-tested components with high efficiencies maximizes profit.

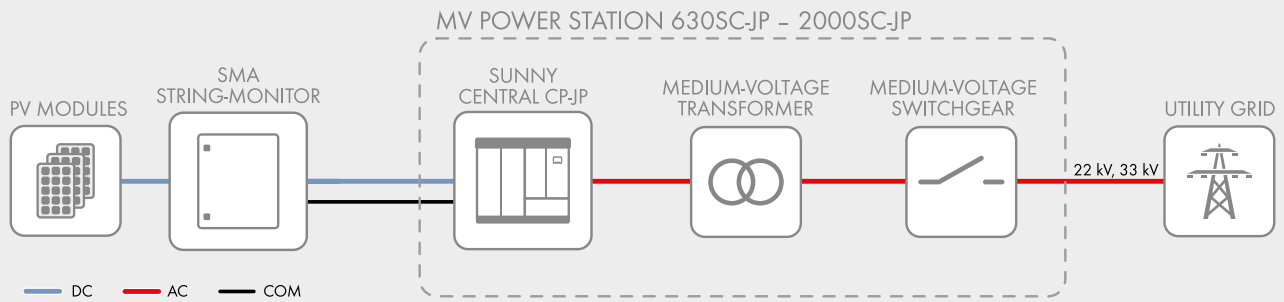
MV POWER STATION 630SC-JP / 800SC-JP / 1000SC-JP / 1250SC-JP / 1600SC-JP / 2000SC-JP

Technical Data	MV Power Station 630SC-JP	MV Power Station 800SC-JP
Input (DC)		
Max. DC power (at $\cos \phi = 1$)	713 kW	898 kW
Max. input voltage	1000 V	1000 V
MPP voltage range (at 25°C / at 50°C) ^{1,2}	529 V to 850 V / 500 V to 850 V	641 V to 850 V / 583 V to 850 V
DC voltage range (at 50 Hz / at 60 Hz)	500 V to 850 V / 500 V to 850 V	530 V to 850 V / 530 V to 850 V
Rated input voltage	529 V	641 V
Max. input current	1350 A	1400 A
Number of independent MPP inputs	1	1
Number of DC inputs	9	9
Output (AC) on the Medium-Voltage Side		
AC power (at 25°C / at 40°C / at 50°C) ³	700 kVA / 655 kVA / 630 kVA	880 kVA / 832 kVA / 800 kVA
Nominal AC voltage	22 kV	22 kV
Optional nominal voltages	33 kV	33 kV
AC power frequency	50 Hz / 60 Hz	50 Hz / 60 Hz
Transformer vector group Dy11 / YNd11	● / ○	● / ○
Max. output current at 20 kV	19 A	24 A
Max. total harmonic distortion	< 3%	< 3%
Power factor at rated power / displacement power factor adjustable ³	1 / 0.9 overexcited to 0.9 underexcited	
Feed-in phases / connection phases	3 / 3	3 / 3
Overall Efficiency⁴		
Max. efficiency	97,5%	97,4%
European efficiency	97,3%	97,2%
Protective Devices		
Input-side disconnection point	Motor-driven DC load-break switch	
Output-side disconnection point	○ (Load-break switch with HV/HVR fuses or circuit breaker)	
DC overvoltage protection	Surge arrester type I	Surge arrester type I
Grid monitoring / PV system monitoring	● / ○ (via Sunny Portal)	● / ○ (via Sunny Portal)
DC ground-fault monitoring / remote ground-fault monitoring	○ / ○	○ / ○
DC insulation monitoring	○	○
Galvanic isolation	●	●
Protection class (according to IEC 62103) ³	I	I
Arc fault resistance (according to IEC 62271-202)	IAC A 20kA 1s	IAC A 20kA 1s
General Data		
Dimensions (W / H / D) ⁸	6.058 m / 2.591 m / 2.438 m	6.058 m / 2.591 m / 2.438 m
Weight	< 10 t	< 10 t
Operating temperature range -25°C to +40°C / +55°C ⁵	● / ○	● / ○
Maximum self-consumption (at rated operation) / self-consumption (at night) ⁶	< 1900 W ³ / < 100 W + 600 W	< 1950 W ³ / < 100 W + 650 W
Internal auxiliary supply voltage	230 V / 400 V (3 / N / PE), 50/60 Hz	
Degree of protection according to IEC 60529 ⁷	Control room IP23D, inverter electronics IP54	
Degree of protection according to IEC 60721-3-4 (4C1, 4S2 / 4C2, 4S2)	● / ○	● / ○
Application / use in chemically active environment	In unprotected outdoor environments / ○	
Maximum permissible value for relative humidity	15% to 95%	15% to 95%
Earth quake class according to MLIT2001, Seismic Zones A,B,C, Soils 1,2,3	○	○
Typhoon class according to DIN EN1991-1-4:2010-12 up to 56 m/s for 3 s	○	○
Max. operating altitude above mean sea level 1,000 m / >1,000 m to 3,000 m	● / ○	● / ○
Fresh air consumption (inverter)	3000 m ³ /h	3000 m ³ /h
Features		
DC connection	Ring terminal lug	Ring terminal lug
AC connection, MV side	Outer-cone angle plug	Outer-cone angle plug
Display	LC graphic display	LC graphic display
Communication / protocols	Ethernet (optical fiber optional) / Modbus	
SC-COM / Communit	● / ○	● / ○
Station enclosure color	RAL 7004	RAL 7004
Transformer for internal power supply 6 kVA	○	○
Medium-voltage switchgear	○	○
Standards (more available on request)	IEC 62271-202, IEC 62271-200, IEC 60076, IEC 61439-1	
Available SUNNY CENTRAL inverters	1 x SC 630CP-JP	1 x SC 800CP-JP
● Standard features ○ Optional features – Not available		
Type designation	MVPS 630SC-JP 22	MVPS 800SC-JP 22

