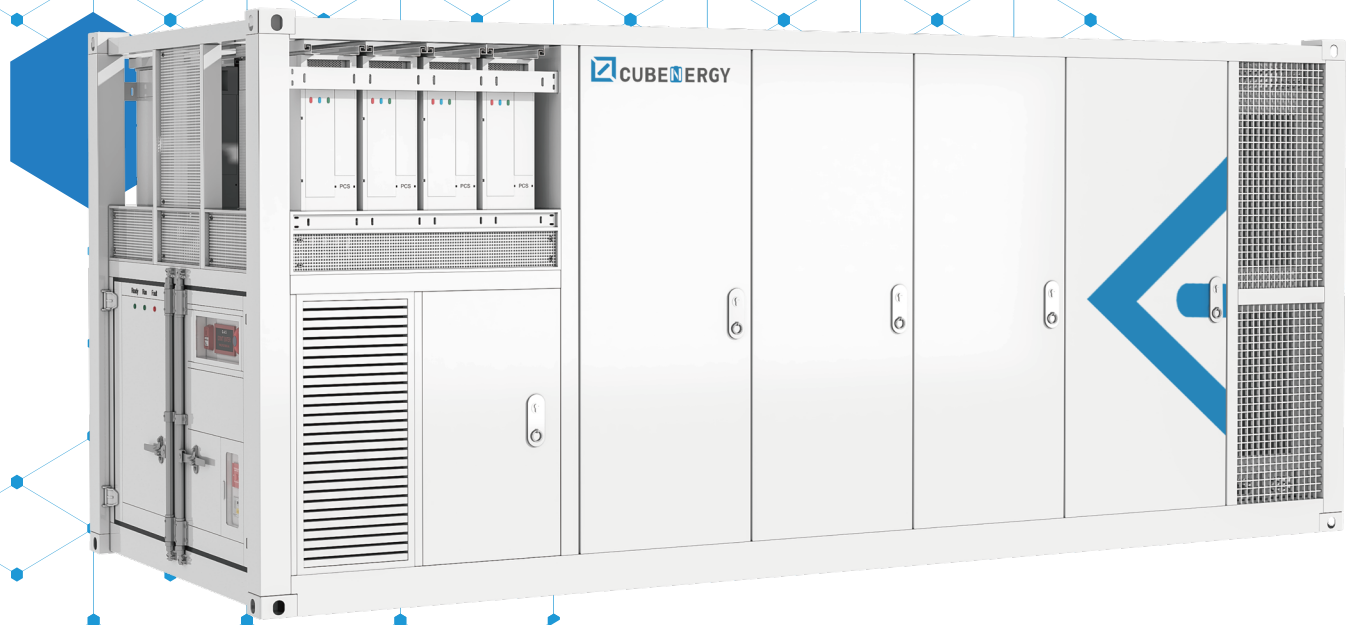
CUBENERGY



PowerCombo-20C2H1600K

Resilient, Reliable, and Quick Delivery Liquid Cooling Energy Station

PowerCombo-20C2H1600K

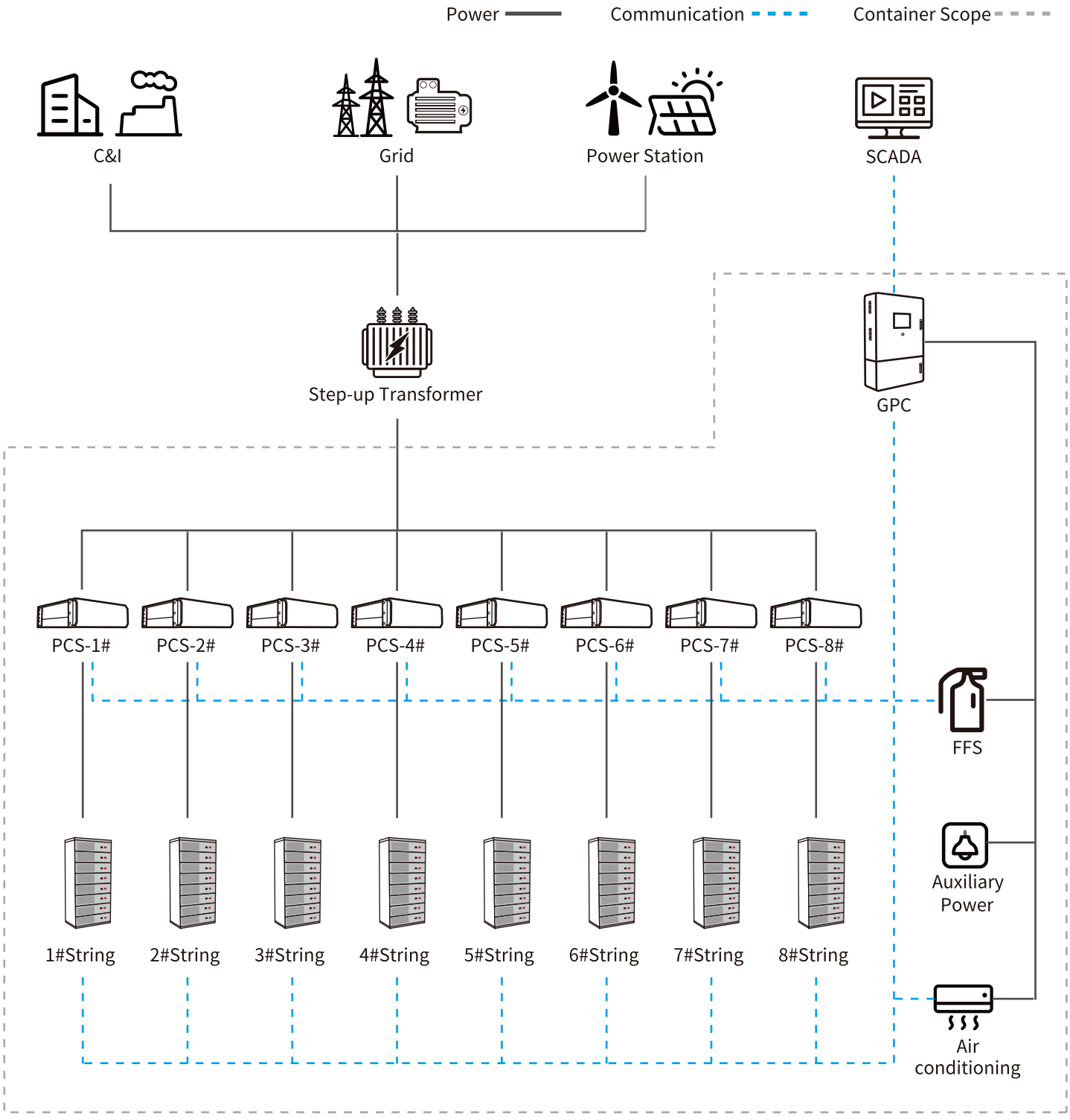
PowerCombo, a high-performance, all-in-one, containerized battery energy storage system developed by Cubenergy, provides C&I users with the intelligent and reliable solution to optimize energy efficiency and resilience. As the leading BESS product, PowerCombo is certificated by UL1973, UL9540A, UL9540, IEC62619, CE , UN38.3, complied with IEC63056, NFPA855, provides secure, reliable and safe power supply.

PowerCombo-20C2H1600K, with capacity of 3,086kWh@20ft, is ideal for mostly utility and C&I applications, such as