

# 高压级联型储能系统

## High-voltage Cascaded Energy Storage System



### 产品特点

PRODUCT FEATURES

#### 实现电池一簇一管理/Implementing cluster-by-cluster battery management >

电池簇无并联，消除环流和短板效应，提升电池容量利用率6%+

By having battery clusters connected in series without any circulating currents or bottleneck effects, the utilization rate of the battery's capacity increased by 6%+.

单簇电池SOC和SOH的一致性更高，降低电池衰减速率、减少补电频率

Within a single cluster, the battery's State of Charge (SOC) and State of Health (SOH) are more consistent, which reduces the rate of battery degradation and the need for frequent recharging.

支持新旧电池混用，降低运维成本

Support mixed use of new and old batteries, reducing maintenance difficulty

#### 效率高:循环效率≥91%，提高全生命周期收益/High efficiency: cycle efficiency ≥ 91%, saving electricity costs over the full life cycle >

无变压器并网，提高效率约1%

Transformer-free grid connection, improving efficiency by about 1%

线损低，高压小电流运行降低线路损耗；多电平技术，器件开关频率低，开关损耗小；智能温控技术，降低辅助系统功耗

Low line loss, efficiency increased by about 1%: High voltage and small current operation reduces line losses; multi-level technology with lower switching frequency, reducing switching losses; intelligent temperature control technology

#### 响应快:响应速度≤20ms/Rapid response: Response speed ≤ 20 ms >

无变压器，接入电网，单机容量大，系统简单，可直接接受电网调度指令

No transformer connected to the grid, large single-unit capacity and simple system, capable of directly accepting power grid dispatching instructions.

#### 具备冗余功能/With redundancy function >

可设置冗余子模块，具备在线旁路功能，提高设备在线率。

Redundant sub-modules can be configured, and the system has redundancy capabilities, improving equipment uptime.

### 产品典型配置 (0.5C-30MWh项目)

TYPICAL PRODUCT CONFIGURATION (0.5C-30MWH PROJECT)

设备/EQUIPMENT	数量/QUANTITY	参数配置/PARAMETER CONFIGURATION
功率储能舱/Power energy storage compartment	9	3.3546MWh/0.5C
配电舱/Power distribution cabin	1	35kV并网电抗器/35kV grid connected reactance
控制舱/Control cabin	1	PCS主控+EMS/PCS main control+EMS

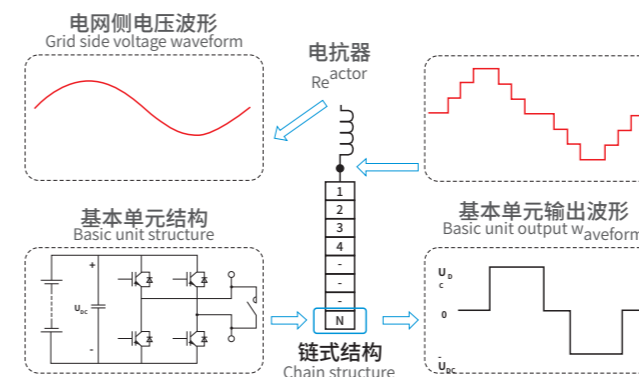
### 产品参数

PRODUCT PARAMETERS

产品型号/PRODUCT MODEL	tPower-FG9
系统功率/System power	7.5~35MW
系统容量/System capacity	30~40MWh
额定电压/Rated voltage	AC35kV
直流电压范围/DC voltage range	DC600V~1100V
电池温控方式/Temperature control mode of battery	智能液冷/ Intelligent liquid cooling
对外通信协议/External system communication protocol	Mudbus/TCP/RTU、IEC 104、IEC 61850 (支持GOOSE) Mudbus/TCP/RTU, IEC 104 and IEC 61850 (supporting GOOSE)
防护等级/IP rating	IP54
工作环境温度/Operating ambient temperature	-30°C~+55°C
工作湿度范围/Operating humidity range	0%-95%
工作海拔范围/Operating altitude range	≤5000m,2000m以上降额/5000m, derating above 2000m

### 主电路拓扑

MAIN CIRCUIT TOPOLOGY



高压级联储能系统采用多电平阶梯波形来逼近正弦波，无需滤波器，结构简单

High-voltage Cascaded Energy Storage System utilize multi-level stepped waveforms to approximate sine waves with no wave filters, resulting in a simplified structure.

