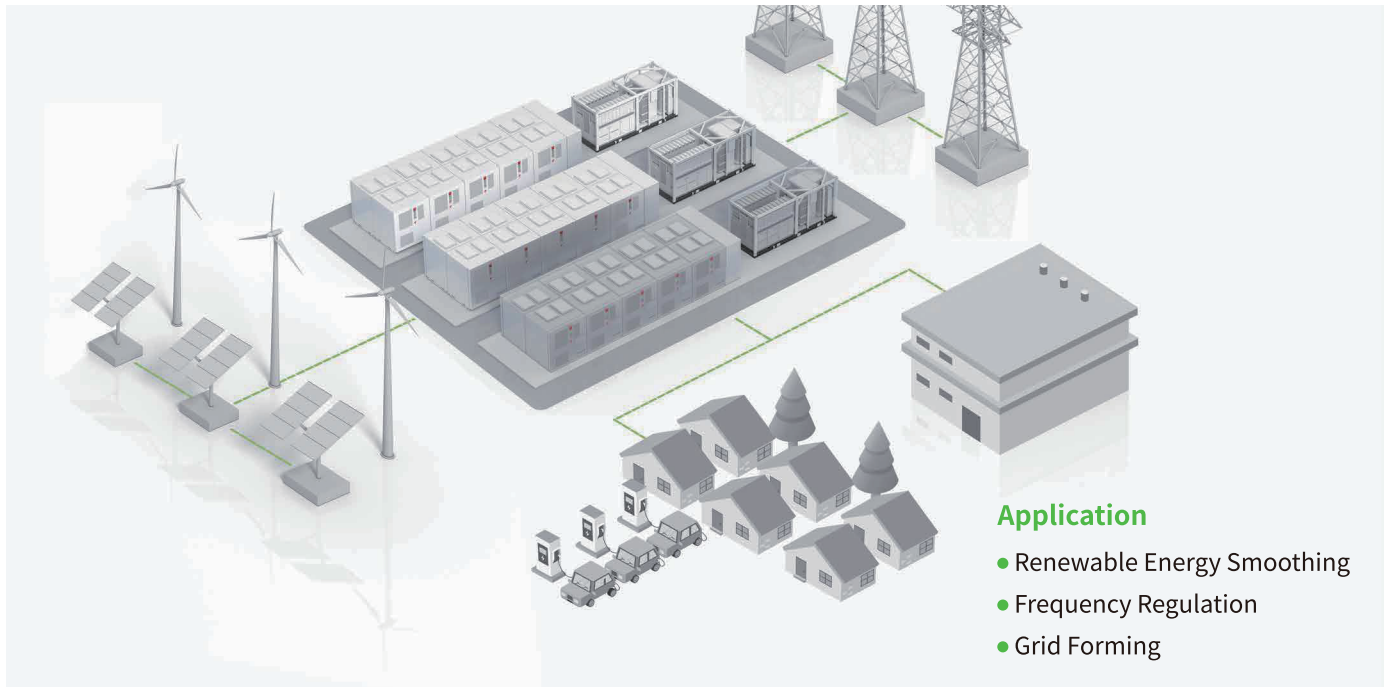


Flexible, Scalable & Reliable Energy Block

FlexCube



FlexCube is a reliable, intelligent and fully-integrated battery energy storage system developed by CUBENERGY for applications in wide-range projects conditions and locations.

Modular design & parallel-connected method of FlexCube indicate more flexibility and effortless-experience by shortening the delivery period and simplifying the deployment process.



