



# PowerCombo-20C1H1000K

Resilient, Reliable, and Quick Delivery Energy Station

# PowerCombo-20C1H1000K



Today, energy storage system plays the critical and growing role in decarbonizing the electric system and improving the electricity quality. More broadly, ESS deployed behind the meter, whether as integrated components of wind and solar power facilities or as stand-alone projects, is providing system capacity and flexible generation to maintain reliability as the growing contributions of renewables from electricity generation.

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, IEC62619, CE , UN38.3, provides secure, reliable and safe power supply.

PowerCombo-20C1H1000K, with capacity of 1,104kWh@20ft GP, 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.

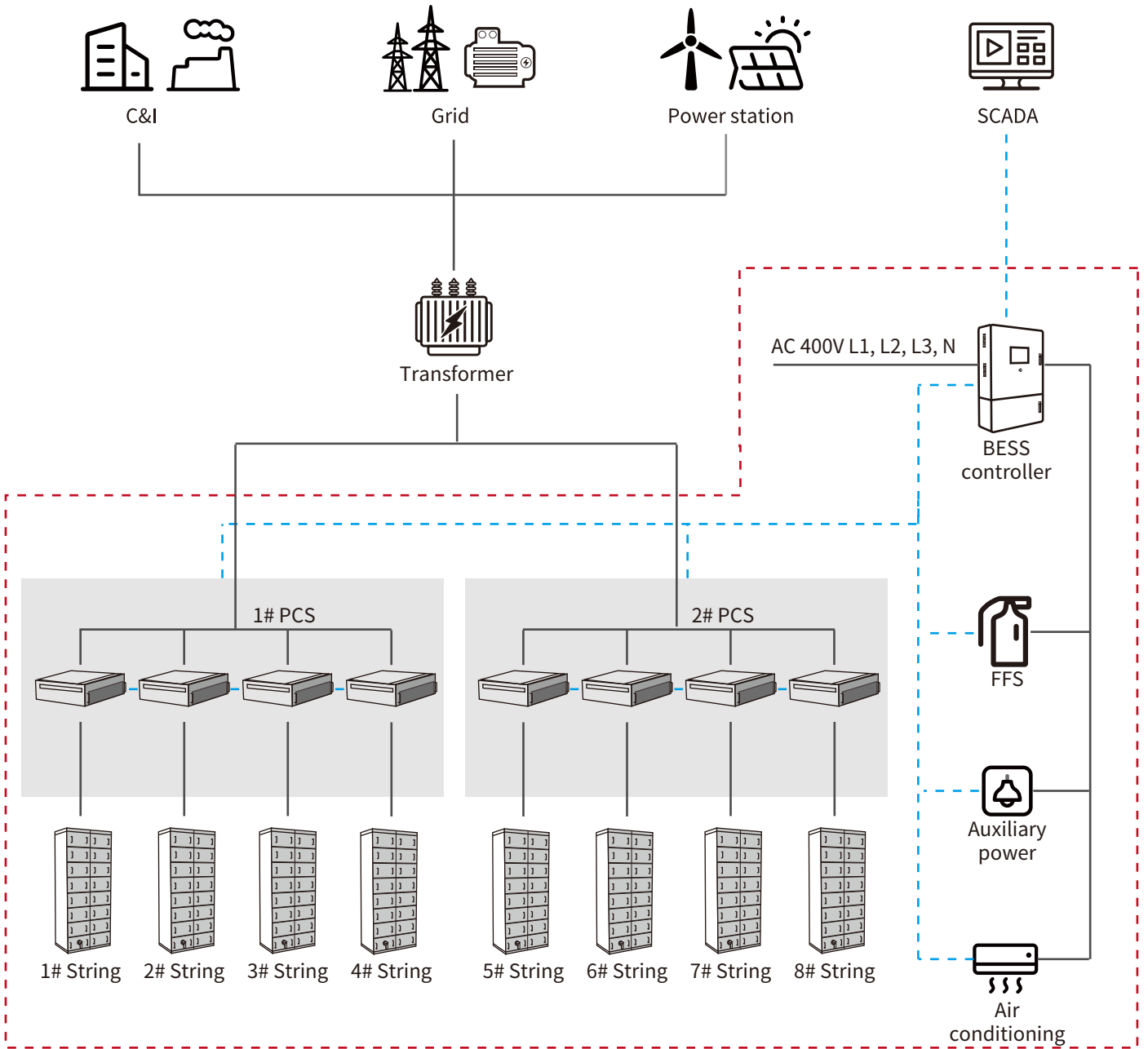
## Application Areas

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



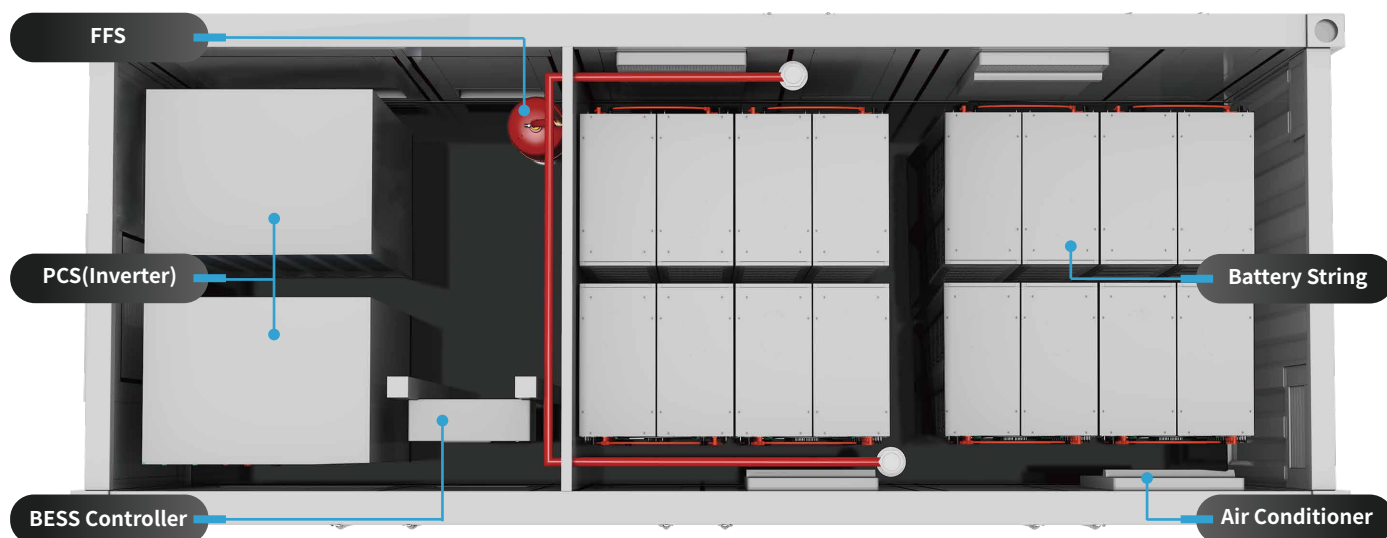
# System Topology

Power ——— Communication - - - - Container Scope - - - -

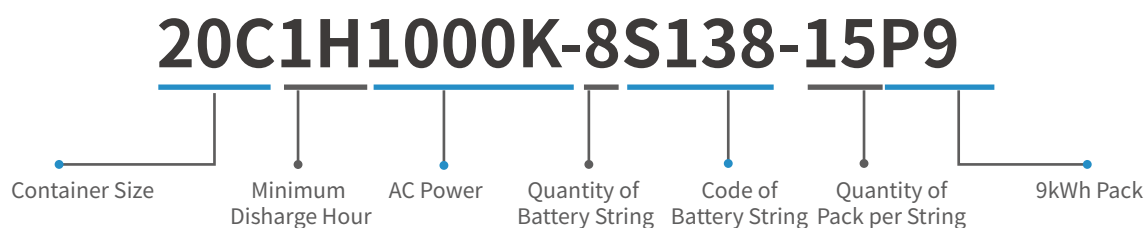


More Energy	All-in-one Design	Simple O&M	Safe & Reliable
Pack-level Optimization String-level Optimization	AC/DC All-in-one Design Reducing Initial Investment	No periodic balancing No experts site visit	Modular Design High Availability

