



# SUNSYS HES XXL

Native outdoor Energy Storage System  
from 1 MVA / 1 MWh to 9 MVA / 33 MWh systems

SUNSYS HES XXL



SUNSYS HES XXL is a complete and ready to use energy storage system aimed for on-grid and off-grid applications. It is a range of outdoor Energy Storage Systems available in a variety of sizes, up to 9MW and 33MWh.

This powerful system is scalable and can be easily upgraded by adding battery cabinets - conversion cabinets later on without having to redesign it totally.

Furthermore SUNSYS HES XXL can be interfaced and controlled by all type of Energy Management System.

Socomec has partnered with CATL and selected the CATL EnerOne liquid cooled LFP battery system as the optimum battery for SUNSYS Hybrid Energy Storage.

## High safety

The system is designed using the best of conversion and battery technologies, mainly for safety. The C-Cab uses a safe conversion technology to limit the Common Mode Noise effect and the B-Cab is made of a stable chemistry of Lithium Iron Phosphate (LFP) that doesn't burn in case of thermal runaway. The complete system is safety certified.

## Extreme flexibility

Based on 3 main cabinets SUNSYS HES XXL is a modular energy storage system enabling a real flexibility in order to be as close as possible to your installation requirements.

In addition SOCOMEC can design engineering to order complementary cabinets for a full compliance with your own installation and your requirements.

## ROI maximization

The system is based on high efficiency equipment to achieve a round trip delay greater than 90% for the whole system (without taking into account the energy consumption of the auxiliaries) and to tackle power peaks up to 20% of rated power.

With an easy to install and maintain design, the TCO of the system is highly reduced.

## Fast and safe installation

All cabinets present in our system are shipped completely assembled, with internal modules mounted, for maximum quality and minimum transportation cost and installation time.

### The solution for

- > Utility scale
- > Renewal energy integration
- > Large Commercial & Industrial buildings
- > Isolated microgrids

### Strong points

- > Extreme flexibility
- > Fast and safe installation
- > High safety
- > ROI maximization

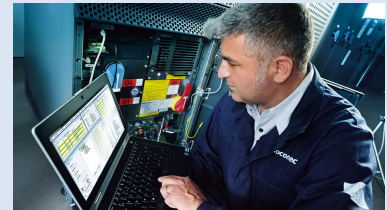
### Conformity to standard

- > **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 / 4220; Italy: CEI 0-16; UK: G99/1; France: VDE 0126-1-1. Please consult us for additional ones.

