

SUNNY BOY SMART ENERGY

The SMA Sunny Boy Smart Energy single-phase hybrid inverter is the two-in-one solution for the generation and flexible use of solar power at home.



Sunny Boy Smart Energy



Sunny Boy Smart Energy



Sunny Boy Smart Energy

The Sunny Boy Smart Energy is the ideal gateway to an all-round energy transition in the home. As a PV and battery inverter in one, it ensures a reliable and sustainable supply of energy. Thanks to the integrated secure power supply function and an optional battery backup function¹⁾, it will continue to run even if the utility grid fails.

Three MPP trackers allow varying roof orientations to be incorporated into plans for solar power production.

The hybrid inverter offers very fast charging for connected batteries and makes the most of days with few hours of sunshine.

Heat pumps, charging solutions for electric vehicles and smart energy management can be flexibly integrated into the energy system at any time. This means greater independence from rising energy costs and conventional energy supplies. With the Sunny Boy Smart Energy, users can expect the high standard of quality that comes with a product made in Germany.

Maximum energy yields

- Rapid charging and discharging of connected batteries
- PV system oversizing for higher energy yields
- Integrated yield optimization with SMA ShadeFix

Easy installation, fast commissioning

- Connection via standard cables
- SMA Easy Lock for effortlessly opening and closing the cover
- Step-by-step commissioning via the SMA 360° app (depending on software version)

Unmatched flexibility

- Three MPP trackers for flexible roof layouts
- Low startup voltage
- Integrated secure power supply
- Optional back-up function¹⁾

Improved storage options

- Compatible with SMA Home Storage battery
- Compatible with high-voltage batteries from major manufacturers (depending on software version)

¹⁾ Available with a later hardware release

Enjoy smart energy management with the Sunny Home Manager 2.0

For optimized self-consumption and even greater independence, the Sunny Home Manager 2.0 links the PV system with electrical appliances and, optionally, a battery storage system with a comprehensive energy system. And thanks to the power of AI, it can even manage energy flows in the home automatically if the user so desires.

SPECIFICATIONS

	Sunny Boy Smart Energy 3.6	Sunny Boy Smart Energy 4.0	Sunny Boy Smart Energy 4.0	Sunny Boy Smart Energy 6.0
Input (PV DC)				
Max. PV Array power	7.200 Wp	8.000 Wp	10.000 Wp	12.000 Wp
Max. input voltage	600 V	600 V	600 V	600 V
Min. input voltage	60 V	60 V	60 V	60 V
MPP Voltage range	60 to 480 V	60 to 480 V	60 to 480 V	60 to 480 V
Startup input voltage	66 V	66 V	66 V	66 V
Max. Usable input current A / B / C	15 A	15 A	15 A	15 A
Max. DC Shortcircuit current A / B / C	Up to 30 A	Up to 30 A	Up to 30 A	Up to 30 A
Number of independent MPP inputs / inputs per MPP	3 / 1	3 / 1	3 / 1	3 / 1
Connection in MPP inputs in parallel possible	A and B	A and B		A y B
Battery connection (DC)				
Battery type	Lithium-Ion batteries			
Voltage range	90 to 500 V			
Max. charging / discharging current	30 A / 30 A			
Number of independent battery inputs	1			
Max. charging power	10.000 W			
Max. discharging power	3750 W	4200 W	5250 W	6300 W
AC Output				
Rated power (at 230 V 50 Hz)	3600 W	4000 W	5000 W	6000 W
Max. apparent AC power (at 230 V 50 Hz)	3600 VA	4000 VA	5000 VA	6000 VA
Rated AC voltage	230 V / 240 V			

AC voltage range	184 to 264 V			
AC grid frequency	50 Hz / 60 Hz			
AC grid frequency range	44 - 60 Hz			
Max. output current	16 A	20 A	25 A	30 A
Rated output current	16 A	17,4 A	21,7 A	26,0 A
Power factor	1			
Adjustable displacement power factor	0,8 overexcited to 0,8 underexcited			
Efficiency				
Max. efficiency	97,5 %			
European efficiency	96,8 %			
SPS Output (AC Backup) during off grid mode				
Rated power (at 230 V 50 Hz)	3680 W			
Max. apparent AC power (at 230 V 50 Hz)	3680 VA			
Nominal voltage	230 V / 240 V			
Frequency	50 Hz / 60 Hz			
Switching mode	Manual			
Backup output (AC backup) during off-grid mode, single phase				
Rated power (at 230 V 50 Hz)	7300 W			
Max. apparent AC power (at 230 V 50 Hz)	7300 VA			
Output power / output apparent power < 100 ms	11040 W / 11040 VA			
Output power / output apparent power < 30 s	9200 W / 9200 VA			
Nominal AC voltage	230 V / 240 V			
AC Frequency	50 Hz / 60 Hz			
Switching mode	Automatic			
Protective devices				
Input-side disconnection point	Yes	Yes	Yes	Yes
Ground fault monitoring	Yes	Yes	Yes	Yes
Grid monitoring	Yes	Yes	Yes	Yes
DC rererse of polarity protecion	Yes	Yes	Yes	Yes
All-pole-sensitive residual-current monitoring unit	Yes	Yes	Yes	Yes
Protection class	I	I	I	I
Overvoltage category (grid / battery / PV)	IV / II / II	IV / II / II	IV / II / II	IV / II / II
DC Type II SPD with monitoring (external, 3rd party)	Optional	Optional	Optional	Optional
General Data				
Dimmensions	500 x 586 x 236 mm			
Weight	17,5 Kgr			
Operating temperature rage	-25 to 60 °C			
Noise emission max.	TBD			
Self-consumption (at night)	TBD			
Topoloty	Transformerless			
Cooling method	Natural convection			
Degree of protection (as per IEC 60529)	IP65			
Climate category (as per IEC 60721-3-4)	4K26			
Humidity	100% (non-condensing)			
Equipment				
PV Connection / battery connection	Leverclamp / Pushing clamp			
Display via smartphone, tablet, laptop	Yes	Yes	Yes	Yes
Ethernet	Yes, 2 ports	Yes, 2 ports	Yes, 2 ports	Yes, 2 ports
Wlan	Yes	Yes	Yes	Yes
Bat-CAN	Yes	Yes	Yes	Yes
Communication protocols	SMA Modbus / SunSpec Modbus / Speedwire / Webconnect / SMA Battery Interface / ModBus RTU			
SMA ShadeFix	Yes	Yes	Yes	Yes
Warranty	5 years (10 years if product is registered), Optionally up to 20 years			
Certificates and permits	AS4777-2; C10/11; CEI0-21; EN50549-1; IEC 62109-1 / IEC 62109-2; TED749; VDE-AR-N4105			

DOWNLOADS

SUNNY BOY SMART ENERGY ESP

 [SBSExx-50-DS-es.pdf](#)

Size: 656.79 KiB

SUNNY BOY SMART ENERGY ENG

 [SBSExx-50-DS-en.pdf](#)

Size: 712.29 KiB