## □ Product Layout



## □ Product Model Definition



## □ Product Configuration

Product Model	Battery string type	Nominal capacity	AC connection	Isolation	Grid-connected voltage	Dimensions (WDH mm)
20C1H1000K-NA	S138-15P9	1,104kWh	3-Phase 3-Wire+PE	Without Transformer	400V	6,058x2,438x2,591mm
20C1H1000K-EX	S138-15P9	1,104kWh	3-Phase 3-Wire+PE	Without Transformer	380V	6,058x2,438x2,591mm

# □ System Technical Specifications

Item	20C1H1000K-NA	20C1H1000K-EX
<b>DC Data</b>		
Battery chemistry	Lithium Iron Phosphate (LFP)	
Cell life cycle	80% Retention with 5,000 Cycles @ 1C 25°C	
Cell spec	3.2V/90Ah	
String configuration	2P240S	
Number of strings	8	
Rated energy capacity	1.1MWh	
DC rated energy capacity	1,105.92kWh	
Rated voltage	768V	
Voltage range	672V~852V	
BMS communication interface	RS485, Ethernet	
BMS communication protocol	Modbus RTU, Modbus TCP	
<b>AC Data</b>		
Rated AC power	1000kW	
Maximum AC power	1100kW	
Rated voltage	400V	
Grid voltage range	360~440V(Configurable)	
AC rate of current	2 * 721.7A	
Output THDi	<3%	
AC PF	0.1~1 leading or lagging (Controllable)	
AC output	3-Phase 3-Wire, PE(without Transformer)	
<b>General Data</b>		
Dimension w/o clearances (L*W*H)	6,058x2,438x2,591mm	
Weight of the whole system	19t	
Degree of protection	IP54	
Operating temperature range	-10~40°C(Max.-20~50°C)	
Relative humidity	0~95% (non-condensing)	
Max working altitude	2,000m/6,500feet (non-derating)	
Cooling concept of DC hatch	Air cooling	
Fire fighting system	FK-5-1-12(NOVEC1230)	
Communication interfaces	RS485, Ethernet	
Certificates	UL9540, UN3536	

# □ Key Components



- 1C Charge/Discharge;
- Power supply can be single battery string or parallel battery strings;
- Easy configuration and maintenance.

## Battery String-S138

Item	Data
Battery module	S138-15P9
Pack QTY	15
Nominal capacity	138.24kWh
Rated voltage	768V
DC voltage range	672V~852V
Pack	51.2V/180Ah@2P16S
Communication	Ethernet, CAN, RS485
Lifespan	>5,000 cycles@1C, 25°C
Dimensions (W×D×H)	800×750×2,050mm
Weight	1,467kg
Certifications	UL1973, UL9540A, IEC62619, CE , UN38.3



- Single-stage three-level modularization;
- Multi-branch input to reduce battery series and parallels connection;

## Power Conversion System

Item	PWS1-500KTL-NA-8M4	PWS1-500KTL-EX-8M4
Battery voltage range	600~900V	
DC max current	873A	
Rated AC power	500kW	
Maximum AC power	550kW	
Rated voltage	400V	
Grid voltage range	360~440V	
AC rate of current	721.7A	
Output THDi	≤3%	
Adjustable PF	1(leading)~1(lagging)	
Grid frequency range	60Hz(59.5~60.5Hz)	50/60±2.5Hz
Isolation method	Non-isolation	
Dimensions (W*D*H)	1,100*800*2,160mm	
Weight	600kg	