典型35kV系统每相采用39个模块，理论线电压电平数量为2×39+1个电平，实现无谐波并网

A typical 35 kV system consists of 39modules per phase. Harmonic-freegrid connection is achieved based on thetheoretical number of line voltage levels = 2×39+1.

### 应用场景

TYPICAL PRODUCT CONFIGURATION

#### 发电侧/Power generation side >

平滑新能源输出功率波动，促进新能源消纳；调频调压，提高电力系统稳定性；

Smooth the fluctuation of new energy output power to promote new energy consumption; frequency and voltage regulation to improve the stability of power system;

#### 电网侧/Grid sid >

削峰填谷，解决区域供电峰谷差问题；调频调压，提高电力系统稳定性

Peak cut to solve the problem of peak-valley difference in regional power supply; frequency and voltage regulation to improve the stability of the power system;

#### 工商业/Industry and commerce >

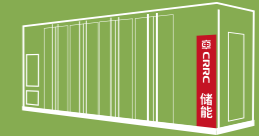
备用电源，电网故障情况下，作为主电源为负荷供电；

Standby power supply, used as the main power supply to supply power to loads in case of grid failure;

#### 峰谷套利/Peak-valley arbitrage >

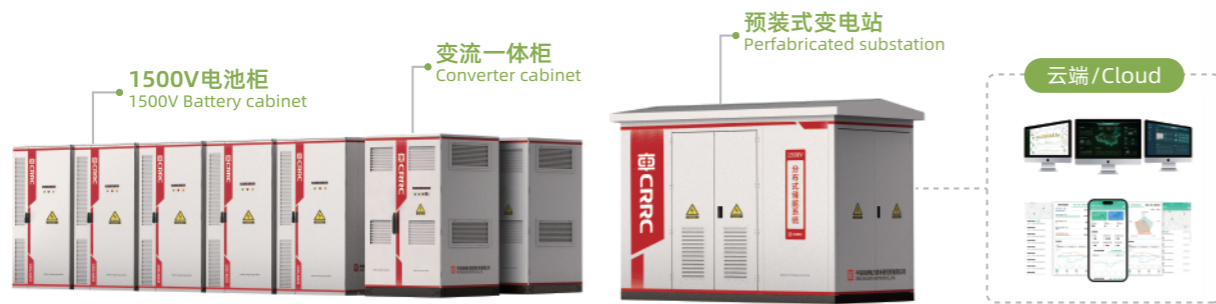
系统效率高，充分利用电价差，提高用户收益。

using electricity price difference to reduce electricity payment.



# DC1500V 分布式储能系统

## DC1500V Distributed Energy Storage System



基于DC1500V户外液冷储能柜（产品型号CESS-M372），可灵活配置DC1500V分布式储能系统。根据实际项目需求，可灵活配置储能柜数量、变流一体柜数量、预装式变电站数量和EMS端口数量等，以适应不同场景容量需求。

Based on the DC1500V outdoor liquid cooled energy storage cabinet (product type CESS-M372), the DC1500V distributed energy storage system can be flexibly configured. According to actual project requirements, the number of energy storage cabinets, integrated converter cabinets, pre-installed substations, and EMS ports can be flexibly configured to meet the capacity requirements of different scenarios.

### 系统特点 SYSTEM FEATURES

#### 极致安全/Ultimate safety >

交直分体，探测和消防到pack，多级主动预警  
The AC and DC are completely separated, with detection and fire protection to the pack, and multi-level active warning

#### 高效灵活/Efficient and flexible >

模块化设计，方便扩展和维护  
Modular design, easy to expand and maintain

#### 经济高效/Economical and efficient >

系统充放电次数超6000次，寿命提升10%，智能温控，减少30%辅助功耗，一簇一管理，系统可用容量提升7%  
Over 6000 charging and discharging times, with a 10% increase in lifespan; with intelligent temperature control, reduces auxiliary power consumption by 30%; implement separate management for each cluster, system usable capacity increased by 7%

#### 智能运维/Intelligent operation and maintenance >

云平台互联，实时状态监测和故障诊断  
Cloud platform interconnection, real-time status monitoring and fault diagnosis

