SUNNY TRIPOWER 5.0 / 6.0 / 8.0 / 10.0
SMART ENERGY

STP5.0-3SE-40 / STP6.0-3SE-40 / STP8.0-3SE-40 / STP10.0-3SE-40

Store energy

- Three-phase / DC-coupled
- Integrated battery-backup function
- Fast charging
- Compatible with high-voltage batteries from leading manufacturers

Smart and effective

- Smart energy management with the Sunny Home Manager
- Maximum energy yield thanks to SMA ShadeFix

Connect to the grid easily

- Intuitive commissioning via app
- Quick and easy to install thanks to external terminals
- Compact design means minimum space requirements

Convenient all round

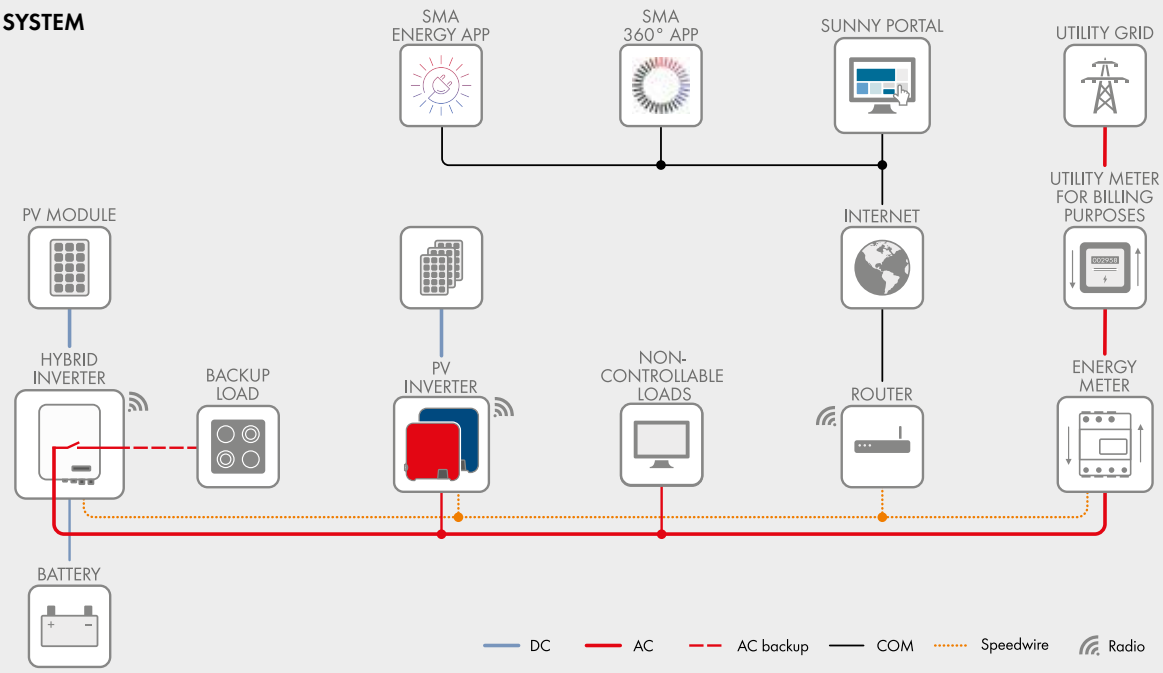
- Full-scale professional support for solar power professionals
- Automated service thanks to SMA Smart Connected
- Warranty extension from 5 to 10 years – free of charge

