Flexible

- Global solution for international markets
- For system voltage of 1,000 V_{DC} or 1,500 V_{DC}
- Various options for monitoring

Robust

- Station and all individual components 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
- Pre-installed and mechanically protected cabling

Cost Effective

- Easy planning and installation
- High power density per m³ for maximum profitability
- Low transport costs due to 20 foot container

MV POWER STATION 2200SC / 2500SC-EV

Turnkey system solution with the new Sunny Central inverter

With the compact power of the new, robust Sunny Central inverter and with matching medium-voltage components, the MV Power Station is a turnkey solution that is available worldwide. It represents the ultimate utility scale solution in compactness with 1,000 V_{DC} (2,200 kW) or 1,500 V_{DC} (2,500 kW). Being the ideal choice for large-scale PV power plants, the integrated 20 foot container station is quick to assemble and commission as well as easy and cost-effective to transport. The compact station itself (IEC 62271-202) and all its components are type-tested. The MV Power Station combines rigorous plant safety with maximum energy yield and minimized operating risk. The MV Power Station's components are delivered completely pre-installed and pre-commissioned to speed up station commissioning as much as possible.

MV POWER STATION 2200SC / 2500SC-EV

Technical data	MV Power Station 2200SC	MV Power Station 2500SC-EV
Input (DC)		
Max. DC input voltage	1,100 V	1,500 V
MPP voltage range (at 25 °C / at 50 °C)	570 V to 950 V / 800 V	850 V to 1,425 V / 1,275 V
Max. input current (at 25 °C / at 50 °C)	4,110 A / 3,960 A	3,000 A / 2,700 A
Number of DC inputs	24	24
Available DC fuse sizes (per input)	200 A, 250 A, 315 A, 350 A, 400 A	
Integrated zone monitoring (+/− 0.5 % shunt resistors)	○	○
Output (AC) on the medium-voltage side		
AC- power at cos φ = 1 (at 25 °C / at 40 °C / at 50 °C)[1]	2,200 kVA / 2,080 kVA / 2,000 kVA	2,500 kVA / 2,350 kVA / 2,250 kVA
Typical AC voltages	10 kV to 33 kV	10 kV to 33 kV
AC power frequency	50 Hz / 60 Hz	50 Hz / 60 Hz
Transformer vector group Dy11 / YNd11	● / ○	● / ○
Transformer cooling method	ONAN[2]	ONAN[2]
Max. output current at 20 kV	64 A	73 A
Transformer no-load losses[3]	1.595 kW	1.76 kW
Transformer short-circuit losses[3]	19.8 kW	22 kW
Max. total harmonic distortion	< 3%	< 3%
Power factor at rated power / displacement power factor adjustable	1 / 0.8 overexcited to 0.8 underexcited	
Feed-in phases / connection phases	3 / 3	3 / 3
Inverter efficiency[4]		
Max. efficiency	98.4%	98.4%
European efficiency	98.3%	98.1%
CEC weighted efficiency	98.0%	98.0%
Protective devices		
Input-side disconnection point	DC load-break switch	
Output-side disconnection point	AC circuit breaker	
DC overvoltage protection	Type II surge arrester	
DC ground-fault monitoring / remote ground-fault monitoring	○ / ○	○ / ○
DC insulation monitoring	○	○
Galvanic isolation	●	●
Arc fault resistance control room (according to IEC 62271-202)	IAC A 20 kA 1 s	IAC A 20 kA 1 s
General data		
Dimensions (W / H / D)[5]	6.058 m / 2.591 m / 2.438 m	6.058 m / 2.591 m / 2.438 m
Weight	< 16 t	< 16 t
Operating temperature range −25 °C to +40 °C / +50 °C	● / ○	● / ○
Self-consumption (max. / partial load / average)[1]	< 8,100 W / < 1,800 W / < 2,000 W	
Self-consumption (stand-by)[1]	< 300 W	< 300 W
Internal auxiliary power supply for inverter self-consumption	8.4 kVA transformer	8.4 kVA transformer
Degree of protection according to IEC 60529	Control room IP23D, inverter 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%
Max. operating altitude above mean sea level 1,000 m / >1,000 m to 2,000 m	● / ○	● / ○
Fresh air consumption (inverter)	6,500 m³/h	6,500 m³/h
Features		
DC connection	Ring terminal lug or busbar	Ring terminal lug or busbar
AC connection, MV side	Outer-cone angle plug	Outer-cone angle plug
Display	HMI touch display (10.1")	
Communication protocols / SMA String-Monitor	Ethernet, Ethernet/IP, Modbus	
SC-COM	●	
Station enclosure color	RAL 7004	
Transformer for external loads 10 kVA / 20 kVA / 30 kVA	○	
Medium-voltage switchgear	○	
Oil tray	○	
Standards (more available on request)	IEC 62271-202, IEC 62271-200, IEC 60076	
● Standard features ○ Optional features – Not available		
Type designation	MVPS 2200SC-10	MVPS 2500SC-EV-10

1) Data based on inverter
2) ONAN = Oil-natural, air-natural cooling
3) Losses in accordance with the Ecodesign regulations, based on grid voltage 20 kV
4) Efficiency measured at inverter with internal power supply
5) Dimensions without feet, service platforms and protection roofs

SYSTEM DIAGRAM

DESIGN NOTES

Inverter compartment
DC connections are made from below in the inverter's DC connection compartment. An integrated transformer and additional space is available for the installation of customer equipment. The air cooling system OptiCool TM ensures smooth operation, even in extreme ambient temperatures.

Transformer compartment
Outdoor transformer optimized for PV without active fan for reduced maintenance. The side panels are equipped with protective grids. The transformer is connected directly to the inverter by a highly efficient three-phase busbar. This cuts costs, reduces losses and allows a highly compact design.

Control room
The following features are installed:
Medium-voltage switchgear with three feeders, including two cable feeders 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 AFL 20 kA 1s according to IEC 62271-200.
Transformers with EMC filters in 10 kVA, 20 kVA and 30 kVA power classes can be installed to support additional communications and control functions and to operate tracker motors.
The station subdistribution board and circuit breakers for control, lightning and socket can optionally be supplied via the 2.5 kVA transformer in the SC or the low-voltage transformer in the control room.

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