



Economical

- Maximum efficiency of 98.3 %
- Shade management with OptiTrac Global Peak
- Active temperature management with OptiCool

Flexible

- DC input voltage of up to 1,000 V
- Integrated grid management functions
- Reactive power supply
- Module-tailored system design with Optiflex

Communicative

- SMA Webconnect
- Sunny Portal communication
- SMA and SunSpec Modbus communication
- Simple country configuration
- Multifunction relay comes standard

Easy-to-Use

- Three-phase feed-in
- Cable connection without tools
- SUNCLIX DC plug-in system
- Integrated ESS (Electronic Solar Switch)
- Easy wall mounting

SUNNY TRIPOWER 5000TL – 12000TL

The Three-Phase Inverter – Not Only for Your Home...

...but also perfectly suited to the design of the traditional residential PV system up to the higher power outage range. After all, with the addition of the new 10 kVA and 12 kVA versions to the portfolio, the Sunny Tripower product range covers a broad spectrum of applications. Users benefit from numerous tried-and-tested product features. Highly flexible with its proven Optiflex technology and asymmetrical multistring, it delivers maximum yields with a top efficiency rating and OptiTrac Global Peak. In addition to SMA and Sunspec Modbus communication, it also comes standard with a direct Sunny Portal connection via SMA Webconnect. Other standard features include integrated grid management functions, reactive power supply and suitability for operation with a 30 mA RCD. In summary, when it comes to system design in the 5 kW to 12 kW power classes, the Sunny Tripower is the optimum product solution – for applications ranging from use in your own home and larger PV rooftop systems to implementation of smaller-scale PV farms.

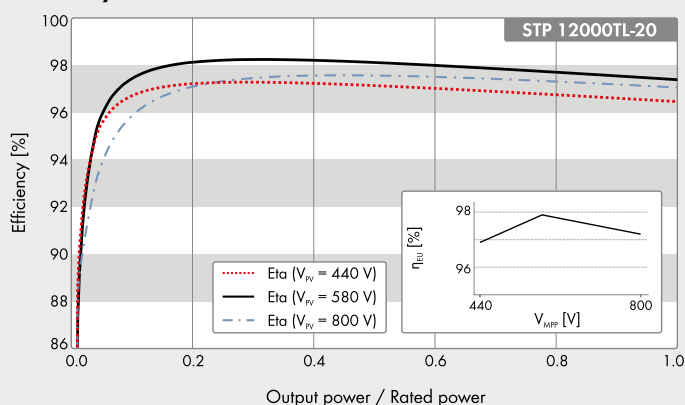
SUNNY TRIPOWER

5000TL / 6000TL / 7000TL / 8000TL / 9000TL / 10000TL / 12000TL

Technical Data	Sunny Tripower 5000TL	Sunny Tripower 6000TL
Input (DC)		
Max. generator power	9000 W _p	9000 W _p
Max. input voltage	1000 V	1000 V
MPP voltage range / rated input voltage	245 V to 800 V/580 V	295 V to 800 V/580 V
Min. input voltage / start input voltage	150 V / 188 V	150 V / 188 V
Max. input current input A / input B	11 A / 10 A	11 A / 10 A
Max. short-circuit current input A / input B	17 A / 15 A	17 A / 15 A
Number of independent MPP inputs / strings per MPP input	2 / A:2; B:2	2 / A:2; B:2
Output (AC)		
Rated power (at 230 V, 50 Hz)	5000 W	6000 W
Max. AC apparent power	5000 VA	6000 VA
Nominal AC voltage	3 / N / PE; 220 / 380 V 3 / N / PE; 230 / 400 V 3 / N / PE; 240 / 415 V	3 / N / PE; 220 / 380 V 3 / N / PE; 230 / 400 V 3 / N / PE; 240 / 415 V
Nominal AC voltage range	160 to 280 V	160 V to 280 V
AC grid frequency / range	50 Hz, 60 Hz / -5 Hz to +5 Hz	50 Hz, 60 Hz / -5 Hz to +5 Hz
Rated power frequency / rated grid voltage	50 Hz / 230 V	50 Hz / 230 V
Max. output current	7.3 A	8.7 A
Power factor at rated power	1	1
Adjustable displacement power factor	0.8 overexcited to 0.8 underexcited	0.8 overexcited to 0.8 underexcited
Feed-in phases / connection phases	3 / 3	3 / 3
Efficiency		
Max. efficiency / European efficiency	98 % / 97.1 %	98 % / 97.4 %
Protective devices		
DC disconnect device	●	●
Ground fault monitoring / grid monitoring	● / ●	● / ●
DC reverse polarity protection / AC short-circuit current capability / galvanically isolated	● / ● / –	● / ● / –
All-pole sensitive residual-current monitoring unit	●	●
Protection class (according to IEC 62103)/overvoltage category (according to IEC 60664-1)	I / III	I / III
General data		
Dimensions (W / H / D)	470 / 730 / 240 mm (18.5 / 28.7 / 9.5 inch)	470 / 730 / 240 mm (18.5 / 28.7 / 9.5 inch)
Weight	37 kg (81.6 lb)	37 kg (81.6 lb)
Operating temperature range	-25 °C to +60 °C (-13 °F to +140 °F)	-25 °C to +60 °C (-13 °F to +140 °F)
Noise emission (typical)	40 dB(A)	40 dB(A)
Self-consumption (at night)	1 W	1 W
Topology / cooling concept	Transformerless / Opticool	Transformerless / Opticool
Degree of protection (according to IEC 60529)	IP65	IP65
Climatic category (according to IEC 60721-3-4)	4K4H	4K4H
Maximum permissible value for relative humidity (non-condensing)	100 %	100 %
Features		
DC connection / AC connection	SUNCLIX / spring-cage terminal	SUNCLIX / spring-cage terminal
Display	Graphic	Graphic
Interface: RS485, Modbus, Speedwire / Webconnect	○ / ● / ●	○ / ● / ●
Multifunction relay / Power Control Module	● / ○	● / ○
Guarantee: 5 / 10 / 15 / 20 years	● / ○ / ○ / ○	● / ○ / ○ / ○
Certificates and permits (more available on request)	AS 4777.2:2015, CE, CEI 0-21:2016, C10/11:2012, DIN EN 62109-1, EN 50438 ¹ , G59/3, G83/2, IEC 61727/MEA ² , IEC 62109-2, NEN EN 50438, NRS 097-2-1, PPC, PPDS, RD 661/2007, RD 1699:2011, SI 4777, UTE C15-712-1, VDE0126-1-1, VDE AR-N 4105, VFR 2013, VFR 2014	
Type designation	STP 5000TL-20	STP 6000TL-20