- 1) At $1.05 V_{AC, nom}$ and $\cos \varphi = 1$
- 2) Further DC voltages upon request
- 3) Information based on inverter
- 4) Efficiency without internal power supply
- 5) In the standard version, the maximum ambient temperature is 40 C. Alternatively, the maximum permissible ambient temperature is up to 55 C.
- 6) Separated according to consumption of the inverter and open-circuit losses of the transformer
- 7) Inverters include additional degrees of protection
- 8) Dimensions without feet, service platforms and protection roofs

MV Power Station 1000SC-JP	MV Power Station 1250SC-JP	MV Power Station 1600SC-JP	MV Power Station 2000SC-JP
1122 kW	1426 kW	1796 kW	2244 kW
1000 V	1000 V	1000 V	1000 V
688 V to 850 V / 596 V to 850 V	529 V to 850 V / 500 V to 850 V	641 V to 850 V / 583 V to 850 V	688 V to 850 V / 596 V to 850 V
596 V to 850 V / 596 V to 850 V	500 V to 850 V / 500 V to 850 V	530 V to 850 V / 530 V to 850 V	596 V to 850 V / 596 V to 850 V
688 V	529 V	641 V	688 V
1635 A	2 x 1350 A	2 x 1400 A	2 x 1635 A
1	2	2	2
9	18	18	18
1100 kVA / 1000 kVA / 900 kVA	1400 kVA / 1300 kVA / 1.250 kVA	1760 kVA / 1664 kVA / 1600 kVA	2200 kVA / 2000 kVA / 1800 kVA
22 kV	22 kV	22 kV	22 kV
33 kV	33 kV	33 kV	33 kV
50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz
● / ○	● / ○	● / ○	● / ○
29 A	37 A	47 A	58 A
< 3%	< 3%	< 3%	< 3%
1 / 0.9 overexcited to 0.9 underexcited	1 / 0.9 overexcited to 0.9 underexcited	1 / 0.9 overexcited to 0.9 underexcited	1 / 0.9 overexcited to 0.9 underexcited
3 / 3	3 / 3	3 / 3	3 / 3
97.5%	97.7%	97.6%	97.7%
97.2%	97.5%	97.4%	97.4%
Motor-driven DC load-break switch		Motor-driven DC load-break switch	
○ (Load-break switch with HV/HVR fuses or circuit breaker)		○ (Load-break switch with HV/HVR fuses or circuit breaker)	
Surge arrester type I		Surge arrester type I	
● / ○ (via Sunny Portal)	● / ○ (via Sunny Portal)	● / ○ (via Sunny Portal)	● / ○ (via Sunny Portal)
○ / ○	○ / ○	○ / ○	○ / ○
○	○	○	○
●	●	●	●
I	I	I	I
IAC A 20kA 1s	IAC A 20kA 1s	IAC A 20kA 1s	IAC A 20kA 1s
6.058 m / 2.591 m / 2.438 m	6.058 m / 2.591 m / 2.438 m	6.058 m / 2.591 m / 2.438 m	6.058 m / 2.591 m / 2.438 m
< 10 t	< 14 t	< 14 t	< 14 t
● / ○	● / ○	● / ○	● / ○
< 1950 W ³ / < 200 W + 770 W	< 3800 W ³ / < 200 W + 950 W	< 3900 W ³ / < 200 W + 1200 W	< 3900 W ³ / < 200 W + 1450 W
230 V / 400 V (3 / N / PE), 50/60 Hz	230 V / 400 V (3 / N / PE), 50/60 Hz	230 V / 400 V (3 / N / PE), 50/60 Hz	230 V / 400 V (3 / N / PE), 50/60 Hz
Control room IP23D, inverter electronics IP54	Control room IP23D, inverter electronics IP54	Control room IP23D, inverter electronics IP54	Control room IP23D, inverter electronics IP54
● / ○	● / ○	● / ○	● / ○
