



powered by
ennexOS

Sunny Island X

Next generation off-grid battery inverter – more powerful than ever

/ Compatible with approved third-party batteries

Advantages

- Nominal output, even at high temperatures (45 °C)
- Modular scalability of AC power and battery capacity in on- and off-grid installations
- Compatible with numerous approved batteries thanks to integrated DC-to-DC converter
- Flexible use of generators or the utility grid in off-grid installations using Sunny Island X Connection Box¹⁾
- Developed in Germany to 100% SMA quality standards
- Made in Germany
- 10-year warranty (5 + 5*)²⁾
- Integrated energy management in on-grid installations without battery backup
- Compatible with SMA Hybrid Controller or other Modbus system controllers in off-grid installations
- Comprehensive system monitoring thanks to Sunny Portal powered by ennexOS
- Sunny Design design tool
- System, service and commissioning training

Whether in off-grid areas or connected to the utility grid, the highly versatile Sunny Island X battery inverter supports a wide range of on- and off-grid installations.

As a central element of your system, it ensures that self-generated solar power can be stored and made available at all times. The Sunny Portal powered by ennexOS interface allows you to visualize all the components in the Sunny Island system and monitor the energy flows.

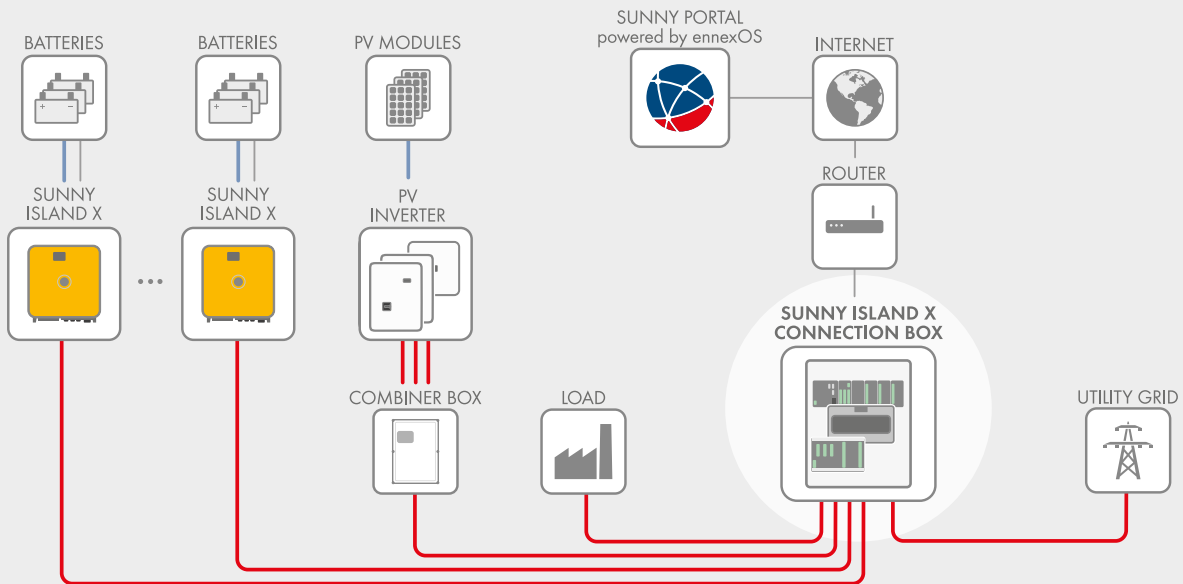
The Sunny Island X ensures the required system flexibility and reliability. The broad temperature range ensures, for example, that the Sunny Island X can operate even under the most extreme conditions – desert heat, tropical humidity or snowy conditions are never a problem for Sunny Island X. Intelligent load and energy management keeps the system running, even in critical situations. The Sunny Island X is a highly robust battery inverter – and comes with an up to 10-year warranty²⁾.