All-in-One & Plug-and-play

Ease of transportation, installation, operation and maintenance;



Flexible Scalability

Simply deploying & connecting standardized blocks to increase energy capacity;



Intelligent Management

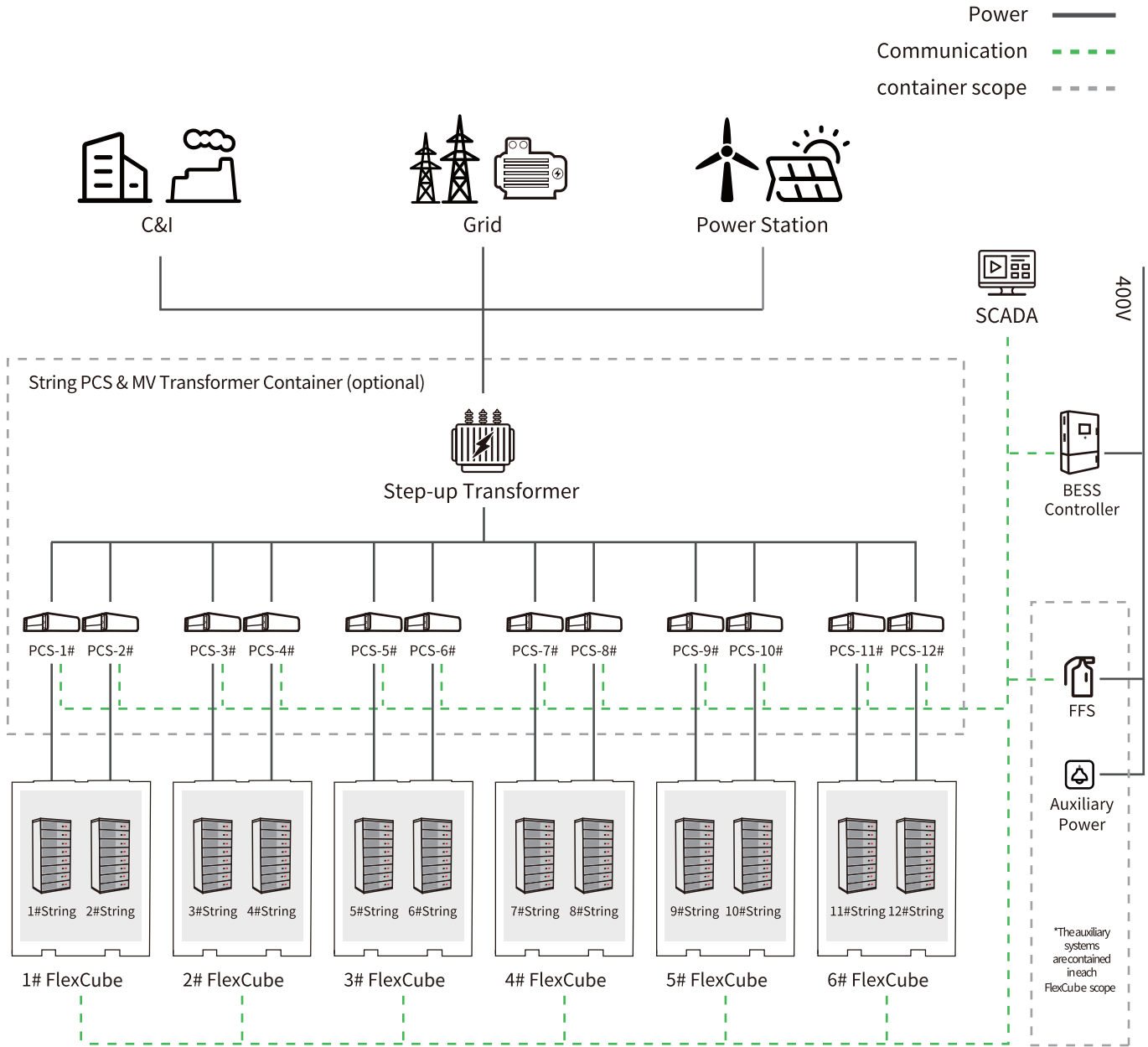
Integrated with leading balancing technology & operation platform, huge plus for safety and long-life-span.



FlexCube is designed with an easy augmentation feature to adapt evolving project requirements. Its DC/AC one-on-one topology, combined with a modular design, simplifies AC augmentation by enabling the addition of PCS units and new enclosures as needed.

