SMA

10 YEAR SYSTEM WARRANTY[1]

SMA Storage XL Package

Usability. Reliable. Full of energy.
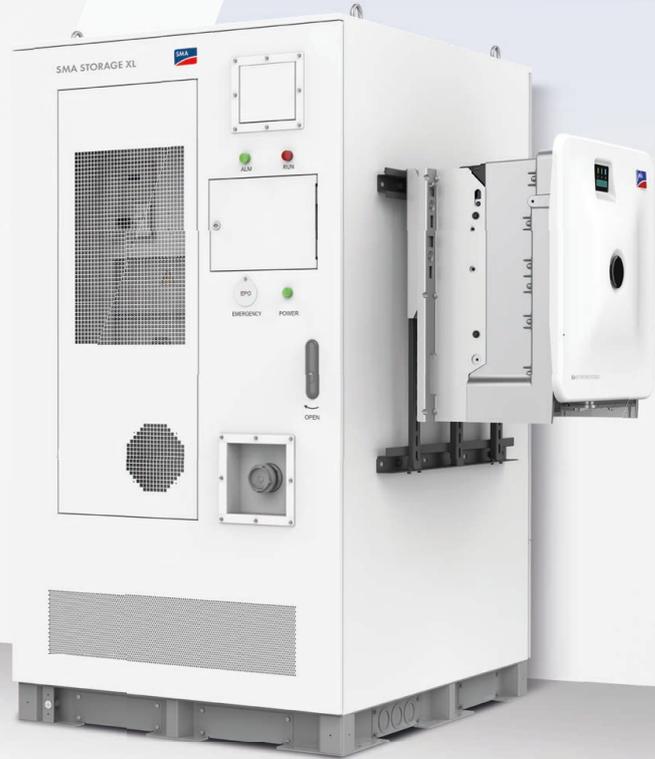
powered by ennexOS

Integrated system support
- Commissioning assistance
- Comprehensive service for the entire system

Flexible and future-proof solution
- Scalable in terms of AC and storage capacity
- Use with or without a PV system
- High-quality battery cells for up to 12000 charging cycles
- 10-year system and battery capacity warranty

Intelligent and reliable energy management
- Increased self-consumption, peak load shaving, and multiuse
- Schedule-based controls
- Monitoring via SMA Sunny Portal powered by ennexOS

Industry-leading cybersecurity
- Built-in access control with enforced passwords, limited interfaces, SMA ID login & auto updates
- ISO 27001-certifi ed cloud via Sunny Portal powered by ennexOS
- Fully compliant with EU regulations and leading security standards

The SMA Storage XL Package combines high-performance battery technology, intelligent control and a convincing service concept. Plug and play commissioning via the WebUI enables smooth startup. The package grows with your needs — whether indoor or outdoor, small or large projects — and integrates seamlessly into the SMA Commercial Energy Solution.

A 10-year warranty for the system and battery capacity creates investment security Intelligent energy management increases self-consumption, reduces load peaks and uses scheduled-based control for high efficiency.

Security is our top priority: industry-leading cybersecurity, EU-based data hosting, and automatic updates ensure reliable protection.

Sunny Tripower Storage X

Technical Data	Sunny Tripower Storage X 30	Sunny Tripower Storage 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	
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 AC voltage	400 V, ±15%	
AC voltage range	340 V to 477 V	
Rated grid frequency	50 Hz / 60 Hz	
Power frequency range	44 Hz to 66 Hz	
Max. output current	45.6 A per line conductor	75.5 A per line conductor
Power factor at rated power/adjustable displacement power factor	1 / 0 overexcited to 0 underexcited	
Feeding conductors / connection line conductors	3 (L1, L2, L3) / 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)	I	
Overvoltage category (according to IEC 60664-1)	DC: II; AC: III	
Surge protection device / surge arrester in accordance with IEC 61643-11	AC: type 2 / class II	
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	
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	
Climate 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 mm² to 95 mm²) / screw terminal (16 mm² to 95 mm²)	
Communication / Protocols	Modbus (SMA, Sunspec), SMA Speedwire, Webconnect	
LED display (status/fault/communication)	● / ● / ●	
Energy management functions	Increased self-consumption, peak load shaving, multiuse, scheduled based control, time of use	
Web user interface / Wi-Fi [2]	● / ●	
Retrofitting in systems with external inverters	●	
System monitoring	Sunny Portal powered by ennexOS	
Battery interface	Ethernet (Modbus) / CAN	
System manager function		
Total number of supported devices when a Sunny Tripower Storage is the system manager [1]	10	
Total number of supported devices when an SMA Data Manager M (EDMM-20) 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	●	
Cybersecurity	EU-RED Cybersecurity Directive (EN 18031-1), ETSI EN 303 645, Speedwire Encrypted Communication (SEC), EU-based data hosting (ISO 27001), EU NIS2 Directive, automatic updates	
Type designation	STPS30-20	STPS50-20

