SUNSYS HES XXL©

Native outdoor Energy Storage System

from 1 MVA / 1 MWh to 3 MVA / 10 MWh systems

SUNSYS HES XXL is a complete and ready to use energy storage system for on-grid and off-grid applications. This is a range of outdoor Energy Storage Systems available in a variety of sizes, up to 3 MVA and 10 MWh, and much more by installing systems in parallel.
SUNSYS HES XXL powerful architecture is scalable and can be easily upgraded by adding battery cabinets and conversion cabinets later on without having to redesign it totally.
Furthermore the system can be interfaced and controlled by all type of Energy Management System.

First-class system

Based on the most efficient converter and the safest battery (EnerOne from CATL) on the market, SUNSYS HES XXL offers a best in class energy storage system.

Flexibility & scalability

With only 3 standard cabinets - C-Cab, B-Cab and M-Cab - and 1 - DC-Cab - only needed for configurations with more than 8 B-Cabs, SUNSYS HES XXL covers a wide range of configurations for a fair price.

High safety

Based on the stable Lithium Iron Phosphate (LFP) chemistry, the B-Cab, also equipped with a fire safety system can withstand thermal runaway (UL 9540A certified).

Short payback period

Through a customized range of services from design to end of life, SUNSYS HES XXL improves system uptime and ensure a short return of investment.

The solution for

- Renewable energy integration
- Large Commercial & Industrial buildings
- Grid support
- EV charging infrastructures

Strong points

- First-class system
- Flexibility & scalability
- High safety
- Short payback period

Conformity to standards

- Safety: IEC 62909-1, IEC 62477-1; UL 9540A
- EMC: EN 61000-6-2/4
- Mechanical: EN 60529; EN 62262
- Environment: RoHS; REACH; IEC 61249-2-21; RAAE 2012/19/UE
- Communication protocol: Modbus TCP
- Grid code: Europe: EN 50549-1/2; Germany: AR-N 4110 / 4120; Italy: CEI 0-16; UK: G99/1;

Please consult us for additional ones.

Expert Services

An experienced and skilled team is at your service to make your project a success!

- **Project development**: pre-sales support, project design & realisation
- **Deployment & integration**: training, field inspection, pre-commissioning, commissioning
- **Operation**: maintenance contracts, spare parts replacement, remote monitoring
- **Warranty extensions**: both on the C-Cab and B-Cab

For more information, please contact us.

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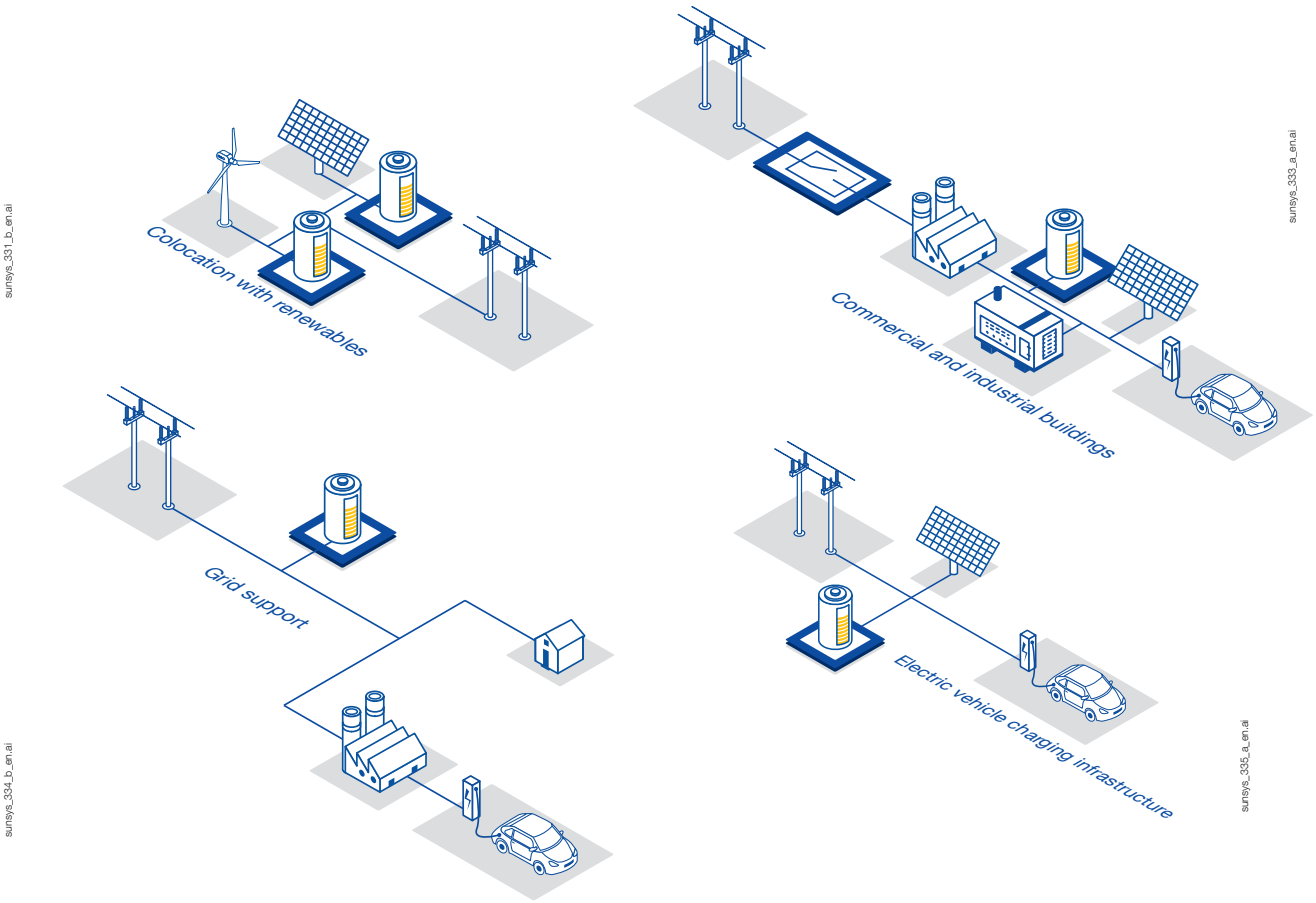
Suitable for all of the following applications