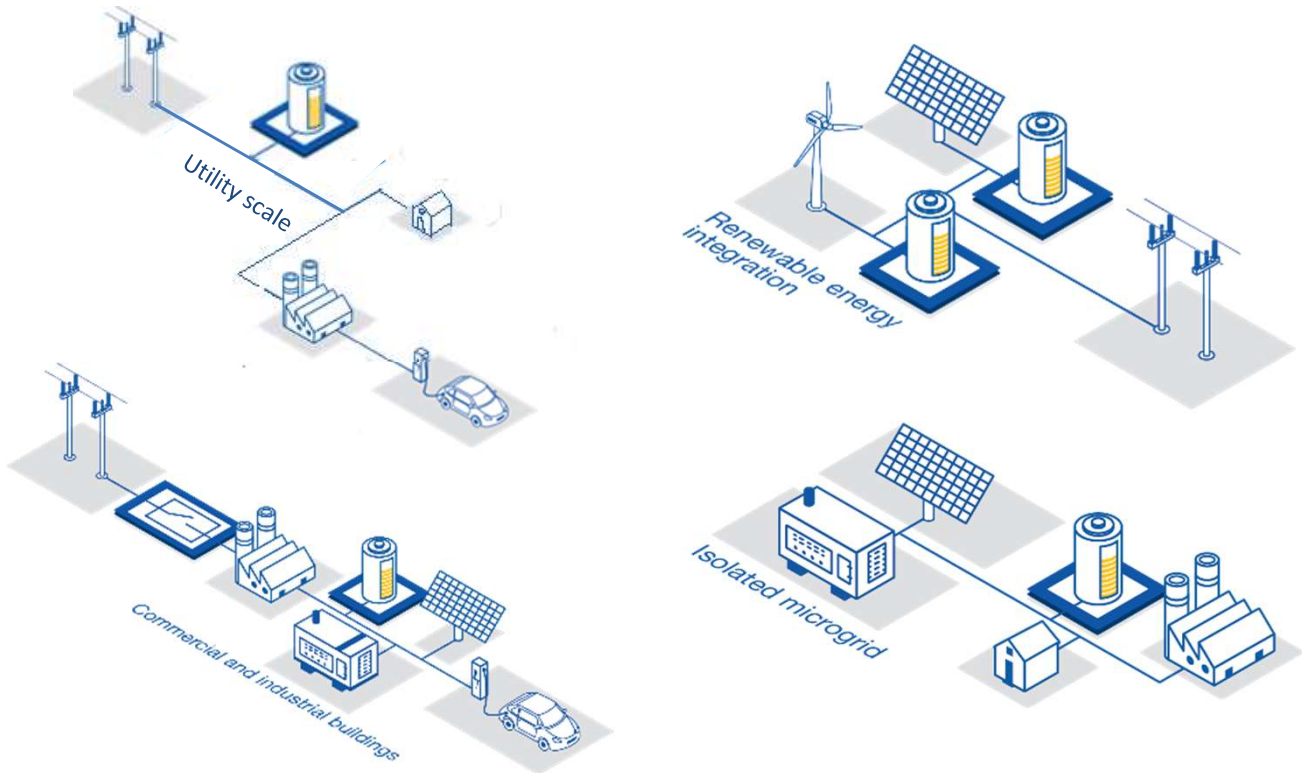
### Expert Services

Technical site audit, solution specification, advice, commissioning, maintenance, training, warranty extension, etc.

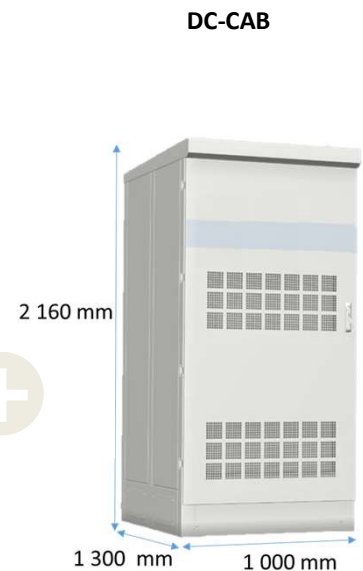
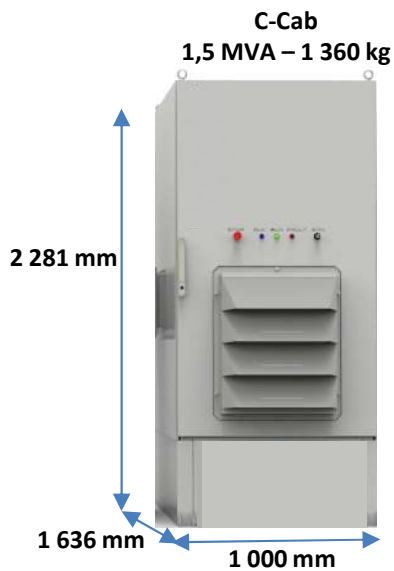
Our Expert Services extend to a complete offer of customised services to make your project a success.



## Suitable for all following applications



## 3 stackable units for maximum flexibility



### C-Cab

- > Bidirectional power converter
- > 1,5 MVA / cabinet
- > Hybrid liquid / air cooling system
- > On and off-grid operation
- > AC/DC distribution and protection