In unprotected outdoor environments / ○	In unprotected outdoor environments / ○	In unprotected outdoor environments / ○	In unprotected outdoor environments / ○
15% to 95%	15% to 95%	15% to 95%	15% to 95%
○	○	○	○
○	○	○	○
● / ○	● / ○	● / ○	● / ○
3000 m ³ /h	6000 m ³ /h	6000 m ³ /h	6000 m ³ /h
Ring terminal lug	Ring terminal lug	Ring terminal lug	Ring terminal lug
Outer-cone angle plug	Outer-cone angle plug	Outer-cone angle plug	Outer-cone angle plug
LC graphic display	LC graphic display	LC graphic display	LC graphic display
Ethernet (optical fiber optional) / Modbus	Ethernet (optical fiber optional) / Modbus	Ethernet (optical fiber optional) / Modbus	Ethernet (optical fiber optional) / Modbus
● / ○	● / ○	● / ○	● / ○
RAL 7004	RAL 7004	RAL 7004	RAL 7004
○	○	○	○
○	○	○	○
IEC 62271-202, IEC 62271-200, IEC 60076, IEC 61439-1	IEC 62271-202, IEC 62271-200, IEC 60076, IEC 61439-1	IEC 62271-202, IEC 62271-200, IEC 60076, IEC 61439-1	IEC 62271-202, IEC 62271-200, IEC 60076, IEC 61439-1
1 x SC 1000CP-JP	2 x SC 630CP-JP	2 x SC 800CP-JP	2 x SC 1000CP-JP
MVPS 1000SC-JP 22	MVPS 1250SC-JP 22	MVPS 1600SC-JP 22	MVPS 2000SC-JP 22

PLANT DIAGRAM WITH SUNNY CENTRAL CP-JP



DESIGN NOTES

Inverter compartment

The MV POWER STATION's inverter compartment includes two standard service platforms and two standard sun protection roofs.

When transporting to overseas countries, the transformer compartment is also equipped with service platforms and protection roofs, and additional base plates are installed in the shipping container.

Transformer compartment

Outdoor transformer optimized for PV without active fan for reduced maintenance. The side panels are equipped with protective grids. The following features can be shipped with the transformer: oil tray, organic oil instead of mineral oil. The organic oil has the following benefits: optimal environmental protection, increased fire safety, oil tray often not required, depending on the local regulations.

Medium-voltage compartment

The following features are installed:

Medium-voltage switchgear with three feeder, including two cable feeder with load-break switch and one transformer feeder with circuit breaker. For optimal user protection, the medium-voltage switchgear contains the standard internal arc classification IAC A FL 20 kA 1s according to IEC 62271-200. For larger PV farms, the medium-voltage switchgear can also be equipped with cascade control.

The auxiliary transformer is available in the power class 6 kVA and delivered, including EMC filtering device.

The station subdistribution board and circuit breakers for the control unit can optionally be equipped with up to three low-voltage meters.

In addition, communication components such as Communit can be integrated.