/ HS-BM-3.28-10 / HS-BU-10

SMA Home Storage

Ease of installation. Long lifetime. Seamless integration.

Future-proof electricity storage system

- Developed for intensive use
- Ready for future, like dynamic tariffs and virtual power plants (VPP)
- Integrated black start function for back-up supply (when combined with the SMA hybrid inverter)
- 8000 life cycles and 10 years of warranty[1)]

Easy installation, fast commissioning

- Plug and play solution, including automatic commissioning
- Preassembled cables for an easy installation
- Expandable capacity possible within 2 years

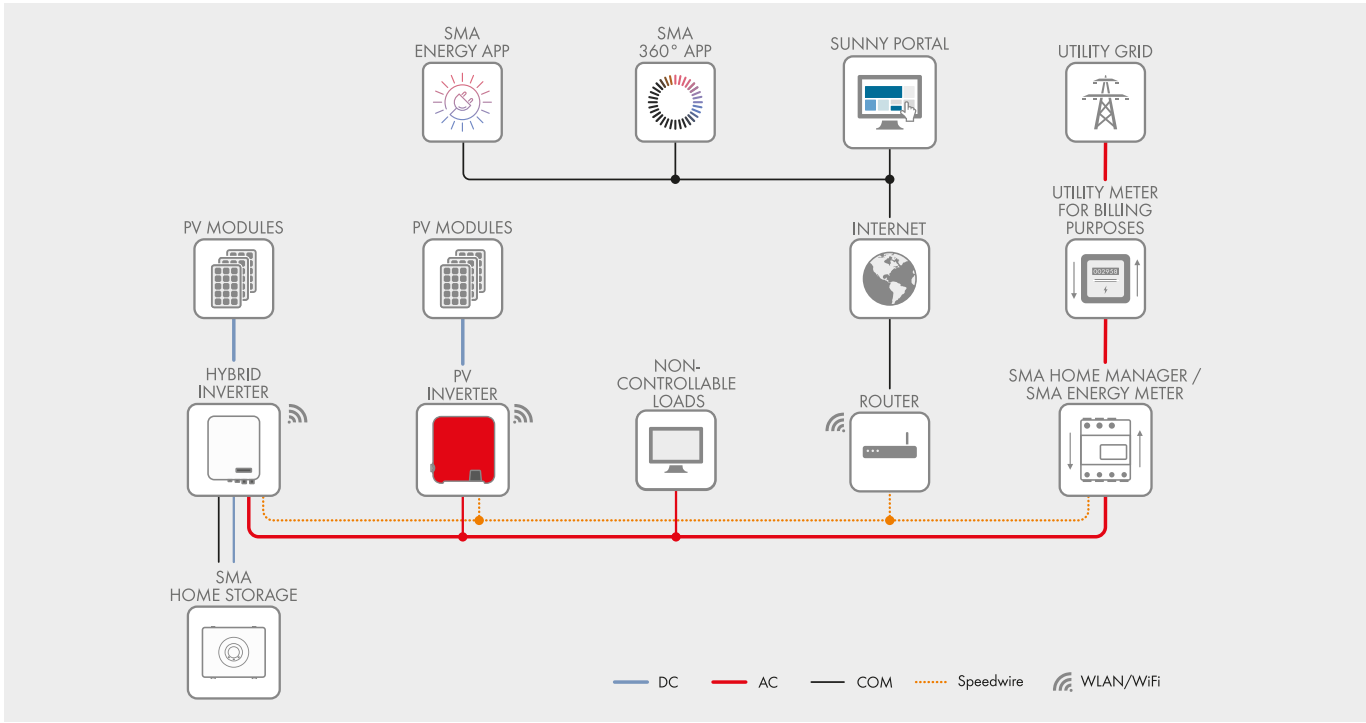
Unmatched flexibility

- Compatible with SMA's hybrid inverters
- Slim, stackable design that can be scaled from 3.2 kWh to 16.4 kW
- Floor, wall or back-to-back mounting
- Outdoor installation possible (Protection class IP65)

The SMA Home Storage Solution allows homeowners to unlock the full potential of sustainable energy. Integrating the SMA Home Storage battery makes the modular solution complete: everything from a single source. It perfectly complements SMA's hybrid inverters enabling energy solutions of today and tomorrow.

Whether during times of low solar irradiation or the highs of midday – the SMA Home Storage can store solar power and make it available as needed.
It offers flexible scalability to be adapted to individual needs and has an especially long lifetime of around 8000 charging cycles. With the SMA Home Storage, homeowners are making a conscious choice for quality and additional security with the 10-year warranty[1)].

