

MV Power Station

4000-S2 / 4200-S2 / 4400-S2 / 4600-S2

Turnkey solution for PV and battery-storage power plants



Robust

- Station and all individual components type-tested
- Galvanized base frame for extreme ambient conditions

Easy to Use

- Turn-key solution
- Fully pre-assembled for easy setup and commissioning

Cost-Effective

- Lower specific costs thanks to high power classes
- Minimal coordination required during planning and installation
- Low transport costs thanks to 20-foot platform

Flexible

- One design for the whole world
- Numerous options

Combining the power of the robust central inverters Sunny Central UP or Sunny Central Storage UP with perfectly matched medium-voltage components, the MV Power Station offers high power density and is a turnkey solution available worldwide.

Ideal for use in the new generation of PV and battery-storage power plants with 1500 V_{DC}, the integrated system solution is easy to transport, quick to assemble, and simple to commission. The MVPS and all components are type-tested. The MV Power Station combines rigorous plant safety with maximum energy yield and minimized deployment and operational risk.

Now also available with environmentally friendly, SF₆-free medium-voltage switchgear—making a sustainable contribution to climate protection.

MV POWER STATION

4000-S2 / 4200-S2 / 4400-S2 / 4600-S2

Technical Data	MVPS 4000-S2	MVPS 4200-S2
Input (DC)		
Available inverters	1 x SC 4000 UP or 1 x SCS 3450 UP or 1 x SCS 3450 UP-XT	1 x SC 4200 UP or 1 x SCS 3600 UP or 1 x SCS 3600 UP-XT
Max. input voltage	1500 V	1500 V
Number of DC inputs	Depending on selected inverter	
Integrated zone monitoring	○	
Output (AC) on the medium-voltage side		
Nominal power at SC UP (from -25°C to +35°C / 40°C; optional 50°C) ¹⁾	4000 kVA / 3600 kVA	4200 kVA / 3780 kVA
Nominal power at SCS UP (from -25°C to +25°C / 40°C; optional 50°C) ¹⁾	3450 kVA / 2930 kVA	3620 kVA / 3075 kVA
Charging power at SCS UP-XT (from -25°C to +25°C / 40°C; optional 50°C) ¹⁾	3589 kVA / 3001 kVA	3769 kVA / 3152 kVA
Discharging power at SCS UP-XT (from -25°C to +25°C / 40°C; optional 50°C) ¹⁾	4000 kVA / 3400 kVA	4200 kVA / 3570 kVA
Typical nominal AC voltages with a permanent tolerance of +/-10%	10 kV to 36 kV	10 kV to 36 kV
AC grid frequency	50 Hz / 60 Hz	50 Hz / 60 Hz
Transformer vector group Dy11 / YNd11 / YNy0	● / ○ / ○	● / ○ / ○
Transformer cooling method	KNAN ²⁾	KNAN ²⁾
Transformer standby power losses, industry standard / Eco design 1 / Eco design 2	● / ○ / ○	● / ○ / ○
Transformer short-circuit losses, industry standard / Eco design 1 / Eco design 2	● / ○ / ○	● / ○ / ○
Max. total harmonic distortion	< 3%	
Reactive power feed-in (up to max. 60% of nominal power)	○	
Inverter efficiency		
Max. efficiency ³⁾ / Europ. efficiency ³⁾ / CEC efficiency ⁴⁾	98.8% / 98.6% / 98.5%	98.8% / 98.7% / 98.5%
Protective devices		
Input-side disconnection point	DC load-break switch	
Output-side disconnection point	Medium-voltage vacuum circuit breaker	
DC overvoltage protection	Surge arrester, type I	
Galvanic isolation	●	
Arc fault resistance medium-voltage control room (according to IEC 62271-202)	IAC A 20 kA 1 s	
General Data		
Dimensions (W / H / D)	6058 mm / 2896 mm / 2438 mm	
Weight	< 18 t	
Self-consumption (max. / partial load / average) ¹⁾	< 8.1 kW / < 1.8 kW / < 2.0 kW	
Self-consumption (stand-by) ¹⁾	< 370 W	
Ambient temperature -25°C to +45°C / -25°C to +55°C / -35°C to +55°C / -40°C to +45°C	● / ○ / ○ / ○	
Degree of protection according to IEC 60529	MV-Cabinet IP33D, LV-Cabinet IP43, inverter electronics IP54	
Environment: standard / harsh / harsh+	● / ○ / ○	
Maximum permissible value for relative humidity (condensing / non-condensing)	95% to 100% (2 month / year) / 0% to 95%	
Max. operating altitude above MSL 1000 m / 2000 m / 3000 m	● / ○ / ○	● / ○ / -
Fresh air consumption of inverter	6500 m ³ /h	
Equipment		
DC connection	Terminal lug	
AC connection	Outer-cone angle plug	
Monitoring package	○	
Station enclosure color	RAL 7004	
Transformer for external loads: without / 10 / 20 / 30 / 40 / 50 / 60 kVA	● / ○ / ○ / ○ / ○ / ○ / ○ / ○	
Fuses for external transformers: none / 120 kVA / 180 kVA	● / ○ / ○	
Medium-voltage switchgear: without / 1 panel / 3 panels / 630 A / 800 A 2 cable panels with load-break switch, 1 transformer panel with circuit breaker, arc fault resistance IAC A FL 20 kA 1 s according to IEC 62271-200	● / ○ / ○ / ○ / ○	
Medium-voltage switchgear short-circuit current capability (20 kA 1 s / 20 kA 3 s / 25 kA 1 s)	● / ○ / ○	
Accessory for medium-voltage switchgear: without / auxiliary contacts / motor for transformer panel / cascade control / monitoring	● / ○ / ○ / ○ / ○	
Integrated oil spill containment: without / with	● / ○	
Industry standards (for further details, please refer to the inverter datasheet)	IEC 60076, IEC 62271-200, IEC 62271-202, EN50588-1, CSC certificate	
Type designation	MVPS-4000-S2-10	MVPS-4200-S2-10

