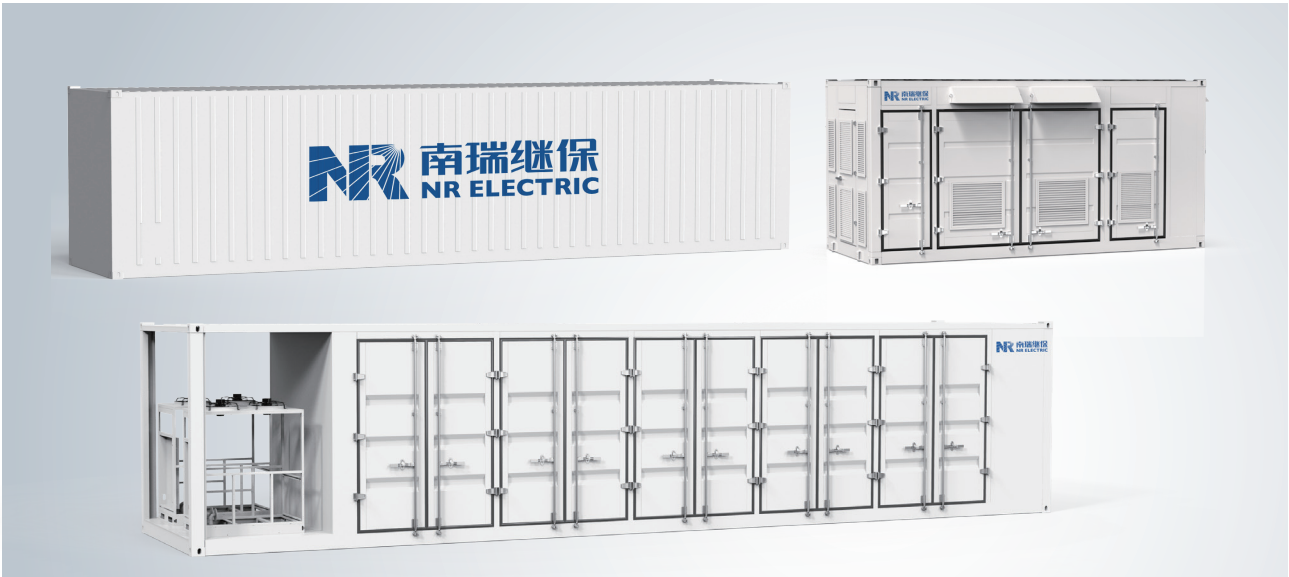


PCS-8813CPB

High voltage directly connected energy storage system



High efficiency and low losses

- Cascaded multi-level topology, low IGBT switching losses
- PCS efficiency > 98%
- Maximum system efficiency > 90%

Grid friendly

- Directly integrated into the high-voltage grid, better transient grid support
- Integrated with synchronous condenser function, simultaneous support frequency and voltage
- Fast response, less than 5ms
- Single unit with large capacity, avoid parallel connection of multiple small PCSs, superior transient coordination performance

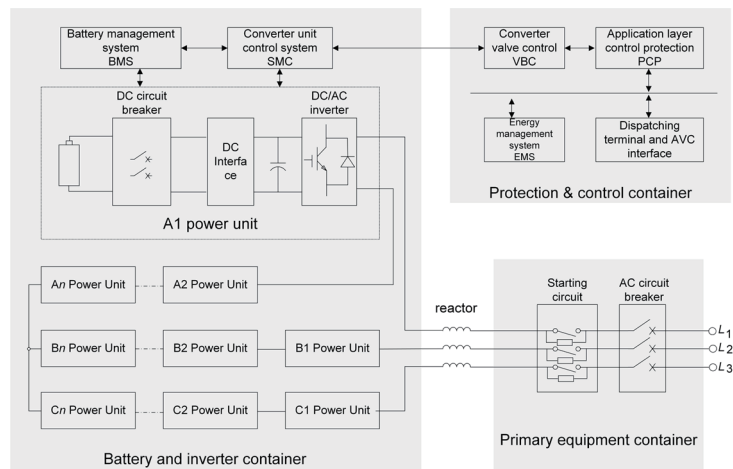
Safe and reliable

- Multi-level SOC balancing control, high uniformity
- No parallel connection of battery clusters, no circulating current, small short-circuit current
- >10% redundancy design, fast isolation of single module fault
- High uniformity of liquid-cooled battery (temperature difference < 3 C)

High integration

- Integrated with EMS, PCS, BMS
- Support industry and electrical standard communication interfaces
- Integration arrangement of battery/BMS/PCS and filter
- Standard storage container for primary AC output, separate cooling and fire protection system

Schematic diagram



Technical specifications

Type designation	PCS-8813CPB
Electrical parameter	
Rated grid voltage (kV)	6~35
Operation voltage (@UN)	-15% ~ +15%
Rated grid frequency (Hz)	50 / 60
Operation frequency (@fN)	±6%
Rated power (MW)	0~25
Installation capacity (MWh)	0~50
Topology	Cascaded multi-level topology, each phase is composed of N units of H-bridge modules, distributed battery connects to DC side of each H-bridge module. Y or Δ connection
Redundancy	Redundancy≥10%, the storage system stops only when all redundant modules fail
Over load capability	1.1pu long-term operation / 1.2pu no less than 60s / 3pu no less than 10s
Adjustable power factor	-1.0~1.0, four-quadrant operation
Control accuracy of output current	<1%
Control accuracy of output voltage	<1%
Control accuracy of output power	<1%
Maximum THD of current(THD)	<3%
Response time (ms)	< 5
Charging and discharging switch time (ms)	≤20
Time for island detection (ms)	< 5
Mode switch	on grid/off grid switch; Black start
PCS efficiency	> 98%
System max efficiency	> 90%
Protection functions	
System level: AC overvoltage/under voltage protection	yes
System level: AC over frequency/ under frequency protection	yes
System level: over current protection	yes
System level: three phases unbalance protection	yes
Module level: IGBT short circuit protection	yes
Module level: power module protection	yes
Module level: over temperature protection	yes
Module level: DC over voltage/under voltage protection	yes
Module level: reverse connection of battery positive and negative terminal protection	yes
Module level: battery cluster fault protection	yes
Module level: communication optical fiber fault protection	yes
System parameter	
Arrangement	Container
Cooling method	liquid cooled, air-cooled+ air condition in container
Maximum working altitude (m)	4000 (> 3000 derating)
Operating temperature range (C)	-30~50
Relative humidity	0~95%, no condensation
Noise	≤75dB (1m distance)
Degree of protection	IP54
Communication interface	CAN / RS-485 / RJ45 / optical fiber
Communication protocol	CAN / Modbus / IEC 61850 / IEC 60870-5-103 etc