Parasol Elite Power

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PEP-20C2H500K

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PEP-20C2H500K



Today, energy storage systems play the critical and growing role in decarbonizing the electric system and improving the electricity quality. More broadly, BESS 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.

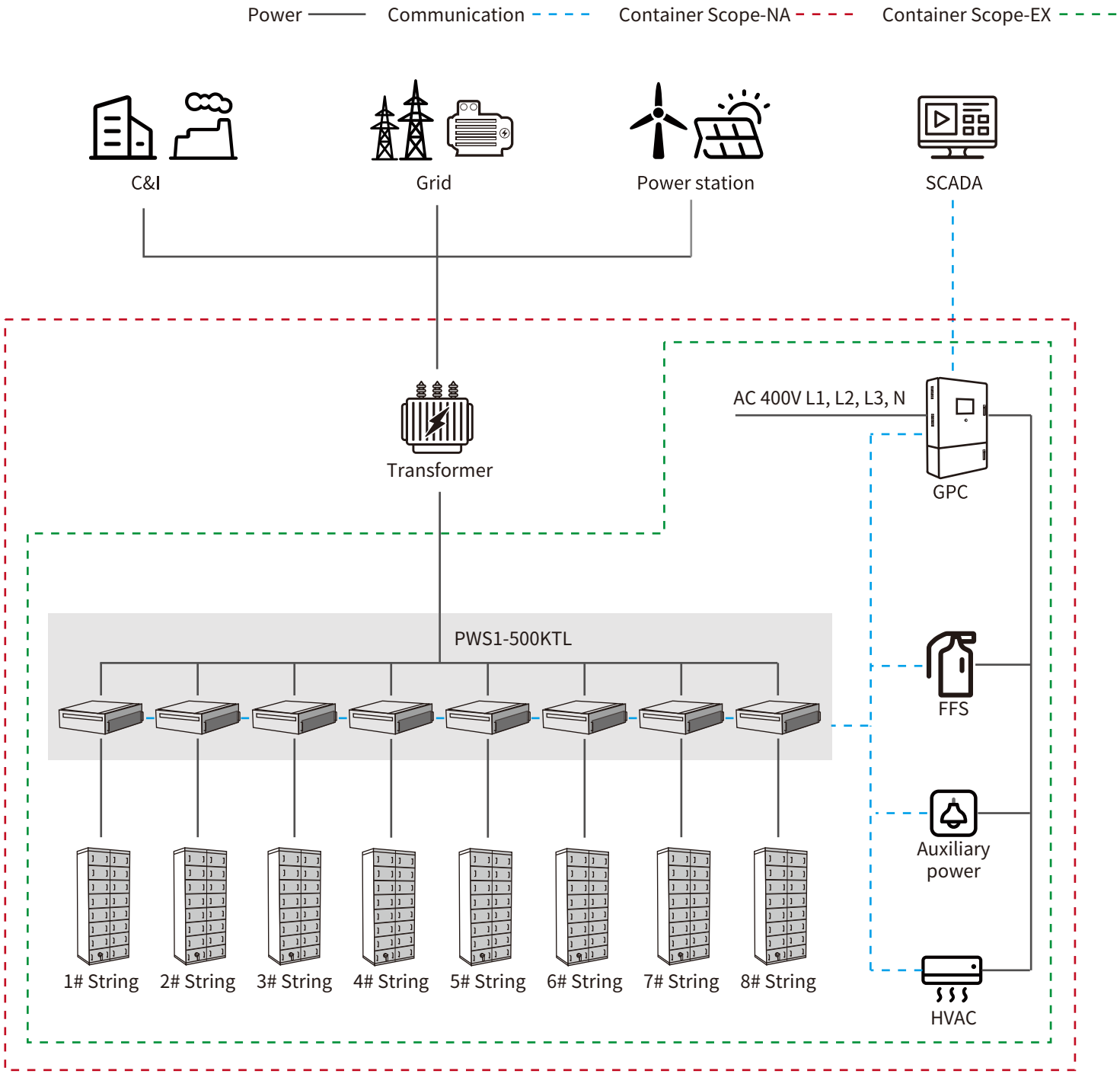
PEP MW, a high-performance, all-in-one, containerized battery energy storage system developed by Deep Blue Energy Engineering Institute, provides C&I users with the intelligent and reliable solution to optimize energy efficiency and resilience. As the leading BESS product, PEP MW is certificated by UL1973, UL9540A, IEC62619, CE , UN38.3, provides secure, reliable and safe power supply.

