

eSpire 290 FC

COMMERCIAL AND INDUSTRIAL BATTERY STORAGE



**FECC
COMPLIANT**



Microgrid Control Cabinet



290 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 3.5 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 detection and outdoor rated enclosure. Off-grid and Back-up package available.

Excellent Local Support

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

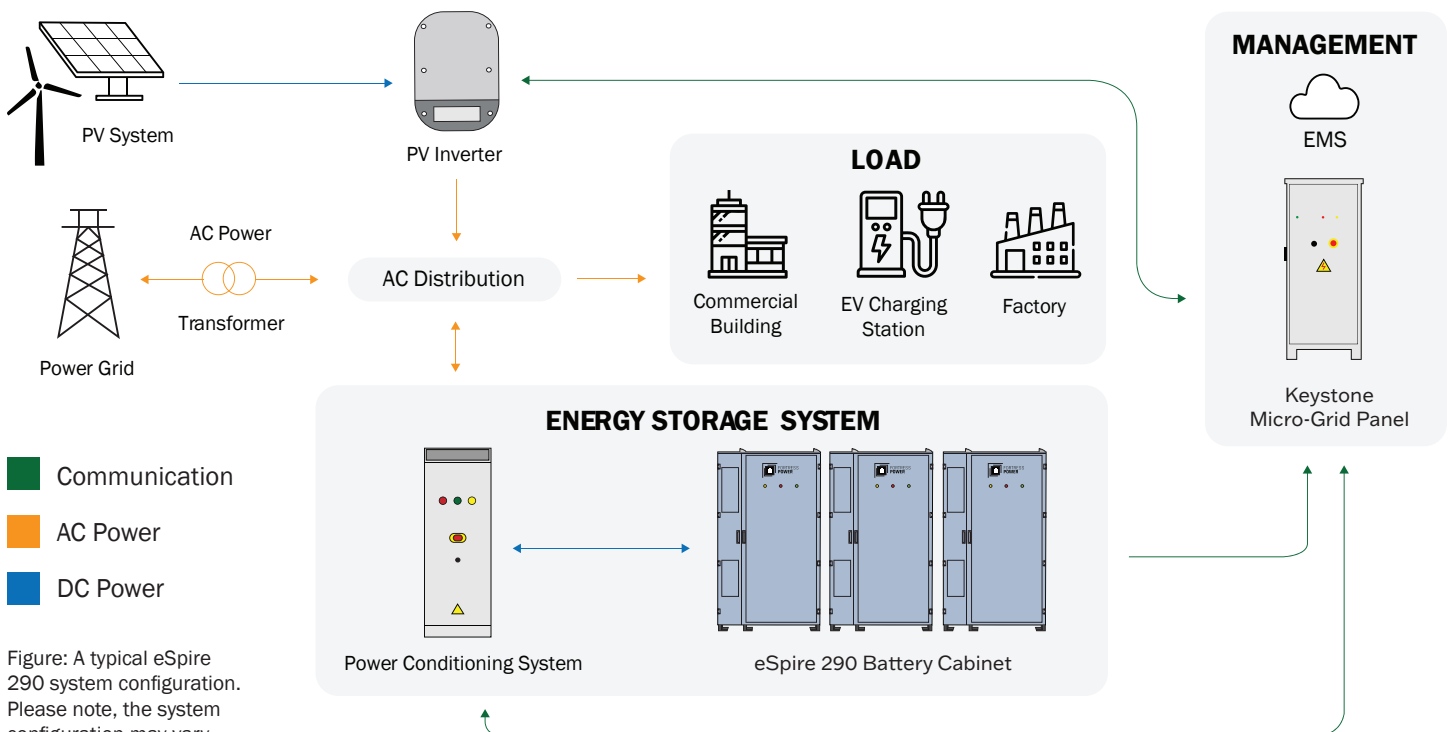


Figure: A typical eSpire 290 system configuration. Please note, the system configuration may vary based on application.

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

eSpire 290

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Battery Specification	
Fortress Power Battery Module	eSpire 290
Chemistry	Lithium Iron Phosphate
Cell Type	Prismatic
Number of Modules	8
Nominal Capacity	316 Ah
Nominal Energy	289.3 kWh
Nominal Voltage	921.6 Vdc
Operating Voltage Range	806.4 - 1036.8 Vdc
Standard Charging Current	157A
Maximum Continuous Charging/Discharging Current	190 Amps
Communication	Modbus TCP, CAN, Modbus RTU
Cycle Life @ 25C @ 70% Retention	8000 Cycles
DC DC Round Trip Efficiency	92.5% @ 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 Mitigation System	Smoke & Heat sensor, BMS protection, Gas sensor
IP Class	IP54
Throughput Energy	780MWh (+25°C, 0.5C, 90% DOD, 70% SOH)

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) ¹ + PE ¹
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	WYE (3P3W, N, PE) or WYE (3P,PE) ²
Protection	DC Reverse Protection/OVP/UVP/OCP/DC Insulation Detection

¹ For 3Ph 208Vac + PE application, a step-down transformer is required.

² N is required for any single phase loads, only in micro-grid sites.

Energy Management Software	
Functional Operation	Real-time Monitoring, daptive 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)	-13 to 131°F (-25 to 55°C)
Storage Temperature Range	-22 to 131°F (-25 to 55°C)	5 to 113°F (-15 to 45°C)	-22 to 140°F (-30 to 60°C)
Dimensions (H*W*D)	78.74 x 23.62 x 19.685 in (2000 x 600 x 500 mm)	69.45 x 31.43 x 35.20 in (1765 x 800 x 894 mm)	92.51 x 47.24 x 52.36 in (2350 x 1200 x 1330 mm)
Enclosure Rating	NEMA 3R / IP55	NEMA 3R / IP54	NEMA 3R / IP56
Relative Humidity	<95% No Condensing	<95% No Condensing	<95% No Condensing
Max Altitude	3000m, De-Rating > 2000m	3000m, De-Rating > 2000m	4000m, 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)	820 lbs (372 kg)	6393 ± 220 lbs (2900 ± 100kg)
Operation Status indicators	AUX Power, RUN, Alarm		
Lockage Enclosure	Padlockable Swing Handle		
User Interface	LED, EPO, Ethernet & HMI via Web Access / EMS Web Portal		
Communication Protocol	Ethernet/Modbus TCP		
Certifications	UL1973, UL9540A, UL9540, NFPA 855, NFPA 69, IEC 62477, IEC 60730, IEC 61000-6-2, IEC 61000-6-4, UN38.2		