SUNNY TRIPOWER 5.0 / 6.0 / 8.0 / 10.0 SMART ENERGY

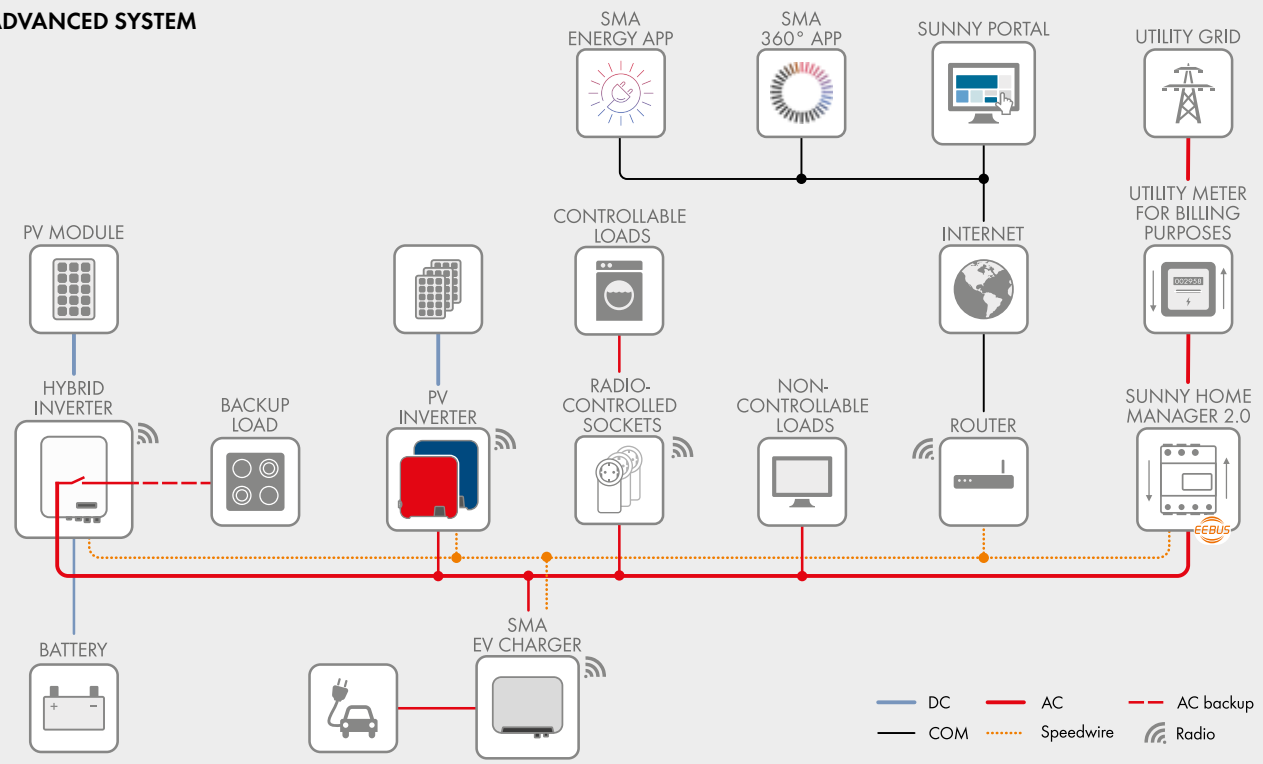
The beating heart of any home

The Sunny Tripower Smart Energy hybrid inverter is the two-in-one system for supplying solar power at home. With this, SMA has combined smart technology and integrated services to create a space-saving compact system, drawing on more than 30 years of experience in storage. With Sunny Tripower Smart Energy, users can easily and conveniently generate, use and store solar power. It is possible to make additions to the system at any time, incorporating e-mobility or heat pumps. The integrated battery-backup function safeguards the household electricity supply even in the event of a grid failure. That makes domestic PV systems comprehensive, smart energy systems with solar energy self-sufficiency of up to 100 percent.

BASIC SYSTEM



ADVANCED SYSTEM



Functions of the basic system with SMA Energy Meter

- Maximum system yield and reduced electricity procurement costs thanks to dynamic limits on grid feed-in of between 0% and 100%*
- Reliable supply for selected loads even in the event of grid failure thanks to integrated automatic backup power supply
- Flexible battery use via PV inverter installed in parallel thanks to DC and AC charging
- Easy commissioning via 360° APP and intuitive installation wizard

* Does not apply to multiple inverters in one system

Functions of the advanced system with Sunny Home Manager 2.0

- Basic system functions
- Increased energy self-sufficiency, ideally matched to your specific installation site and usage by means of artificial intelligence
- Smart combination with heat pumps
- Smart combination with electric vehicles
- Maximum energy use thanks to forecast-based charging
- Visualization of energy consumption
- Dynamic limits on grid feed-in of between 0% and 100% with multiple SMA inverters