## DC1500V 分布式储能系统

### DC1500V Distributed Energy Storage System

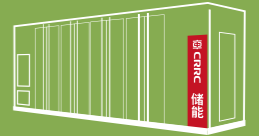
### 系统参数 SYSTEM PARAMETERS

系统额定容量/System rated capacity(MWh)	1.12	1.49	1.86	2.24	2.61	2.98	3.35	3.73
系统额定功率/System rated power(kW)	600	800	1000	1200	1400	1600	1800	2000
单个电池柜容量/Capacity of a battery cabinet(kWh)	372.74	372.74	372.74	372.74	372.74	372.74	372.74	372.74
电池柜数量/Number of battery cabinets (台)	3	4	5	6	7	8	9	10
单个变流一体柜容量/Capacity of a integrated inverter cabinet (kW)	3*200	4*200	5*200	6*200	7*200	8*200	9*200	10*200
变流一体柜数量/Number of integrated inverter cabinets (台)	1	1	1	2	2	2	2	2
预装变电站容量/Capacity of Pre-installed substation (kVA)	800	800	1000	1250	1600	1600	2000	2000
预装变电站数量/Number of Pre-installed substation (台)	1	1	1	1	1	1	1	1
EMS (套/Set)	1	1	1	1	1	1	1	1
云端/System cloud (Web+App) (套/Set)	1	1	1	1	1	1	1	1

系统额定容量/System rated capacity(MWh)	4.47	4.85	5.22	5.59	5.96	6.34	6.71	7.08	7.45
系统额定功率/System rated power(kW)	2400	2600	2800	3000	3200	3400	3600	3800	4000
单个电池柜容量/Capacity of a battery cabinet(kWh)	372.74	372.74	372.74	372.74	372.74	372.74	372.74	372.74	372.74
电池柜数量/Number of battery cabinets (台)	12	13	14	15	16	17	18	19	20
单个变流一体柜容量/Capacity of a integrated inverter cabinet (kW)	12*200	13*200	14*200	15*200	16*200	17*200	18*200	19*200	20*200
变流一体柜数量/Number of integrated inverter cabinets (台)	3	3	3	3	4	4	4	4	4
预装变电站容量/Capacity of Pre-installed substation (kVA)	2500	2500	3150	3150	3150	3150	4000	4000	4000
预装变电站数量/Number of Pre-installed substation (台)	1	1	1	1	1	1	1	1	1
EMS (套/Set)	1	1	1	1	1	1	1	1	1
云端/System cloud (Web+App) (套/Set)	1	1	1	1	1	1	1	1	1

系统额定容量/System rated capacity(MWh)	7.83	8.2	8.57	8.95	9.32	9.69	10.06
系统额定功率/System rated power(kW)	4200	4400	4600	4800	5000	5200	5400
单个电池柜容量/Capacity of a battery cabinet(kWh)	372.74	372.74	372.74	372.74	372.74	372.74	372.74
电池柜数量/Number of battery cabinets (台)	21	22	23	24	25	26	27
单个变流一体柜容量/Capacity of a integrated inverter cabinet (kW)	21*200	22*200	23*200	24*200	25*200	26*200	27*200
变流一体柜数量/Number of integrated inverter cabinets (台)	5	5	5	5	5	6	6
预装变电站容量/Capacity of Pre-installed substation (kVA)	4000	5000	5000	5000	5000	5000	5000
预装变电站数量/Number of Pre-installed substation (台)	1	1	1	1	1	1	1
EMS (套/Set)	1	1	1	1	1	1	1
云端/System cloud (Web+App) (套/Set)	1	1	1	1	1	1	1

系统额定容量/System rated capacity(MWh)	13	16	20	30	40	50	60
系统额定功率/System rated power(kW)	7	8.6	10.8	16.2	21.6	27	32.4
单个电池柜容量/Capacity of a battery cabinet(kWh)	372.74	372.74	372.74	372.74	372.74	372.74	372.74
电池柜数量/Number of battery cabinets (台)	35	43	54	81	108	135	162
单个变流一体柜容量/Capacity of a integrated inverter cabinet (kW)	35*200	43*200	54*200	81*200	108*200	135*200	27*200
变流一体柜数量/Number of integrated inverter cabinets (台)	8	10	12	18	24	30	36
预装变电站容量/Capacity of Pre-installed substation (kVA)	1*1600 1*5000	1*3150 1*5000	2*5000	3*5000	4*5000	5*5000	6*5000
预装变电站数量/Number of Pre-installed substation (台)	2	2	2	3	4	5	6
EMS (套/Set)	1	1	1	1	1	1	1
云端/System cloud (Web+App) (套/Set)	1	1	1	1	1	1	1



# DC1000V 分布式储能系统

## DC1000V Distributed Energy Storage System



基于DC1000V户外液冷储能柜（产品型号CESS-M261），可灵活配置DC1000V分布式储能系统。根据实际项目需求和园区变压器容量，可灵活配置储能柜数量和EMS端口数量，适应不同场景容量需求。

Based on the DC1000V outdoor liquid cooled energy storage cabinet (product type CESS-M261), the DC1000V distributed energy storage system can be flexibly configured. According to actual project requirements and the capacity of transformers in the park, the number of energy storage cabinets and EMS ports can be flexibly configured to meet the capacity requirements of different scenarios.