Sunny Tripower 7000TL	Sunny Tripower 8000TL	Sunny Tripower 9000TL
13500 W _p	13500 W _p	13500 W _p
1000 V	1000 V	1000 V
290 V to 800 V / 580 V	330 V to 800 V / 580 V	370 V to 800 V / 580 V
150 V / 188 V	150 V / 188 V	150 V / 188 V
15 A / 10 A	15 A / 10 A	15 A / 10 A
25 A / 15 A	25 A / 15 A	25 A / 15 A
2 / A:2; B:2	2 / A:2; B:2	2 / A:2; B:2
7000 W	8000 W	9000 W
7000 VA	8000 VA	9000 VA
3 / N / PE; 220 / 380 V	3 / N / PE; 220 / 380 V	3 / N / PE; 220 / 380 V
3 / N / PE; 230 / 400 V	3 / N / PE; 230 / 400 V	3 / N / PE; 230 / 400 V
3 / N / PE; 240 / 415 V	3 / N / PE; 240 / 415 V	3 / N / PE; 240 / 415 V
160 V to 280 V	160 V to 280 V	160 V ... 280 V
50 Hz, 60 Hz / -5 Hz to +5 Hz	50 Hz, 60 Hz / -5 Hz to +5 Hz	50 Hz, 60 Hz / -5 Hz ... +5 Hz
50 Hz / 230 V	50 Hz / 230 V	50 Hz / 230 V
10.2 A	11.6 A	13.1 A
1	1	1
0.8 overexcited to 0.8 underexcited	0.8 overexcited to 0.8 underexcited	0.8 overexcited to 0.8 underexcited
3 / 3	3 / 3	3 / 3
98 % / 97.5 %	98 % / 97.6 %	98 % / 97.6 %
I / III	I / III	I / III
470 / 730 / 240 mm (18.5 / 28.7 / 9.5 inch)	470 / 730 / 240 mm (18.5 / 28.7 / 9.5 inch)	470 / 730 / 240 mm (18.5 / 28.7 / 9.5 inch)
37 kg (81.6 lb)	37 kg (81.6 lb)	37 kg (81.6 lb)
-25 °C to +60 °C (-13 °F to +140 °F)	-25 °C to +60 °C (-13 °F to +140 °F)	-25 °C to +60 °C (-13 °F to +140 °F)
40 dB(A)	40 dB(A)	40 dB(A)
1 W	1 W	1 W
Transformerless / Opticool	Transformerless / Opticool	Transformerless / Opticool
IP65	IP65	IP65
4K4H	4K4H	4K4H
100 %	100 %	100 %
SUNCLIX / spring-cage terminal	SUNCLIX / spring-cage terminal	SUNCLIX / spring-cage terminal
Graphic	Graphic	Graphic
AS 4777.2:2015, CE, CEI 0-21:2016, C10/11:2012, DIN EN 62109-1, EN 50438 ¹ , G59/3, G83/2, IEC 61727/MEA ² , IEC 62109-2, NEN EN 50438, NRS 097-2-1, PPC, PPDS, RD 661/2007, RD 1699:2011, SI 4777, UTE C15-712-1, VDE0126-1-1, VDE AR-N 4105, VFR 2013, VFR 2014		
STP 7000TL-20	STP 8000TL-20	STP 9000TL-20

Efficiency curve



Accessories



Power Control Module
PWCBRD-10



RS485 interface
485BRD-10

¹ Does not apply to all national appendices of EN 50438

² Only STP 9000TL-20

● Standard feature ○ Optional feature — Not available

Last updated: May 2017

Data at nominal conditions

Sunny Tripower 10000TL	Sunny Tripower 12000TL	
13500 W _p	18000 W _p	
1000 V	1000 V	
370 V to 800 V / 580 V	440 V to 800 V / 580 V	
150 V / 188 V	150 V / 188 V	
18 A / 10 A	18 A / 10 A	
25 A / 15 A	25 A / 15 A	
2 / A:2; B:2	2 / A:2; B:2	
10000 W	12000 W	
10000 VA	12000 VA	
3 / N / PE; 220 / 380 V	3 / N / PE; 220 / 380 V	
3 / N / PE; 230 / 400 V	3 / N / PE; 230 / 400 V	
3 / N / PE; 240 / 415 V	3 / N / PE; 240 / 415 V	
160 V to 280 V	160 V to 280 V	
50 Hz, 60 Hz / -5 Hz to +5 Hz	50 Hz, 60 Hz / -5 Hz to +5 Hz	
50 Hz / 230 V	50 Hz / 230 V	
14.5 A	17.4 A	
1	1	
0.8 overexcited to 0.8 underexcited	0.8 overexcited to 0.8 underexcited	
3 / 3	3 / 3	
98 % / 97.6 %	98.3 % / 97.9 %	
● ● / ● ● / ● / — ● I / III	● ● / ● ● / ● / — ● I / III	
470 / 730 / 240 mm (18.5 / 28.7 / 9.5 inches)	470 / 730 / 240 mm (18.5 / 28.7 / 9.5 inches)	
37 kg (81.6 lb)	38 kg / 84 lbs	
-25 °C to +60 °C (-13 °F to +140 °F)	-25 °C to +60 °C (-13 °F to +140 °F)	
40 dB(A)	40 dB(A)	
1 W	1 W	
Transformerless / Opticool	Transformerless / Opticool	
IP65	IP65	
4K4H	4K4H	
100 %	100 %	
SUNCLIX / spring-cage terminal	SUNCLIX / spring-cage terminal	
Graphic ○ / ● / ● ● / ○ ● / ○ / ○ / ○	Graphic ○ / ● / ● ● / ○ ● / ○ / ○ / ○	
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STP 10000TL-20	STP 12000TL-20	