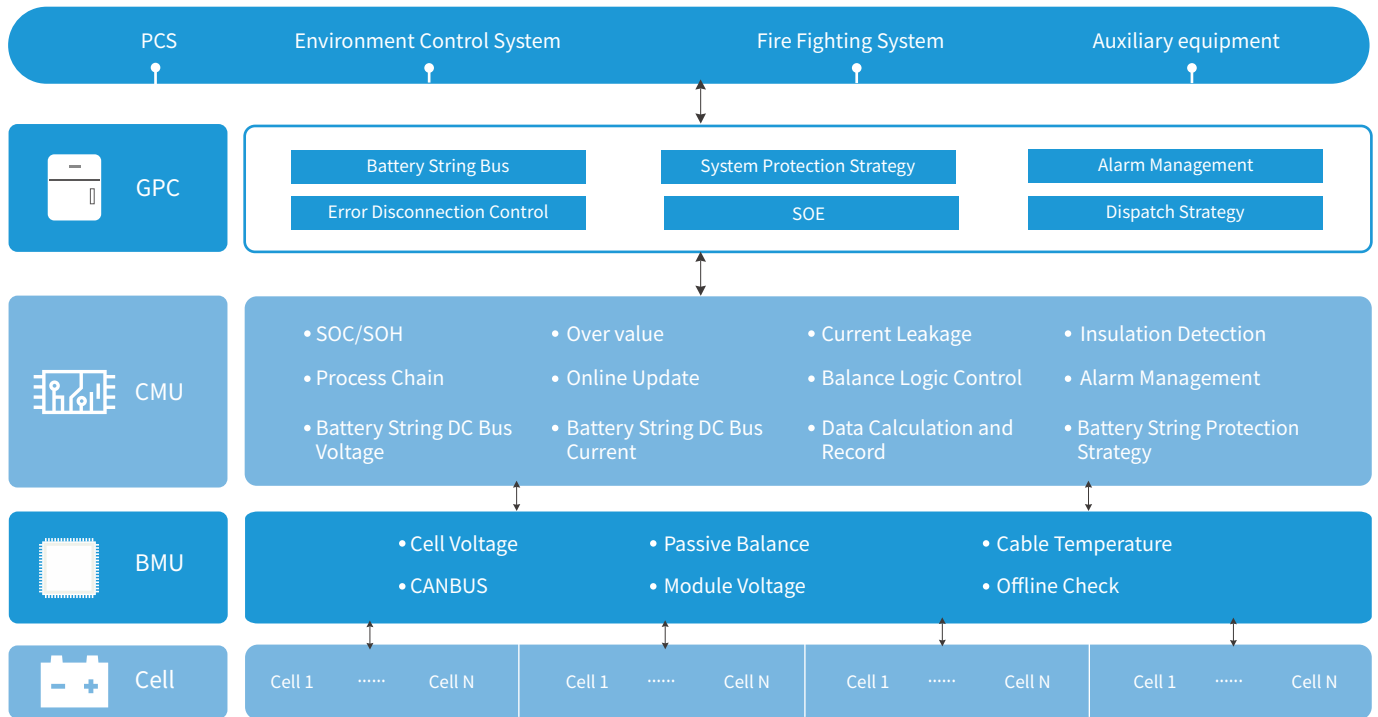


- All-round signal collection;
- Comprehensive logical control;
- Multilevel electric & control protection;
- Intelligentize Communication management ;
- Simple Configuration.

## GridPoint Controller (GPC)

Item	Data
Power interface	AC400V/DC24V
Communication	Modbus RTU、 Modbus TCP
Relay	24 stem node input / output
Network control application	Peak shifting and valley filling, peak cutting, smooth renewable energy output curve

# □ BMS with Real-time Passive Balance



BMU		CMU	
Cell Voltage Measurement Accuracy	±5 mV	Battery String Voltage Measurement Range	100~1,000V
Cell Voltage Monitoring Interval	≤200ms	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	Passive Balance, 150mA 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

# NOTES

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

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