



# PowerCombo-C20 BESS

Function Safe, Certification Proof, and Efficiency Based System Portfolio

# PowerCombo-C20 BESS



PowerCombo-C20, a product developed by Cubenergy, is a prefabricated large-scale energy storage system, which is tailor-made for renewable energy power plants and national grid-related applications. It consists of sets of standard S138 battery strings and is equipped with fire protection and electrical units complying with international related standards. An environmental control system is also built in the container, which increases the service life of the battery system. Intelligent battery management technologies are leveraged to improve the safety of the system in its lifespan.

## Areas of Application

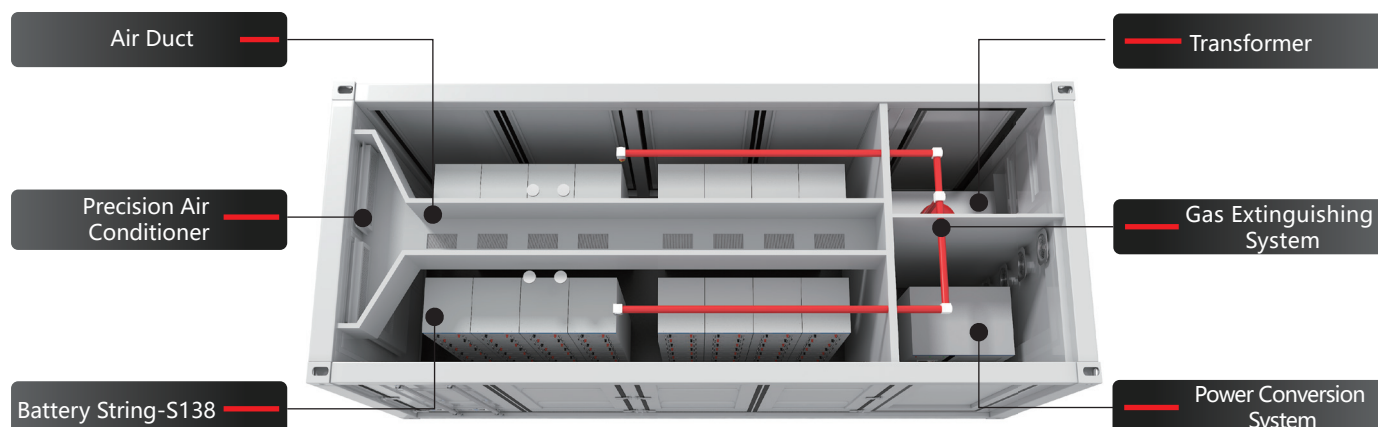
- Frequency regulation
- Renewable energy load abatement
- Utility and Large C&I



## Product features

- Supports on-grid/off-grid operation;
- High-rate discharge capability and stable discharge curves;
- Enables access from third-party SCADA;
- Full integration of the physical layer, network layer, and application layer, to ensure the stable and reliable operation of the system;
- Enables cloud-based dispatch and promotes economic operation;
- Enables active/passive balancing;
- IP54 and high adaptability to the environment;
- RTU based control technologies, to ensure all subsystems compatibility and to reduce the probability of a single point of failure;
- Adopts a modular design that is easy to update, expand and maintain, reducing the time needed for maintenance;


## □ System Configuration




## □ Technical Specifications-Data Sheet

String QTY	Nominal capacity (kWh)	Rated voltage (V)	Discharge cut-off voltage (V)	Charge cut-off voltage (V)	Weight (kg)
5	691.2	768	672	852	20,710
6	829.4	768	672	852	22,140
7	967.7	768	672	852	23,570
8	1,105.9	768	672	852	25,000

## □ Key Components

Battery String-S138	Item	Data
 <ul style="list-style-type: none"> <li>1C Charge/Discharge;</li> <li>The power supply can be a single battery string or parallel battery strings;</li> <li>Easy configuration and maintenance;</li> </ul>	Battery module	S138-15P9
	Pack QTY	15 (6~15 Configurable)
	Nominal capacity	138kWh ( 55~138kWh)
	Discharge cutoff- Rated- Charge cutoff voltage	672V~768V~852V
	Cell	3.2V/90Ah
	String measuring voltage range	0~1,000V
	String voltage detection accuracy	±0.5%
	String voltage sampling period	100 ms
	String measuring current range	±300A
	String current detection accuracy	1%
	String temperature detection accuracy	±3°C
	SOC calculation accuracy	< 7%
	Input insulation resistance	≥10MΩ, 1,000V DC
	Communication	Ethernet、 CAN、 RS485
	System cycle life	>5,000 cycles@1C, 25°C
	Dimensions (W*D*H)	800*750*2,050mm
	Weight	1,350 kg