renewable energy power plant supplement, factories, buildings, etc. The integrated and easy-to-install BESS can be easily connected and matched with the equipment, while the advanced BMS and cloud-based operation platforms bring superior interaction experience for users.

Application

- Smooth New Energy Output
- Voltage, Frequency Support, Frequency Modulation
- Peak Valley Arbitrage
- Demand Management
- Construction of Microgrid

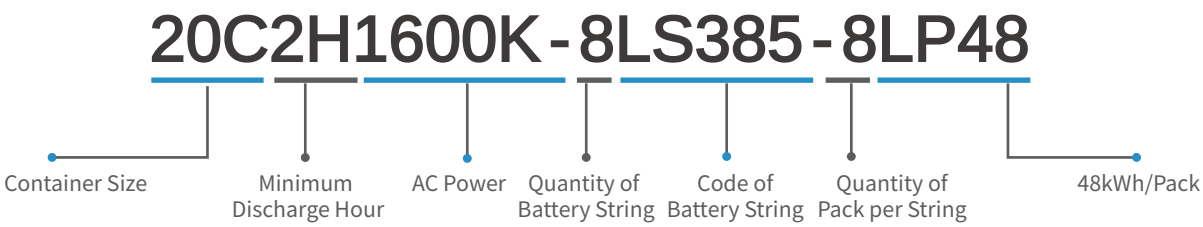
System Topology



More Energy	All-in-one Design	Simple O&M	Safe & Reliable
Pack-level Optimization String-level Optimization	AC/DC All-in-one Design Reducing Initial Investment	No periodic balancing No experts site visit	Modular Design High Availability