### 系统特点 SYSTEM FEATURES

#### 高集成和安全/High integration and security

交直流集成在一个柜体内，分区隔离，探测和消防到pack，多级主动预警

The AC and DC are integrated in one cabinet, with partition isolation, detection and fire protection to the pack, and multi-level active warning

#### 高效灵活/Efficient and flexible

模块化设计，方便扩展和维护

Modular design, easy to expand and maintain

#### 经济高效/Economical and efficient

系统充放电次数超6000次，寿命提升10%，智能温控，减少30%辅助功耗，一簇一管理，系统可用容量提升7%

Over 6000 charging and discharging times, with a 10% increase in lifespan; with intelligent temperature control, reduces auxiliary power consumption by 30%; implement separate management for each cluster, system usable capacity increased by 7%

#### 智能运维/Intelligent operation and maintenance

云平台互联，实时状态监测和故障诊断

Cloud platform interconnection, real-time status monitoring and fault diagnosis

# DC1000V 分布式储能系统

## DC1000V Distributed Energy Storage System

### 系统参数 SYSTEM PARAMETERS

DC1000V分布式储能系统容量配置推荐表 Recommended Table for Capacity Configuration of DC1000V Distributed Energy Storage System								
系统额定容量/System rated capacity (MWh)	0.26	0.52	0.78	1.04	1.31	1.57	1.83	2.09
系统额定功率/System rated power (kW)	125	250	375	500	625	750	875	1000
单个电池柜容量/Capacity of a battery cabinet (kWh)	261.248	261.248	261.248	261.248	261.248	261.248	261.248	261.248
电池柜数量/Number of battery cabinets	1	2	3	4	5	6	7	8
EMS (套/Set)	1	1	1	1	1	1	1	1
云端/Cloud system (Web +App) (套/Set)	1	1	1	1	1	1	1	1

系统额定容量/System rated capacity (MWh)	2.35	2.61	2.87	3.13	3.40	3.66	3.92	4.18
系统额定功率/System rated power (kW)	1125	1250	1375	1500	1625	1750	1875	2000
单个电池柜容量/Capacity of a battery cabinet (kWh)	261.248	261.248	261.248	261.248	261.248	261.248	261.248	261.248
电池柜数量/Number of battery cabinets	9	10	11	12	13	14	15	16
EMS (套/Set)	1	1	1	1	1	1	1	1
云端/Cloud system (Web +App) (套/Set)	1	1	1	1	1	1	1	1

系统额定容量/System rated capacity (MWh)	4.44	4.70	4.96	5.22	5.49	5.75	6.01	6.27
系统额定功率/System rated power (kW)	2125	2250	2375	2500	2625	2750	2875	3000
单个电池柜容量/Capacity of a battery cabinet (kWh)	261.248	261.248	261.248	261.248	261.248	261.248	261.248	261.248
电池柜数量/Number of battery cabinets	17	18	19	20	21	22	23	24
EMS (套/Set)	1	1	1	1	1	1	1	1
云端/Cloud system (Web +App) (套/Set)	1	1	1	1	1	1	1	1

系统额定容量/System rated capacity (MWh)	6.53	6.79	7.05	7.31	7.58	7.84	8.10	8.36
系统额定功率/System rated power (kW)	3125	3250	3375	3500	3625	3750	3875	4000
单个电池柜容量/Capacity of a battery cabinet (kWh)	261.248	261.248	261.248	261.248	261.248	261.248	261.248	261.248
电池柜数量/Number of battery cabinets	25	26	27	28	29	30	31	32
EMS (套/Set)	1	1	1	1	1	1	1	1
云端/Cloud system (Web +App) (套/Set)	1	1	1	1	1	1	1	1



核心部件/Core components

# DC1500V集中式PCS-1725kW

## DC1500V PCS-1725kW Integrated

### 产品特点

PRODUCT FEATURES

**高效稳定/High efficiency and stability**

NPC三电平拓扑，最高效率≥99%  
 NPC three-level topology with a 99% max efficiency or higher  
 DC1500V直流系统，宽输入电压范围，配置灵活  
 DC1500V DC system, wide range of input voltage and flexible configuration  
 具备110%长时间过载，120%过载不低于2分钟的能力，系统可靠性高  
 Can withstand 110% longtime overload and up to 2-minutes 120% overload. High system reliability

