



Efficient

- High power density
- Max. efficiency is 98.6%
- Lower transportation costs (up to 4 inverters in a standard shipping container)

Robust

- Proven OptiCool™ technology for intelligent, effective cooling
- Can be installed worldwide outdoors in any ambient condition

Flexible

- Conforms to all relevant grid requirements worldwide
- Four quadrant operation for full reactive power support
- Stand-alone device or turnkey solution with medium-voltage block

Versatile

- Integrated battery communication
- Customized monitoring and control of inverters
- Grid management functions for dynamic grid support
- Integrated voltage supply for internal consumption and external loads

SUNNY CENTRAL STORAGE 2500-EV / 2750-EV / 3000-EV

Battery inverter for large-scale storage systems

Grid-connected storage systems enable the integration of large amounts of intermittent renewable energy into the utility grid while ensuring maximum grid stability. The Sunny Central Storage is the central component of the SMA system solution for integration of large-scale storage systems. It is designed to compensate fluctuations in solar energy generation and offers comprehensive grid management services, e.g., automatic frequency control. The battery inverter is optimized for continuous operation at nominal load and temperature of -25°C to $+50^{\circ}\text{C}$. Thanks to its wide DC voltage range, it is compatible with various types of battery technologies. The Sunny Central Storage is designed to work with the SMA Hybrid Controller and is also available as turnkey solution with medium-voltage block.

SUNNY CENTRAL STORAGE 2500-EV / 2750-EV

Technical Data	SCS 2500-EV	SCS 2750-EV
Battery side (DC)		
DC Voltage range (at 25 °C / at 50 °C) ¹⁾	850 V to 1425 V / 1200 V	875 V to 1425 V / 1200 V
Minimal / Maximal DC voltage ²⁾	778 V / 1500 V	849 V / 1500 V
Max. DC current (at 25 °C / at 50 °C)	3200 A / 2956 A	3200 A / 2956 A
Max. interruption current capability ³⁾	6400 A	6400 A
Number of DC cables per polarity	26	
Grid side (AC)		
Max. AC power (at 25 °C / at 50 °C)	2500 kVA / 2250 kVA	2750 kVA / 2500 kVA
Max. AC current	2624 A	2646 A
Nominal AC voltage / nominal AC voltage range ⁴⁾	550 V / 440 V to 660 V	600 V / 480 V to 690 V
AC power frequency / range	50 Hz / 47 Hz to 53 Hz 60 Hz / 57 Hz to 63 Hz	
Power factor at rated power / displacement power factor adjustable ¹¹⁾	1 / 0 overexcited to 0 underexcited	
Max. total harmonic distortion	< 3% at nominal power	
Min. short-circuit ratio at the AC terminals	> 2	
Efficiency		
Max. efficiency ⁵⁾ / European efficiency ⁵⁾	98.6% / 98.3%	98.7% / 98.5%
Protective Devices		
Input-side disconnection point	DC load-break switch	
Output-side disconnection point	AC circuit breaker	
DC overvoltage protection	Surge arrester, type I	
AC overvoltage protection	○ Surge arrester, class I	
Lightning protection (according to IEC 62305-1)	Lightning Protection Level III	
Ground-fault monitoring / remote ground-fault monitoring	○ / ○	
Insulation monitoring	●	
Degree of protection: electronics / air duct / connection area (as per IEC 60529)	IP65 / IP34 / IP34	
General Data		
Dimensions (W / H / D)	2780 mm / 2318 mm / 1588 mm	
Weight	< 3400 kg	
Self-consumption (max. ⁶⁾ / partial load ⁷⁾ / average ⁸⁾	< 8100 W / < 1800 W / < 2000 W	
Self-consumption (standby)	< 370 W	
Auxiliary power supply: integrated 8.4 kVA transformer / external	● / ○	
Operating temperature range	-25 °C to 60 °C	
Noise emission ⁹⁾	< 67.8 dB(A)	
Temperature range (standby)	-40 °C to 60 °C	
Temperature range (storage)	-40 °C to 70 °C	
Max. permissible value for relative humidity (condensing / non-condensing)	95% to 100% (2 month/year) / 0% to 95%	
Maximum operating altitude above MSL ¹⁰⁾ 1000 m / 2000 m ¹²⁾ / 3000 m ¹²⁾	● / ○ / ○	
Fresh air consumption	6500 m ³ /h	
Features		
DC connection	Terminal lugs on each input (without fuse)	
AC connection	With busbar system (three busbars, one per line conductor)	
Communication	Ethernet, Modbus Master, Modbus Slave	
Enclosure / roof color	RAL 9016 / RAL 7004	
Display	● Indicator lights / ○ HMI touchscreen (10.1")	
Supply transformer for external loads	○ (2.5 kVA)	
Standards and directives complied with	BDEW-MSRL, CE, IEC / EN 62109-1, IEC / EN 62109-2	
EMC standards	EN 55011:2011-4, IEC / EN 61000-6-4, IEC / EN 61000-6-2, EN 55022	
● Standard features ○ Optional		
Type designation	SCS-2500-EV-10	SCS-2750-EV-10

1) Another voltage range can be offered on request

2) With power derating

3) Battery short circuit disconnection has to be done on the battery side

4) AC voltage range can be extended for 50 Hz grids only (option „brown power“ must be selected, option “housekeeping” not combinable).

