



/ SBSE3.8-US-50 / SBSE4.8-US-50 / SBSE5.8-US-50 / SBSE7.7-US-50 / SBSE9.6-US-50\* / SBSE11.5-US-50\*

# Sunny Boy Smart Energy-US

3.8 / 4.8 / 5.8 / 7.7  
9.6\* / 11.5\*

The perfect solution  
for solar installers



powered by  
**ennexOS**



## Ultimate flexibility

- 200% DC/AC design capability
- PV and Hybrid use cases
- 3 or 4\* MPPT optimizing channels
- Larger power classes\*

## Easy installation

- Smaller and lighter, eases mounting
- 2-in-1 solution saves time, wall space and electrical upgrades
- Rapid commissioning 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 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.**

The center of the new SMA Home Energy Solution is the Sunny Boy Smart Energy (SBSE-US) hybrid inverter. This groundbreaking inverter combines the functions of a PV and battery inverter into a single unit, keeping electrical upgrades to a minimum. SBSE-US features modular add-on options including the new SMA Energy Meter and SMA Backup Secure that enhance the systems' performance and offer peace of mind to the homeowner.

Sunny Boy Smart Energy is packed with new technology, including an integrated system manager, SMA 360° and Energy apps, SunSpec RSD transmitter, SMA ShadeFix optimization (with 3 MPPTs), SMART Connected and more.

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

\* Upcoming

Technical data	SBSE 3.8	SBSE 4.8	SBSE 5.8	SBSE 7.7	SBSE 9.6*	SBSE 11.5*
<b>Input PV (DC)</b>						
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		
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)				30 A	
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*	
<b>Input battery (DC)</b>						
Battery type	BYD Battery-Box Premium HVL 12.0, 16.0, 20.0, 24.0, 28.0, 32.0 (UL9540)					
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	10000 W / 10000 W	
<b>Output (AC)</b>						
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					
<b>Efficiency</b>						
Max. efficiency	98.1%					
CEC efficiency (240/208V)	96.5% / 97%	97% / 97%	97.5% / 97%	97.5% / 97%		
<b>Protective devices</b>						
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	III / II / II					
<b>General data</b>						
Dimensions (W / H / D) / Weight	19.7 x 23.1 x 9.3 in / 38.6 lb				19.7 x 26.8 x 9.3 in / 50 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	IP65 / Type 3R					
<b>Equipment</b>						
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, 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)	●					
<b>SMA Backup Secure** (grid outage mode, with or without battery)</b>						
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.						

## Accessories



SMA Energy Meter  
EMETER-US-50



SMA Backup Start  
BU-STRT-US-50



SMA Shutdown  
Initiator  
RSI-US-50