This flexible approach supports incremental expansion of the system. By integrating two standardized FlexCube units and two additional PCS to at each stage, the system's capacity can be scaled up from 500kWh to 8400kWh, ensuring at least 10 years of stable projects operation.

System Topology



Product Configuration

Product Model	Battery String Type	FlexCombo Qty	Nominal Capacity	DC Voltage Range	PCS Grid-connected Voltage
FlexCube - D5000	LS418	6	5,016kWh	1164.8V~1476.8V	690V
FlexCube - D6500		8	6,688kWh		
FlexCube - D8000		10	8,360kWh		

□ System Technical Specifications

Item	FlexCube
DC Data	
Battery chemistry	Lithium Iron Phosphate (LFP)
Cell life cycle	8,000 cycles with 70% retention @ 0.5C 25°C
Cell spec	3.2V/314Ah
Each string configuration	1P416S
Number of strings	2
DC rated energy capacity	836kWh
Rated voltage	1,331.2V
Voltage range	1,164.8V~1,476.8V
Auxiliary load voltage	400V, 50/60Hz
Auxiliary peak load	7kW
BMS communication interface	RS485, Ethernet
BMS communication protocol	Modbus RTU, Modbus TCP
General Data	
Dimension w/o clearances (W*D*H)	2,000mm*1,785mm*2,545mm
Weight of the whole system	≤8t
Degree of protection	IP54
Operating temperature range	-30~50°C
Relative humidity	0~95% (non-condensing)
Max working altitude	<2,000m/6,561ft
Cooling concept of DC hatch	Liquid Cooling
Coolant type	50% Ethylene glycol solution
Fire fighting system	Aerosol/FK-5-1-12 Fire Extinguishing Device/Water fire fighting
Communication interfaces	RS485, Ethernet
Certificates	UL9540, CE

More Energy	Flexible Scalability	Simple O&M	Safe & Reliable
Pack-level Optimization String-level Optimization	DC Modular Design Reducing Initial Investment	No periodic balancing No experts site visit	Modular Design High Availability

□ Key Components



- 0.5C Charge/Discharge;
- Power supply can be single battery string or parallel battery strings;
- Easy configuration and maintenance.

Battery String-LS418

Item	Data
Battery module	LS418
Pack QTY	8
Rated capacity	418.00kWh
Rated voltage	1,331.2V
DC voltage range	1,164.8V~1,476.8V
Pack	166.4V/314Ah@1P52S
Communication	Ethernet, CAN, RS485
Lifespan	8,000 cycles with 70% retention@0.5C 25°C
Dimensions (W×D×H)	926×1,220×2,520mm
Weight	≤3t
Certificates	UL1973, UL9540A, IEC62619