PEP-20C2H500K, 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. Our micro-grid system can be used with our Virtual Power Plant to expand beyond single-site applications.

Application Areas

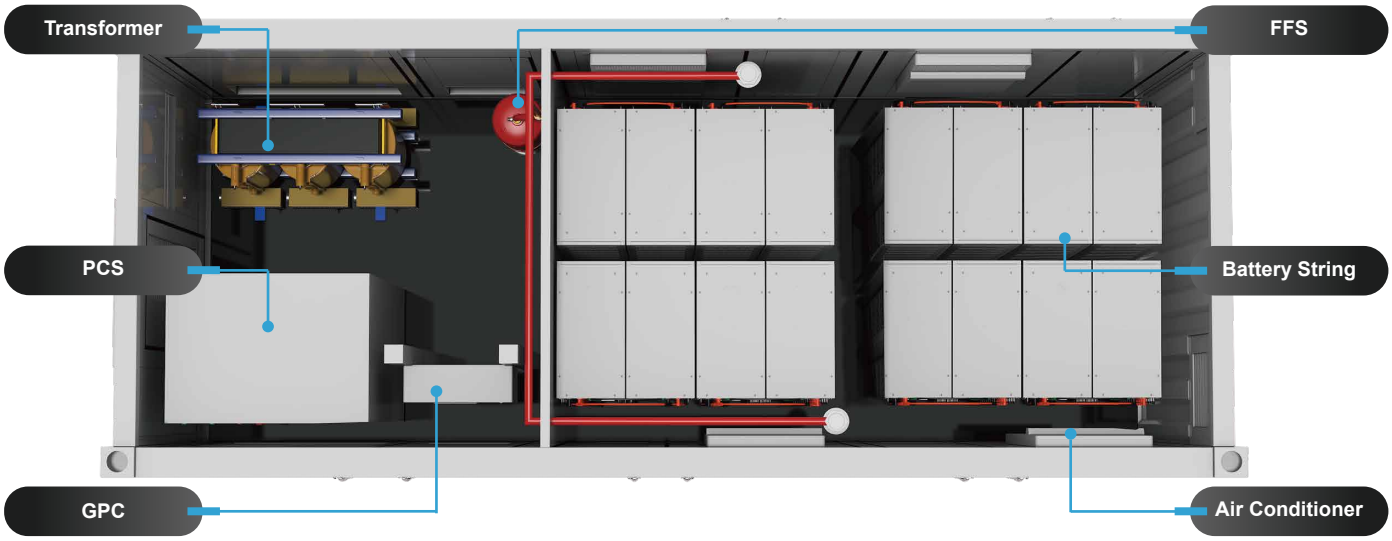
- Smooth New Energy Output
- Voltage, Frequency Support, Frequency Modulation
- Peak Valley Arbitrage
- Demand Management
- Construction of Microgrid

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

PEP20C2H500K-8S138-15P9

- Parasol Elite Power
- Container Length ft
- Minimum Charge Time
- PCS Power
- Quantity of Battery String
- Battery String
- Quantity of Pack
- 9kWh Pack

Product Configuration

Product Model	Battery string type	Nominal capacity	AC connection	Isolation	Grid-connected voltage	Dimensions (WDH mm)
20C2H500K-NA	S138-15P9	1,104kWh	3-Phase 4-Wire+PE	Built-in Transformer	480V	6,058x2,438x2,591mm
20C2H500K-EX			3-Phase+PE	Non-isolation	400V	

System Technical Specifications

Item	20C2H500K-NA	20C2H500K-EX
DC Data		
Battery chemistry	Lithium Iron Phosphate (LFP)	
Cell life cycle	80% Retention with 5,000 Cycles @ 1C 25℃	
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	
AC Data		
Rated AC power	500kW	
Maximum AC power	550kW	
Rated voltage	480V	400V
Grid voltage range	432~528V(Configurable)	342~418V(Configurable)
AC rate of current	601.4A	721.7A
Output THDi	< 3%	
AC PF	0.1~1 leading or lagging (Controllable)	
AC output	3-Phase 4-Wire+PE	3-Phase+PE
General Data		
Dimension w/o clearances (L*W*H)	6,058x2,438x2,591mm	
Weight of the whole system	20t	18.7t
Degree of protection	IP54	
Operating temperature range	-20~40℃	
Relative humidity	0~95% (non-condensing)	
Max working altitude	3000m/10000feet (> 2000m/6500feet derating)	
Cooling concept of DC hatch	HVAC	
Fire fighting system	NOVEC1230/FM-200	
Communication interfaces	RS485, Ethernet, GPRS	
Certificates	UL9540, IEC62933, UN3536, etc	