SUNNY PORTAL



www.SunnyPortal.com

Professional management,
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SUNNY PLACES

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ENERGY
THAT
CHANGES



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Status: May 2017

STP 5000TL-20 / STP 6000TL-20 / STP 7000TL-20 / STP 8000TL-20 / STP 9000TL-20 / STP 10000TL-20 / STP 12000TL-20



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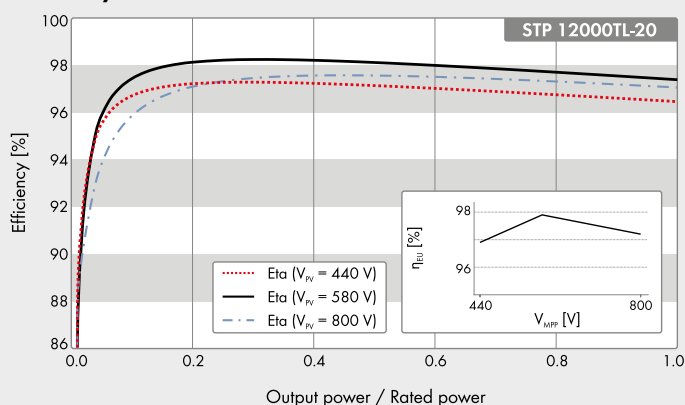
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5000TL / 6000TL / 7000TL / 8000TL / 9000TL / 10000TL / 12000TL

Technical Data	Sunny Tripower 5000TL	Sunny Tripower 6000TL
Input (DC)		
Max. generator power	9000 W _p	9000 W _p
Max. input voltage	1000 V	1000 V
MPP voltage range / rated input voltage	245 V to 800 V/580 V	295 V to 800 V/580 V
Min. input voltage / start input voltage	150 V / 188 V	150 V / 188 V
Max. input current input A / input B	11 A / 10 A	11 A / 10 A
Max. short-circuit current input A / input B	17 A / 15 A	17 A / 15 A
Number of independent MPP inputs / strings per MPP input	2 / A:2; B:2	2 / A:2; B:2
Output (AC)		
Rated power (at 230 V, 50 Hz)	5000 W	6000 W
Max. AC apparent power	5000 VA	6000 VA
Nominal AC voltage	3 / N / PE; 230 / 400 V	3 / N / PE; 230 / 400 V
AC grid frequency / range	50 Hz / -5 Hz to +5 Hz	50 Hz / -5 Hz to +5 Hz
Rated power frequency / rated grid voltage	50 Hz / 230 V	50 Hz / 230 V
Max. output current	7.3 A	8.7 A
Power factor at rated power	1	1
Adjustable displacement power factor	0.8 overexcited to 0.8 underexcited	0.8 overexcited to 0.8 underexcited
Feed-in phases / connection phases	3 / 3	3 / 3
Efficiency		
Max. efficiency / European efficiency	98 % / 97.1 %	98 % / 97.4 %
Protective devices		
DC disconnect device	●	●
Ground fault monitoring / grid monitoring	● / ●	● / ●
DC reverse polarity protection / AC short-circuit current capability / galvanically isolated	● / ● / –	● / ● / –
All-pole sensitive residual-current monitoring unit	●	●
Protection class (according to IEC 62103)/overvoltage category (according to IEC 60664-1)	I / III	I / III
General data		
Dimensions (W / H / D)	470 / 730 / 240 mm (18.5 / 28.7 / 9.5 inch)	470 / 730 / 240 mm (18.5 / 28.7 / 9.5 inch)
Weight	37 kg (81.6 lb)	37 kg (81.6 lb)
Operating temperature range	-25 °C to +60 °C (-13 °F to +140 °F)	-25 °C to +60 °C (-13 °F to +140 °F)
Noise emission (typical)	40 dB(A)	40 dB(A)
Self-consumption (at night)	1 W	1 W
Topology / cooling concept	Transformerless / Opticool	Transformerless / Opticool
Degree of protection (according to IEC 60529)	IP65	IP65
Climatic category (according to IEC 60721-3-4)	4K4H	4K4H
Maximum permissible value for relative humidity (non-condensing)	100 %	100 %
Features		
DC connection / AC connection	SUNCLIX / spring-cage terminal	SUNCLIX / spring-cage terminal
Display	Graphic	Graphic
Interface: RS485, Modbus, Speedwire / Webconnect	○ / ● / ●	○ / ● / ●
Multifunction relay / Power Control Module	● / ○	● / ○
Guarantee: 5 / 10 / 15 / 20 years	● / ○ / ○ / ○	● / ○ / ○ / ○
Certificates and permits (more available on request)	AS 4777.2:2015, CE, CEI 0-21:2016, C10/11:2012, DIN EN 62109-1, EN 50438 ¹ , G59/3, G83/2, IEC 61727/MEA ² , IEC 62109-2, NEN EN 50438, NRS 097-2-1, PPC, PPDS, RD 661/2007, RD 1699:2011, SI 4777, UTE C15-712-1, VDE0126-1-1, VDE AR-N 4105, VFR 2013, VFR 2014	
Type designation	STP 5000TL-20	STP 6000TL-20