1) Device registration via the SMA product registration at my.sma-service.com required within 30 days after initial commissioning. The conditions of the SMA limited factory warranty apply. You can find additional information at SMA-solar.com.



Technical data	SMA Home Storage 3.2	SMA Home Storage 6.5	SMA Home Storage 9.8	SMA Home Storage 13.1	SMA Home Storage 16.4
Electrical					
Usable energy capacity[1]	3.28 kWh	6.56 kWh	9.84 kWh	13.12 kWh	16.40 kWh
Nominal voltage	96 V	192 V	288 V	384 V	480 V
Operating voltage range	90 V to 108 V	180 V to 216 V	270 V to 324 V	360 V to 432 V	450 V to 540 V
Max. charging / discharging current	36 A				
General data					
Dimensions[2] (W/H/D)	610 × 483 × 214.6 mm	610 × 969 × 214.6 mm	610 × 1455 × 214.6 mm	2 × (610 × 969 × 214.6) mm	(610 × 1455 × 214.6 mm) and (610 × 969 × 214.6 mm)
Weight	38 kg	76 kg	114 kg	152 kg	190 kg
Operating temperature Charging / discharging	-10°C to 50°C / 0°C to 50°C				
Self-consumption (at night) per module	2 W				
Degree of protection (according to IEC 60529)	IP 65				
Max. permissible value for relative humidity (non-condensing)	5% to 95%				
Cell technology	Lithium Iron Phosphate (LiFePO4)				
Efficiency					
Battery efficiency	94.5%				
Protective devices					
Input-side disconnection point	●				
DC reverse polarity protection	●				
Overvoltage category battery / inverter	II / II				
Equipment					
DC connection	MC4				
Interface / Communication	RJ45				
Communication protocols	SMA battery interface				
Warranty: 2/10 years	● / ●[3]				
Certificates and permits (more available upon request)	CE, UN38.3, IEC62619, IEC 62477, VDE2510-50				
Compatible SMA products	STP-SE (SMA Home Storage 6.5 to 16.4), SB-SE (SMA Home Storage 3.2 to 13.1)				
Accessories	Base unit for floor mounting (HS-BU-10), communication cable to STP-SE (HS-COM-CBL-3-10)				
Type designation	HS-BM-3.28-10	2 x HS-BM-3.28-10	3 x HS-BM-3.28-10	4 x HS-BM-3.28-10	5 x HS-BM-3.28-10

● Standard equipment ○ Optional – Not available Data at nominal conditions Last revised: 1/2024

1) Under specific test conditions (100% DOD, 0.2 C charge and discharge at +25 °C).

2) Dimensions for wall mounting. Dimensions with optional base unit can be found in the product manual.

3) Device registration via the SMA product registration at my.sma-service.com required within 30 days after initial commissioning. The conditions of the SMA limited factory warranty apply. You can find additional information at SMA-solar.com.