GridPoint Controller	Item	Data
 <ul style="list-style-type: none"> <li>Data acquisition;</li> <li>Multiple protection: overload protection &amp; reverse power protection;</li> <li>Intelligent interaction HMI;</li> </ul>	Dimensions (L*W*H)	480*230*770mm
	Weight	35.5kg
	Power interface	AC 220V, 50/60Hz
	PCS communication	TCP/RS485
	HVU communication	TCP/IP
	HVAC communication	RS485
	Grid control application	Time shifting, peak shaving, renewables moving average
	Offgrid control application	Backup power, PV/DG/EV/ESS integrated micro-grid control
	Battery management system	DC busbar incoming control

Power Conversion System	Item	Data
 <ul style="list-style-type: none"> <li>Single-stage three-level modularization;</li> <li>Multi-branch input to reduce battery series and parallels connection;</li> <li>With STS on/off-grid seamless switching can be realized;</li> </ul>	Battery voltage range	600~900V
	DC max current	873A
	AC output voltage	380V (±10% configurable)
	AC output current	760A (short term overload 836A max)
	Nominal AC output power	500kW
	AC max power	550kW
	Output THDu	≤2%
	AC frequency	50/60Hz
	AC PF	Actual: 0.1~1 leading or lagging
	Overload capability	105%~115% 10min; 115%~125% 1min; 125%~150% 200ms;
	Cooling	Forced air cooling
	Noise	70dB
	Max elevation	3,000m/10,000feet (> 2,000m/6,500 feet derating)
	Operating ambient temperature	-20°C~50°C (De-rating over 45°C)
	Dimension (W*H*D)	1,100×2,160×800mm
	Weight	600kg
	Installation	Floor standing
	Peak efficiency	98.2%
	Protection	OTP, AC OVP/UVP, OFP/UFP, EPO, AC Phase Reverse, Fan/Relay Failure, OLP, GFDI, Anti-islanding
	Configurable protection limits	Upper/Lower AC Voltage/Frequency limit, Battery EOD voltage.
	AC connection	3-Phase 3-Wire
	Communication	RS485,CAN,Ethernet
	Isolation	Non-isolation
	Certifications	CE LVD , IEC62477, CE EMC, IEC61000, G59



## □ System Technical Specifications

PowerCombo-C20	Item	Specification
DC Data	Cell type	Prismatic LFP
	Cell brand	EVE
	Cell life cycle	5,000cycles@1C,25°C
	Cell spec	3.2V/90Ah
	String configuration	2P240S
	Number of strings	5~8
	String rated energy capacity	138kWh
	DC rated energy capacity	691.2~1,105.9kWh
	Rated voltage	768V
	Voltage range	672V~852V
	BMS communication interface	RS485, Ethernet
	BMS communication protocol	Modbus RTU, Modbus TCP
AC Data	Rated AC power	500kW
	Maximum AC power	550kW
	Rated AC voltage	400V
	Grid incoming voltage range	340V~460V
	AC PF	0.1~1 leading or lagging
	Power factor correction	1 leading~1 lagging
	Nominal grid frequency	50/60±2.5Hz
	Isolation method	3 Phase 4 Line Transformer
General Data	Dimension w/o clearances (L*W*H)	6,058*2,438*2,591mm
	Weight of the whole system	<25MT
	Degree of protection	IP54
	Operating temperature range	-20~40°C
	Relative humidity	0~95% (non-condensing)
	Max working altitude	3,000m/9,842ft
	Cooling concept of DC hatch	HAVC
	Cooling concept of PCS hatch	Forced air cooling
	Fire extinguisher system	HFC bottle group
	Communication interfaces	RS485, Ethernet, GPRS
	Communication protocols	Modbus RTU, Modbus TCP

## NOTES

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Product dimensions and physical appearance in this catalog 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 or physical appearance shown.


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

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