**环境适应能力强/Superior environment adaptability**

适应用户侧、电网侧、发电侧多种储能应用场景  
 Adaptable to multiple energy storage applications, e.g. user-side, grid-side and power plant-side  
 适应高温、高湿、高海拔等恶劣环境  
 Applicable to very rugged environments, e.g. high-temperature, high-RH and high elevation  
 超宽工作温度范围，支持低温加热启动  
 Ultra-wide working temperature range, supporting low-temperature heating start

**功能丰富/Diverse functions**

支持高/低压穿越，具备黑启动、SVG、VSG、PQ、VF等功能  
 Support HVRT, LVRT, black start, SVG, VSG, PQ and VF  
 支持多机并联，扩展功率，简单灵活  
 Support parallel connection, power expansion, simplicity and flexibility  
 配备多种通讯接口，灵活组网  
 Equipped with more than one communications interface. Flexible networking  
 智能在线调试与升级，具备故障录波功能，快速定位故障点  
 Smart online debugging and updating. Locate faults quickly with a fault recorder



### 产品参数

PRODUCT PARAMETERS

## DC1500V集中式PCS-1725kW

### DC1500V PCS-1725kW Integrated

产品型号/PRODUCT MODEL	CRR-APCS-1250K	CRR-APCS-1375K	CRR-APCS-1575K	CRR-APCS-1725K
<b>直流侧/DC-side</b>				
最大直流电压/Max DC voltage	1500V			
最小直流电压/Min DC voltage	800V	850V	900V	1000V
额定功率直流电压工作范围 /DC working voltage at rated power	800~1500V	850~1500V	900~1500V	1000~1500V
最大直流工作电流/Max DC working current	1754A	1805A	1877A	1935A
<b>交流侧（并网）/AC-side (grid-connected)</b>				
额定输出功率@45°C/Rated power output @45°C	1250kW	1375kW	1575kW	1725kW
最大输出功率@30°C/Max power output @30°C	1375kW	1513W	1733kW	1897kW
最大交流电流/Max AC current	1443A @ 45°C / 1587A @ 30°C			
额定交流电压/Rated AC voltage	550V	600V	630V	690V
允许电网电压偏差范围 /Allowable grid voltage deviation range	-15%~10%			
额定电网频率/电网频率范围 /Rated grid frequency /Grid frequency range	50Hz / 45~55Hz			
交流电流谐波/AC current harmonics	<3% (额定功率时) /<3% (At rated power)			
功率因数 / 可调节范围 /Power factor /adjustable range	>0.99 (额定输出功率) /1 (超前) ~1 (滞后) >/>0.99 (rated power output) / 1 (lead) ~ 1 (lag)			
<b>交流侧（离网）/AC-side (off-grid)</b>				
额定交流电压/Rated AC voltage	550V	600V	630V	690V
交流输出电压范围/AC voltage output range	-15%~10%			
交流电压谐波/AC voltage harmonics	< 3% (线性负载) /<3% (linear load)			
直流电压分量/DC voltage component	< 0.5% Un (线性平衡负载) /< 0.5% Un (linear balanced load)			
额定电网频率/电网频率范围 /Rated grid frequency /Grid frequency range	50Hz / 45~55Hz			
<b>效率/Efficiency</b>				
最大效率/Max efficiency	99%			
<b>保护/Protection</b>				
直流输入保护/DC input protection	负荷开关+熔断器/Load switch + fuse			
交流输出保护/AC output protection	框架断路器/Air circuit breaker			
浪涌保护/Surge protection	DC Type II / AC Type II			
电网监测/ 接地故障监测 /Grid monitoring and earth fault monitoring	具备 / 具备/Provided / Provided			
绝缘监测/Insulation monitoring	具备/Provided			
过热保护/Overheat protection	具备/Provided			
<b>常规参数/General parameters</b>				
尺寸(宽×深×高)/Size (W*D*H)	1080mm×1274mm×2400mm			
重量/Weight	1500kg			
隔离类型/Isolation type	无变压器隔离/Transformerless isolation			
防护等级/IP	IP55、IP65可选/IP55 and IP65 are optional			
工作温度范围/Working temperature range	-35~+60°C (>45°C降额运行) /-35°C~60°C (>45°C derated running)			
相对湿度范围/RH range	0~100%			
冷却方式/Cooling mode	智能强迫风冷/Intelligent forced air cooling			
最大工作海拔/Max working altitude	5000m (>3000m降额) /5000 m (>3000 m derating)			
显示/Display	显示屏可选/The display screen is optional			
通讯/Communication	RS485、CAN、Ethernet			
通信协议/Communication protocol	CAN 2.0B、Modbus-RTU/TCP、IEC104、IEC61850 (支持GOOSE) /CAN 2.0B, Modbus-RTU/TCP, IEC104, IEC61850 (support GOOSE)			
设计标准/Design standard	GB/T 34120、GB/T 34133			