● Standard features ○ Optional features – Not available

1) Data based on inverter. Further details can be found in the inverter datasheet.

2) KNAN = ester with natural air cooling

3) Efficiency measured at inverter without internal power supply

4) Efficiency measured at inverter with internal power supply

Technical Data	MVPS 4400-S2	MVPS 4600-S2
Input (DC)		
Available inverters	1 x SC 4400 UP or 1 x SCS 3800 UP or 1 x SCS 3800 UP-XT or 1 x SCS 4400 UP-S	1 x SC 4600 UP or 1 x SCS 3950 UP or 1 x SCS 3950 UP-XT or 1 x SCS 4600 UP-S
Max. input voltage	1500 V	1500 V
Number of DC inputs	Depending on selected inverter	
Integrated zone monitoring	○	
Output (AC) on the medium-voltage side		
Nominal power at SC UP (from -25 °C to +35 °C / 40 °C; optional 50 °C) ¹⁾	4400 kVA / 3960 kVA	4600 kVA / 4140 kVA
Nominal power at SCS UP (from -25 °C to +25 °C / 40 °C; optional 50 °C) ¹⁾	3800 kVA / 3230 kVA	3960 kVA / 3365 kVA
Charging power at SCS UP-XT (from -25 °C to +25 °C / 40 °C; optional 50 °C) ¹⁾	3949 kVA / 3302 kVA	4129 kVA / 3453 kVA
Discharging power at SCS UP-XT (from -25 °C to +25 °C / 40 °C; optional 50 °C) ¹⁾	4400 kVA / 3740 kVA	4600 kVA / 3910 kVA
Nominal power at SCS UP-S (from -25 °C to +35 °C / 40 °C; optional 50 °C) ¹⁾	4400 kVA* / 3960 kVA*	4600 kVA* / 4140 kVA*
Typical nominal AC voltages with a permanent tolerance of +/-10%	10 kV to 36 kV	10 kV to 36 kV
AC grid frequency	50 Hz / 60 Hz	50 Hz / 60 Hz
Transformer vector group Dy11 / YNd11 / YNy0	● / ○ / ○	● / ○ / ○
Transformer cooling method	KNAN ²⁾	KNAN ²⁾
Transformer standby power losses, industry standard / Eco design 1 / Eco design 2	● / ○ / ○	● / ○ / ○
Transformer short-circuit losses, industry standard / Eco design 1 / Eco design 2	● / ○ / ○	● / ○ / ○
Max. total harmonic distortion	< 3%	
Reactive power feed-in (up to max. 60% of nominal power)	○	
Inverter efficiency		
Max. efficiency ³⁾ / Europ. efficiency ³⁾ / CEC efficiency ⁴⁾	98.8% / 98.7% / 98.5%	98.8% / 98.7% / 98.5%
Maximum efficiency of the SCS UP-S ³⁾	99.45%	99.45%
Protective devices		
Input-side disconnection point	DC load-break switch	
Output-side disconnection point	Medium-voltage vacuum circuit breaker	
DC overvoltage protection	Surge arrester, type I	
Galvanic isolation	●	
Arc fault resistance medium-voltage control room (according to IEC 62271-202)	IAC A 20 kA 1 s	
General Data		
Dimensions (W / H / D)	6058 mm / 2896 mm / 2438 mm	
Weight	< 18 t	
Self-consumption (max. / partial load / average) ¹⁾	< 8.1 kW / < 1.8 kW / < 2.0 kW	
Self-consumption (stand-by) ¹⁾	< 370 W	
Ambient temperature -25 °C to +45 °C / -25 °C to +55 °C / -35 °C to +55 °C / -40 °C to +45 °C	● / ○ / ○ / ○	
Degree of protection according to IEC 60529	MV-Cabinet IP33D, LV-Cabinet IP43, inverter electronics IP54	
Environment: standard / harsh / harsh+	● / ○ / ○	
Maximum permissible value for relative humidity (condensing / non-condensing)	95% to 100% (2 month / year) / 0% to 95%	
Max. operating altitude above MSL 1000 m / 2000 m / 3000 m	● / ○ / –	
Fresh air consumption of inverter	6500 m ³ /h	
Equipment		
DC connection	Terminal lug	
AC connection	Outer-cone angle plug	
Monitoring package	○	
Station enclosure color	RAL 7004	
Transformer for external loads: without / 10 / 20 / 30 / 40 / 50 / 60 kVA	● / ○ / ○ / ○ / ○ / ○ / ○ / ○	
Fuses for external transformers: none / 120 kVA / 180 kVA	● / ○ / ○	
Medium-voltage switchgear: without / 1 panel / 3 panels / 630 A / 800 A 2 cable panels with load-break switch, 1 transformer panel with circuit breaker, arc fault resistance IAC A FL 20 kA 1 s according to IEC 62271-200	● / ○ / ○ / ○ / ○	
Medium-voltage switchgear short-circuit current capability (20 kA 1 s / 20 kA 3 s / 25 kA 1 s)	● / ○ / ○	
Accessory for medium-voltage switchgear: without / auxiliary contacts / motor for transformer panel / cascade control / monitoring	● / ○ / ○ / ○ / ○	
Integrated oil spill containment: without / with	● / ○	
Industry standards (for further details, please refer to the inverter datasheet)	IEC 60076, IEC 62271-200, IEC 62271-202, EN50588-1, CSC certificate	
Type designation	MVPS-4400-S2-10	MVPS-4600-S2-10