● Standard equipment   ○ Optional   — Not available   Data at nominal conditions   Last revised: 11/2025
1) Supported devices: SMA EV Charger Business, SMA inverters, Sunny Tripower Storage and SMA Commercial Energy Meter   2) Only for commissioning

SMA Storage XL

Technical Data	89 kWh Indoor	197 kWh Indoor	107 kWh Outdoor	197 kWh Outdoor
Connection				
Energie (usable)	89 kWh	197 kWh	107 kWh	197 kWh
Parallel connectability		up to 4 systems		
Nominal voltage	320 V	704 V	384 V	704 V
Min. operating voltage/max. operating voltage	280 V / 360 V	616 V / 792 V	336 V / 432 V	616 V / 792 V
Max. C rate		1C		
Cell		Lithium Iron Phosphate (LFP)		
Cycles expected / cycles guaranteed		12000 / 8000		
Efficiency				
Efficiency (battery)		up to 98%		
General Data				
Dimensions (W / H / D)	597/ 2058/960 mm	1147/ 2058/994 mm	1150 mm / 2120 mm / 1375mm	
Total weight	941 kg	1797 kg	1515 kg	2200 kg
Operating temperature, ambient temperature	0°C to 55°C		−25 °C to +55 °C	
Noise emission, typical:		< 75 dB		
Humidity (non-condensing)		0% to 95%		
Cooling concept	Active air cooling		Integrated HVAC with active air conditioning	
Altitude of mounting location above sea level	< 3000 m		< 3000 m	
Degree of protection	IP20		IP55	
Security features	−		Integration fire suppression system, gas/smoke detection, thermal management	
Remote access and monitoring		Supports remote updates through the inverter and remote maintenance		
Corrosion protection class (according to ISO12944)	−		C3	
Product certificates and standards		IEC 61000, IEC 62619, UN 38.3, IEC 62477, IEC 60730, VDE 2510, IEC 63056 REACH, RoHS, IEC 63056		
Type designation	CS-89-IN-30	CS-197-IN-30	CS-107-OUT-30	CS-197-OUT-30