Product Layout

Product Model Definition



Product Configuration

Product Model	Battery String Type	String Qty	Nominal Capacity	DC Voltage Range	Grid-connected Max Rated Voltage	Dimensions (WDH mm)
20C2H1600K	LS385	8	3,086kWh	1075.2V~1363.2V	690V	6,058x2,438x2,896mm
20C1H1000KLS	LS385	8	1,929kWh	672V~852V	400V	6,058x2,438x2,896mm
20C2H1000KLS	LS385	8	2,315kWh	806.4V~1022.4V	400V	6,058x2,438x2,896mm

System Technical Specifications

Item	20C2H1600K	20C2H1000KLS	20C2H1000KLS
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		
String configuration	1P384S	1P240S	1P288S
Number of strings	8	8	8
DC rated energy capacity	3,086kWh	1,929kWh	2,315kWh
Rated voltage	1,228.8V	768V	921.6V
Voltage range	1,075.2V~1,363.2V	672V~852V	806.4V~1,022.4V
BMS communication interface	RS485, Ethernet		
BMS communication protocol	Modbus RTU, Modbus TCP		
AC Data	Standard Output		
Rated AC Power	1,600kW	1,000kW	1,000kW
Maximum AC power	1,760kW	1,100kW	1,100kW
Rated voltage	690V	400V	400V
Grid voltage range	586.5~759V(Optional)	340~440V(Optional)	340~440V(Optional)
AC rate of current	1,338.8A	1,443.4A	1,443.4A
Output THDi	＜3%		
AC PF	-1~+1		
AC output	3W+PE		
General Data			
Dimension w/o clearances (L*W*H)	6,058x2,438x2,896mm		
Weight of the whole system	⩽30.7t	⩽23.3t	⩽25.8t
Degree of protection	IP54		
Operating temperature range	-30~50°C		
Relative humidity	0~95% (non-condensing)		
Max working altitude	2,000m/6,562feet(non-derating)		
Cooling concept of DC hatch	Liquid Cooling and Dehumidification system		
Fire fighting system	FK-5-1-12		
Communication interfaces	RS485, Ethernet		
Certificates	UL9540, UN3536, CE Mark		

☐ Key Components

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

Battery String

Item	LS385-8LP48	LS385-5LP48	LS385-6LP48
Battery module	LS385	LS385	LS385
Pack QTY	8	5	6
Rated capacity	386kWh	241kWh	289kWh
Rated voltage	1,228.8V	768V	921.6V
DC voltage range	1,075.2V~1,363.2V	672V~852V	806.4V~1,022.4V
Pack	153.6V/314Ah@1P48S		
Communication	Ethernet, CAN, RS485		
Dimensions (W×D×H)	862×1,100×2,228mm		
Weight	2,490kg	1,575kg	1,880kg
Certifications	UL1973, UL9540A, IEC62619, CE , UN38.3		

