

SUNSYS HES XXL[®]

High power energy storage system

from 0.5 MVA / 1.6 MWh to 6 MVA / 24 MWh



Function

SUNSYS HES XXL is an outdoor high power energy storage system designed for both on-grid and off-grid applications. It is available in a variety of configurations, to provide the ideal system size for a range of project requirements. It supports dedicated applications such as optimization of photovoltaics with self consumption, peak shaving, backup power, and EV charging infrastructure support. SUNSYS HES XXL combines the economic returns of on-grid operation with the security of a microgrid when the grid may fail.

It is perfectly adapted to large scale commercial and industrial installations as well as front of the meter projects.

Advantages

High safety

SUNSYS HES XXL integrates advanced power conversion and LFP battery technologies to create a winning formula. The B-Cab XXL (Battery Cabinet) uses liquid-cooled thermal management, with an integrated fire safety system, and meets the requirements of the latest international fire code.

The complete system is certified to the latest UL 9540, the safety standard for energy storage systems in both Canada and the USA.

Extreme scalability

Large variety of system configurations are available based on three standard cabinets:

- C-Cab XXL: Converter Cabinet from 0.5 to 1.5 MVA
- B-Cab XXL: Battery Cabinet of 407kWh
- M-Cab XXL: Master Control Cabinet embedding smart components

While putting up to 4 systems in parallel it is possible to reach 6 MVA / 24 MWh.

Fully bankable supplier

Socomec is a 100+ years old company with expert knowledge in power conversion, switching and monitoring.

With our energy storage experience of 10+ years and 420+ systems installed worldwide, we have proven our knowledge and support process on the field.

Integrated ready to use certified system

SUNSYS HES XXL systems, including inverter, batteries and control cabinets, are certified and tested. Our systems have undergone a type-testing procedure to guarantee reliable behavior and performance, reducing the time and effort required for commissioning.

Specially adapted software for internal communication between all cabinets has been developed allowing efficient monitoring and control of the system, called PMS. Going a step further, we enabled thanks to SunSpec standard an easy integration with external EMS if you require it.

Whether you have a switchboard, solar system, generators or other equipment on site, our systems are designed to be compatible with a wide range of existing installations.

The solution for

- > Large commercial and industrial buildings
- > EV charging infrastructures
- > Grid support
- > Isolated microgrids
- > Resilient microgrids
- > Community solar

Strong Points

- > High safety
- > Extreme scalability
- > Fully bankable historical supplier
- > Integrated ready to use certified system

Conformity to standards

- > **Safety:** UL 9540; UL 9540A; UL 1973; NFPA 855; NFPA 68
- > **EMC:** FCC part 15 Level A
- > **Environment:** RoHS; REACH IEC 61249
- > **Communication protocol:** Modbus TCP; SunSpec 2.0
- > **Grid code:** UL 1741 SB; UL 3141; IEEE 1547-2018; IEEE 1547.1-2020; CA Rule 21
- > CEC listed

Please consult us for additional ones.

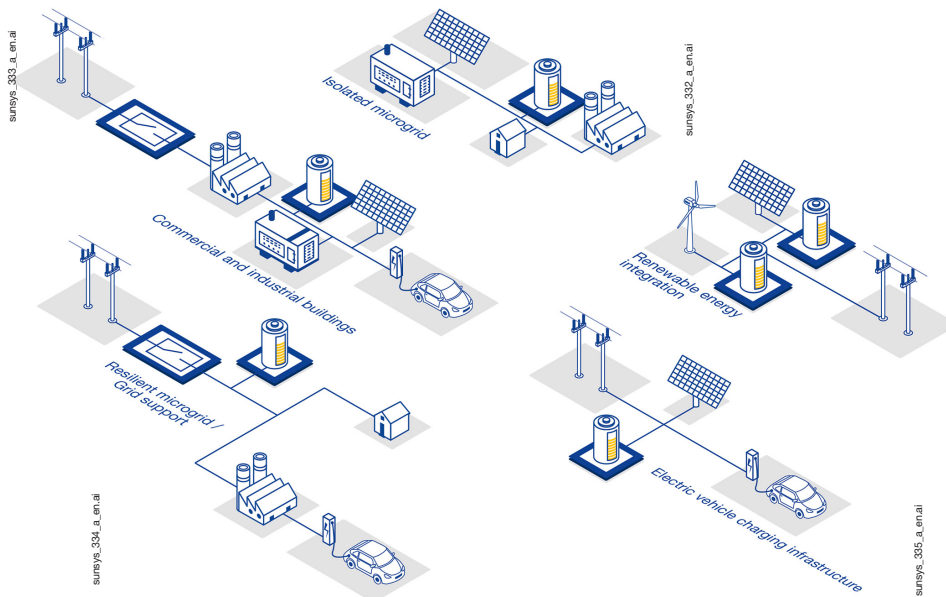
Expert Services

An experienced and skilled team is at your service to make your project a success, providing optimized asset management and performance!