● Standard features ○ Optional features − Not available

Commercial Energy Meter

An Energy Meter is always required for the operation of the SMA Storage XL Package.
Important information: the Energy Meter is not included in the delivery of the storage packages and must be ordered separately. Three different Energy Meters are available.
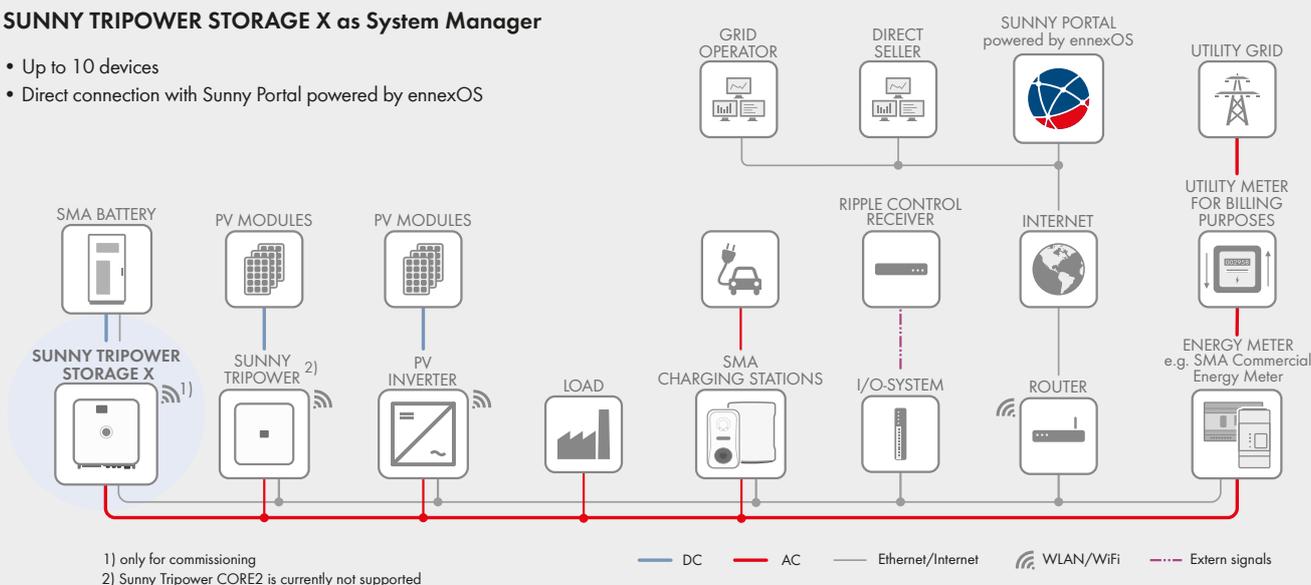
Technical Data	SMA Commercial Energy Meter 600 A	SMA Commercial Energy Meter 200 A	Power Quality Analyser UMG 604 E
Current transformer	3 x 600 A	3 x 200 A	Not incl. in the scope of delivery
Voltage supply	from voltage input	from voltage input	via power supply unit CLCON-PWRSUPPLY
Cable length to the current transformer	2 m	2 m	−
Meter dimensions	88 x 35 x 65 mm	88 x 35 x 65 mm	107.5 x 90 x 82 mm
Meter weight	< 0.2 kg	< 0.2 kg	0.35 kg
Dimensions of 1 current transformer (W / H / T)	57.5 x 85.2 x 41.4 mm	23 x 40 x 26 mm	Not incl. in the scope of delivery
Weight 1 current transformer	470 g	250 g	Not incl. in the scope of delivery
Diameter opening current transformer enclosure opening	36 mm	24 mm	Not incl. in the scope of delivery
Total weight	1.6 kg	1.0 kg	0.35 kg
Standard measuring interval	200 ms	200 ms	200 ms
Ambient temperature in operation	−25°C to +55°C	−25°C to +55°C	−10°C to +55°C
Assembly	DIN rail	DIN rail	DIN rail
Type designation	COM-EMETER-A-20	COM-EMETER-B-20	JANITZA-SP

Order code SMA Storage XL Package	System Components				Optional
Indoor Systems	Inverter Power	Inverter (type designation)	Battery Capacity	Battery (type designation)	Commercial Energy Meter*
CSS-89-IN-30-30	30 kW	STPS30-20	89 kWh	CS-89-IN-30	
CSS-89-IN-50-30	50 kW	STPS50-20	89 kWh	CS-89-IN-30	
CSS-197-IN-50-30	50 kW	STPS50-20	197 kWh	CS-197-IN-30	COM-EMETER-A-20, COM-EMETER-B-20, JANITZA-SP
Outdoor Systems					
CSS-107-OUT-30-30	30 kW	STPS30-20	107 kWh	CS-107-OUT-30	
CSS-107-OUT-50-30	50 kW	STPS50-20	107 kWh	CS-107-OUT-30	
CSS-197-OUT-50-30	50 kW	STPS50-20	197 kWh	CS-197-OUT-30	

*Required for operation. Must be ordered separately.

SUNNY TRIPOWER STORAGE X as System Manager

- Up to 10 devices
- Direct connection with Sunny Portal powered by ennexOS

1) only for commissioning
2) Sunny Tripower CORE2 is currently not supported

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

SUNNY TRIPOWER STORAGE X with SMA DATA MANAGER M (EDMM-20) as System Manager

- Up to 50 Geräte
- Direct connection with Sunny Portal powered by ennexOS

1) only for commissioning
2) Sunny Tripower CORE2 is currently not supported

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

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