418 kWh 液冷直流储能柜

418 kWh Liquid-Cooled DC Energy Storage Cabinet

418 Series　CFGE DC/418 -PT/GL



面向外接 PCS 的户外直流储能系统，集成 8 个电池包、高压配电单元、BMS 及液冷温控。提供电池状态监测、均衡、绝缘检测与保护控制，采用直流快插接口，便于系统集成和维护。

An outdoor DC energy storage system for connection to an external PCS, integrating eight battery packs, a high-voltage PDU, BMS and liquid thermal management. Battery monitoring, balancing, insulation detection and protection control support integration and maintenance through quick-connect DC interfaces.

高压直流接口 / High-voltage DC interface

液冷与低温预热 / Liquid cooling and low-temperature preheating

分层电池管理 / Hierarchical battery management

电池与直流参数 Battery and DC Specifications

参数 Parameter	规格 Specification
额定能量 Rated energy	418 kWh
电芯类型与容量 Cell chemistry / capacity	LFP / 3.2 V / 314 Ah
电池配置 Battery configuration	1P416S（1P52S × 8）
电池包数量 Number of battery packs	8 个 packs
标称直流电压 Nominal DC voltage	1,331.2 V DC
直流电压范围 DC voltage range	1,040–1,497.6 V DC
整柜额定充放电功率 Rated cabinet charge / discharge power	209kW
整柜持续充放电电流 Continuous cabinet charge / discharge current	157A

直流保护与接口 DC Protection and Interfaces

参数 Parameter	规格 Specification
隔离开关额定值 Disconnect switch rating	1,500 V DC / 250 A
主正极熔断器额定值 Main positive fuse rating	1,500 V DC / 350 A
直流连接方式 DC connection	快插 / Quick-connect
通信接口 Communication interfaces	CAN / RS485 / Ethernet
对外通信 External communication	与 PCS / EMS 通信 / Communication with PCS / EMS

开关与熔断器额定值为器件参数；整柜允许电流及功率以电池、BMS 和系统配置共同限制为准。
Switch and fuse ratings are component ratings. Cabinet operating current and power are limited by the battery, BMS and system configuration.

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系统与环境参数 System and Environmental Specifications

参数 Parameter	规格 Specification
外形尺寸 宽 × 深 × 高 Dimensions W × D × H	1,313.2 × 1,300 × 2,402 mm
整柜重量 Cabinet weight	约 / Approx. 3,650 kg
整柜防护等级 Cabinet ingress protection	IP55
防腐等级 Corrosion protection	C4
安装位置 Installation	户外 / Outdoor
工作环境温度 Ambient operating temperature	−30 to +50 °C
充电 / 放电工作温度 Charge / discharge operating temperature	充电 / Charge: +5 to +50 °C 放电 / Discharge: −15 to +50 °C
工作海拔 Operating altitude	≤ 2,500 m
冷却 / 加热方式 Cooling / heating	液冷 / Liquid cooling；液体加热 / Liquid heating
存储湿度 / 存储 SOC Storage humidity / SOC	RH ≤ 90%；SOC 30–50%

辅助供电 Auxiliary Power Supply

参数 Parameter	规格 Specification
辅助电源电压 Auxiliary supply voltage	220 V AC ±15%
辅助电源频率 Auxiliary supply frequency	50 / 60 Hz ±3 Hz
辅助电源最大电流 Maximum auxiliary supply current	30.2 A

管理与安全配置 Management and Safety Functions

参数 Parameter	规格 Specification
电池管理 Battery management	BMU + BCU / BCMU 分层管理 Hierarchical BMU and cluster management
监测与均衡 Monitoring and balancing	电压、温度、SOC；被动均衡 Voltage, temperature, SOC; passive balancing
检测与保护 Detection and protection	绝缘检测、继电器粘连检测、故障告警 Insulation and relay adhesion detection; fault alarms
温控功能 Thermal management	自动制冷及低温预热 Automatic cooling and low-temperature preheating
消防系统 Fire protection system	气溶胶、烟温探测、声光报警 aerosol, smoke/heat detection, audiovisual alarm

低温充放电需满足电池工作温度及 BMS 许可条件；环境温度范围不等同于电池可直接充放电的温度范围。

Low-temperature operation requires suitable battery temperature and BMS permission. Ambient limits do not define the direct battery charge/discharge temperature limits.

标准与认证 Standards and Certifications

系统认证（System Certifications）：IEC 61000-6-2, IEC 61000-6-4, IEC 62477, IEC 62619, IEC 63056, UN 38.3