

# MV POWER STATION

## 4400 / 4950 / 5000 / 5500 / 6000



MVPS 4400-20 / MVPS 4950-20 / MVPS 5000-20 / MVPS 5500-20 / MVPS 6000-20



### Robust

- Station and all individual components type-tested
- Optimally suited to extreme ambient conditions

### Easy to Use

- Plug and play concept
- Walk-in control rooms
- Completely pre-assembled for easy set-up and commissioning

### Cost-Effective

- Easy planning and installation
- Low transport costs due to 40-foot container

### Flexible

- Global solution for international markets
- Numerous options
- Compatible with MVPS 2200 – MVPS 3000

## MV POWER STATION 4400 / 4950 / 5000 / 5500 / 6000

### Turnkey Solution for PV Power Plants

With the double power of the new robust central inverters, the Sunny Central or Sunny Central Storage, and with perfectly adapted medium-voltage components, the new MV Power Station offers even more power density and is a turnkey solution available worldwide. The solution is the ideal choice for new generation PV power plants operating at 1500 V<sub>DC</sub>. Delivered pre-configured in a 40-foot container, the solution is easy to transport and quick to assemble and 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 operating risk.

# MV POWER STATION

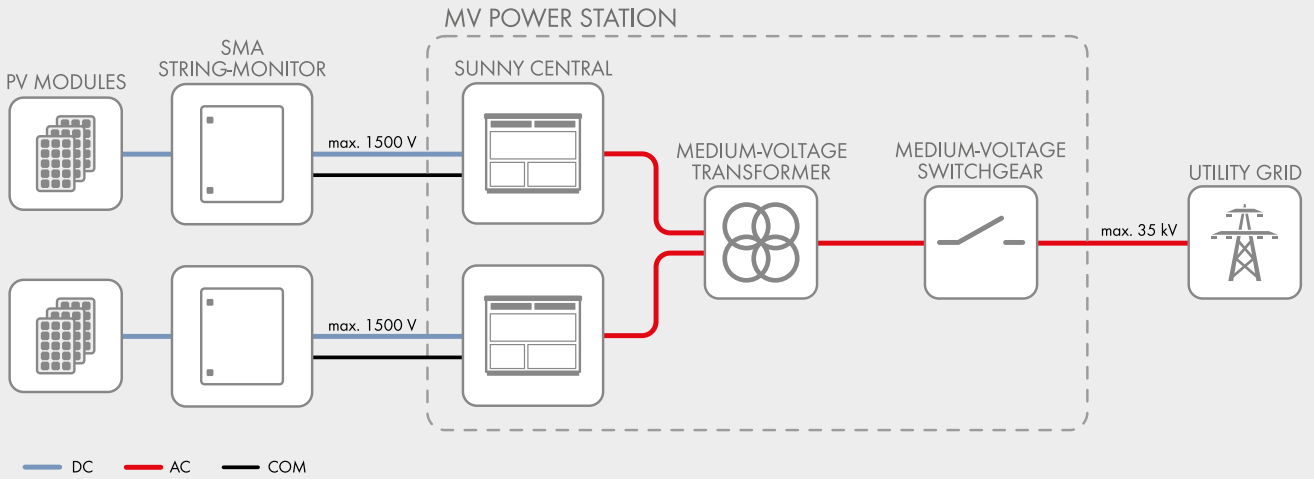
## 4400 / 4950 / 5000 / 5500 / 6000

Technical Data	MV Power Station 4400
<b>Input (DC)</b>	
Available inverters	2 x SC 2200 or 2 x SCS 2200
Max. input voltage	1100 V
Max. input current	2 x 3960 A
Number of DC inputs	2 x 24 double pole fused (2 x 32 single pole fused)
Integrated zone monitoring	○
Available DC fuse sizes (per input)	200 A, 250 A, 315 A, 350 A, 400 A, 450 A, 500 A
<b>Output (AC) on the medium-voltage side</b>	
Standard power at 1000 m and $\cos \varphi = 1$ (at -25°C to 35°C / at 40°C / at 45°C) <sup>1)</sup>	4400 kVA / 4000 kVA / 0 kVA
Optionale power at 1000 m and $\cos \varphi = 1$ (at -25°C to 35°C / at 50°C / at 55°C) <sup>1)</sup>	4400 kVA / 4000 kVA / 0 kVA
Typical nominal AC voltages	11 kV to 35 kV
AC power frequency	50 Hz / 60 Hz
Transformer vector group Dy11y11 / YNd11d11	● / ○
Transformer cooling methods ONAF <sup>2)</sup> / KNAF <sup>2)</sup>	● / ○
Max. output current at 33 kV	78 A
Transformer no-load losses Standard / Ecodesign at 33 kV	2.8 kW / 3.9 kW
Transformer short-circuit losses Standard / Ecodesign at 33 kV	37.5 kW / 37.5 kW
Max. total harmonic distortion	< 3%
Reactive power feed-in	○ up to 60% of AC power