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

Sunny Tripower Smart Energy

5.0 / 6.0 / 8.0 / 10.0

The beating heart of every home

SMA Smart Connected

SMA ShadeFix
STRING LEVEL OPTIMIZATION

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

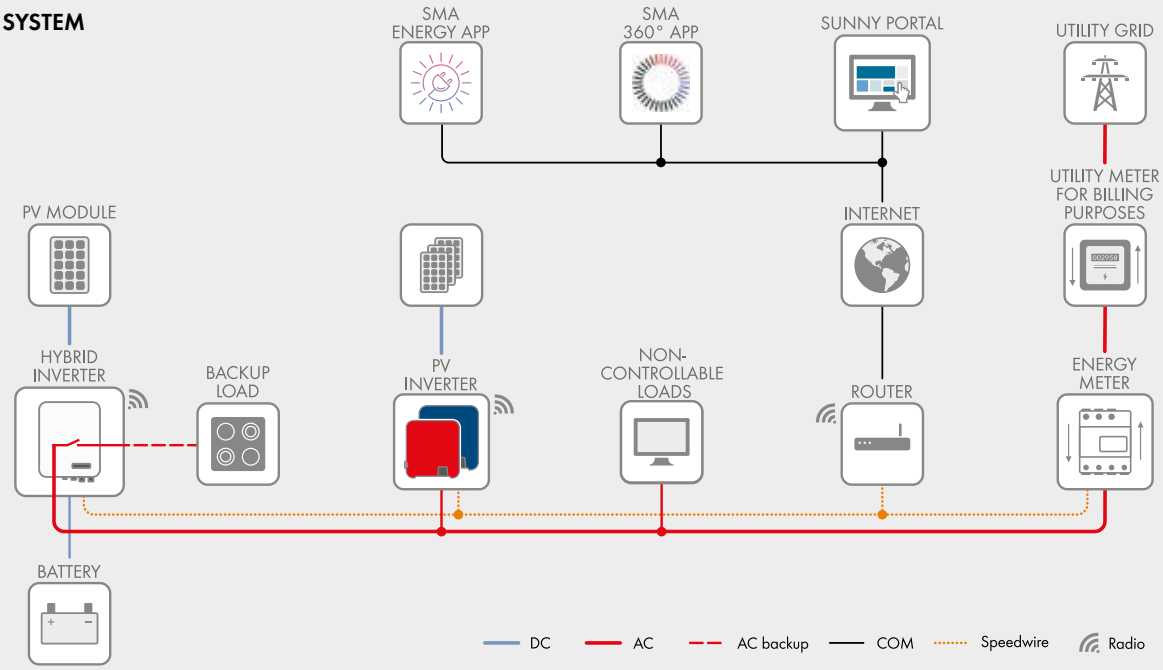
Connect to the grid easily
- Intuitive commissioning via app
- Quick and easy to install thanks to external terminals
- Compact design means minimum space requirements

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

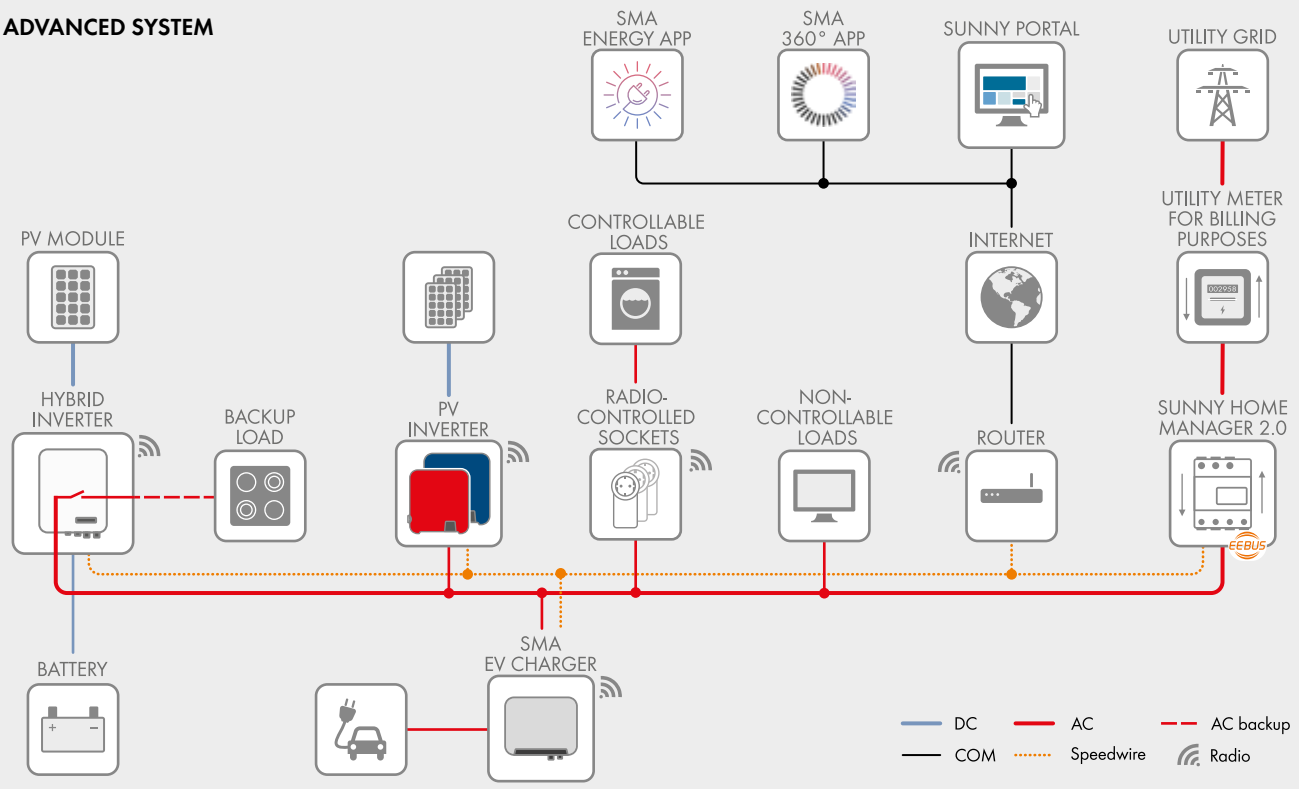
The Sunny Tripower Smart Energy hybrid inverter is the two-in-one system for supplying solar power at home.