Sunny Tripower 7000TL	Sunny Tripower 8000TL	Sunny Tripower 9000TL
13500 W _p	13500 W _p	13500 W _p
1000 V	1000 V	1000 V
290 V to 800 V / 580 V	330 V to 800 V / 580 V	370 V to 800 V / 580 V
150 V / 188 V	150 V / 188 V	150 V / 188 V
15 A / 10 A	15 A / 10 A	15 A / 10 A
25 A / 15 A	25 A / 15 A	25 A / 15 A
2 / A:2; B:2	2 / A:2; B:2	2 / A:2; B:2
7000 W	8000 W	9000 W
7000 VA	8000 VA	9000 VA
3 / N / PE; 230 / 400 V	3 / N / PE; 230 / 400 V	3 / N / PE; 230 / 400 V
50 Hz / -5 Hz to +5 Hz	50 Hz / -5 Hz to +5 Hz	50 Hz / -5 Hz to +5 Hz
50 Hz / 230 V	50 Hz / 230 V	50 Hz / 230 V
10.2 A	11.6 A	13.1 A
1	1	1
0.8 overexcited to 0.8 underexcited	0.8 overexcited to 0.8 underexcited	0.8 overexcited to 0.8 underexcited
3 / 3	3 / 3	3 / 3
98 % / 97.5 %	98 % / 97.6 %	98 % / 97.6 %
I / III	I / III	I / III
470 / 730 / 240 mm (18.5 / 28.7 / 9.5 inch)	470 / 730 / 240 mm (18.5 / 28.7 / 9.5 inch)	470 / 730 / 240 mm (18.5 / 28.7 / 9.5 inch)
37 kg (81.6 lb)	37 kg (81.6 lb)	37 kg (81.6 lb)
-25 °C to +60 °C (-13 °F to +140 °F)	-25 °C to +60 °C (-13 °F to +140 °F)	-25 °C to +60 °C (-13 °F to +140 °F)
40 dB(A)	40 dB(A)	40 dB(A)
1 W	1 W	1 W
Transformerless / Opticool	Transformerless / Opticool	Transformerless / Opticool
IP65	IP65	IP65
4K4H	4K4H	4K4H
100 %	100 %	100 %
SUNCLIX / spring-cage terminal	SUNCLIX / spring-cage terminal	SUNCLIX / spring-cage terminal
Graphic	Graphic	Graphic
AS 4777.2:2015, CE, CEI 0-21:2016, C10/11:2012, DIN EN 62109-1, EN 50438 ¹ , G59/3, G83/2, IEC 61727/MEA ² , IEC 62109-2, NEN EN 50438, NRS 097-2-1, PPC, PPDS, RD 661/2007, RD 1699:2011, SI 4777, UTE C15-712-1, VDE0126-1-1, VDE AR-N 4105, VFR 2013, VFR 2014		
STP 7000TL-20	STP 8000TL-20	STP 9000TL-20

Efficiency curve



Accessories



Power Control Module
PWCBRD-10



RS485 interface
485BRD-10

¹ Does not apply to all national appendices of EN 50438

² Only STP 9000TL-20

● Standard feature ○ Optional feature — Not available

Last updated: May 2017

Data at nominal conditions

Sunny Tripower 10000TL	Sunny Tripower 12000TL	
13500 W _p	18000 W _p	
1000 V	1000 V	
370 V to 800 V / 580 V	440 V to 800 V / 580 V	
150 V / 188 V	150 V / 188 V	
18 A / 10 A	18 A / 10 A	
25 A / 15 A	25 A / 15 A	
2 / A:2; B:2	2 / A:2; B:2	
10000 W	12000 W	
10000 VA	12000 VA	
3 / N / PE; 230 / 400 V	3 / N / PE; 230 / 400 V	
50 Hz / -5 Hz to +5 Hz	50 Hz / -5 Hz to +5 Hz	
50 Hz / 230 V	50 Hz / 230 V	
14.5 A	17.4 A	
1	1	
0.8 overexcited to 0.8 underexcited	0.8 overexcited to 0.8 underexcited	
3 / 3	3 / 3	
98 % / 97.6 %	98.3 % / 97.9 %	
●	●	
● / ●	● / ●	
● / ● / -	● / ● / -	
●	●	
I / III	I / III	
470 / 730 / 240 mm (18.5 / 28.7 / 9.5 inches)	470 / 730 / 240 mm (18.5 / 28.7 / 9.5 inches)	
37 kg (81.6 lb)	38 kg / 84 lbs	
-25 °C to +60 °C (-13 °F to +140 °F)	-25 °C to +60 °C (-13 °F to +140 °F)	
40 dB(A)	40 dB(A)	
1 W	1 W	
Transformerless / Opticool	Transformerless / Opticool	
IP65	IP65	
4K4H	4K4H	
100 %	100 %	
SUNCLIX / spring-cage terminal	SUNCLIX / spring-cage terminal	
Graphic	Graphic	
○ / ● / ●	○ / ● / ●	
● / ○	● / ○	
● / ○ / ○ / ○	● / ○ / ○ / ○	
AS 4777.2:2015, CE, CEI 0-21:2016, C10/11:2012, DIN EN 62109-1, EN 50438 ¹ , G59/3, G83/2, IEC 61727/MEA ² , IEC 62109-2, NEN EN 50438, NRS 097-2-1, PPC, PPDS, RD 661/2007, RD 1699:2011, SI 4777, UTE C15-712-1, VDE0126-1-1, VDE AR-N 4105, VFR 2013, VFR 2014		
STP 10000TL-20	STP 12000TL-20	

SUNNY PORTAL



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SUNNY PLACES

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private end customers



ENERGY
THAT
CHANGES



www.SMA-Solar.com

Status: May 2017

SUNNY BOY 3.0 / 3.6 / 4.0 / 5.0

including SMA SMART CONNECTED



What's new:
The complete solution for
100% ease and comfort

SMA Smart Connected

- Investment security included
- Automatic monitoring by SMA
- Proactive information and automatic service

Easy to Use

- Safe plug and play installation
- Commissioning via smartphone or tablet
- WLAN and intuitive webserver

Everything at a Glance

- Free online monitoring
- PV system data viewable via smartphone

Future-Proof

- SMA storage solutions, intelligent energy management and Smart-module technology can be added at any time
- Dynamic feed-in control

SUNNY BOY 3.0 / 3.6 / 4.0 / 5.0

More than just an inverter. Smaller, simpler and more convenient with SMA Smart Connected

The new Sunny Boy 3.0 – 5.0 succeeds the globally successful Sunny Boy 3000 – 5000TL. It is more than just a PV inverter: with the integrated SMA Smart Connected service, it offers all-round comfort for PV system operators and installers alike. The automatic inverter monitoring by SMA analyzes operation, reports irregularities and thus minimizes downtime.

