/ SBSE3.6-50 / SBSE4.0-50 / SBSE5.0-50 / SBSE6.0-50 / SBSE8.0-50 / SBSE9.9-50



Sunny Boy Smart Energy

3.6 / 4.0 / 5.0 / 6.0 / 8.0 / 9.9

Higher yields. Faster charging.
Easy installation. Full control.

BEST EFFICIENCY
HYBRID
UP TO 5 KW (DC)
TOP PERFORMER
SPI
92.8%
HTW BERLIN 2025

powered by ennexOS

SMA Smart Connected

SMA ArcFix

SMA ShadeFix
STRING LEVEL OPTIMIZATION

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

Unmatched flexibility
- 3 MPP trackers / 4 MPP trackers for flexible roof layouts
- Low startup voltage
- Integrated secure power supply[1)]
- Optional battery-backup function

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

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.

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 function, it will continue to run even if the utility grid fails.
With three MPP trackers – or four in the new high-performance version – different roof orientations can also be taken into account for solar power production. The hybrid inverter offers very fast charging for connected batteries and optimizes the use of times of year when there are fewer hours of daylight.
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.

1) Australia/New Zealand specific wiring required

Technical Data	Sunny Boy Smart Energy 3.6	Sunny Boy Smart Energy 4.0	Sunny Boy Smart Energy 5.0	Sunny Boy Smart Energy 6.0
Input PV (DC)				
Max. PV system power	7200 Wp	8000 Wp	10000 Wp	12000 Wp
Max. input voltage	600 V			
Min. input voltage	60 V			
MPP voltage range	60 V to 480 V			
Startup input voltage	66 V			
Max. usable input current input A / B / C	15 A			
Max. DC short-circuit current input A / B / C	up to 30 A[1)]			
Number of independent MPP inputs / inputs per MPP	3 / 1			
Connection of MPP inputs in parallel possible	A and B			
Input battery (DC)				
Battery type	Lithium-Ion batteries[2)]			
Voltage range	90 V to 500 V			
Max. continuous charging current / max. continuous discharging current	30 A / 30 A			
Number of independent battery inputs	1			
Max. charging power	10000 W			
Max. discharging power	3789 W	4211 W	5263 W	6316 W
Output (AC)				
Rated power (at 230 V, 50 Hz)	3600 W	4000 W	5000 W [3)]	6000 W [3)]
Max. apparent AC power (at 230 V, 50 Hz)	3600 VA	4000 VA	5000 VA [3)]	6000 VA [3)]
Rated AC voltage	230 V / 240 V			
AC voltage range	184 V to 253 V			
AC grid frequency / range	50 Hz / 60 Hz / 44 Hz to 66 Hz			
Rated / Max. output current	15.7 A / 16 A	17.4 A / 20 A	21.7 A / 25 A	26.1 A / 30 A
Power factor at rated power/adjustable displacement power factor	1 / 0 overexcited to 0 underexcited			
Efficiency				
Max. efficiency / European efficiency	97.8 % / 96.6 %	97.8 % / 96.8 %	97.8 % / 97.1 %	98.0 % / 97.5 %
SPS Output (AC backup) during off-grid mode				
Rated power (at 230 V)	3680 W			
Max. apparent AC power (at 230 V, 50 Hz)	3680 VA			
Nominal AC voltage	230 V / 240 V			
Rated output current	16 A			
Active power limit AC 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			
Active power limit AC frequency	50 Hz / 60 Hz			
Switching mode	automatic			
Protective Devices				
Input-side disconnection point	●			
Arc-fault circuit interrupter (AFCI)	●			
Ground fault monitoring / grid monitoring	● / ●			
DC reverse polarity protection / AC short-circuit current capability	● / ●			
All-pole-sensitive residual-current monitoring unit	●			
Protection class	I			
Overvoltage category grid / battery / PV	III / II / II			
DC Type II SPD (external, 3rd party)	○			
General Data				
Dimensions (W / H / D)	500 mm / 586 mm / 236 mm (19.7 / 23.1 / 9.3 in)			
Weight	17.5 kg (38.6 lb)			
Operating temperature range	–25°C to +60°C (–13°F to +140°F) with derating			
Noise emission, max.	35 dB(A)			
Self-consumption (at night)	6 W			
Topology / cooling method	Transformerless / Natural convection			
Degree of protection (as per IEC 60529) / climate category (as per IEC 60721-3-4)	IP65/4K26			
Maximum permissible value for relative humidity (non-condensing)	100%			
Equipment				
PV connection / BAT connection	Lever clamp / Push in clamp			
Display via smartphone, tablet, laptop	●			
Communication protocols	Modbus (SMA, SunSpec), Speedwire / Webconnect, SMA battery interface, MODBUS RTU			
Interfaces: WLAN / Ethernet / BAT-CAN / RS-485	● / ● / ● / ●			
Ethernet ports	2			
Number of digital outputs	1 (SG Ready (multifunction relay, 30 Vdc /1 A))			
Shade management: SMA ShadeFix (integrated)	●			
Warranty: 5/10/15/20 years	● / ●[4)] / ○ / ○			
Planned certificates and permits (more available upon request)	AS4777-2; C10/11; CEI0-21; EN50549-1; IEC 62109-1 / IEC 62109-2; TED749; VDE-AR-N4105			
Cybersecurity	EU-RED Cybersecurity Directive (EN 18031-1), ETSI EN 303 645, Speedwire Encrypted Communication (SEC), EU-based data hosting (ISO 27001), automatic updates			
Country availability of SMA Smart Connected	BE, DE, ES, LU, NL, IT			
Type designation	SBSE3.6-50	SBSE4.0-50	SBSE5.0-50	SBSE6.0-50