Technical data	Sunny Tripower 5.0 Smart Energy	Sunny Tripower 6.0 Smart Energy	Sunny Tripower 8.0 Smart Energy	Sunny Tripower 10.0 Smart Energy
Input (PV DC)				
Max. PV array power	7500 Wp	9000 Wp	12000 Wp	15000 Wp
Max. input voltage	1000 V	1000 V	1000 V	1000 V
MPP voltage range	210 V to 800 V	250 V to 800 V	330 V to 800 V	280 V to 800 V
Rated input voltage	600 V			
Min. input voltage / initial input voltage	150 V / 180 V			
Max. input current input A / input B	12.5 A / 12.5 A			12.5 A / 25 A
Max. DC short-circuit current input A / input B	20 A / 20 A			20 A / 40 A
Number of independent MPP inputs / strings per MPP input	2/A: 1; B: 1			2/A: 1; B: 2
Battery connection				
Battery type	Lithium-ion[1]			
Voltage range	150 V to 600 V			
Max. charging current / max. discharging current	30 A[2] / 30 A[2]			
Number of connectable batteries	1			
Max. charging power / max. discharging power[3]	7500 W / 6000 W	9000 W / 7200 W	10600 W / 10600 W	
AC connection				
Rated power (at 230 V, 50 Hz)	5000 W	6000 W	8000 W	10000 W
Max. apparent AC power	5000 VA	6000 VA	8000 VA	10000 VA
Nominal AC voltage	3 / N / PE; 220 V / 380 V 3 / N / PE; 230 V / 400 V 3 / N / PE; 240 V / 415 V			
AC voltage range	156 V to 277 V			
AC power frequency/range	50 Hz / 45 Hz to 55 Hz			
Rated grid frequency / rated grid voltage	50 Hz/230 V			
Rated output current	3 x 7.3 A	3 x 8.7 A	3 x 11.6 A	3 x 14.5 A
Max. output current	3 x 7.6 A	3 x 9.1 A	3 x 12.1 A	3 x 15.2 A
Power factor at rated power / adjustable displacement power factor	1 / 0.8 overexcited to 0.8 underexcited			
Feed-in phases/connection phases	3/3			
Efficiency				
Max. efficiency / European Efficiency	98.2% / 97.3%	98.2% / 97.5%	98.2% / 97.8%	98.1% / 97.5%
Output (AC backup) during on-grid mode				
Max. connectable power for backup load	13800 W			
Max. output current for backup load	3 x 20 A			
Output (AC backup) during off-grid mode				
Rated power 1~/3~ (at 230 V, 50 Hz)	1660 W / 5000 W	2000 W / 6000 W	2660 W / 8000 W	3330 W / 10000 W
Max. apparent AC power	5000 VA	6000 VA	8000 VA	10000 VA
Output power / output apparent power < 5 min	6000 W / 6000 VA	7200 W / 7200 VA	12000 W / 12000 VA	
Output power / output apparent power < 10 s	10000 W / 10000 VA		12000 W / 12000 VA	
Nominal AC voltage	3 / N / PE; 230 V / 400 V			
AC grid frequency	50 Hz			
Tariff switching to backup mode	30 ms to 10 s (adjustable)			
Protective devices				
Input-side disconnection point (PV DC)	●			
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 61140)	I			
Overvoltage category (according to IEC 60664-1) grid/battery/PV	III / II / II			
SPD	DC type II / AC type II			
General data				
Dimensions (W/H/D)	500 mm / 598 mm / 173 mm (19.7 inch / 23.5 inch / 6.8 inch)			
Weight	30 kg (66 lbs)			
Operating temperature range	-25°C to +60°C (–13°F to +140°F)			
Noise emission, typical	30 dB(A)			
Self-consumption (at night)	44 W			
Topology / cooling method	Transformerless/convection			
Degree of protection (according to IEC 60529) / climate category (according to IEC 60721-3-4)	IP65/4K26			
Max. permissible value for relative humidity (non-condensing)	100%			
Equipment				
PV connection / BAT connection	SUNCLIX / MC4, incl. MC4 battery cable, 3 m			
AC terminals	AC CONNECTOR (5 x 1.5 to 10 mm²)			
Display via smartphone, tablet, laptop	●			
Number of interfaces: Wi-Fi/Ethernet/BAT-CAN	1/2/1			
Number of digital inputs / outputs	5/1			
Communication protocols	Modbus (SMA, Sunspec), Speedwire/Webconnect			
Shade management: SMA ShadeFix (integrated)	●			
Warranty: 5/10 years	● / ●[4]			
Certificates and permits (more available upon request)	CE, IEC 62109-1/-2, TOR Generator type A, VDE0126-1-1, VDE AR-E-2510-2, C10/11, VDE-AR-N4105			
Country availability of SMA Smart Connected	AT, BE, CH, DE, NL			
Model type number	STP5.0-3SE-40	STP6.0-3SE-40	STP8.0-3SE-40	STP10.0-3SE-40

● Standard features ○ Optional features – Not available Information refers to nominal conditions Provisional data as of Dec. 2022/1 1) BYD Premium HVS 5.1-12.8, BYD Premium HVM 11.0-22.1; others being planned 2) U_{PV} < 700 V and U_{BAT} >220 V 3) Depending on battery connected 4) When device is registered via the SMA product registration page (sma-service.com). The conditions of the SMA limited factory warranty apply. You can find additional information at SMA-Solar.com

SMA SMART CONNECTED

Integrated service for ease and comfort

SMA Smart Connected* allows you to monitor your inverter via the SMA Sunny Portal for free. If an inverter fails, SMA will proactively inform the PV system owner and the installer. This saves valuable working time and costs.

With SMA Smart Connected, the installer benefits from rapid diagnostics by SMA. This allows the installer to rectify the fault quickly and offer customers a range of additional and highly attractive services.

ACTIVATION OF SMA SMART CONNECTED

During registration of the system in the Sunny Portal, the installer activates SMA Smart Connected and benefits from 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. As a result, every customer benefits from SMA's many 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. This ensures that everyone involved is properly prepared for the troubleshooting process. This minimizes downtime and saves time and money. Regular power reports also provide valuable information about the overall system.

REPLACEMENT SERVICE

If a replacement device is necessary, SMA will automatically supply a new inverter within one to three days of the fault being diagnosed. 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 is not delivered within three days.

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

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