

eSpire 280

COMMERCIAL AND INDUSTRIAL BATTERY STORAGE



Microgrid Control Cabinet

280 kWh ESS (battery)

125 kW PCS (inverter)

Supported Applications

- Peak shaving for demand charge management
- Load shifting for time-of-use savings
- Real and reactive power compensation to improve power quality
- Standalone operation in off-grid mode for power backup
- Store excess solar energy during the day and use at another time

Multi-family Homes

Grocery Stores & Convenience Stores

Charging Stations & Service Areas

Schools, Banks, & Hospitals

Product Features

Safe Technology & Multi-level Protection

The solution uses the best-in-class Tier 1 Lithium Iron Phosphate (LFP) chemistry for the highest level of safety, thermal stability, and reliability; An integrated, multi-level Battery Management System (BMS) monitors, optimizes, and balances the system.

Advanced Liquid Cooling for the Extended Battery Lifespan

The unique liquid cooling system optimizes the battery thermal performance by 3 times, which extends the battery lifespan and increases your investment.

Built-in Microgrid Controls with Adaptive EMS / Fleet Management

Ability to integrate with solar, genset, wind, micro-turbines, utility, or other distributed energy resources. Intelligent software to reduce electricity cost, prepare for resiliency, and maximize return on investment. Remote operation & maintenance.

Easy & Flexible to scale (Easy scalability)

This outdoor rated, modular solution can be expanded up to 4.2 MWH capacity easily (Max. 12 units in parallel).

Turnkey System for Fast Install

Fully integrated, pre-configured package system reduces on-site installation time; includes inverter(s), battery trays, racks, BMS, Keystone Micro-Grid, Controller, HVAC, fire suppression, and outdoor rated enclosure. Off-grid and Back-up package available.

Excellent Local Support

Our US based technical support team can help you from project design to completion.

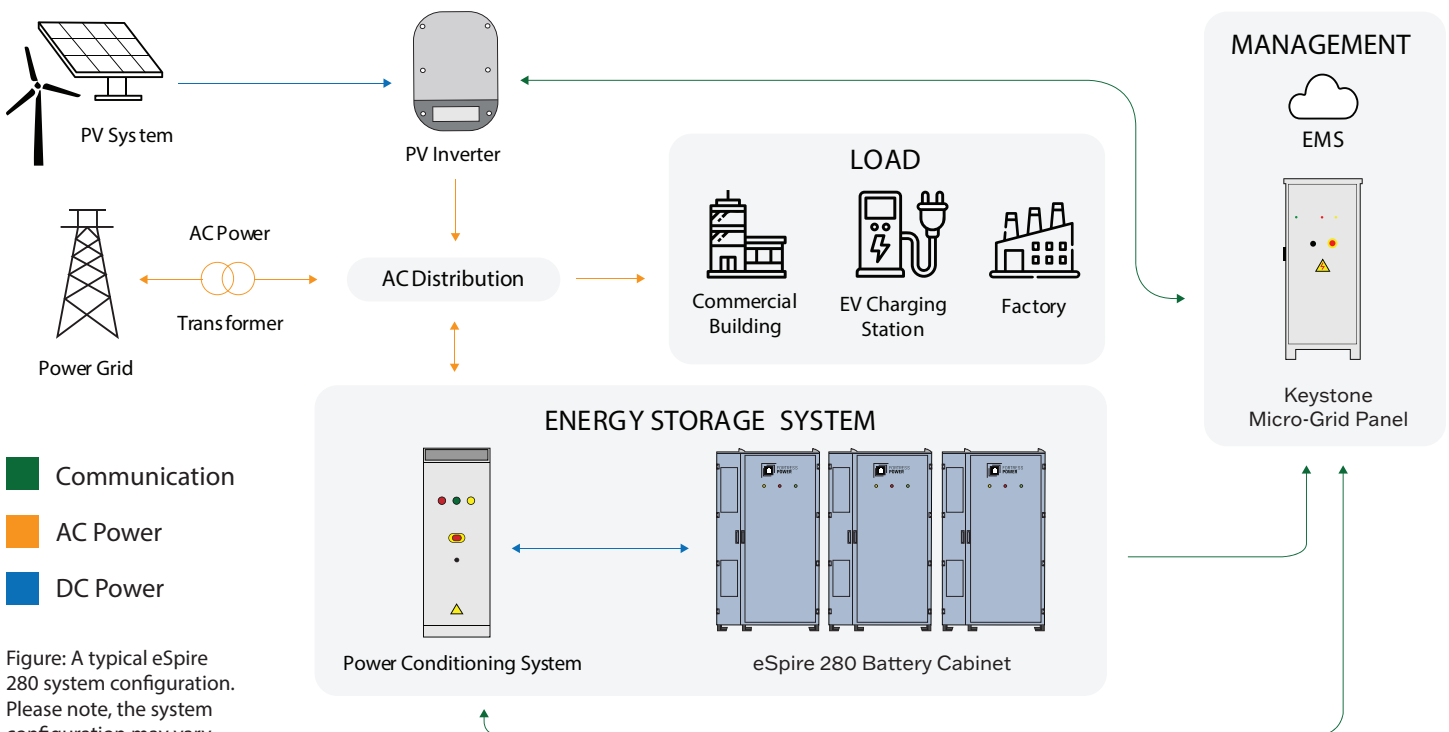


Figure: A typical eSpire 280 system configuration. Please note, the system configuration may vary based on application.