# DC1500V 户外液冷储能柜-分布式

## DC1500V Outdoor Liquid-Cooled Energy Storage Cabinet - Distributed

### 产品特点 PRODUCT FEATURES

#### 极致安全/Ultimate safety

标准化机柜实现储能系统分区安全隔离  
Standardized cabinet realizes partition safety isolation of energy storage system

探测到包, 消防到包, 多级主动预警  
Providing detection and firefighting equipment for each battery pack, multi-level active early warning

两级快速熔断、电弧监测保护  
Three-level fast fusing and arc monitoring protection

智能防漏液监测及补液  
Intelligent anti-leakage fluid detection and replenishment

#### 高效灵活/Convenient and flexible

高度集成, 整柜运输  
Highly integrated, full-cabinet transportation

模块化设计, 支持并联, 方便扩展  
Modular design, supporting parallel connection and convenient expansion

Pack独立运维窗口, 免开箱维护, 运维效率高  
Pack-independent O&M window, free of unpacking maintenance and high O&M efficiency

#### 经济高效/Economical and efficient

系统寿命超6000次  
the system life is beyond 6,000 times

散热性能提升16%, 系统温差3°C以内, 电芯寿命提升10%。  
The heat dissipation performance is improved by 16%, the system temperature difference is within 3°C, and the battery cell life is increased by 10%.

智能液冷控温, 减少30%辅助功耗  
Intelligent liquid-cooled temperature control, reducing auxiliary power consumption by 30%

#### 智能运维/Intelligent operation and maintenance

全场景适用, 从发电侧到用户侧  
Applicable to all scenarios, from power generation side to user side

云平台互联, 远程一键升级, 实时状态监测, 故障记录  
Cloud platform interconnected, remote one-click upgrade, real-time status monitoring and fault recording

AI电芯监测、运营决策分析、智能调度  
AI cell monitoring, operation decision analysis, and intelligent scheduling



# DC1500V 户外液冷储能柜-分布式

## DC1500V Outdoor Liquid-Cooled Energy Storage Cabinet - Distributed

### 产品参数 PRODUCT PARAMETERS

产品型号/PRODUCT MODEL	CESS-M372
直流侧/DC side	
最大直流电压/Maximum DC voltage	1500Vdc
电池电压范围/Battery voltage range	1000V-1500V
最大直流电流/Maximum DC current	172A
电芯类型/Cell type	LFP3.2V/280Ah
额定容量/Rated capacity	372kWh
系统配置/System configuration	1P416S
额定倍率/Rated power	0.5P
系统参数/System parameter	
防护等级/IP rating	机柜IP55/电池包IP67/Cabinet IP55/battery pack IP67
工作温度/Operating temperature	-30-55°C > (45°C 降容) / -30-55°C > (45°C capacity reduction)
工作湿度/Working humidity	0-95%RH (无冷凝) / 0-95%RH (non-condensing)
循环次数/Number of cycles	≥6000次 (电芯容量80%) @25°C±2/≥6000 times (cell capacity 80%) @25°C±2
系统温差/System temperature difference	≤3°C
海拔/Altitude	2000m
噪音/Noise	≤70dB
防腐等级/Anti-corrosion grade	C3
尺寸(长×宽×高)/Dimensions (L × W × H)	约1300*1300*2300mm/About 1300*1300*2300mm
重量/Weight	约3.5t/About 3.5 t
冷却方式/Cooling mode	液冷/Liquid cooling
消防/Firefighting	PACK级主动消防 (全氟己酮) /PACK level active fire protection (Perfluoro(2-methyl-3-pentanone))
直流进线方式/DC incoming line mode	底部进线/Bottom incoming line
通讯接口/Communication interface	WiFi、4G、LAN、CAN和RS485/WIFI, 4G, LAN, CAN and RS485
通讯协议/Communication protocol	CAN; RS485; Ethernet
产品认证/Product certification	GB/T 36276、GB/T34131、UN38.3、IEC62619、IEC62477-1、IEC61000-6-2/4