1) Sunny Island X Connection Box is an additional component that needs special commissioning training courses
2) Device registration via the SMA product-registration homepage (my.sma-service.com)

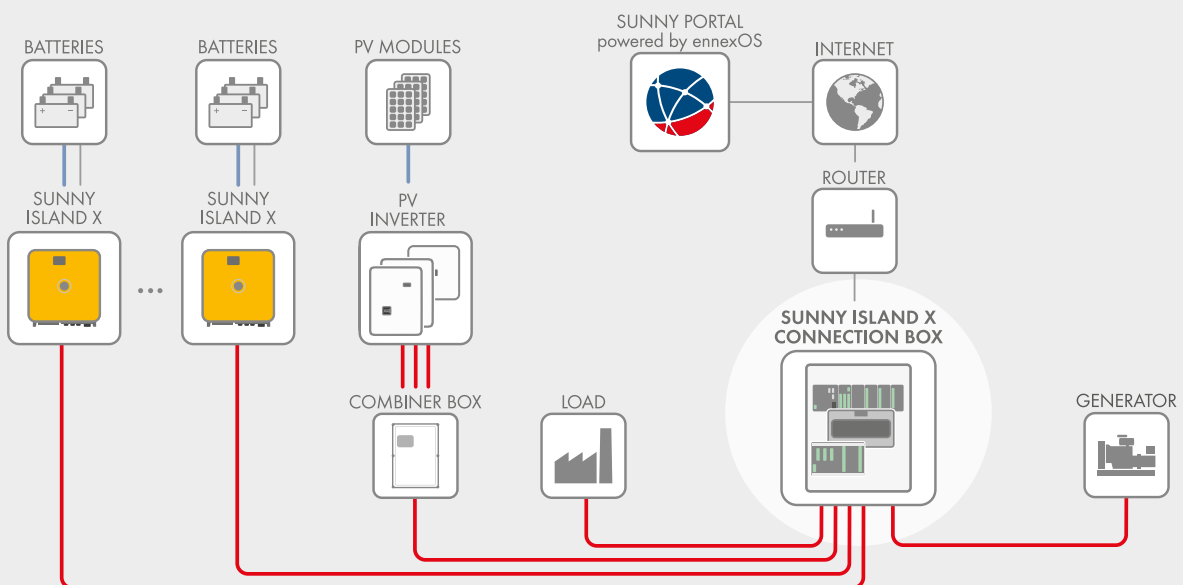
Sunny Island X Connection Box

The Sunny Island X Connection Box is the solution for connecting and managing all system components. With the included Hybrid Controller, it can offer various system options with the Sunny Island X:

Sunny Island X off-grid system with utility grid connection

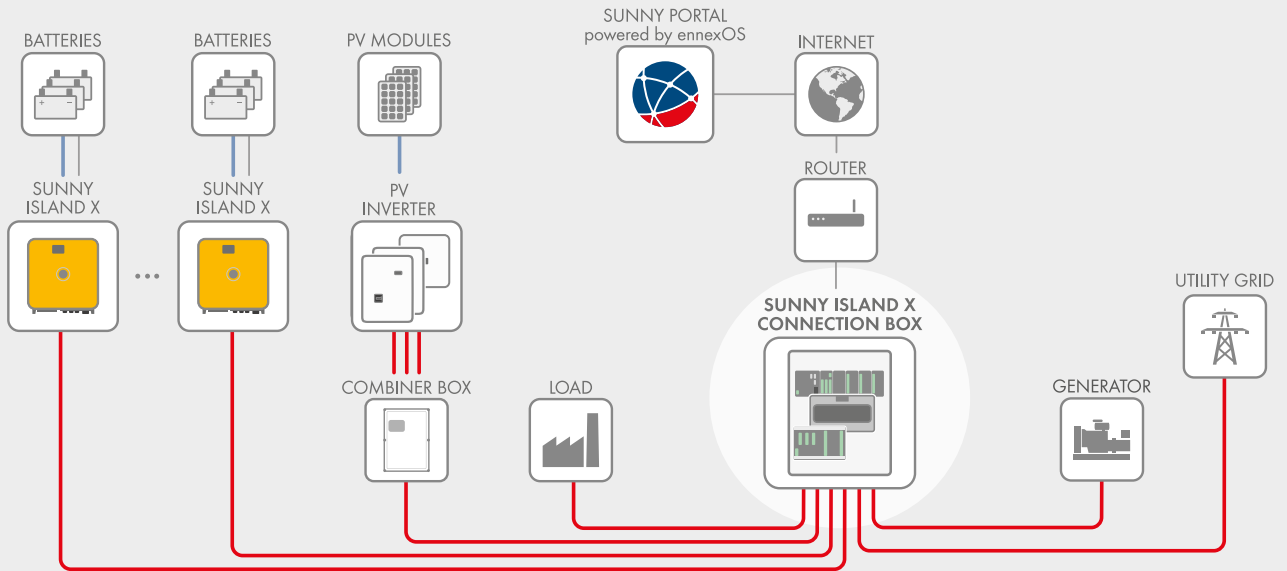


Sunny Island X off-grid system with generator

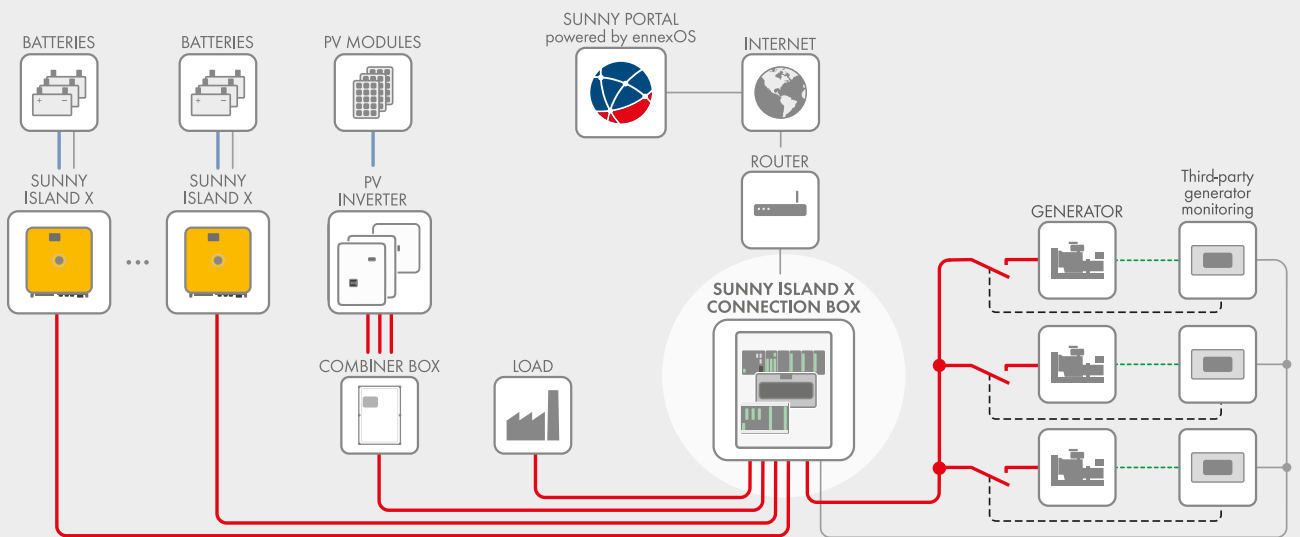


— DC — AC — Ethernet/Internet

Sunny Island X off-grid system with utility grid and generator