● Standard features ○ Optional Data at nominal conditions 1) The sum of all inputs must not exceed 66 A 2) See "List of Approved Batteries" at www.SMA-Solar.com

3) 4600 W / 4600 VA according to VDE-AR-N 4105 4) Device registration via the SMA product registration at my.sma-service.com required within 12 months. The conditions of the SMA limited factory warranty apply. You can find additional information at SMA-solar.com

Technical Data	Sunny Boy Smart Energy 8.0	Sunny Boy Smart Energy 9.9
Input PV (DC)		
Max. PV system power	16000 Wp	19800 Wp
Max. input voltage	600 V	
Min. input voltage	60 V	
MPP voltage range	60 V to 480 V	
Startup input voltage	66 V	
Max. usable input current input A / B / C / D	15 A	
Max. DC short-circuit current input A / B / C / D	30 A[1)]	
Number of independent MPP inputs / inputs per MPP	4 / 1	
Connection of MPP inputs in parallel possible	A and B / C and D	
Input battery (DC)		
Battery type	Lithium-Ion batteries[2)]	
Voltage range	90 V to 500 V	
Max. continuous charging current / max. continuous discharging current	30 A / 30 A	
Number of independent battery inputs	1	
Max. charging power	12000 W	
Max. discharging power	8421 W	10421 W
Output (AC)		
Rated power (at 230 V, 50 Hz)	8000 W	9900 W
Max. apparent AC power (at 230 V, 50 Hz)	8000 VA	9900 VA
Rated AC voltage	230 V / 240 V	
AC voltage range	184 V to 253 V	
AC grid frequency / range	50 Hz / 60 Hz / 44 Hz to 66 Hz	
Rated / Max. output current	34.8 A / 40 A	43 A / 48 A
Power factor at rated power/adjustable displacement power factor	1 / 0 overexcited to 0 underexcited	
Efficiency		
Max. efficiency / European efficiency	97,89 % / 97,32 %	97,82 % / 97,35 %
SPS Output (AC backup) during off-grid mode		
Rated power (at 230 V)	3680 W	
Max. apparent AC power (at 230 V, 50 Hz)	3680 VA	
Nominal AC voltage	230 V / 240 V	
Rated output current	16 A	
Active power limit AC 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)	11040 W	
Max. apparent AC power (at 230 V, 50 Hz)	11040 VA	
Output power / Output apparent power < 100 ms	16560 W / 16560 VA	
Output power / Output apparent power < 30 s	13800 W / 13800 VA	
Nominal AC voltage	230 V / 240 V	
Active power limit AC frequency	50 Hz / 60 Hz	
Switching mode	automatic	
Protective Devices		
Input-side disconnection point	●	
Arc-fault circuit interrupter (AFCI)	●	
Ground fault monitoring / grid monitoring	● / ●	
DC reverse polarity protection / AC short-circuit current capability	● / ●	
All-pole-sensitive residual-current monitoring unit	●	
Protection class	I	
Overvoltage category grid / battery / PV	III/II/II	
DC Type II SPD (external, 3rd party)	○	
General Data		
Dimensions (W / H / D)	500 mm / 680 mm / 233 mm (19.7 / 26.8 / 9.2 in)	
Weight	22 kg (48.5 lb)	
Operating temperature range	–25°C to +60°C (–13°F to +140°F) with derating	
Noise emission, max.	35 dB(A)	
Self-consumption (at night)	6 W	
Topology / cooling method	Transformerless / Natural convection	
Degree of protection (as per IEC 60529) / climate category (as per IEC 60721-3-4)	IP65/4K26	
Maximum permissible value for relative humidity (non-condensing)	100%	
Equipment		
PV connection / BAT connection	Lever clamp / Push in clamp	
Display via smartphone, tablet, laptop	●	
Communication protocols	Modbus (SMA, SunSpec), Speedwire / Webconnect, SMA battery interface, MODBUS RTU	
Interfaces: WLAN / Ethernet / BAT-CAN / RS-485	● / ● / ● / ●	
Ethernet ports	2	
Number of digital outputs	1 (SG Ready (multifunction relay, 30 Vdc /1 A))	
Shade management: SMA ShadeFix (integrated)	●	
Warranty: 5/10/15/20 years	● / ●[3)] / ○ / ○	
Planned certificates and permits (more available upon request)	AS4777-2; CEI0-21	
Cybersecurity	EU-RED Cybersecurity Directive (EN 18031-1), ETSI EN 303 645, Speedwire Encrypted Communication (SEC), EU-based data hosting (ISO 27001), automatic updates	
Country availability of SMA Smart Connected	IT	
Type designation	SBSE8.0-50	SBSE9.9-50