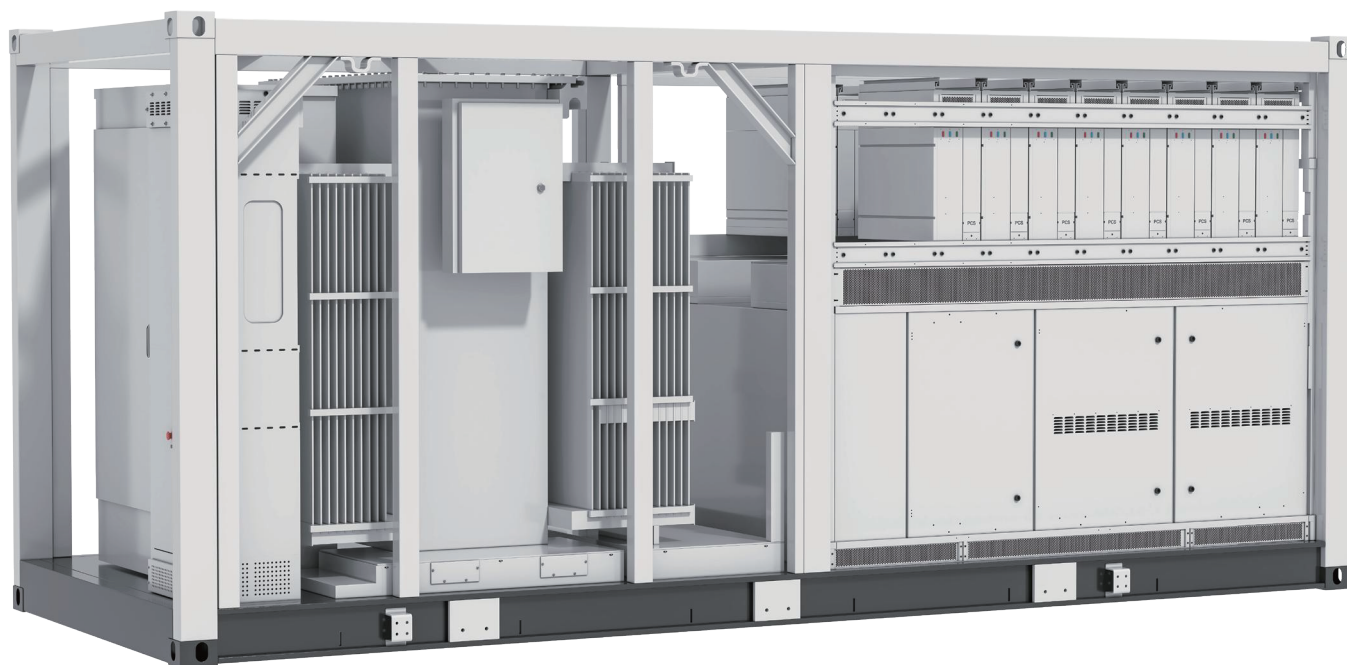


- Single-stage three-level modularization;
- Multi-branch input to reduce battery series and parallels connection;
- One-to-one Management of Battery string and PCS.

Power Conversion System

Item	Data
DC voltage range	1000~1,500V
Maximum DC current	224.5A
Rated output power	200kW
Rated grid voltage	690V, 3W+PE
Grid voltage range	586.5~759V(Optional)
Grid frequency	50Hz/60Hz
Max AC current	184.1A
AC PF	-1~+1
Weight	100kg
Certificates	UL 1741, IEEE 1547, IEC62477-1, IEC 61000