ESS includes: 125 kVA Inverter, battery, battery racks, BMS, HVAC, fire suppression, extraposition transformer, and outdoor rated enclosure

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Battery Specification	
Fortress Power Battery Module	eSpire 280
Chemistry	Lithium Iron Phosphate
Cell Type	Prismatic
Configuration	1P6S
Number of Modules	6
Nominal Capacity	280 Ah
Nominal Energy	279.5 kWh
Nominal Voltage	998.4 Vdc
Operating Voltage Range	873.7 - 1123.2 Vdc
Maximum Continuous Charging/Discharging Current	140 Amps
Communication	Modbus TCP, CAN, Modbus RTU
Cycle Life @ 25C @ 70% Retention	8000 Cycles
DC DC Round Trip Efficiency	92% @ 0.5C, 25°C, 1 Cycle Per Day
Operating Temperature Range	Charging: 0-55°C & Discharging -20-55°C
Thermal Management System	Integrated Liquid Cooling System (HVAC)
Fire Suppression System	Fire Detector, Smoke Detector & Fire Extinguisher
IP Class	Type IP66, NEMA 3R
Battery Bank Scalability	Up to 15 (4.2 MWH)

PCS Specification	
PCS Model	FP-PCS125HV
Rated AC Power	125 KVA/KW
Rated Grid Voltage	3Ph 480Vac + PE
Grid Voltage Range	422 to 528Vac (-12%, +10%) / (3Ph 208Vac) * + PE *
Rated Grid Frequency	60 Hz
Grid Frequency Range	59.3 to 60.5Hz, Adjustable
Rated AC Current	151 Amps
DC Voltage Range	750-1350Vdc
Rated Discharge / Charge Power	128KW/122KW
Max. Discharge/Charge Current	157Amps/151Amps
Current THD	<3%
Power Factor	-1 to 1, continuously adjustable
Peak Efficiency	98%
Standby Loss	<25W @ Cool Mode
Grid Power Factor	-1 (leading) to (Lagging), Continuously Adjustable
Wiring Configuration	3 Phase 4 Wire or 3 Phase 3 Wire (3P4W/3P3W Configuration)
Protection	DC Reverse Protection/DVP/UVP/OCP/DC Insulation Detection

* For 3Ph 208Vac + PE application, a step-down transformer is required.

Energy Management Software	
Functional Operation	Real-time Monitoring,aptive Peak Shaving, Demand Response, Net Metering, VPP
Operation Mode	Back-up, Microgrid, Off-grid, Peak Shaving, Demand Response, Time of Use, Net Metering, Zero Export, VPP
Communication Interface	Modbus (TCP and RTU), TCP/IP, CANbus, BACnet, Dry Contactor, External APIs

System Specification	PCS Details	Keystone Microgrid Control Panel	Battery Details
Operating Temperature	-22 to 140°F, De-Rating >113°F (-30 to 60°C, De-Rating >45°C)	-13 to 104°F (-25 to 40°C)	-22 to 113°F (-30 to 45°C)
Storage Temperature Range	-22 to 131°F (-25 to 55°C)	5 to 113°F (-15 to 45°C)	-20 to 140°F (-40 to 60°C)
Dimensions (H*W*D)	78.74 x 23.62 x 19.685 in (2000 x 600 x 500 mm)	77.56 x 35.43 x 33.85 in (1970 x 900 x 860 mm)	89.76 x 51.18 x 51.18 in (2280 x 1300 x 1300 mm)
Enclosure Rating	NEMA 3R / IP55	NEMA 3R / IP54	NEMA 4X / IP66
Relative Humidity	<95% No Condensing	<95% No Condensing	<95% No Condensing
Max Altitude	3000m, De-Rating > 2000m	3000m, De-Rating > 2000m	3000m, De-Rating > 2000m
Acoustic Noise	<70 dBA, Max 75dB	<70dB	<70dB, Max 80dB
Cooling System	Forced Air via Speed Control	Air Cool	Liquid Cooling Via HVAC
Net Weight	286.6lbs (230 kg)	690 lbs (313 kg)	6625 lbs (3005 kg)
Operation Status indicators	Warning, Low Voltage & High Voltage		
Lockage Enclosure	Padlockable Swing Handle		
User Interface	LED, EPO, Ethernet & HMI via Web Access / EMS Web Portal		
Communication Protocol	Ethernet/Modbus TCP		
Certifications	UL1973, UL9540(A), UL1741-SB, IEEE-1547-2018, IEEE-519, FCC Part 15 Class A, UL9540 CEC, SGIP, OGPc		