● Standard features ○ Optional Data at nominal conditions 1) The sum of all inputs must not exceed 90 A 2) See "List of Approved Batteries" at www.SMA-Solar.com

3) Device registration via the SMA product registration at my.sma-service.com required within 12 months. The conditions of the SMA limited factory warranty apply. You can find additional information at SMA-solar.com

Accessories:

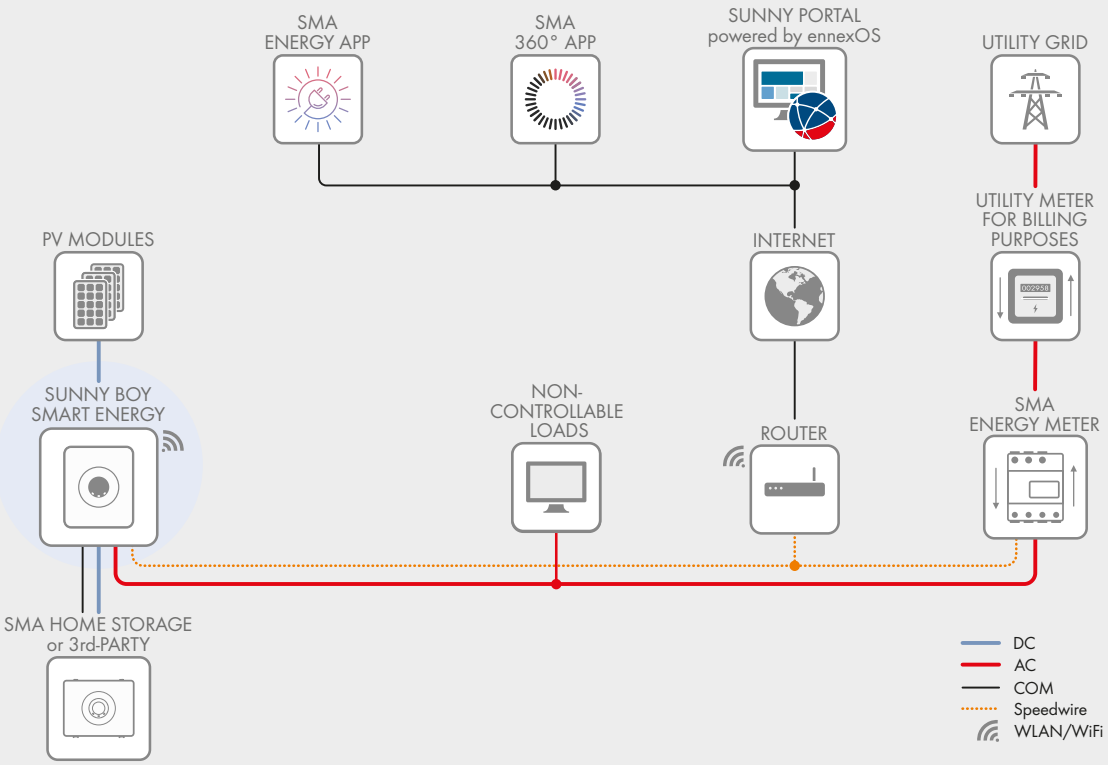


SMA Energy Meter CT
EM-1CT63A-21 /
EM-3CT63A-21

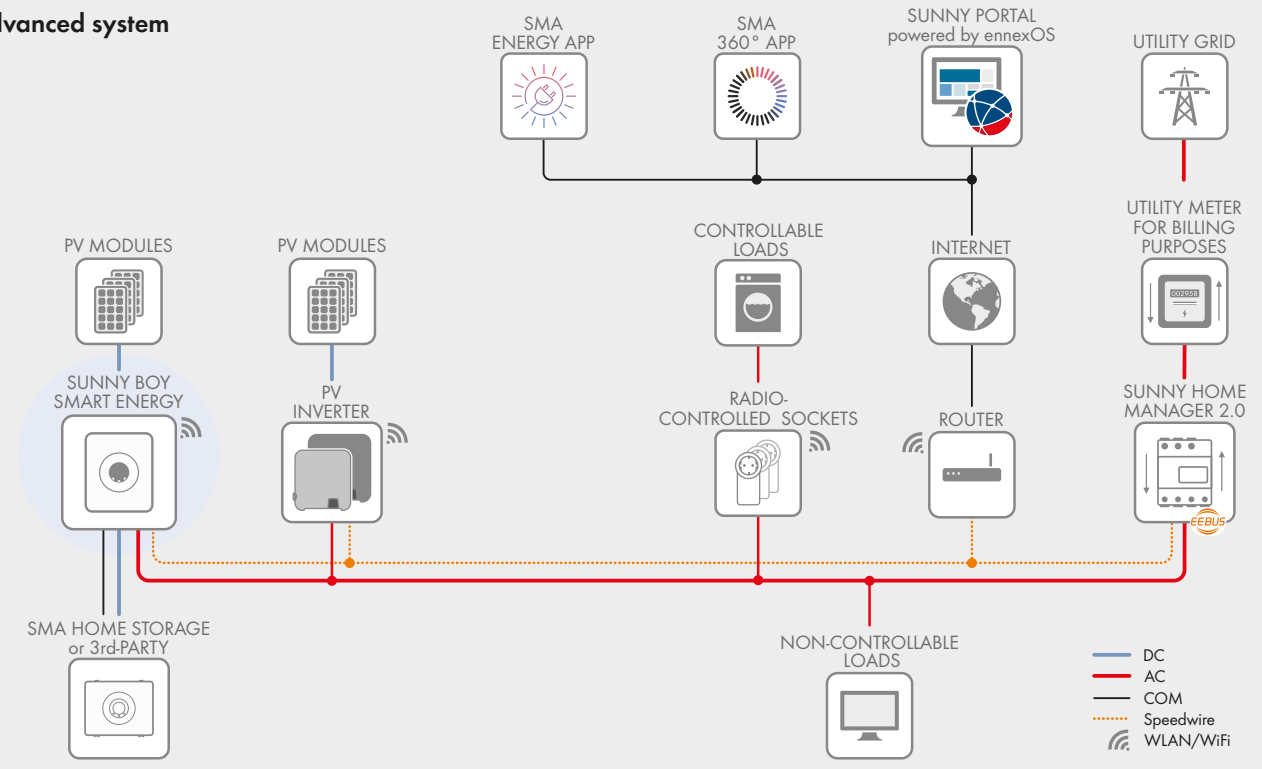


SMA Backup 1P
BU-SBSE-AU-1P-50

Basic system



Advanced system



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 loads 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.

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