Power factor at rated power / displacement power factor adjustable	1 / 0.8 overexcited to 0.8 underexcited
<b>Inverter efficiency</b>	
Max. efficiency <sup>3)</sup>	98.6%
European efficiency <sup>3)</sup>	98.4%
CEC weighted efficiency <sup>4)</sup>	98.0%
<b>Protective devices</b>	
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	●
Internal arc classification medium-voltage control room (according to IEC 62271-202)	IAC A 20 kA 1 s
<b>General Data</b>	
Dimensions of the 40-foot High Cube ISO container (W / H / D) <sup>5)</sup>	12192 mm / 2896 mm / 2438 mm
Weight	< 26 t
Self-consumption (max. / partial load / average) <sup>1)</sup>	< 16.2 kW / < 3.6 kW / < 4.0 kW
Self-consumption (stand-by) <sup>1)</sup>	< 600 W
Degree of protection according to IEC 60529	Control rooms IP23D, inverter electronics IP65
Environment: standard / chemically active / dusty	● / ○ / ○
Degree of protection according to IEC 60721-3-4 (4C1, 4S2 / 4C2, 4S2 / 4C2, 4S4)	● / ○ / ○
Maximum permissible value for relative humidity	15% to 95%
Max. operating altitude above mean sea level 1000 m / 2000 m / 3000 m / 4000	● / ○ / ○ / ○ (earlier temperature-dependent de-rating)
Fresh air consumption of inverter and transformer	20000 m <sup>3</sup> /h
<b>Features</b>	
DC terminal	Terminal lug
AC connection	Outer-cone angle plug
Tap changer for MV-transformer: without / with	● / ○
Shield winding for MV-Transformer: without / with	● / ○
Communication package	○
Station enclosure color	RAL 7004
Transformer for external loads: without / 30 kVA / 40 kVA / 50 kVA / 60 kVA	● / ○ / ○ / ○ / ○
Medium-voltage switchgear: without / 2 feeders / 3 feeders	● / ○ / ○
1 or 2 cable feeders with load-break switch, 1 transformer feeder with circuit breaker, internal arc classification IAC A FL 20 kA 1 s according to IEC 62271-200	
Accessories for medium-voltage switchgear: without / auxiliary contacts / motor for transformer feeder / cascade control / monitoring	● / ○ / ○ / ○ / ○
Oil containment: without / with (integrated)	● / ○
Industry standards (for other standards see the inverter datasheet)	IEC 62271-202, IEC 62271-200, IEC 60076 , CSC certificate, EN 50588-1
● Standard features   ○ Optional features   – Not available	
Type designation	MVPS-4400-20

- 1) Data based on inverter
- 2) ONAF = Mineral oil with forced air cooling; KNAF = Organic oil with forced air cooling
- 3) Efficiency measured at inverter without internal power supply
- 4) Efficiency measured at inverter with internal power supply
- 5) Transport dimensions