● Standard feature ○ Optional feature – Not available *) preliminary

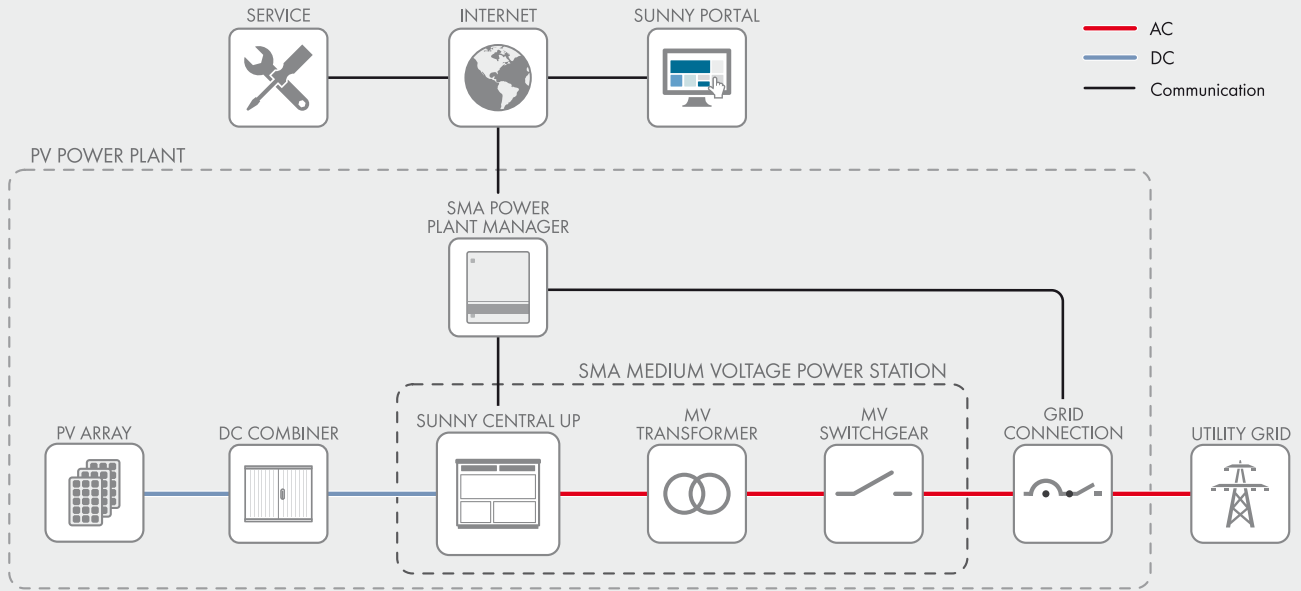
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Plant diagram with Sunny Central UP



Plant diagram with Sunny Central Storage UP

