/ MVPS 2200-S2-11 / MVPS 2475-S2-11 / MVPS 2900-S2-11

MV Power Station

2200-S2 / 2475-S2 / 2900-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

With the power of the robust central inverters Sunny Central or Sunny Central Storage and the 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 1100 V_{DC}, the integrated system 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
2200-S2 / 2475-S2 / 2900-S2

Technical Data	MVPS 2200-S2	MVPS 2475-S2
Input (DC)		
Available inverters	1 x SCS 1900 / 1 x SCS 2200 / 1 x SC 2200	1 x SCS 2475 / 1 x SC 2475
Max. input voltage	1100 V	1100 V
Number of DC inputs	Depending on selected inverter	
Integrated zone monitoring	○	
Output (AC) on the medium-voltage side		
Nominal power SCS (from -25°C to +25°C / 40°C; optional 50°C)[1]	1900 kVA / 1710 kVA or 2200 kVA / 2000 kVA	2475 kVA / 2250 kVA
Nominal power SC (from -25°C to +35°C / 40°C; optional 50°C)[1]	2200 kVA / 2000 kVA	2475 kVA / 2250 kVA
Typical nominal AC voltages with a tolerance of +/-10%	10 kV to 35 kV	10 kV to 35 kV
AC power 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 %	
Inverter efficiency		
Max. efficiency[3] / Europ. Efficiency[3]	98.6% / 98.4%	98.6% / 98.4%
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]	< 300 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	Control rooms IP23D, inverter electronics IP54	
Environment: standard/extreme	● / ○	
Maximum permissible value for relative humidity	95% (for 2 months/year)	
Max. operating altitude above MSL 1000 m / 2000 m	● / ○	
Inverter fresh air consumption	6500 m³/h	
Equipment		
DC connection	Lug	
AC connection	Outer-cone angle plug	
Tap changer for MV voltage transformer: without/with	● / ○	
Shield winding for MV transformer: without/with	● / ○	
Monitoring package	○	
Station enclosure color	RAL 7004	
Transformer for external loads: without / 10 / 20 / 30 / 40 / 50 / 60 kVA	● / ○ / ○ / ○ / ○ / ○ / ○	
MV switchgear: without / 1 panel / 3 panels 2 cable panels with load-break switch, 1 transformer panel with circuit breaker, arc fault resistance IAC A FL 20 kA 1 s to IEC 62271-200	● / ○ / ○	
MV switchgear short-circuit current capability (20 kA 1 s / 20 kA 3 s / 25 kA 1 s)	● / ○ / ○	
Accessory for MV switchgear: without / auxiliary contacts / motor for transformer panel / cascade control / monitoring	● / ○ / ○ / ○ / ○	
Integrated oil spill containment: without/with	● / ○	
Industry standards (other industry standards: see inverter datasheet)	IEC 60076, IEC 62271-200, IEC 62271-202, EN50588-1, CSC certificate	
Model type number	MVPS-2200-S2-11	MVPS-2475-S2-11

● Standard features ○ Optional features – Not available

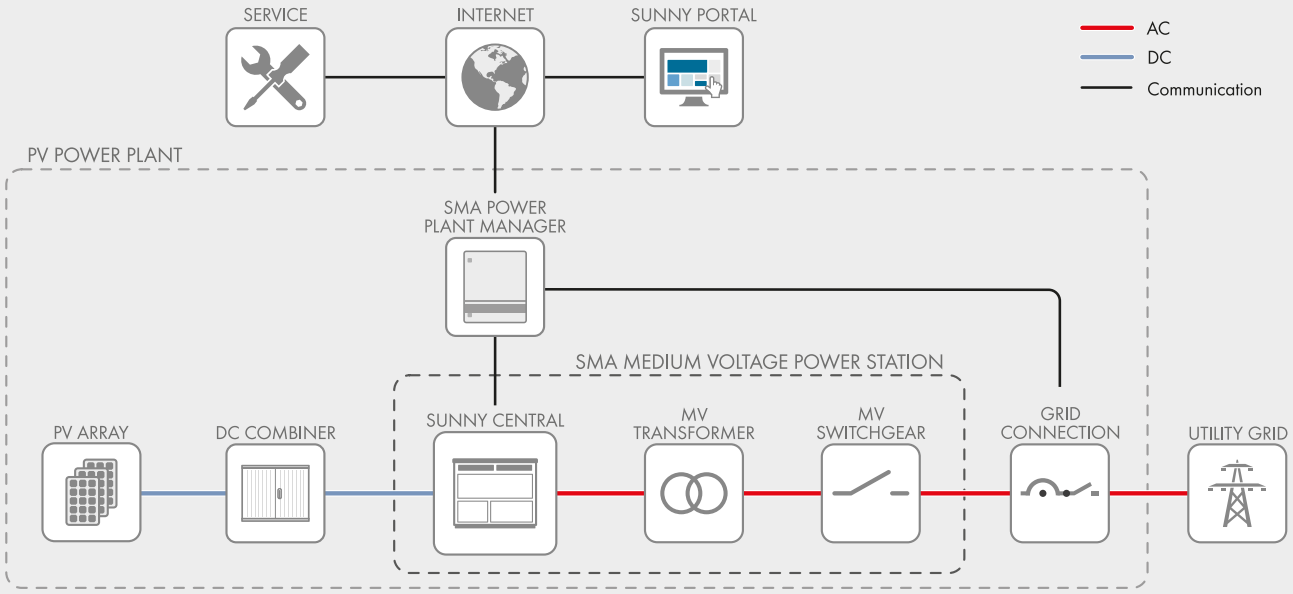
1) Data based on inverter Further details can be found in the inverter datasheet.
2) KNAN = ester with natural air cooling
3) Efficiency measured at inverter without internal power supply
4) Efficiency measured at inverter with internal power supply