- 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

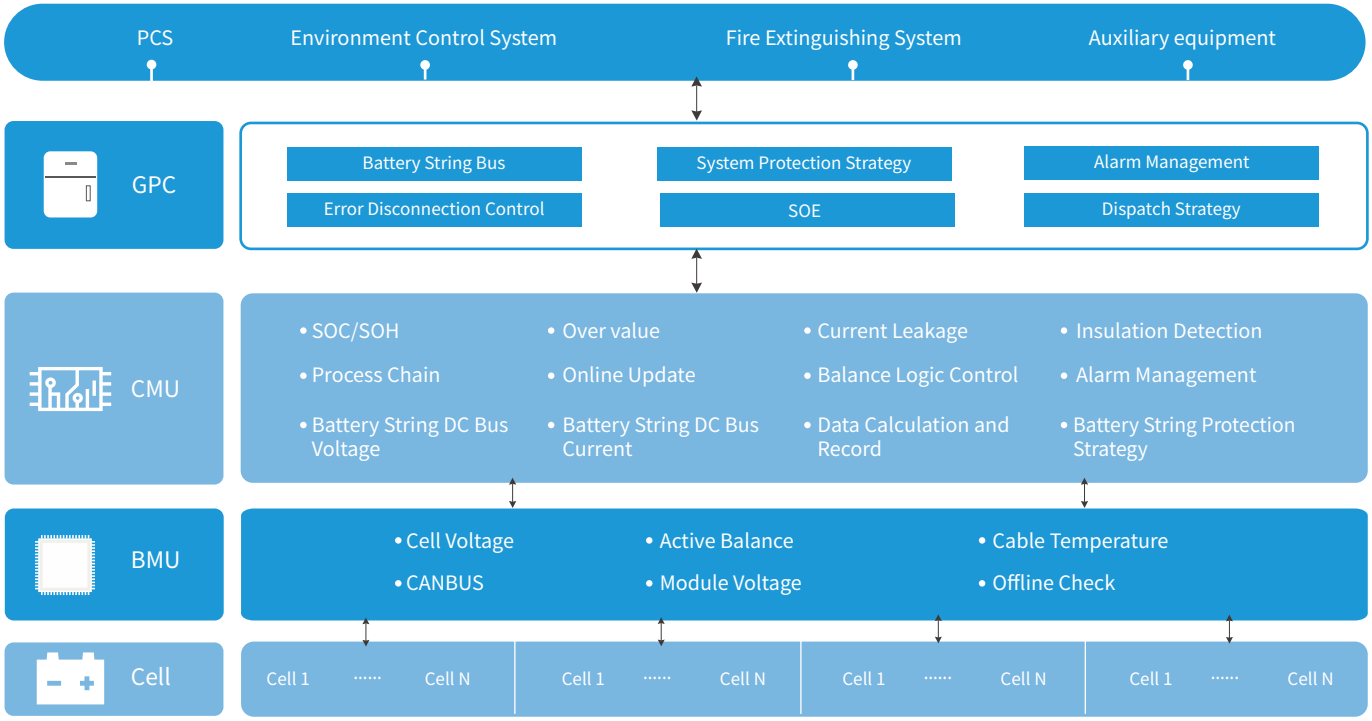
Item	EH-0200-HA-M	CBAC-125-HA-M
Rated AC power	200kW	125kW
Max.DC current	224.5A	234A
DC voltage range	1000~1500Vd.c	600~1500Vd.c
Max.DC voltage	1500Vd.c	
Power factor range	-1~+1	
Ingress protection	IP66	
Rated AC current	167.4A	180.4A
Max.AC current	184.1A	198.4A
Rated AC voltage	690Va.c.(3W+PE)	400Va.c.(3W+PE)
Output operating voltage range	-15%~+10%(Configurable)	
Rated AC frequency	50/60Hz	
Oprating temperature range	-40~+60°C	
Protective class	I	
Operating altitude	4000m(derating above 3000 m)	
Cooling method	Smart air cooling	
Weight	98±2kg	

- All-round signal collection;
- Comprehensive logical control;
- Multilevel electric & control protection;
- Intelligentize Sub-System management;
- Quick and Simple Configuration and Connect with third-part SCADA and EMS.

GridPoint Controller (GPC)

	Data
Power interface	AC400V/DC24V
Communication and Relay	Modbus RTU、Modbus TCP
Power backup for Monitoring	Reseverd UPS connection
Control mode with EMS	Time-of-use, Peak shaving, Flexibility service Renewable smoothing, Grid-Forming

BMS with Real-time Active Balance



BMU		CMU	
Cell Voltage Measurement Accuracy	±2.5 mV	Battery String Voltage Measurement Range	100~1,500V
Cell Voltage Monitoring Interval	⩽500ms	Battery String Voltage Measurement Accuracy	±1%
Cell Temperature Measurement Accuracy	±2°C	Battery String Voltage Monitoring Interval	⩽200ms
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	⩾10MΩ，1,000VDC

NOTES

Product dimensions and physical appearance in this brochure are nominal and are provided for the convenience of our customers. Cubenergy reserves the right to make changes from time to time, without prior notification, which may change the dimensions and physical appearance shown.

We therefore recommend you to consult with a Cubenergy sales representative before your purchase.

CUBENERGY

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