# DC1000V 户外液冷储能柜—分布式

## DC1000V Outdoor Liquid-cooled Energy Storage Cabinet - Distributed



集成大容量/高寿命电池、智能热管理系统、BMS、PCS和EMS。相比同类产品，尺寸减少25%，容量提升12%，投资收益提升25%。搭载自研综合能源云平台，可随时监控储能系统运行状态及收益情况，实现近&远端灵活运维。

Integrating features such as large-capacity/long-life battery, smart thermal management system, BMS, PCS and EMS. Compared to similar products, it boasts a 25% reduction in size, 12% increase in capacity, and 25% improvement in investment returns. Equipped with our independently developed integrated energy cloud platform, it allows for real-time monitoring of the operation status and benefits of the energy storage system enabling flexible local & remote operation and maintenance.

### 产品特点 PRODUCT FEATURES

#### 更安全/Safer

探测到包、消防到包，多级主动预警设计  
Providing detection and firefighting equipment for each battery pack, multi-level active early warning.

#### 更高效/More efficient

效率高达90%，提升全生命周期内客户收益  
With an efficiency of up to 90%, improving customer benefits throughout the life cycle

#### 更可靠/More reliable

系统循环次数≥6000次，一簇一管理，有效解决簇间环流问题，全生命周期可用容量提高6-8%，提高客户收益。  
System cycles ≥ 6,000 cycles; cluster-level management, avoiding parallel connection between battery clusters and effectively solving the inter-cluster circulation issues; with an 8% increase in available capacity throughout the life cycle, significantly improving the system discharge capacity and customer benefits.

# DC1000V户外液冷储能柜—分布式

## DC1000V Outdoor Liquid-cooled Energy Storage Cabinet - Distributed

#### 更一致/More consistent

精细化热管理，柜内温差≤3K，提升电池全生命周期的一致性和寿命。  
More consistent: Refined thermal management, with temperature differences in the cabinet as low as 3k, ensuring the consistency of the battery's full life cycle.

#### 更灵活/More flexibility

即插即用，交付即并网；多机任意并联，满足不同容量需求；  
Plug-and-serve design, grid connection immediately at delivery; flexible scheme of multi-unit parallel connection to meet different capacity demands;

### 产品参数 PRODUCT PARAMETERS

项点/Item	参数/Parameter
电芯类型/Cell type	磷酸铁锂电池/Lithium iron phosphate battery
电芯规格/Cell specification	314Ah/3.2V (兼容280Ah电芯) /314 Ah/3.2 V (compatible with 280 Ah cell)
电池包规格/Specification of battery pack	1P52S (兼容1P48S模组) /1P52S (compatible with 1P48S module)
电池包数量/Number of battery packs	5个/柜/5 per cabinet
额定电压/Rated voltage	DC832V
工作电压/Operating voltage	DC728V~DC936V
额定放电倍率/Rated discharge rate	0.5P
标称电量/Nominal electric quantity	261 kWh (额定倍率放电) /261 kWh (discharge at rated rate)
0.5P充放电条件下，一充一放循环次数 Number of charge-discharge cycles at a charge-discharge rate of 0.5P	≥6000次/≥ 6000 cycles
防护等级/IP rating	IP54
防腐等级/Corrosion protection level	C3 (C4/C5可选) /C3 (C4/C5 optional)
户外柜尺寸L*W*H(mm) Outdoor cabinet dimension (L*W*H) (mm)	1300*930*2300
重量/Weight	2.3吨/2.3 t
环境温度/Ambient temperature	-30~+55°C
存储与运输温度 Storage and transportation temperature	-20~+45°C
运行湿度范围/Operating humidity range	0-95% (无凝露) /0-95% (no condensation)
额定电网电压/Rated grid voltage	AC400V±15%



# DC1500V 风冷电池包/电池簇

## DC1500V Air-cooled Pack/Cluster

# DC1500V 风冷电池包/电池簇

## DC1500V Air-cooled Pack/Cluster



### 产品特点 PRODUCT FEATURES

#### 配置灵活 兼容性强/Flexible configuration and high compatibility >

灵活配置，标准化、模块化设计，PACK支持1500V平台，可向下兼容  
Flexible configuration, standardized & modular design. The pack supports the 1,500V platform. Downward compatibility

#### 维护方便/Easy to maintain >

正面维护，简易拆装配件，防误触、反接设计，保障安全运维  
Front maintenance and easy-to-assemble-or-disassemble components. Palm rejection and reverse polarity-proof design ensure O&M safety