The Sunny Boy is ideally suited to solar power generation in private homes. Thanks to its extremely light design and location of the external connections, the device can be quickly installed and easily commissioned thanks to the intuitive webserver.

Current communication standards mean that intelligent energy management solutions as well as SMA storage solutions can be flexibly added to the inverter at any time.

SMA SMART CONNECTED

The integrated service for ease and comfort

SMA Smart Connected* is the free monitoring of the inverter via the SMA Sunny Portal. If there is an inverter fault, SMA proactively informs the PV system operator and the installer. This saves valuable working time and costs.

With SMA Smart Connected, the installer benefits from rapid diagnoses by SMA. They can thus quickly rectify the fault and score points with the customer thanks to the attraction of additional services.



ACTIVATION OF SMA SMART CONNECTED

During registration of the system in the Sunny Portal, the installer activates SMA Smart Connected and benefits from the automatic inverter monitoring by SMA.



AUTOMATIC INVERTER MONITORING

SMA takes on the job of inverter monitoring with SMA Smart Connected. SMA automatically checks the individual inverters for anomalies around the clock during operation. Every customer thus benefits from SMA's long years of experience.



PROACTIVE COMMUNICATION IN THE EVENT OF FAULTS

After a fault has been diagnosed and analyzed, SMA informs the installer and end customer immediately by e-mail. Everyone is thus optimally prepared for the troubleshooting. This minimizes the downtime and saves time and money. The regular power reports also provide valuable information about the overall system.



REPLACEMENT SERVICE

If a replacement device is necessary, SMA automatically supplies a new inverter within one to three days of the fault diagnosis. The installer can contact the PV system operator of their own accord and replace the inverter.

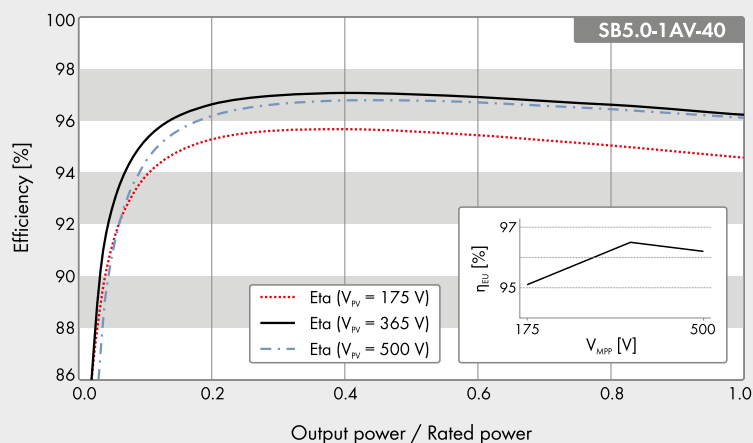


PERFORMANCE SERVICE

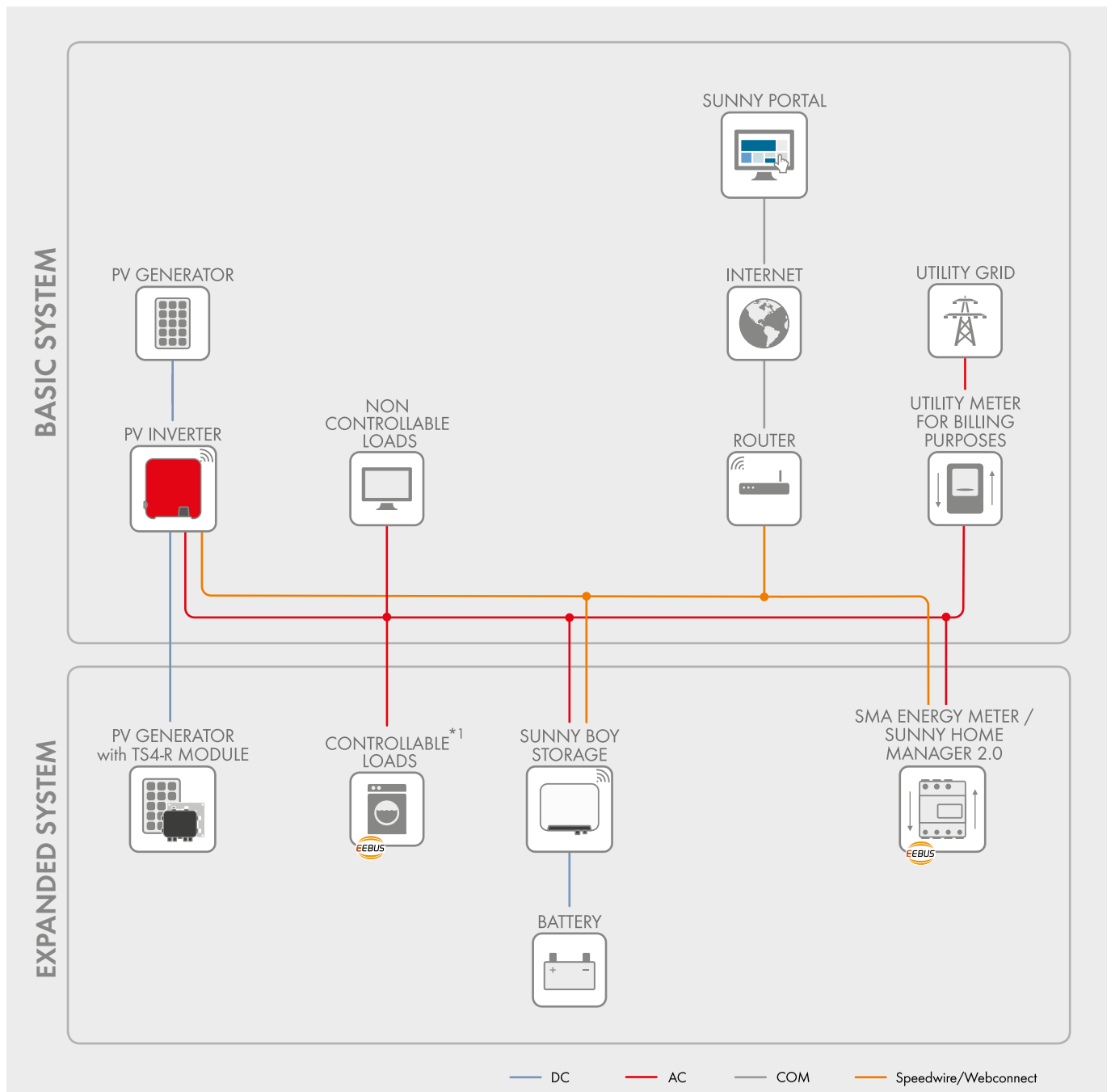
The PV system operator can claim compensation from SMA if the replacement inverter cannot be delivered within three days.