MV Power Station 4950	MV Power Station 5000	MV Power Station 5500	MV Power Station 6000
2 x SC 2475 or 2 x SCS 2475	2 x SC 2500-EV or 2 x SCS 2500-EV	2 x SC 2750-EV or 2 x SCS 2750-EV	2 x SC 3000-EV or 2 x SCS 3000-EV
1100 V	1500 V	1500 V	1500 V
2 x 3960 A	2 x 3200 A	2 x 3200 A	2 x 3200 A
○	2 x 24 double pole fused (2 x 32 single pole fused) ○	○	○
	200 A, 250 A, 315 A, 350 A, 400 A, 450 A, 500 A		
4950 kVA / 4500 kVA / 0 kVA	5000 kVA / 4500 kVA / 0 kVA	5500 kVA / 5000 kVA / 0 kVA	6000 kVA / 5400 kVA / 0 kVA
4950 kVA / 4500 kVA / 0 kVA	5000 kVA / 4500 kVA / 0 kVA	5500 kVA / 5000 kVA / 0 kVA	6000 kVA / 5400 kVA / 0 kVA
11 kV to 35 kV	11 kV to 35 kV	11 kV to 35 kV	11 kV to 35 kV
50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz
● / ○	● / ○	● / ○	● / ○
● / ○	● / ○	● / ○	● / ○
87 A	88 A	97 A	105 A
3.1 kW / 4.0 kW	3.1 kW / 4.0 kW	3.1 kW / 4.0 kW	3.2 kW / 4.5 kW
37.5 kW / 37.5 kW	37.5 kW / 37.5 kW	40.0 kW / 40.0 kW	45.5 kW / 45.5 kW
< 3%	< 3%	< 3%	< 3%
○ up to 60% of AC power	○ up to 60% of AC power	○ up to 60% of AC power	○ up to 60% of AC power
1 / 0.8 overexcited to 0.8 underexcited	1 / 0.8 overexcited to 0.8 underexcited	1 / 0.8 overexcited to 0.8 underexcited	1 / 0.8 overexcited to 0.8 underexcited
98.6%	98.6%	98.7%	98.8%
98.4%	98.3%	98.6%	98.6%
98.0%	98.0%	98.5%	98.5%
DC load-break switch	DC load-break switch	DC load-break switch	DC load-break switch
Medium-voltage vacuum circuit breaker	Medium-voltage vacuum circuit breaker	Medium-voltage vacuum circuit breaker	Medium-voltage vacuum circuit breaker
Surge arrester type I	Surge arrester type I	Surge arrester type I	Surge arrester type I
●	●	●	●
IAC A 20kA 1s	IAC A 20kA 1s	IAC A 20kA 1s	IAC A 20kA 1s
12192 mm / 2896 mm / 2438 mm	12192 mm / 2896 mm / 2438 mm	12192 mm / 2896 mm / 2438 mm	12192 mm / 2896 mm / 2438 mm
< 26 t	< 26 t	< 26 t	< 26 t
< 16.2 kW / < 3.6 kW / < 4.0 kW	< 16.2 kW / < 3.6 kW / < 4.0 kW	< 16.2 kW / < 3.6 kW / < 4.0 kW	< 16.2 kW / < 3.6 kW / < 4.0 kW
< 600 W	< 740 W	< 740 W	< 740 W
Control rooms IP23D, inverter electronics IP65			
● / ○ / ○	● / ○ / ○	● / ○ / ○	● / ○ / ○
● / ○ / ○	● / ○ / ○	● / ○ / ○	● / ○ / ○
15% to 95%	15% to 95%	15% to 95%	15% to 95%
● / ○ / ○ / ○ (earlier temperature-dependent de-rating)	● / ○ / ○ / - (earlier temperature-dependent de-rating)		
20000 m <sup>3</sup> /h	20000 m <sup>3</sup> /h	20000 m <sup>3</sup> /h	20000 m <sup>3</sup> /h
Terminal lug	Terminal lug	Terminal lug	Terminal lug
Outer-cone angle plug	Outer-cone angle plug	Outer-cone angle plug	Outer-cone angle plug
● / ○	● / ○	● / ○	● / ○
● / ○	● / ○	● / ○	● / ○
○	○	○	○
RAL 7004	RAL 7004	RAL 7004	RAL 7004
● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○
● / ○ / ○	● / ○ / ○	● / ○ / ○	● / ○ / ○
● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○
● / ○	● / ○	● / ○	● / ○
IEC 62271-202, IEC 62271-200, IEC 60076 , CSC certificate, EN 50588-1			
MVPS-4950-20	MVPS-5000-20	MVPS-5500-20	MVPS-6000-20

### System diagram with Sunny Central



### System diagram with Sunny Central Storage