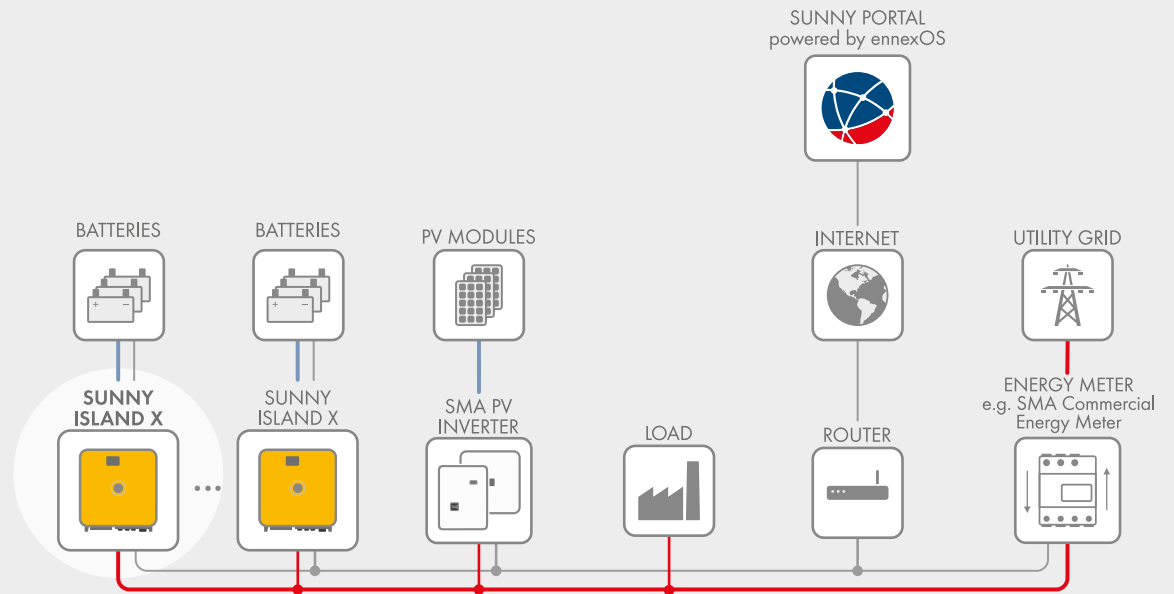


Sunny Island X off-grid system with generator management system

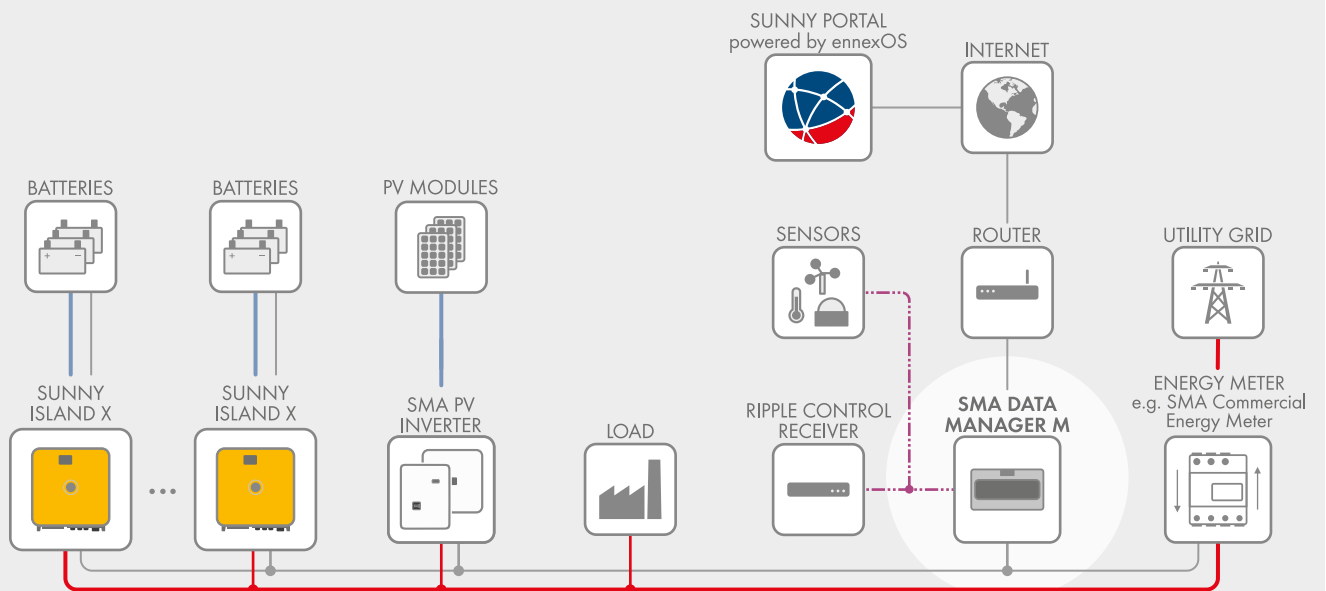


— DC — AC — Ethernet/Internet - - - Control signal - - - - - Extern communication