- > **Project development:** pre-sales support, project design
- > **Deployment:** training, field inspection, commissioning
- > **Operation:** maintenance contracts, spare parts replacement, remote monitoring
- > Cloud data storage
- > Extended product and performance warranties

For more information, please contact us.

Suitable for all of the following applications



Native services supported by SUNSYS HES XXL

- > Demand charge reduction
- > Peak shaving
- > Time-of-Use
- > Energy arbitrage
- > Energy smoothing
- > Energy shifting
- > Capacity reserve
- > Frequency regulation
- > Voltage control
- > Emergency back-up
- > PV self-consumption
- > Compatible with external EMS to unlock more services

3 modular units for maximum flexibility



(W x D x H): 1009 x 1634 x 2281 mm
39.7 x 64.3 x 89.8 in
1360 kg / 3000 lbs



(W x D x H): 1390 x 1344 x 2348 mm
54.7 x 52.9 x 92.4 in
3650 kg / 8047 lbs



(W x D x H): 805 x 805 x 2095 mm
31.7 x 31.7 x 82.5 in
250 kg / 551 lbs

C-Cab XXL Converter Cabinet

- > Bidirectional power converter
- > 0.5 to 1.5 MVA / cabinet
- > Hybrid liquid / air cooling system
- > On and off-grid operation

B-Cab XXL Battery Cabinet

- > Lithium Iron Phosphate (LFP) Chemistry
- > 407 kWh / rack
- > Liquid cooling thermal management
- > Integrated fire safety detection and suppression system
- > Life cycle of 8000 cycles at 25°C; 0.5P

M-Cab XXL Master Cabinet

- > ESS control cabinet
- > Integrated battery management system
- > Remote management
- > Auxiliaries power supply
- > Automation functions and EMS connection
- > Battery data logging

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from 0.5 MVA / 1.6 MWh to 6 MVA / 24 MWh

Many system configurations are available to meet customer requirements

1 C-Cab XXL - 600 or 690 V

	4 Racks	5 Racks	6 Racks	7 Racks	8 Racks	9 Racks	10 Racks	11 Racks	12 Racks	13 Racks	14 Racks	15 Racks
	1,628 kWh	2,035 kWh	2,442 kWh	2,849 kWh	3,256 kWh	3,663 kWh	4,070 kWh	4,477 kWh	4,884 kWh	5,291 kWh	5,698 kWh	6,105 kWh
500 kVA	3.0	3.8	4.5									
750 kVA	2.0	2.5	3.0	3.5	4.1							
1,000 kVA		2.0	2.3	2.6	3.0	3.4	3.8	4.2				
1,250 kVA			2.0	2.1	2.4	2.7	3.0	3.3	3.6	3.9	4.3	
1,500 kVA				2.0	2.0	2.3	2.5	2.8	3.0	3.3	3.5	3.8

Duration shown in AC useable energy at BOL

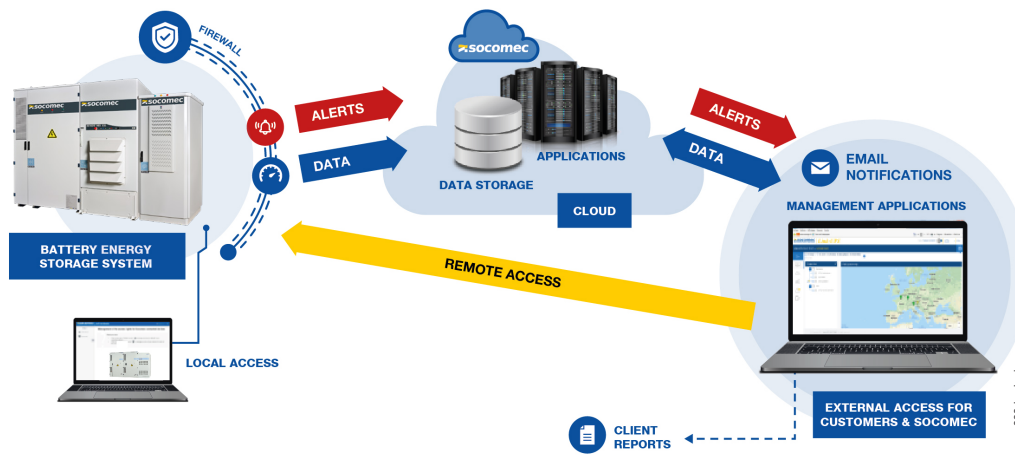
Power derating to respect 0.5 CP



Parallel up to 4 SUNSYS HES XXL[®]

Thanks to the scalable architecture of SUNSYS HES XXL, you can add up to 4 systems in parallel and reach a max power of 6 MVA / 24 MWh. Ask us for more details.