With this, SMA has combined smart technology and integrated services to create a compact, space-saving 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. usable input power (P_{DC} max) at input A / input B	4500 W / 4500 W	5400 W / 5400 W	7200 W / 7200 W	6000 W / 12000 W
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. usable input current at input A / input B	12.5 A / 12.5 A			12.5 A / 25 A
Max. DC short-circuit current at 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 grid 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 line conductors / connection line conductors	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			
Switching time to backup operation	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 (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 approvals (more available upon request)	CE, CEI0-21 int./ext., C10/11 int./ext., EN50549-1, G98/G99, IEC 62109-1/2, NA/EEA-NE7, NRS 097-2-1, RD1699/413, TOR generator type A, VDE126-1-1, VDE AR-E2510-2, VDE-AR-N4105			
Country availability of SMA Smart Connected	AT, BE, CH, DE, ES, GB, LU, NL, IT, UK, ZA			
Model type number	STP5.0-3SE-40	STP6.0-3SE-40	STP8.0-3SE-40	STP10.0-3SE-40

● Standard features ○ Optional – Not available Information refers to nominal conditions Provisional data as of April 2023 1) See "List of Approved Batteries" at www.SMA-Solar.com
2) U_{PV} < 700V 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

Sunny Tripower Smart Energy

SMA ShadeFix – Intelligent energy yield optimization

Established product features and integrated software solutions will provide yield optimization throughout the system's entire service life. Even in the shade. SMA ShadeFix is a proprietary inverter software that optimizes energy yield in nearly every situation. SMA Smart Connected inverter monitoring offers enhanced safety by detecting errors at an early stage and automatically reporting them to the installer.

SMA Smart Connected – Proactive communication in the event of faults

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 system operator 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.

* For details, see document "Description of Services - SMA SMART CONNECTED"

Innovative

- Energy manager with integrated measuring device
- Consumption analysis of individual loads
- Optimized battery charging in SMA storage systems

Easy to Use

- Quick plug-and-play installation
- Overview of all relevant appliances, PV generation and battery systems
- Use energy more efficiently and reduce electricity costs

Transparent

- Energy balance and load data shown in interactive diagrams
- Integrated weather and PV forecast data
- PV system monitoring via Sunny Portal

Flexible

- Appliance connection via standard protocols and switchable devices
- For compatible devices, such as heat pumps, electric vehicles and other household appliances, go to www.sma-solar.com

