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Sunny Boy Smart Energy-US

3.8 / 4.8 / 5.8 / 7.7
9.6 / 11.5

The ideal solution for new and repowering installations

powered by ennexOS

SMA Smart Connected

SMA ShadeFix
STRING LEVEL OPTIMIZATION

Ultimate flexibility
- 200% DC:AC design capability
- PV and Hybrid use cases
- 3 or 4 MPPT optimizing channels

Easy installation
- Smaller and lighter, eases mounting
- 2-in-1 solution saves time, wall space and electrical upgrades
- Rapid shutdown via built-in SunSpec Certified RSD transmitter

Complete reliability
- No need for complex microinverters or optimizers
- 10-year warranty, extendable to 25
- SMA Backup Secure and Backup Select provides energy security with or without a battery

New, modern design
- Fresh aesthetic look, with more functional capabilities
- Curved, easy-open cover

Quick commissioning
- SMA 360° app saves installers time and money
- Scan, tap and connect multiple devices from your mobile device or tablet

For over 40 years, SMA has been the leader in solar energy and the new SMA Home Energy Solution will continue this trajectory. Installers choose SMA for reliability, performance and innovation.

At the center of the SMA Home Energy Solution is the Sunny Boy Smart Energy hybrid inverter. This groundbreaking inverter combines the functions of a PV and battery inverter into a single unit, keeping electrical upgrades to a minimum. The Sunny Boy Smart Energy features modular add-on options such as the SMA Energy Meter, Backup Secure and Backup Select. These enhancements improve the system's performance and provide homeowners with tailored solutions to meet their specific needs.

The Sunny Boy Smart Energy is packed with new technology including an integrated system manager, SunSpec RSD transmitter, SMA ShadeFix, SMA Smart Connected and compatibility with both the SMA 360° and Energy Apps.

Trust in SMA America, your leader in residential energy - building reliable, high-performance and innovative solutions, with support you can depend on.

Technical data	SBSE 3.8	SBSE 4.8	SBSE 5.8	SBSE 7.7	SBSE 9.6	SBSE 11.5
Input PV (DC)						
Max. PV array power (200% oversizing)	7680 Wp	9600 Wp	11520 Wp	15360 Wp	19200 Wp	23040 Wp
Max. DC voltage	600 V					
Rated MPP voltage range	91 V - 480 V	112 V - 480 V	136 V - 480 V	180 V - 480 V	168 V- 480 V	200 V - 480 V
Min. / Startup DC Voltage	60 V / 66 V					
Max. usable current input per MPPT	15 A					
Max. short-circuit current input per MPPT	30 A (the sum at all inputs must not exceed 60 A[2] and 90 A[3])					
Independent MPPT inputs / inputs per MPPT	3 / 1				4 / 1	
Connection of MPPT inputs in parallel	A and B*				A and B / C and D*	
Input battery (DC)						
Battery type	SMA Home Storage* and other 3rd party batteries*					
Voltage range	90 V to 500 V					
Max. charging current / max. discharging current	30 A / 30 A					
Number of independent battery inputs	1					
Max. charging power / max. discharging power	10000 W / 4042 W	10000 W / 5053 W	10000 W / 6063 W	10000 W / 8084 W	12000 W / 10105 W	12000 W / 12000 W
Output (AC)						
Max. apparent AC power	3840 VA	4800 VA	5760 VA	7680 VA	9600 VA	11520 VA
AC Rated power (at 240 V, 60 Hz)	3840 W	4800 W	5760 W	7680 W	9600 W	11520 W
AC Rated power (at 208 V, 60 Hz)	3328 W	4160 W	4992 W	6656 W	8320 W	9984 W
AC voltage rated and range	240 V (211 V to 264 V) or 208 V (183 V to 229 V)					
AC grid frequency / range	60 Hz / 55 Hz to 66 Hz					
Max. rated output current	16 A	20 A	24 A	32 A	40 A	48 A
Breaker (overcurrent protection)	20 A	25 A	30 A	40 A	50 A	60 A
Power factor at rated power	1 / adjustable 0.8 overexcited to 0.8 underexcited					
Efficiency						
Max. efficiency	98.1%				98%	
CEC efficiency (240/208V)	96.5% / 97%	97% / 97%	97.5% / 97%		97.5%/97%	
Protective devices						
DC disconnect / DC reverse polarity protection	● / ●					
DC AFCI arc-fault protection	●					
Ground fault monitoring / Grid monitoring	● / ●					
AC short circuit current capability	●					
All-pole-sensitive residual-current monitoring unit	●					
Protection class	I					
Overvoltage category grid / battery / PV	IV / II / II					
General data						
Dimensions (W / H / D) / Weight	19.7 x 23.1 x 9.2 in / 38.6 lb				19.7 x 26.8 x 9.2 in / 48.5 lb	
Operating temperature range	−13 °F to +140 °F (−25 °C to +60 °C) with derating					
Topology / cooling method	Transformerless / Natural convection					
Environmental protection rating	Type 3R					
Equipment						
Communication protocols	Modbus (SMA, SunSpec), Speedwire / Webconnect, SMA Battery Interface					
Interfaces: WLAN / Ethernet / BAT-CAN / RS-485	● / ● / ● / ●					
2.4 GHz WLAN	●					
Ethernet ports / Number of outputs	2 / 1 (Multi function relay 30 Vdc /1 A)					
Warranty: 10 / +5 / +10 / +15 years	● / ○ / ○ / ○					
Certificates and approvals	UL 1741 SB/SA, UL 62109-1, UL 1998, UL 1699B Ed. 1, UL9540[1], IEEE1547, FCC Part 15 (Class A & B), CAN CSA-C22.2, CA Rule 21, HECO Rule 14H, PV Rapid Shutdown System Equipment in accordance with UL1741, NEC 2020, NEC 2023 compliant					
SMA Smart Connected	●					
SMA ShadeFix (integrated shade optimization)	●					
SunSpec certified transmitter (Rapid Shutdown)	●					
Integrated System Manager						
Max number supported Inverters/ Energy Meter	5/1					
Centralized commissioning of all devices in the system	●					
SMA Backup Secure** (grid outage mode, with or without battery)						
Rated power (at 120 V, 60 Hz)	1920 W					
Max. apparent AC power	1920 VA					
Nominal AC voltage	120 V					
AC grid frequency	60 Hz					
Activation mode	Manual					
● Standard features ○ Optional features						
Type designation	SBSE3.8-US-50	SBSE4.8-US-50	SBSE5.8-US-50	SBSE7.7-US-50	SBSE9.6-US-50	SBSE11.5-US-50

* Upcoming ** SMA Backup Start module required to enable SMA Backup Secure in installations bound by NEC rapid shutdown requirements. [1] Not yet available for SBSE 9.6/11.5 [2] SBSE 3.8-7.7 [3] SBSE 9.6, 11.5

Accessories

SMA Energy Meter
EMETER-US-50

SMA Backup Select
BU-SLCT-US-50

SMA Backup Start
BU-STRT-US-50

SMA Shutdown Initiator
ESS-RSD01-RSI50