Remote Monitoring & Debugging



Local management

The Socomec Power Management System, coordinating the operation of all converter and battery components. Its capabilities include:

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

- Peak shaving, energy shifting, self-consumption and fuel saving to maximise valuable savings,
- Transitions between on-grid and microgrid operation,
- Autonomous microgrid management,
- Compatibility with 3rd party energy management software suites, through a Sunspec 2.0 or Modbus interface,
- SCADA integration through Modbus/TCP.

Remote monitoring

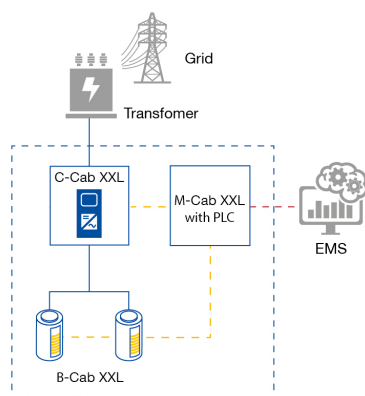
In addition, the M-Cab XXL also integrates IoT devices that make it possible to continuously monitor the system remotely.

These devices enable the following, through 2 offers SoLive and SoLive Pro:

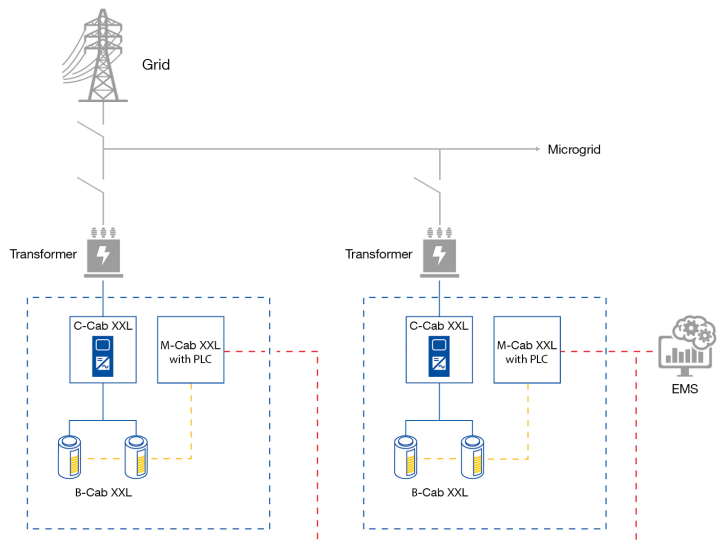
- Web dashboard for on-line monitoring,
- Web access to the system KPIs,
- Smartphone app,
- Remote firmware upgrade.

SUNSYS HES XXL system architectures

Architecture with 1 C-Cab XXL



Architecture with multiple C-Cabs XXL



— Power connection - - - Power management by PLC - - - Connecting to external EMS - - - Provided by Socomec

Technical Data

System information	
Power modularity	0.5 MVA & 1 MVA & 1.25 MVA @ 600 Vac or 1.5 MVA @ 690 Vac per C-Cab XXL
Chemistry	LFP - Lithium Iron Phosphate
Energy Nameplate	407.3 kWh per cabinet
AC/AC Max Round Trip Efficiency	higher than 90%*
Maximum P-rate	0.5 P
AC connections	3-wire (3P3W) 6 x 600 kcmil or 6 x 300 mm ²
AC Voltage range	600-690 VRMS +/-10%
Rated frequency	50 & 60 Hz configurable
Fire protection	fire safety system including smoke detectors, heat detectors, aerosol, dry pipe and deflagration venting panel
Environment	
Environment installation	Outdoor
Degree of protection	IP 55
Operation temperature	-20 to 45 °C -4 to +113°F without derating
Acoustic level at 3 m	< 75 dBA @ 3m
Altitude max.	1,000 m / 3,280 ft without derating (above 1,000 m / 3,280 ft, 10% per 1,000 m / 3,280 ft)

*energy consumption of the auxiliaries is not taken into account

Also available



SUNSYS HES L[®]
 Modular Outdoor Energy Storage System
 from 50 kVA / 203 kWh to 550 kVA / 1,218 kWh systems