Technical Data	MVPS 2900-S2
Input (DC)	
Available inverters	1 x SCS 2900
Max. input voltage	1100 V
Number of DC inputs	Depending on selected inverter
Integrated zone monitoring	○
Output (AC) on the medium-voltage side	
Nominal power (from -25 °C to +25 °C / 40 °C; optional 50 °C)[1]	2940 kVA / 2670 kVA
Typical nominal AC voltages with a tolerance of +/-10%	10 kV to 35 kV
AC power frequency	50 Hz / 60 Hz
Transformer vector group Dy11 / YNd11 / YNy0	● / ○ / ○
Transformer cooling method	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 %
Inverter efficiency	
Max. efficiency[3]	98.6 %
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]	< 300 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	Control rooms IP23D, inverter electronics IP54
Environment: standard/extreme	● / ○
Maximum permissible value for relative humidity	95% (for 2 months/year)
Max. operating altitude above MSL 1000 m / 2000 m	● / ○
Inverter fresh air consumption	6500 m³/h
Equipment	
DC connection	Lug
AC connection	Outer-cone angle plug
Tap changer for MV voltage transformer: without/with	● / ○
Shield winding for MV transformer: without/with	● / ○
Monitoring package	○
Station enclosure color	RAL 7004
Transformer for external loads: without / 10 / 20 / 30 / 40 / 50 / 60 kVA	● / ○ / ○ / ○ / ○ / ○ / ○
MV switchgear: without / 1 panel / 3 panels 2 cable panels with load-break switch, 1 transformer panel with circuit breaker, arc fault resistance IAC A FL 20 kA 1 s to IEC 62271-200	● / ○ / ○
MV switchgear short-circuit current capability (20 kA 1 s / 20 kA 3 s / 25 kA 1 s)	● / ○ / ○
Accessory for MV switchgear: without / auxiliary contacts / motor for transformer panel / cascade control / monitoring	● / ○ / ○ / ○ / ○
Integrated oil spill containment: without/with	● / ○
Industry standards (other industry standards: see inverter datasheet)	IEC 60076, IEC 62271-200, IEC 62271-202, EN50588-1, CSC certificate
Model type number	MVPS-2900-S2-11

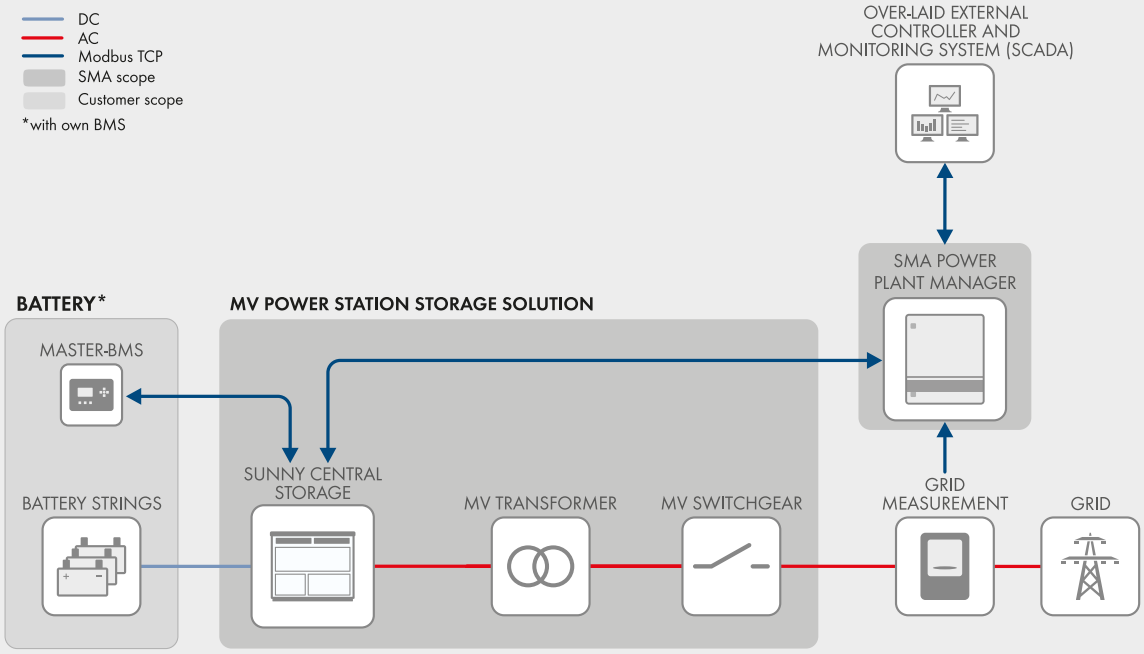
● Standard features ○ Optional features – Not available

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

Plant diagram with Sunny Central



Plant diagram with Sunny Central Storage



By combining several of these schemes, higher power systems can be realized

Grid-connected functions

- Setpoints for active and reactive power
- Static grid support Q(U), (P(f)
- Dynamic grid support (FRT)
- Active islanding detection (AID)
- High compatibility with most battery types

Energy management system functionalities

- External static grid supporting functions
- Ramp-rate control of PV power
- Peak shaving
- Energy shifting
- Genset optimization control
- Reducing necessary spinning reserve of gensets
- Battery start-up and stop sequence
- Operates the battery within optimal operation window
- Grid forming operation
- Black start compatibility