



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

Preliminary

# 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, Hybrid and AC coupling in one
- 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
- 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 Solutions will continue this trajectory. Installers choose SMA for reliability, performance and innovation.**

The center of this new home 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 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, ShadeFix optimization (with 3 MPPTs), SMA Arc Fix, 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)  | 7600 Wp  | 9600 Wp          | 11600 Wp         | 15400 Wp         | 19200 Wp                 | 23000 Wp          |
| Max. DC voltage  | 600 V  |                  |                  |                  |                          |                   |
| MPP voltage range  | 60 – 480 V   |                  |                  |                  |                          |                   |
| Startup input voltage  | 66 Vdc   |                  |                  |                  |                          |                   |
| 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                     |                   |
| Number of 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   | See SMA List of Approved 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 / 4032 W   | 10000 W / 5040 W | 10000 W / 6084 W | 10000 W / 8064 W | 10000 W / 10080 W        | 10000 W / 12096 W |
| <b>Output (AC)</b>   |  |                  |                  |                  |                          |                   |
| Max. apparent AC power   | 3840 VA  | 4800 VA          | 5760 VA          | 7650 VA          | 9600 VA                  | 11520 VA          |
| AC Rated power (at 240 V, 60 Hz)   | 3840 W   | 4800 W           | 5760 W           | 7650 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  | 97.5%  |                  |                  |                  |                          |                   |
| <b>Protective devices</b>  |  |                  |                  |                  |                          |                   |
| DC disconnect / DC reverse polarity protection   | ● / ●  |                  |                  |                  |                          |                   |
| Arc fault circuit interrupter (AFCI)   | ●  |                  |                  |                  |                          |                   |
| 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   |                  |                  |                  |                          |                   |
| <b>General data</b>  |  |                  |                  |                  |                          |                   |
| Dimensions (W / H / D) / Weight  | 19.7 x 23.1 x 9.3 in / 38.6 lb   |                  |                  |                  | 20 x 29.5 x 8 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 3S   |                  |                  |                  |                          |                   |
| <b>Equipment</b>   |  |                  |                  |                  |                          |                   |
| AC terminals / Ground Connection (AWG)   | 10 AWG - 6 AWG / 12 AWG - 6 AWG  |                  |                  |                  | 10 AWG - 6 AWG           |                   |
| 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 (planned)   | 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<br>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<br>* Upcoming    **Backup Start module required to enable SMA Backup Secure in installations bound by NEC rapid shutdown requirements. |  |                  |                  |                  |                          |                   |

**Accessories**



SMA Energy Meter  
EMETER-US-50



Backup Start  
Module  
BU-STRT-US-50



SMA Shutdown  
Initiator  
RSI-US-50