/ ESSX-30-20 / ESSX-50-20

10 YEARS SYSTEM-WARRANTY*

SMA Commercial Storage Solution

The new integrated energy storage solution for the commercial sector.

powered by ennexOS

Integrated system support
- Design with the SMA Planning Service
- System and battery training
- Commissioning support
- SMA Service for the entire system

Full flexibility
- Scaleable AC and storage capacity
- Can be used with and without PV
- Prepared for battery backup

Long service life and investment security
- High-quality battery cells
- Up to 8000 complete charge cycles

Intelligent energy management
- Increased self-consumption, peak load shaving
- Multiuse as combinations of different modes
- Free monitoring thanks to SMA Sunny Portal

The new storage solution for commercial use is easy to install and provides comprehensive support throughout the entire product life cycle.

From the design including calculation of the load profile and ROI to support during commissioning as well as certified system and battery training – everything from a single source.

The modularity of the components enables an easy implementation of a flexible design or expansion. This can be achieved whether incorporating PV or not.

With the integrated system manager, the commissioning and integration of other SMA components such as PV inverters, EV chargers or sensors is child's play.

The integrated energy management makes a variety of storage applications possible. Increased self-consumption and peak load shaving, or even a combination thereof with multiuse: all of this is leading to commercial customers reducing their energy costs permanently and making it plannable for the companies.

*) Valid only once the system has been registered with SMA. Battery: 10 year capacity warranty. The SMA warranty conditions apply.

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	
Battery type	Li-ion	
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	
Feed-in line 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)/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	
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	
Max. 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	Self-consumption optimization, peak load shaving, multiuse	
Web User Interface / WiFi [2]	● / ●	
Retrofitting in systems with external inverters	●	
System monitoring	Sunny Portal powered by ennexOS	
Bus battery interface	Ethernet (Modbus)	
Battery backup	In preparation	
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 a 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	●	
Model type number	STPS30-20	STPS50-20

● Standard equipment ○ Optional – Not available Data at nominal conditions Last revised: 02/2025

1) Supported devices: SMA EV Charger Business, PV inverter, Sunny Tripower Storage and SMA Commercial Energy Meter 2) Only for commissioning

Order options	ESSX-30-20	ESSX-50-20
consisting of:	STPS30-20 Storage-30-20 SMA Commercial Energy Meter	STPS50-20 Storage-50-20 SMA Commercial Energy Meter

SMA Commercial Storage

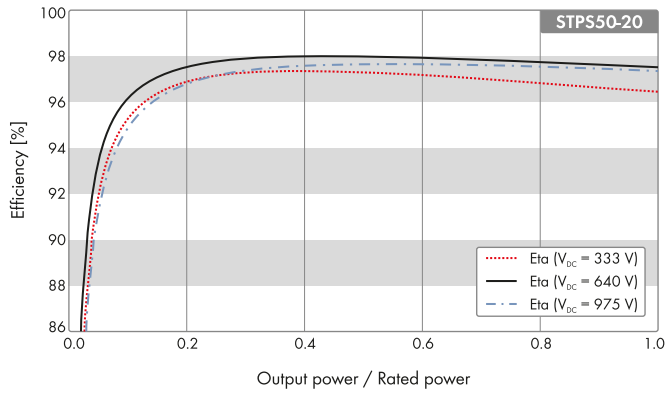
Technical data	SMA Commercial Storage 30	SMA Commercial Storage 50
Connection		
Energy	32 kWh (at 100% DOD)	56 kWh (at 100% DOD)
Expandability - battery modules of 8 kWh each can be flexibly retrofitted within 6 months after commissioning	extendable to up to 48 kWh	extendable to up to 80 kWh
Can be expanded to up to	max. 192 kWh	max. 320 kWh
Nominal voltage	324 V	567 V
Min. operating voltage/max. operating voltage	290 V/365 V	508 V/639 V
Nominal charge/discharge current	100 A	100 A
Max. C rate	1C (in conjunction with STPS30-20)	1C (in conjunction with STPS50-20)
Cell	Lithium NMC prismatic (Samsung SDI)	
Cell balancing	DynamiX Battery Optimizer	
Anticipated cycles @ 100% DoD | 70% EoL | 23°C +/-5°C 1C/1C	6000	
Anticipated cycles @ 100% DoD | 70% EoL | 23°C +/-5°C 0.5C/0.5C	8000	
Guaranteed cycles @ 100% DoD | 70% EoL | 23°C +/-5°C 1C/1C	4500	
Guaranteed cycles @ 100% DoD | 70% EoL | 23°C +/-5°C 0.5C/0.5C	6000	
Self-consumption (standby)	5 W (without battery inverter)	
efficiency		
Efficiency (battery)	Up to 98%	
General data		
Dimensions (W/H/D)	608 mm/1400 mm/990 mm	608 mm/2008 mm/990 mm
Total weight	356 kg	555 kg
Cabinet	119 kg	150 kg
Battery module	56 kg	
Battery management system (APU)	13 kg	
Operating temperature	0°C to 50°C	
Ambient temperature	0°C to 50°C	
Humidity	0% to 80% (non-condensing)	
Cooling concept	Passive via air louvers and active via fan	
Altitude of mounting location	< 2000 meters above NN	
Protection class/degree of protection	IP20/I	
Recycling	Free collection of batteries within Germany	
Cell certificates and standards	IEC 62619, UL 1642, UN 38.3	
Product certificates and standards	CE, UN 38.3, IEC 62619, IEC 62620, IEC 61010-1, IEC 61508, IEC 61000-6-2/4/7, 2006/66/EC (Battery Directive)	
Battery designation in accordance with DIN EN 62620:2015	INP46/175/127/[1P22S]M/-20+60/90	
Model type number	Storage-30-20	Storage-50-20