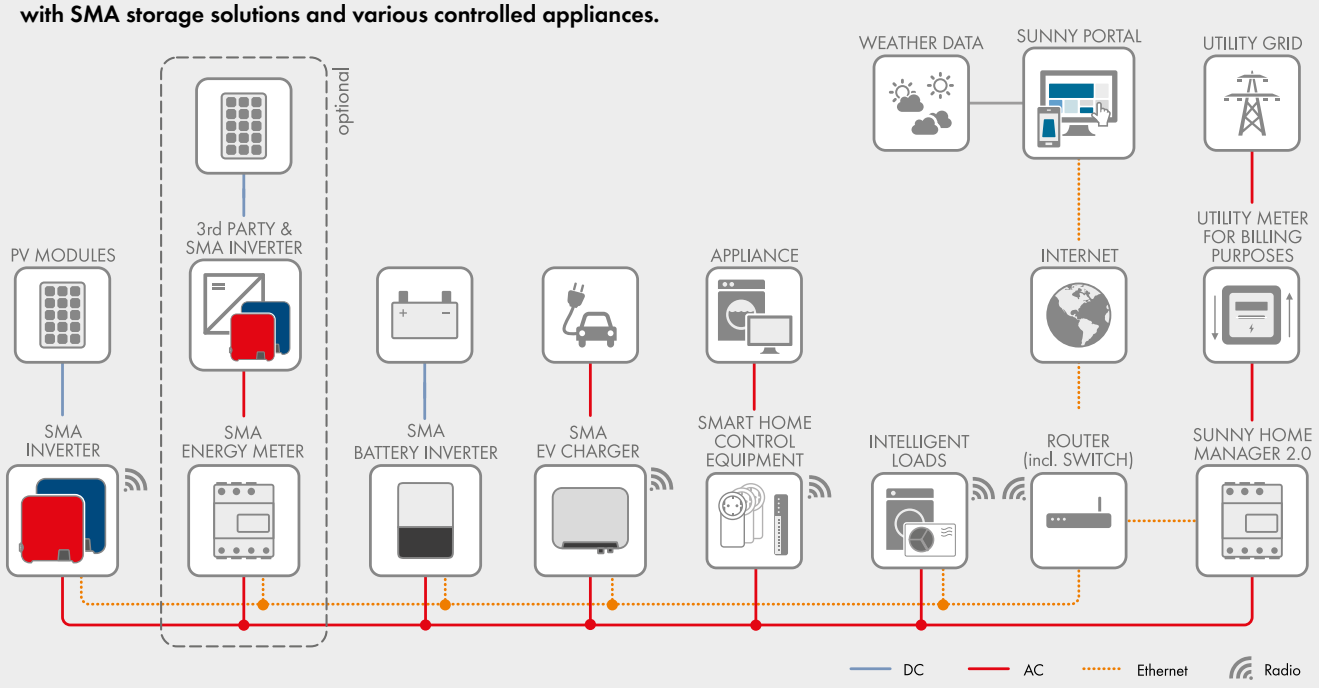
SUNNY HOME MANAGER 2.0

The control center for smart energy management

The Sunny Home Manager 2.0 is SMA's intelligent energy manager and enables the most efficient use of solar energy in the home. It optimizes PV self-consumption and significantly reduces electricity costs. To do this, it measures the power of PV generation, purchased electricity as well as grid feed-in, and gives an overview of all relevant energy flows in the household. By means of local PV generation forecasts and the measured household consumption profile, the self-learning device prompts the user with energy-related action recommendations. Operation of the controlled appliances is coordinated in a way to optimize the use of self-generated solar energy.

The path to intelligent energy management is quite easy. Simply install the Sunny Home Manager 2.0 at the grid connection point, connect it to the internet router using an Ethernet cable, then register the PV system in Sunny Portal free of charge and join more than 60,000 systems already installed worldwide in benefiting from greater energy efficiency.

An example of intelligent energy management: PV generation with SMA storage solutions and various controlled appliances.



Technical Data	Sunny Home Manager 2.0
Energy Manager	
Connection to the local router	via Ethernet cable (10/100 Mbit/s, RJ45 plug)
Connection of SMA PV inverters and battery systems	Ethernet or WLAN via local router
Connection of appliances for energy management	a. Direct data connection (EEBUS, SEMP) b. Indirect data connection (compatible switchable devices)
Integrated Measuring Device	
Measurement accuracy	≤1 %
Measuring cycle	200 ms, 600 ms or 1000 ms
Max. number of devices on the system (excluding the SMA Energy Meter)	
Total number of devices in the system	up to 24
of which devices as appliances in active energy management	up to 12
Inputs (voltage and current)	
Nominal voltage	110 V / 230 V/400 V
Frequency	50 Hz / 60 Hz
Nominal current/limiting current per line conductor	5 A/63 A (>63 A can be covered via external current transformers)
Connection cross-section	10 mm² to 16 mm² (for 63 A application)
Torque for screw terminals	2.0 Nm
Ambient Conditions in Operation	
Ambient temperature	-25°C to +40°C
Storage temperature range	-25°C to +70°C
Protection class (according to IEC 62103)	II
Degree of protection (according to IEC 60529)	IP20
Max. permissible value for relative humidity (non-condensing)	5% to 90%
Operation altitude range	0 m to 2000 m
General Data	
Dimensions (W/H/D)	70 mm/88 mm/65 mm
Top hat-rail width units	4
Weight	0.3 kg
Mounting location	Switch or meter cabinet
Mounting type	Top-hat rail mounting
Status display	3 x LED
Self-consumption	< 3 W
Features	
Operation and visualization	via Sunny Portal
Update function for the Sunny Home Manager and the connected SMA devices	automatic
Warranty	2 years
Certificates and approvals	www.SMA-Solar.com
Accessories	
SMA Energy Meter as complement to integrated measuring device	Precise three-phase measuring, connection via Ethernet in the local network.
Last updated: 05/2021	
Type designation	HM-20