3 stackable units for maximum flexibility

Dimensions (W x D x H): 1000 x 1636 x 2281 mm

C-Cab - Conversion Cabinet

- Bidirectional power converter
- 1.5 MVA / cabinet
- Hybrid liquid / air cooling system
- On and off-grid operation
- AC/DC distribution and protection

Dimensions (W x D x H): 1300 x 1300 x 2280 mm

B-Cab - Battery Cabinet

- Lithium ion - LFP technology
- 372 kWh / rack
- Liquid cooling thermal management
- Fire safety detection and extinction system integrated

Dimensions (W x D x H): 800 x 800 x 1800 mm

M-Cab - Master Cabinet

- ESS control cabinet up to 14 B-Cab
- Master Battery Management Unit
- Devices for remote management
- Auxiliaries power supply
- PLC to connect external EMS

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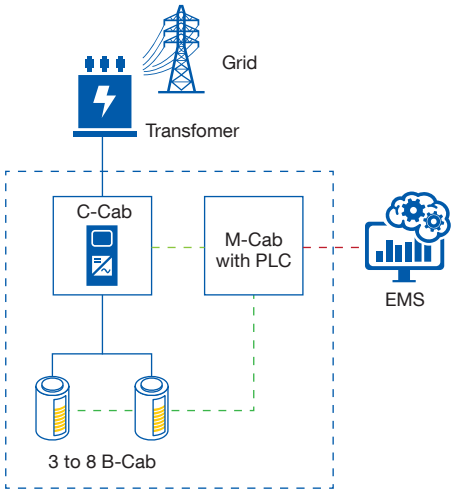
Many system configurations are available to meet customer requirements

Energy increment in steps of 0,372 MWh.
Many other configurations are available by installing systems in parallel.

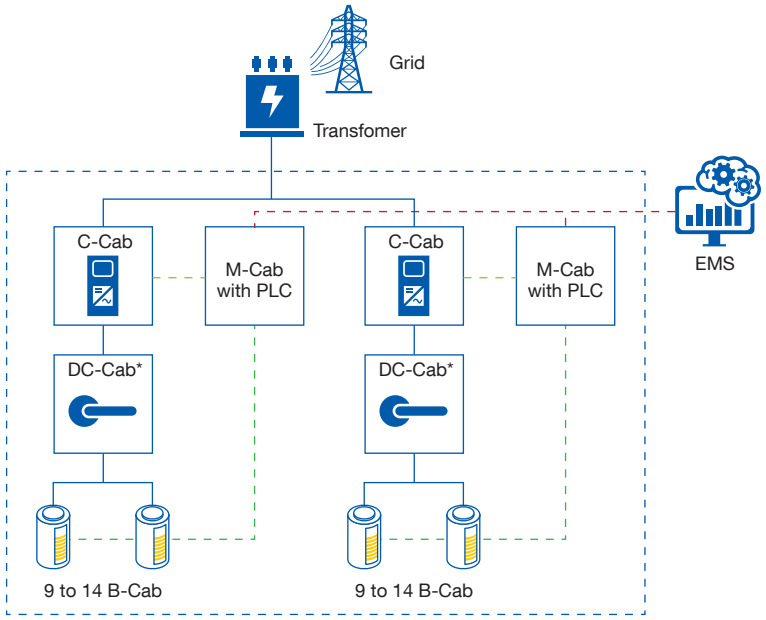
Number of racks	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Energy (kWh)	1.1	1.5	1.9	2.2	2.6	3.0	3.4	3.7	4.1	4.5	4.8	5.2	5.6	6.0	6.3	6.7	7.1	7.5	7.8	8.2	8.6	8.9	9.3	9.7	10.1
Power																									
1 Cab																									
Up to 1 MVA	from 1 to 5 hours duration																								
Up to 1.5 MVA		from 1 to 3.5 hours duration																							
2 Cab																									
Up to 2 MVA				from 1 to 5 hours duration																					
Up to 2.5 MVA					from 1 to 4 hours duration																				
Up to 3 MVA						from 1 to 3.5 hours duration																			

