

## Distributed Air-cooled ESS

ESN 215 ESS is based on All-in-one design theory, highly integrating LFP battery, BMS, PCS, EMS, power distribution system, temperature control system and fire protection system. The ESS can provide peak shaving, grid frequency modulation, power capacity expansion, standby power supply, black start and other functions to help users reduce electricity costs to the maximum extent. The ESS can be flexibly deployed in various scenarios such as industrial and commercial parks, gas stations, PV ESS EV charging stations, mining areas and airports.



## Product Introduction

### Safe:

- Early thermal runaway prewarning and PACK-level combustible gas detection to realize targeted fire extinguishing by coordinating with BMS and EMS;
- Using flame retardant material and multiple ESS can be connected seamlessly, saving 20% of space and reducing maintenance cost by 10%;
- Patented bionic tree runner design with PACK temperature difference  $\leq 5^{\circ}\text{C}$  and battery cycle life increased by 12%;
- Adopt "emergency avoidance design" with BMS and EMS online backup to reduce failure rate by 5%;
- Compact and safe design with core components (air conditioners, PCS) integrated within the cabinet to reduce the risk of hidden failure.

### Simple:

- All-in-one design and modular installation with single cabinet covering an area of just 1.68m<sup>2</sup>;
- Applicable to multiple industrial scenarios and easy to connect to the grid;
- Easily plug and play with aviation plug and simple capacity expansion covering power range from 50kW to 1MW;
- Factory prefabrication and integrated transportation to reduce the transportation, installation and commissioning fees by 15%.

### Smart:

- Remote cloud operation and maintenance, supporting remote and local monitoring;
- Smart balancing strategy and system AI prewarning to ensure the consistency of battery life cycle;
- Support black start function with reliable power supply in off-grid/micro-grid mode;
- Support a variety of operation modes (virtual power plant, grid-connected, off-grid) to improve revenue.

Model

ESN PVW51A-215KWh

Type	Name	Parameters
Battery parameters	Cell type	ESN-3.2V-280Ah
	System configuration	1P240S
	Rated energy	215.04KWh
	Voltage	768
	Voltage range	672~864
AC parameters (grid connected)	Rated power	100kW
	Maximum power	110kW
	Wiring mode	Three-phase four-wire/three-phase three-wire
	Rated grid voltage	400V
	Voltage range	320~460V
	Rated current	144A
	Rated grid frequency	50/60Hz
	THDi	<3%(Rated power)
AC Parameters (off grid)	Powerfactor adjustable range	-1(ahead)~1(lag)
	AC off-grid voltage	400
	AC off-grid frequency	50/60
	AC voltage range	$\pm 3\%$
System parameters	Off-grid output voltage distortion rate	<3%(Linear load)
	System Efficiency	$\geq 90\%$
	Charge-discharge rate	$\leq 0.5\text{CP}$
	Thermal management mode	Air-cooling
	Fire protection system	Type S aerosol/HFC-propane/perfluorohexanone
	Anticorrosive level	C3(C4/C5 optional)
	Ingress protection	IP54
Ambient parameters	Dimension D*W*H	1400*1200*2200mm
	Weight	2300kg
	Operating temperature range	-15~+45 $^{\circ}\text{C}$ (>45 $^{\circ}\text{C}$ derating)
communication	Operating humidity range	0~95%(no condensation)
	Altitude	2000m (>2000m derating)
	Communication	Ethernet, RS485
Certificate	External system communication protocol	ModbusTCP, IEC61850, Modbus RTU
	Certificate	GB/T36276, GB/T 34131, UL1973, UL9540A, IEC62619, UN38.3