#### 冷却稳定 实时检测/Stable cooling and real-time detection >

强劲风冷，均衡冷量，电池簇电芯温差 $\leq 6^{\circ}\text{C}$   
Forced air cooling and balanced cooling capacity. The cell differential temperature of the cluster is  $6^{\circ}\text{C}$  or lower  
延长使用寿命，电芯运行状态参数全面、实时检测  
Prolong usable life. Comprehensive real-time detection of cell status parameters

#### 多重保护 保证安全/Protection diversity ensures safety >

多级保护策略，多处短路保护设计，有效保护电芯  
Multi-level protection strategy and multiple short-circuit protection designs protect cells efficiently  
防热扩散设计，3S管理级消防，加固最后安全防线  
With heat diffusion prevention and 3S management-level fire protection, it solidifies the innermost line of defense  
安全防护，消防到簇  
Safety protection eliminates fire hazards to the cluster level

### 系统参数 SYSTEM PARAMETERS

#### 电池包参数/Pack parameters

电芯类型/Cell type	LPF-280Ah
成组方式/Pack type	1P16S
额定容量/Rated capacity	280Ah
持续充放电倍率/Continuous charge-discharge rate	0.5C
最大充放电倍率/Max charge-discharge rate	1C
额定电压/Rated voltage	51.2V
额定电量/Rated capacity	14.3kWh
尺寸(W*D*H)/Size (W*D*H)	765*470*225mm
重量/Weight	约105kg

#### 电池簇参数/Cluster parameters

电芯类型/Cell type	LPF-280Ah
成簇方式/Cluster type	1P416S
持续充放电倍率/Continuous charge-discharge rate	0.5C
最大充放电倍率/Max charge-discharge rate	1C
额定电压/Rated voltage	1331.2V
额定电量/Rated capacity	372.7kWh
尺寸(W*D*H)/Size (W*D*H)	1525*800*2400mm
重量/Weight	约3100kg



# DC1500V液冷电池包/电池簇

## DC1500V Liquid-cooled Pack/Cluster

# DC1500V液冷电池包/电池簇

## DC1500V Liquid-cooled Pack/Cluster



### 产品特点 PRODUCT FEATURES

#### 配置灵活 兼容性强/Flexible configuration and high compatibility >

灵活配置，标准化、模块化设计，PACK支持DC1000V平台  
Flexible configuration, standardized & modular design. The pack supports the DC1000V platform

#### 维护方便/Easy to maintain >

火情探测器及熔断器无需拆包维护，自密封管路实现免排液维护，保障安全运维  
The fire detector and the fuse can be maintained without unpacking, and drainage-free maintenance is realized for the self-sealing pipelines to safeguard safe operation and maintenance

#### 智能液冷控温/Smart liquid cooling >

自有专利液冷板流道设计，簇内温差低于5°C  
With the built-in patented liquid-cooling plate runner design, the in-cluster temperature difference is less than 5°C  
延长使用寿命；电芯运行状态参数全面、实时检测  
Prolong usable life. Comprehensive real-time detection of cell status parameters

#### 多重保护 保证安全/Protection diversity ensures safety >

多级保护策略，双层短路保护设计，pack级火情探测和消防  
Multi-level protection strategy and two-layer short-circuit protection designs and pack-level fire detection and fire protection  
安全防护，消防到包  
Safety protection eliminates fire hazards to the pack level

### 系统参数 SYSTEM PARAMETERS

#### 电池包参数/Pack parameters

电芯类型/Cell type	LPF-280Ah
成组方式/Pack type	1P52S
额定容量/Rated capacity	280Ah
标准充放电倍率/Standard charge-discharge rate	0.5C
最大持续充放电倍率/Max continuous charge-discharge rate	1C
额定电压/Rated voltage	166.4V
额定电量/Rated capacity	46.6kWh
尺寸(W*D*H)/Size (W*D*H)	1160*810*240 mm
重量/Weight	约350kg

#### 电池簇参数/Cluster parameters

电芯类型/Cell type	LPF-280Ah
成簇方式/Cluster type	1P416S
持续充放电倍率/Continuous charge-discharge rate	0.5C
最大充放电倍率/Max charge-discharge rate	1C
额定电压/Rated voltage	1331.2V
额定电量/Rated capacity	372.7kWh
尺寸(W*D*H)/Size (W*D*H)	930*1211*2341 mm
重量/Weight	约3200kg