SUNSYS HES XXL generic architectures

Architecture with 1 C-Cab



Architecture with 2 C-Cab



Power connection — Power management by PLC — Connecting to external EMS

* DC-Cab: needed when connecting more than 8 B-Cab

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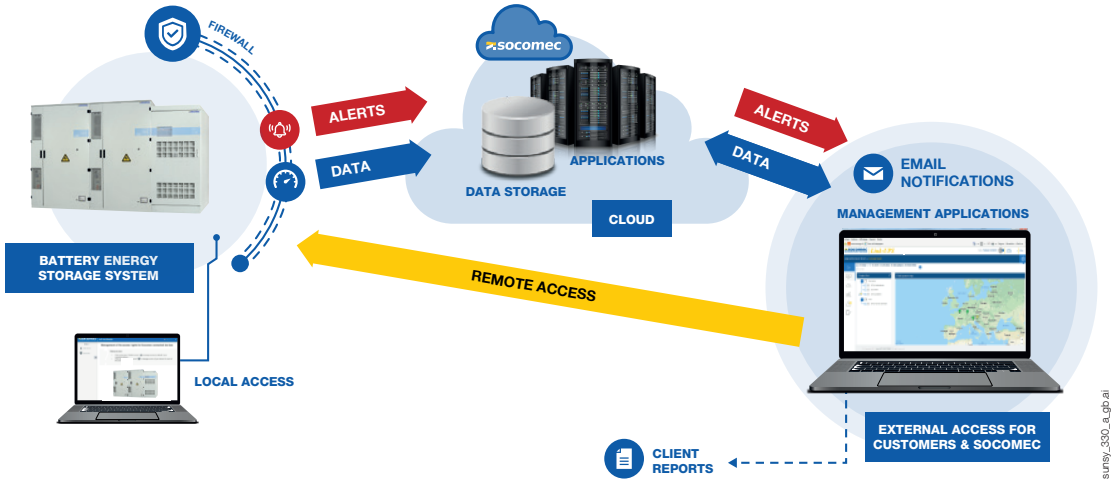
Technical Data

System information	
Power modularity	1 / 1.5 MVA per C-Cab - up to 2 C-Cab in parallel
Chemistry	LFP - Lithium Iron Phosphate
Energy Nameplate	372.7 kWh per cabinet
AC/AC Max Round Trip Efficiency	higher than 90% (without taking into account the energy consumption of the auxiliaries)
Maximum C-rate	0.5 C
DC Voltage range	750 - 1500 VDC
AC connections	conversion 3-wires / 690 VRMS - auxillary 3 wires + N / 400 VAC
AC Voltage range	690 VRMS
Rated frequency	50 /60 Hz configurable
Fire protection	fire safety system including smoke detectors, heat detectors and aerosol in the B-Cab
Environment	
Environment installation	Outdoor
Degree of protection	IP 55 / NEMA 3R
Operation temperature	-30 to 45 C° (without derating)
Acoustic level at 3 m	< 75 dBA @ 3m
Altitude max.	2000 m without derating (above consult us)

Local management and Remote monitoring



Local management

We have developed a modular and adaptive platform to be the brain of our system.

This open platform, integrated in the M-Cab, provides access to:

- Peak shaving, energy shifting, self-consumption, fuel saving…
- Multi-sources microgrid autonomous management and possible additional customization.
- Compatibility with third-party supervision systems (EMS, SCADA...) for additional functions.

Remote monitoring (option)

In option, the system can also integrate some IoT devices that makes it possible to continuously monitor the system remotely.

These devices enable the following functionalities:

- Web dashboard for on-line monitoring.
- Web access to the system KPIs.
- Smartphone application.
- Maintenance information: scheduled visits, remote firmware upgrade.

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