SMA Commercial Energy Meter and other

By default, the SMA Commercial Storage Solution is supplied with a meter for a measurement range of up to 600 A and low-voltage connection. For systems with other requirements, a different meter can be selected during ordering.

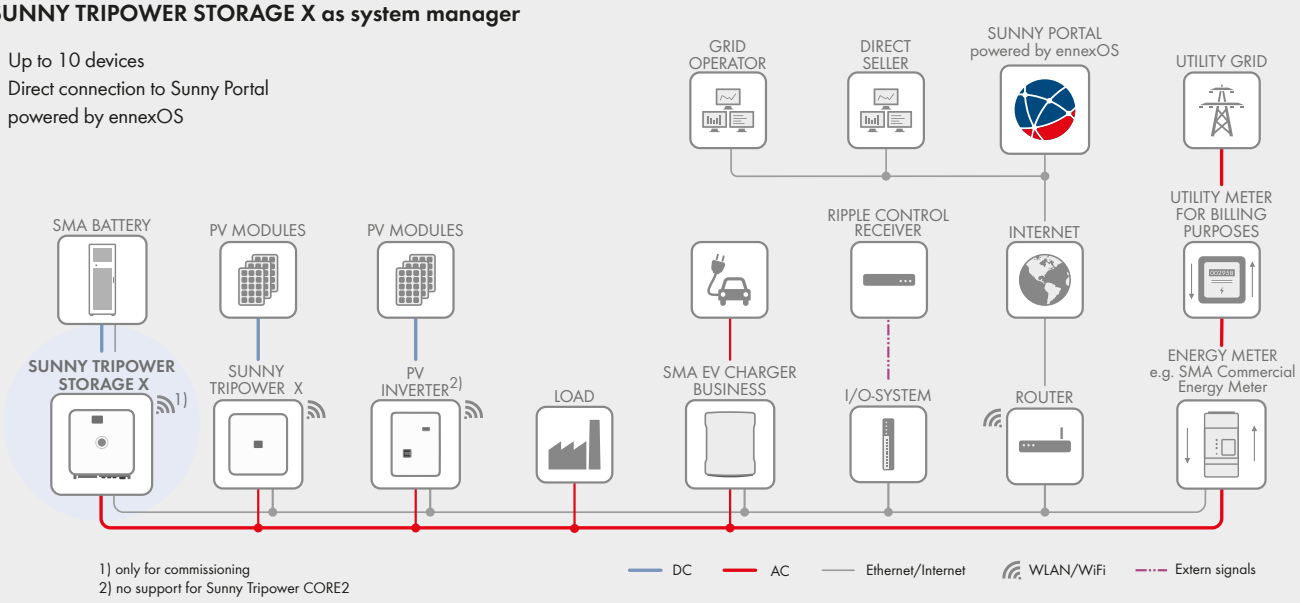
Technical data	SMA Commercial Energy Meter 600 A	SMA Commercial Energy Meter 200 A	Power Quality Analyser UMG 604 E
Current transformer	3 x 600 A	3 x 200 A	Not included in the scope of delivery
Voltage supply	from voltage input	from voltage input	via power supply unit CLCON-PWRSUPPLY
Cable length to 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 one current transformer (W/H/D)	57.5 x 85.2 x 41.4 mm	23 x 40 x 26 mm	Not included in the scope of delivery
Weight 1 current transformer	470 g	250 g	
Diameter opening current transformer enclosure opening	36 mm	24 mm	
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
Model type number	COM-EMETER-A-20	COM-EMETER-B-20	JANITZA-SP