* Details: see document "Description of Services – SMA SMART CONNECTED"

Efficiency curve



Technical data	Sunny Boy 3.0	Sunny Boy 3.6	Sunny Boy 4.0	Sunny Boy 5.0
Input (DC)				
Max. generator power	5500 Wp	5500 Wp	7500 Wp	7500 Wp
Max. input voltage	600 V			
MPP voltage range	110 V to 500 V	130 V to 500 V	140 V to 500 V	175 V to 500 V
Rated input voltage	365 V			
Min. input voltage / initial input voltage	100 V / 125 V			
Max. input current input A / input B	15 A / 15 A			
Max. input current per string input A / input B	15 A / 15 A			
Number of independent MPP inputs / strings per MPP input	2 / A:2; B:2			
Output (AC)				
Rated power (at 230 V, 50 Hz)	3000 W	3680 W	4000 W	5000 W ¹⁾
Max. apparent power AC	3000 VA	3680 VA	4000 VA	5000 VA ²⁾
Nominal AC voltage / range	220 V, 230 V, 240 V / 180 V to 280 V			
AC power frequency / range	50 Hz, 60 Hz / –5 Hz to +5 Hz			
Rated power frequency / rated grid voltage	50 Hz / 230 V			
Max. output current	16 A	16 A	22 A ²⁾	22 A ²⁾
Power factor at rated power	1			
Adjustable displacement power factor	0.8 overexcited to 0.8 underexcited			
Feed-in phases / connection phases	1 / 1			
Efficiency				
Max. efficiency / European Efficiency	97.0% / 96.4%	97.0% / 96.5%	97.0% / 96.5%	97.0% / 96.5%
Protective devices				
Input-side disconnection point	●			
Ground fault monitoring / grid monitoring	● / ●			
DC reverse polarity protection / AC short circuit current capability / galvanically isolated	● / ● / –			
All-pole-sensitive residual-current monitoring unit	●			
Protection class (as per IEC 62103) / overvoltage category (according to IEC 60664-1)	I / III			
General data				
Dimensions (W / H / D)	435 mm / 470 mm / 176 mm (17.1 inches / 18.5 inches / 6.9 inches)			
Weight	16 kg (35.3 lb)			
Operating temperature range	–25°C to +60°C (–13°F to +140°F)			
Noise emission, typical	25 dB(A)			
Self-consumption (at night)	1.0 W			
Topology	Transformerless			
Cooling method	Convection			
Degree of protection (as per IEC 60529)	IP65			
Climatic category (as per IEC 60721-3-4)	4K4H			
Max. permissible value for relative humidity (non-condensing)	100%			
Equipment				
DC connection / AC connection	SUNCLIX / AC connector			
Display via smartphone, tablet, laptop	●			
Interfaces: WLAN, Speedwire / Webconnect	● / ●			
Warranty: 5 / 10 / 15 years	● / ○ / ○			
Certificates and approvals (more available upon request)	AS 4777, C10/11, CE, CEI 0-21, EN 50438, G59/3, G83/2, DIN EN 62109 / IEC 62109, NEN-EN50438, RD1699, SI 4777, UTE C15-712, VDE-AR-N 4105, VDE0126-1-1, VFR 2014 IEC 61727, NRS 097-2-1			
Certificates and approvals (planned)				
Country availability of SMA Smart Connected	AU, AT, BE, CH, DE, ES, FR, IT, LU, NL, UK			
● Standard features ○ Optional features – Not available				
Data at nominal conditions Status: May 2017				
1) 4600 W / 4600 VA according to VDE-AR-N 4105				
2) AS 4777: 21.7 A				
Type designation	SB3.0-1AV-40	SB3.6-1AV-40	SB4.0-1AV-40	SB5.0-1AV-40



BASIC SYSTEM functions

- Easy commissioning via integrated WLAN and Speedwire interface
- Maximum transparency thanks to visualization in the Sunny Portal / Sunny Places
- Safe investment through SMA Smart Connected
- Modbus as interface for third-party providers

EXPANDED SYSTEM functions

- Basic system functions
- Reduction in purchased electricity and increase in self-consumption through use of stored solar energy
- Maximum energy use thanks to forecast-based charging
- Increased self-consumption thanks to intelligent load control
- Maximum system yield through Smart module technology

With SMA Energy Meter^{*2}

- Maximum system usage through dynamic limiting of feed-in to the grid between 0% and 100%
- Visualization of energy consumption

^{*1}) via SMA radio-controlled socket or standardized data communication

^{*2}) from FW version 1.03.03

SUNNY BOY 3.0 / 3.6 / 4.0 / 5.0

including SMA SMART CONNECTED



What's new:
The complete solution for
100% ease and comfort

SMA Smart Connected

- Investment security included
- Automatic monitoring by SMA
- Proactive information and automatic service

Easy to Use

- Safe plug and play installation
- Commissioning via smartphone or tablet
- WLAN and intuitive webserver

Everything at a Glance

- Free online monitoring
- PV system data viewable via smartphone

Future-Proof

- SMA storage solutions, intelligent energy management and Smart-module technology can be added at any time
- Dynamic feed-in control

SUNNY BOY 3.0 / 3.6 / 4.0 / 5.0

More than just an inverter. Smaller, simpler and more convenient with SMA Smart Connected

The new Sunny Boy 3.0 – 5.0 succeeds the globally successful Sunny Boy 3000 – 5000TL. It is more than just a PV inverter: with the integrated SMA Smart Connected service, it offers all-round comfort for PV system operators and installers alike. The automatic inverter monitoring by SMA analyzes operation, reports irregularities and thus minimizes downtime.