Sunny Island X as SMA System Manager in an on-grid application without battery backup



Sunny Island X in an on-grid application without battery backup with Data Manager as SMA System Manager



— DC — AC — Ethernet/Internet - - - Extern signals

Technical data	Sunny Island X 30	Sunny Island X 50
Battery connection (DC)		
Max. DC power	30600 W	51000 W
DC voltage range	200 V to 980 V	
Max. usable input current ($I_{DC, max}$)	150 A	
Battery type	Li-ion (Modbus TCP or CAN bus)	
Grid connection (AC)		
Rated power at nominal voltage	30000 W	50000 W
Max. apparent AC power	30000 VA	50000 VA
Max. reactive power	30000 var	50000 var
Nominal output current	45.6 A per line conductor	75.5 A per line conductor
Overload capability	TBD	TBD
Short-circuit current	TBD	TBD
Nominal AC voltage	400 V, $\pm 15\%$	
AC voltage range	340 V to 477 V	
Rated grid frequency	50 Hz / 60 Hz	
Power frequency range	44 Hz to 66 Hz	
Power factor at rated power / adjustable displacement power factor	0/1/0 overexcited to 0 underexcited	
Unbalanced load capability / connection lines	TBD/5 (L1, L2, L3, N, PE)	
Efficiency		
Max. efficiency / European efficiency	98.0% / 97.6%	98.0% / 97.2%
Protective Devices		
Grid monitoring	●	
Overtemperature / battery deep discharge	● / ●	
AC short-circuit current capability / galvanically isolated	● / –	
All-pole-sensitive residual-current monitoring unit	●	
Protection class (according to IEC 62109-1) / overvoltage category (according to IEC 60664-1)	I / DC: II; AC: III	
General data		
Dimensions (W/H/D)	772 / 837.3 / 443.8 mm (30.4 / 33 / 17.5 inch)	
Weight	104 kg (229 lb)	
Operating temperature range	-25°C to +60°C (-13°F to +140°F) with derating from 45°C	
Noise emission, typical	69 dB(A)	
Standby	25 W	
Topology / cooling concept	Three-phase / active	
Degree of protection (according to IEC 60529 / UL 50E)	IP65 / NEMA 4X	
Climatic category (according to IEC 60721-3-4)	4K4 / 4Z4 / 4S2 / 4M3 / 4C2 / 4B2	
Maximum permissible value for relative humidity (non-condensing)	95%	
Features/functions/accessories		
DC connection / AC connection	Terminal lug (50 mm ² to 95 mm ²) / screw terminal (16 mm ² to 95 mm ²)	
Communication / protocols	Modbus (SMA), SMA Speedwire	
LED display (status/fault/communication)	● / ● / ●	
On-grid energy management functions (with integrated System Manager)	Self-consumption optimization, peak load shaving, multi-use ²⁾	
Web user interface / Wi-Fi ²⁾	● / ●	
System monitoring	Sunny Portal powered by ennexOS	
Hybrid controller functions (paired with Sunny Island X Connection Box for professional off-grid and backup applications)		
Support of Sunny Island X	●	
Black start	●	
Diesel-off mode (frequency and voltage control)	●	
Active and reactive power control (PV and battery)	●	
SOC (state of charge) balancing	●	
Diesel generator management	●	
On-grid energy management (increased self-consumption, peak load shaving)	●	
Synchronization with external AC sources (utility grid or generator)	●	
System manager functions for on-grid-only applications		
Total number of supported devices with a Sunny Island X as system manager ¹⁾	11	
Total number of supported devices when a SMA Data Manager M is the system manager ¹⁾	50	
Centralized commissioning of all devices in the system	●	
Remote parameterization of SMA devices with Sunny Portal powered by ennexOS	●	
Model type number	SJ30-20	SJ50-20

● Standard equipment ○ Optional – Not available Data at nominal conditions Last revised: 05/2024

1) Supported devices: SMA EV Charger Business (only monitoring), SMA PV inverter, Sunny Island X, Energy Meter and other Modbus devices 2) For commissioning only