5) Efficiency measured without internal power supply

6) Self-consumption at rated operation

7) Self-consumption at < 75% P_n at 25 °C

8) Self-consumption averaged out from 5% to 100% P_n at 25 °C

9) Sound pressure level at a distance of 10 m

10) Values apply only to inverters. Permissible values for SMA MV solutions from SMA can be found in the corresponding data sheets.

11) Depending on the DC voltage

12) Earlier temperature-dependent de-rating and reduction of DC open-circuit voltage

SUNNY CENTRAL STORAGE 3000-EV

Technical Data	SCS 3000-EV
Battery side (DC)	
DC Voltage range (at 25 °C / at 50 °C) ¹⁾	956 V to 1425 V / 1200 V
Minimal / Maximal DC voltage ²⁾	927 V / 1500 V
Max. DC current (at 25 °C / at 50 °C)	3200 A / 2970 A
Max. interruption current capability ³⁾	6400 A
Number of DC cables per polarity	26
Grid side (AC)	
Max. AC power (at 25 °C / at 50 °C)	3000 kVA / 2700 kVA
Max. AC current (at 25 °C / at 50 °C)	2646 A
Nominal AC voltage / nominal AC voltage range ⁴⁾	655 V / 524 V bis 721 V
AC power frequency / range	50 Hz / 47 Hz to 53 Hz 60 Hz / 57 Hz to 63 Hz
Power factor at rated power / displacement power factor adjustable ¹¹⁾	1 / 0 overexcited to 0 underexcited
Max. total harmonic distortion	< 3% at nominal power
Min. short-circuit ratio at the AC terminals	> 2
Efficiency	
Max. efficiency ⁵⁾ / European efficiency ⁵⁾	98.8% / 98.6%
Protective Devices	
Input-side disconnection point	DC load-break switch
Output-side disconnection point	AC circuit breaker
DC overvoltage protection	Surge arrester, type I
AC overvoltage protection	○ Surge arrester, class I
Lightning protection (according to IEC 62305-1)	Lightning Protection Level III
Ground-fault monitoring / remote ground-fault monitoring	○ / ○
Insulation monitoring	●
Degree of protection: electronics / air duct / connection area (as per IEC 60529)	IP65 / IP34 / IP34
General Data	
Dimensions (W / H / D)	2780 mm / 2318 mm / 1588 mm
Weight	< 3400 kg
Self-consumption (max. ⁶⁾ / partial load ⁷⁾ / average ⁸⁾	< 8100 W / < 1800 W / < 2000 W
Self-consumption (standby)	< 370 W
Auxiliary power supply: integrated 8.4 kVA transformer / external	● / ○
Operating temperature range	-25 °C to 60 °C
Noise emission ⁹⁾	< 67.8 dB(A)
Temperature range (standby)	-40 °C to 60 °C
Temperature range (storage)	-40 °C to 70 °C
Max. permissible value for relative humidity (condensing / non-condensing)	95% to 100% (2 month/year) / 0% to 95%
Maximum operating altitude above MSL ¹⁰⁾ 1000 m / 2000 m ¹²⁾	● / ○
Fresh air consumption	6500 m ³ /h
Features	
DC connection	Terminal lugs on each input (without fuse)
AC connection	With busbar system (three busbars, one per line conductor)
Communication	Ethernet, Modbus Master, Modbus Slave
Enclosure / roof color	RAL 9016 / RAL 7004
Display	● Indicator lights / ○ HMI touchscreen (10.1")
Supply transformer for external loads	○ (2.5 kVA)
Standards and directives complied with	BDEW-MSRL, CE, IEC / EN 62109-1, IEC / EN 62109-2
EMC standards	EN 55011:2011-4, IEC / EN 61000-6-4, IEC / EN 61000-6-2, EN 55022
● Standard features ○ Optional	
Type designation	SCS-3000-EV-10

1) Another voltage range can be offered on request

2) With power derating

3) Battery short circuit disconnection has to be done on the battery side

4) AC voltage range can be extended for 50 Hz grids only (option „brown power“ must be selected, option “housekeeping” not combinable).

5) Efficiency measured without internal power supply

6) Self-consumption at rated operation

7) Self-consumption at < 75% P_n at 25 °C

8) Self-consumption averaged out from 5% to 100% P_n at 25 °C

9) Sound pressure level at a distance of 10 m

10) Values apply only to inverters. Permissible values for SMA MV solutions from SMA can be found in the corresponding data sheets.

11) Depending on the DC voltage

12) Earlier temperature-dependent de-rating and reduction of DC open-circuit voltage