The Sunny Boy is ideally suited to solar power generation in private homes. Thanks to its extremely light design and location of the external connections, the device can be quickly installed and easily commissioned thanks to the intuitive webserver.

Current communication standards mean that intelligent energy management solutions as well as SMA storage solutions can be flexibly added to the inverter at any time.

SMA SMART CONNECTED

The integrated service for ease and comfort

SMA Smart Connected* is the free monitoring of the inverter via the SMA Sunny Portal. If there is an inverter fault, SMA proactively informs the PV system operator and the installer. This saves valuable working time and costs.

With SMA Smart Connected, the installer benefits from rapid diagnoses by SMA. They can thus quickly rectify the fault and score points with the customer thanks to the attraction of additional services.



ACTIVATION OF SMA SMART CONNECTED

During registration of the system in the Sunny Portal, the installer activates SMA Smart Connected and benefits from the automatic inverter monitoring by SMA.



AUTOMATIC INVERTER MONITORING

SMA takes on the job of inverter monitoring with SMA Smart Connected. SMA automatically checks the individual inverters for anomalies around the clock during operation. Every customer thus benefits from SMA's long years of experience.



PROACTIVE COMMUNICATION IN THE EVENT OF FAULTS

After a fault has been diagnosed and analyzed, SMA informs the installer and end customer immediately by e-mail. Everyone is thus optimally prepared for the troubleshooting. This minimizes the downtime and saves time and money. The regular power reports also provide valuable information about the overall system.



REPLACEMENT SERVICE

If a replacement device is necessary, SMA automatically supplies a new inverter within one to three days of the fault diagnosis. The installer can contact the PV system operator of their own accord and replace the inverter.

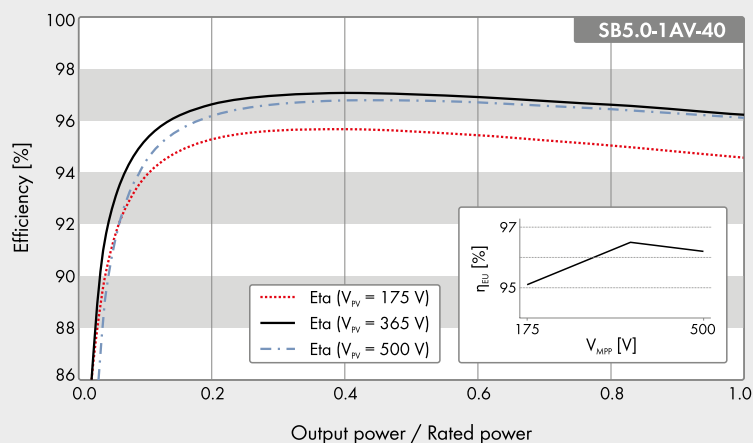


PERFORMANCE SERVICE

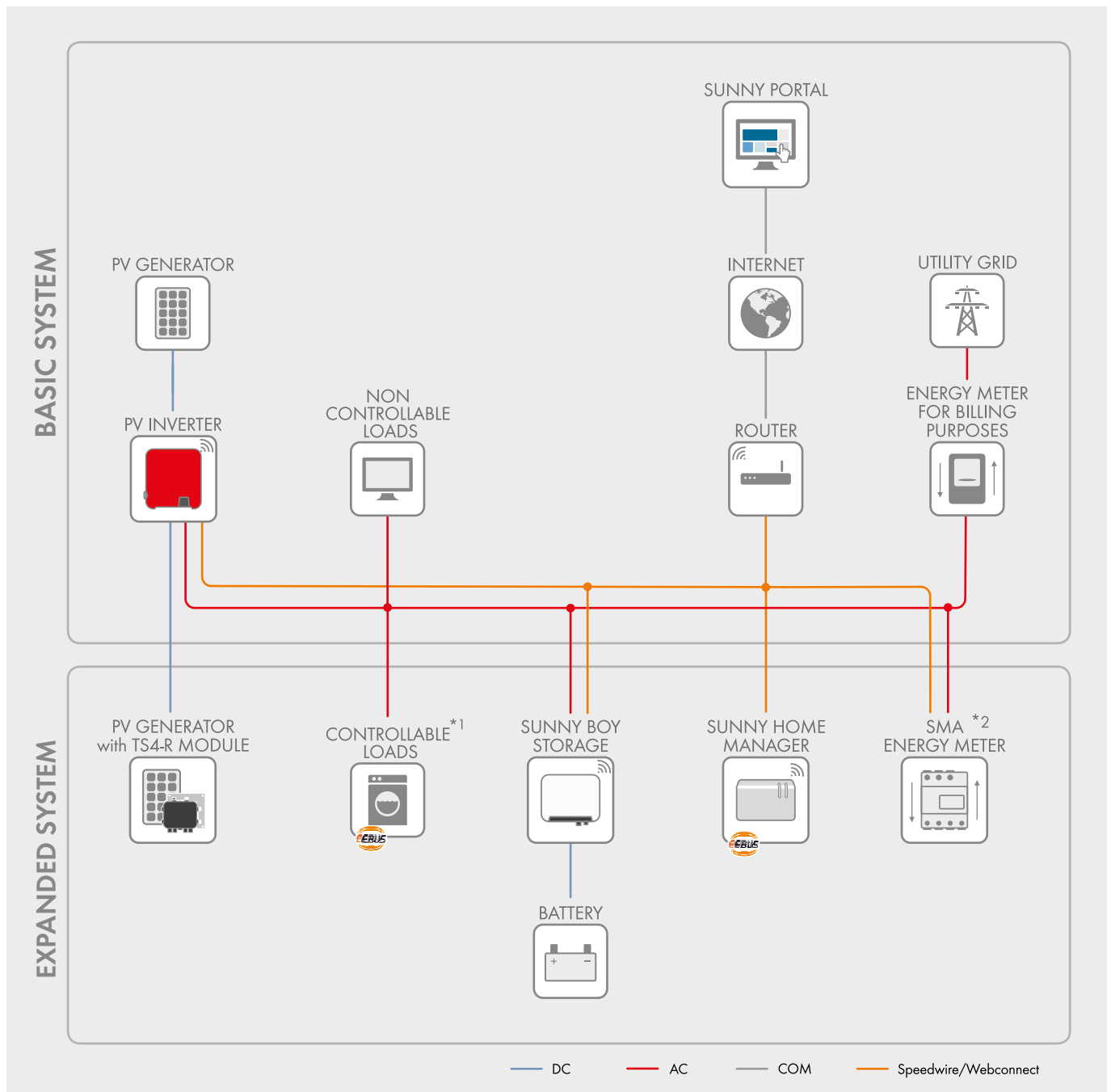
The PV system operator can claim compensation from SMA if the replacement inverter cannot be delivered within three days.