Efficiency curve



SUNNY TRIPOWER STORAGE X as system manager

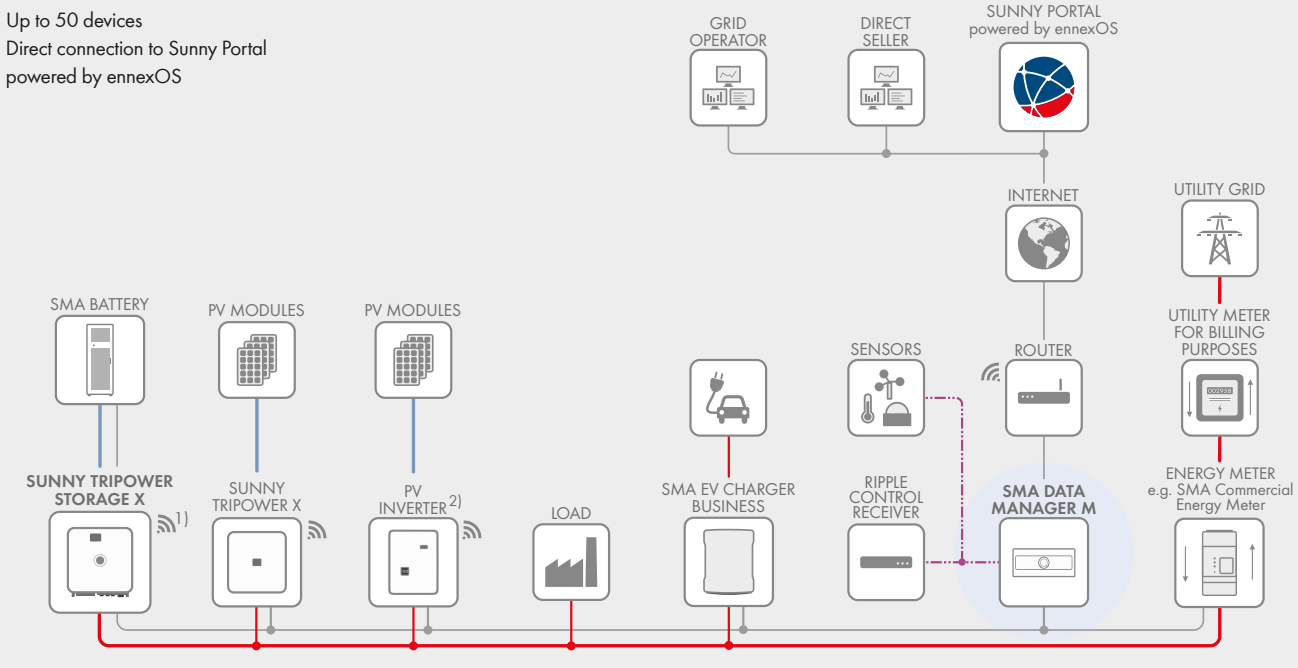
- Up to 10 devices
- Direct connection to Sunny Portal powered by ennexOS



1) only for commissioning
2) no support for Sunny Tripower CORE2

SUNNY TRIPOWER STORAGE X with SMA DATA MANAGER M as system manager [3]

- Up to 50 devices
- Direct connection to Sunny Portal powered by ennexOS



1) only for commissioning
2) currently no support of the Sunny Tripower CORE2, only as of firmware version 2.1 of the Data Manager M (EDMM-20)
3) Multiuse with Data Manager M (EDMM-20) only as of firmware version 2.1