□ Key Components



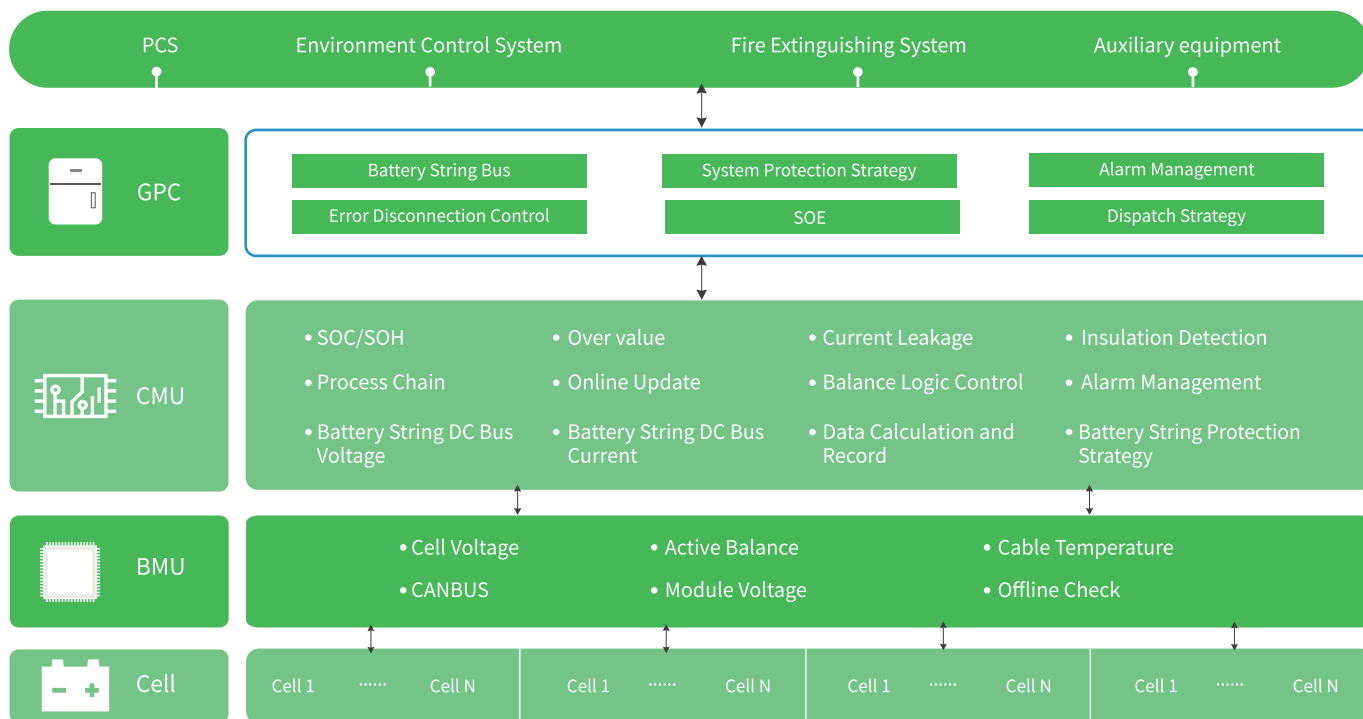
String PCS & MV Transformer Container

Item	Data
DC Parameters	
Max. DC Current	224.5A*12/224.5A*16/224.5A*20
Battery voltage range	1000~1,500V
Number of DC inputs	12/16/20
AC parameters (On-Grid)	
AC output power	2500kW/3200kW/4000kW
PCS AC voltage	690V
Nominal grid frequency	50Hz/60Hz
Harmonic (THDi)	<1.5% (100% load)
Power Factor	-1~+1
Transformer	
Isolation mode	Oil-Immersed Transformer
Transformer rated power	2500kVA/3200kVA/4000kVA
LV/MV voltage	0.69kV/33kV
Transformer vector	Dy11 y11

- Power Modular design for easy replacement and save maintenance time;
- Allow quick battery string expansion to the existing system;
- 200 kW string PCS building up to 3.2MW inside 20 ft structure;
- Solve SOC imbalance between battery strings.

Item	Data
General Data	
PCS Max. efficiency	98.8%
Ingress protection rating	TYPE 3R
Operating temperature range	-40~+60°C (>45°C derating)
Relative humidity	0~100% (no condensing)
Max. altitude	2000m
Cooling method	Forced air cooling
Communicate port	RS485/CAN/Ethernet
Dimensions (W*D*H)	6,058×2,438×2,896mm
Weight	15,000kg/18,000kg/22,500kg

□ BMS with Real-time Active Balance



BMU		CMU	
Cell Voltage Measurement Accuracy	±5mV	Battery String Voltage Measurement Range	100~1,500V
Cell Voltage Monitoring Interval	≤100ms	Battery String Voltage Measurement Accuracy	±1%
Cell Temperature Measurement Accuracy	±2°C	Battery String Voltage Monitoring Interval	≤100ms
Cell Temperature Measurement Interval	≤3s	Battery String Current Measurement Range	±300A
Cell Current Balance	Active Balance, 5A MAX	Battery String Current Measurement Accuracy	≤1%
Cell Voltage Measurement Range	1~5 V	Battery String Current Monitoring Interval	≤50ms
Over-current Protection	250A/1s	SOC Calculation Accuracy	≤8%
Short-Circuit Protection	500A/10ms	Input Insulation Resistance	≥10MQ, 1,000VDC