### B-Cab

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

### DC-Cab

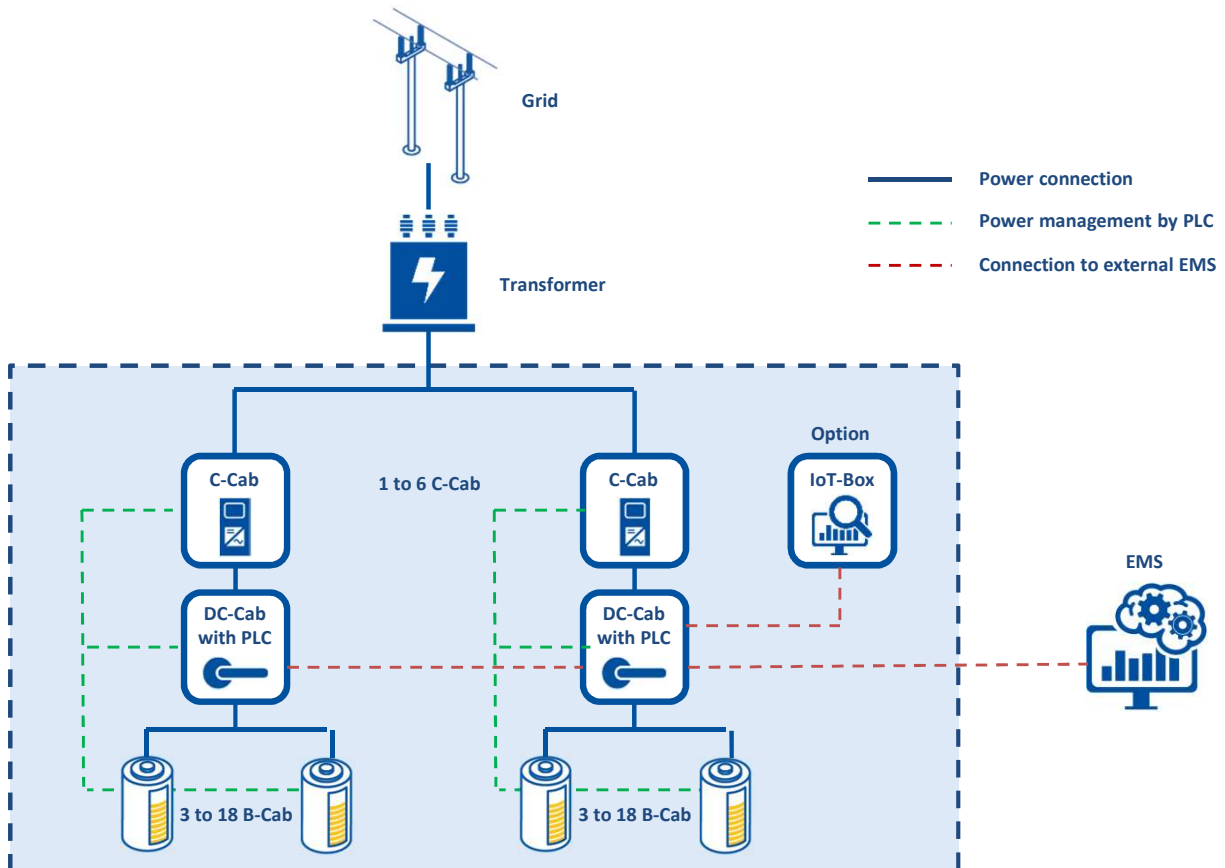
- > DC distribution panel
- > Battery connection up to 18 B-Cab
- > Master Battery Management Unit
- > Battery protection
- > Battery auxiliaries power supply
- > PLC to connect external EMS

## Many system configurations available to meet customer requirements

Energy / Power	Up to 1,5 MW	Up to 3 MW	Up to 4,5 MW	Up to 6 MW	Up to 7,5 MW	Up to 9 MW
6 Racks Up to 2236,20 MWh		Limited to 1C				
12 Racks Up to 4472,40 MWh						
18 Racks Up to 6708,60 MWh						
24 Racks Up to 8944,80 MWh						Limited to 1C
30 Racks Up to 11181,00 MWh						
36 Racks Up to 13417,20 MWh						
42 Racks Up to 15653,40 MWh						
48 Racks Up to 17889,60 MWh						
54 Racks Up to 20125,80 MWh						
60 Racks Up to 22362,00 MWh						
66 Racks Up to 24598,20 MWh						
72 Racks Up to 26834,40 MWh						
78 Racks Up to 29070,60 MWh						
84 Racks Up to 31306,80 MWh						
90 Racks Up to 33543,00 MWh						

Energy increment in steps of 0,372 MWh

## SUNSYS HES XXL generic architecture



## Technical Data

System information	SUNSYS HES XXL
Power modularity	1,5 MVA per C-Cab - up to 6 C-Cab in parallel
Symmetrical overload	1,8 MW for 3 sec. - 1,75 MW for 5 min
Chemistry	LFP - Lithium Iron Phosphate
Energy Nameplate	372 kWh per cabinet
AC/AC Max Round Trip Efficiency	Greater than 90% (without taking into account the energy consumption of the auxiliaries)
Maximum C-rate	0,5 or 1 C
Maximum DC current	1 400
AC connections	3-wire - 304mm <sup>2</sup>
AC Voltage range	479 - 690 VRMS +10% / 12%
Rated frequency	50 /60 Hz configurable
Fire protection	Fire Safety System including smoke detectors, heat detectors and aerosol
<b>Environment</b>	
Environment installation	Outdoor
Degree of protection	IP 55 / NEMA 3R
Operation temperature	-20 to 40 C°
Storage temperature	-20 to 60 C°
Acoustic level at 3 m	< 75 dBA
Altitude max.	1000 m without derating (above consult us)

## Local management and Remote monitoring

### 1 LOCAL MANAGEMENT

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

This open platform, integrated in the DC-Cab, gives 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.

### 2 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.