☐ 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	25.6V/180Ah@2P16S
Communication	Ethernet, CAN, RS485
Lifespan	>5,000 cycles@1C, 25℃
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	PWS1-500KTL-EX
Battery voltage range	630~900V	600~900V
DC max current	873A	
Rated AC power	500kW	
Maximum AC power	550kW	
Rated voltage	480V	400V
Grid voltage range	432V~528V	342V~418V
AC rate of current	601.4A	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	Built-in Transformer	Non-isolation
Dimensions (W*D*H)	2,200*800*2,160mm	1,100*800*2,160mm
Weight	2,000kg	600kg

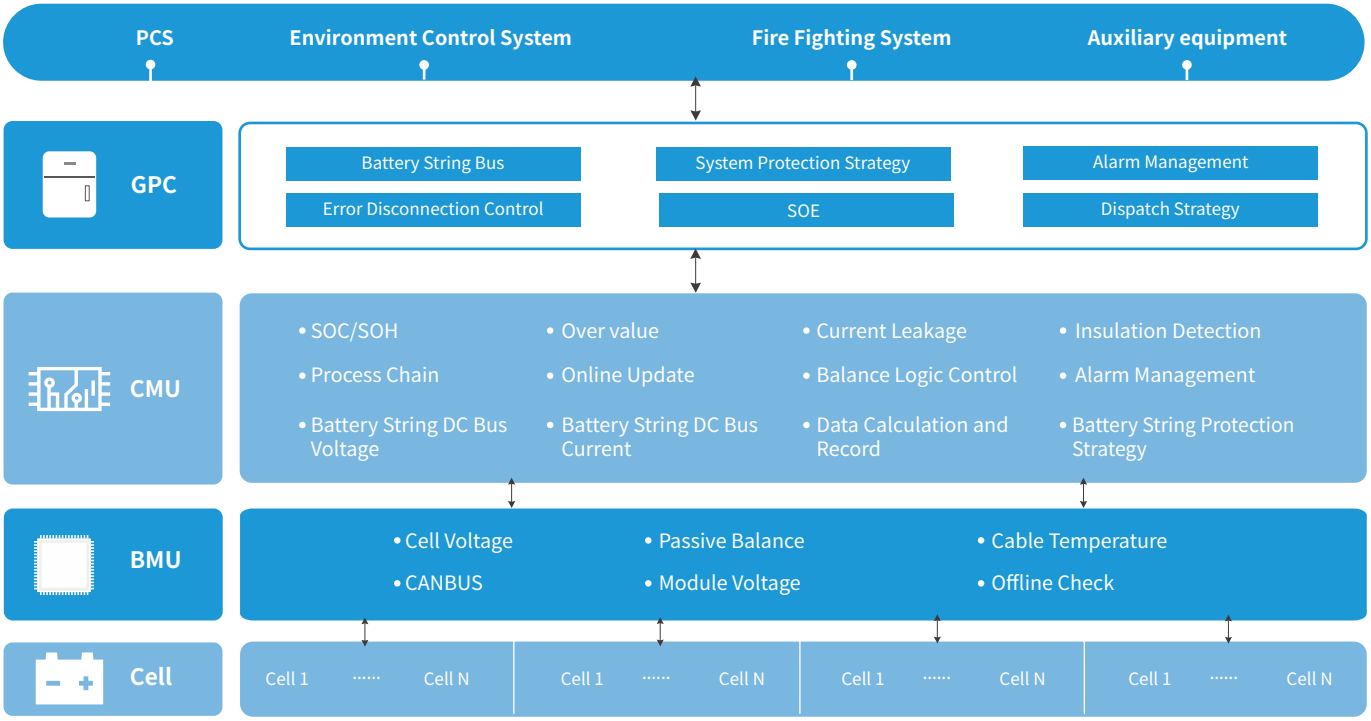


- All-round signal collection;
- Comprehensive logical control;
- Multilevel electric & control protection;
- Intelligentize Communication management ;
- Simple Configuration.

GridPoint Controller (GPC)

Item	Data
Power interface	AC220V/DC24V
Communication	Modubus RTU、Modubus TCP
Relay	24 stem node input / output
Network control application	Peak shifting and valley filling, peak cutting, smooth renewable energy output curve
Offline control application	Backup power supply, PV/DG/EV/ESS integrated micro-grid control

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	⩾10MΩ，1,000VDC

NOTES

Product dimensions and physical appearance in this brochure are general representations for demonstration purposes. Actual dimensions and physical appearance may be different depending on customer requirements.

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