* Details: see document "Description of Services – SMA SMART CONNECTED"

Efficiency curve



Technical data	Sunny Boy 3.0	Sunny Boy 3.6	Sunny Boy 4.0	Sunny Boy 5.0
Input (DC)				
Max. DC power (at cos φ =1)	3200 W	3880 W	4200 W	5250 W ¹⁾
Max. input voltage	600 V			
MPP voltage range	110 V to 500 V	130 V to 500 V	140 V to 500 V	175 V to 500 V
Rated input voltage	365 V			
Min. input voltage / initial input voltage	100 V / 125 V			
Max. input current input A / input B	15 A / 15 A			
Max. input current per string input A / input B	15 A / 15 A			
Number of independent MPP inputs / strings per MPP input	2 / A:2; B:2			
Output (AC)				
Rated power (at 230 V, 50 Hz)	3000 W	3680 W	4000 W	5000 W ²⁾
Max. apparent power AC	3000 VA	3680 VA	4000 VA	5000 VA ²⁾
Nominal AC voltage / range	220 V, 230 V, 240 V / 180 V to 280 V			
AC power frequency / range	50 Hz, 60 Hz / –5 Hz to +5 Hz			
Rated power frequency / rated grid voltage	50 Hz / 230 V			
Max. output current	16 A	16 A	22 A ³⁾	22 A ³⁾
Power factor at rated power	1			
Adjustable displacement power factor	0.8 overexcited to 0.8 underexcited			
Feed-in phases / connection phases	1 / 1			
Efficiency				
Max. efficiency / European Efficiency	97.0% / 96.4%	97.0% / 96.5%	97.0% / 96.5%	97.0% / 96.5%
Protective devices				
Input-side disconnection point	●			
Ground fault monitoring / grid monitoring	● / ●			
DC reverse polarity protection / AC short circuit current capability / galvanically isolated	● / ● / –			
All-pole-sensitive residual-current monitoring unit	●			
Protection class (as per IEC 62103) / overvoltage category (according to IEC 60664-1)	I / III			
General data				
Dimensions (W / H / D)	435 mm / 470 mm / 176 mm (17.1 inches / 18.5 inches / 6.9 inches)			
Weight	16 kg (35.3 lb)			
Operating temperature range	–25°C to +60°C (–13°F to +140°F)			
Noise emission, typical	25 dB(A)			
Self-consumption (at night)	1.0 W			
Topology	Transformerless			
Cooling method	Convection			
Degree of protection (as per IEC 60529)	IP65			
Climatic category (as per IEC 60721-3-4)	4K4H			
Max. permissible value for relative humidity (non-condensing)	100%			
Equipment				
DC connection / AC connection	SUNCLIX / AC connector			
Display via smartphone, tablet, laptop	●			
Interfaces: WLAN, Speedwire / Webconnect	● / ●			
Warranty: 5 / 10 / 15 years	● / ○ / ○			
Certificates and approvals (more available upon request)	AS 4777, C10/11, CE, CEI 0-21, EN 50438, G59/3, G83/2, DIN EN 62109 / IEC 62109, NEN-EN50438, RD1699, SI 4777, UTE C15-712, VDE-AR-N 4105, VDE0126-1-1, VFR 2014 IEC 61727, NRS 097-2-1			
Certificates and approvals (planned)	IEC 61727, NRS 097-2-1			
Country availability of SMA Smart Connected	AU, AT, BE, CH, DE, ES, FR, IT, LU, NL, UK			
● Standard features ○ Optional features – Not available				
Data at nominal conditions Status: February 2017				
1) 4825 W according to VDE-AR-N 4105				
2) 4600 W / 4600 VA according to VDE-AR-N 4105				
3) AS 4777: 21.7 A				
Type designation	SB3.0-1AV-40	SB3.6-1AV-40	SB4.0-1AV-40	SB5.0-1AV-40



BASIC SYSTEM functions

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- Maximum transparency thanks to visualization in the Sunny Portal / Sunny Places
- Safe investment through SMA Smart Connected
- Modbus as interface for third-party providers

EXPANDED SYSTEM functions

- Basic system functions^{*3}
- Reduction in purchased electricity and increase in self-consumption through use of stored solar energy
- Maximum energy use thanks to forecast-based charging
- Increased self-consumption thanks to intelligent load control
- Maximum system yield through Smart module technology

With SMA Energy Meter^{*2}

- Maximum system usage through dynamic limiting of feed-in to the grid between 0% and 100%
- Visualization of energy consumption

^{*1}) via SMA radio-controlled socket or standardized data communication

^{*2}) scheduled for mid-2017 via software update

^{*3}) SMA Smart Connected for systems with Sunny Home Manager, scheduled for mid-2017 via software update