EVO POWER

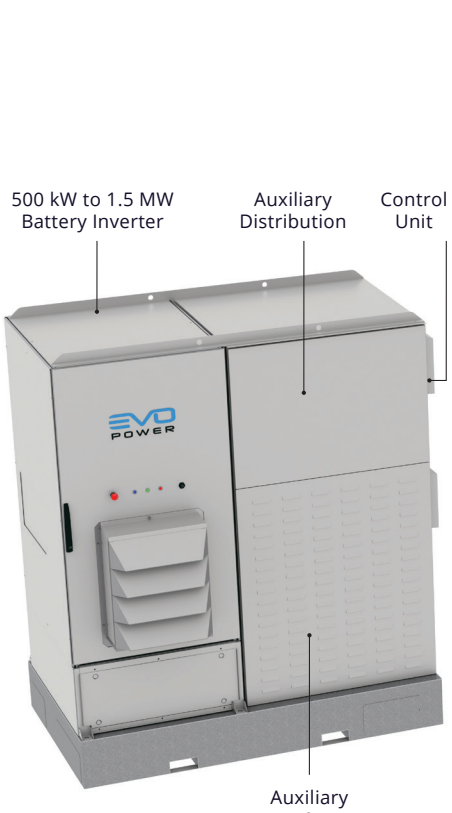
# EXCEL PLUS SERIES

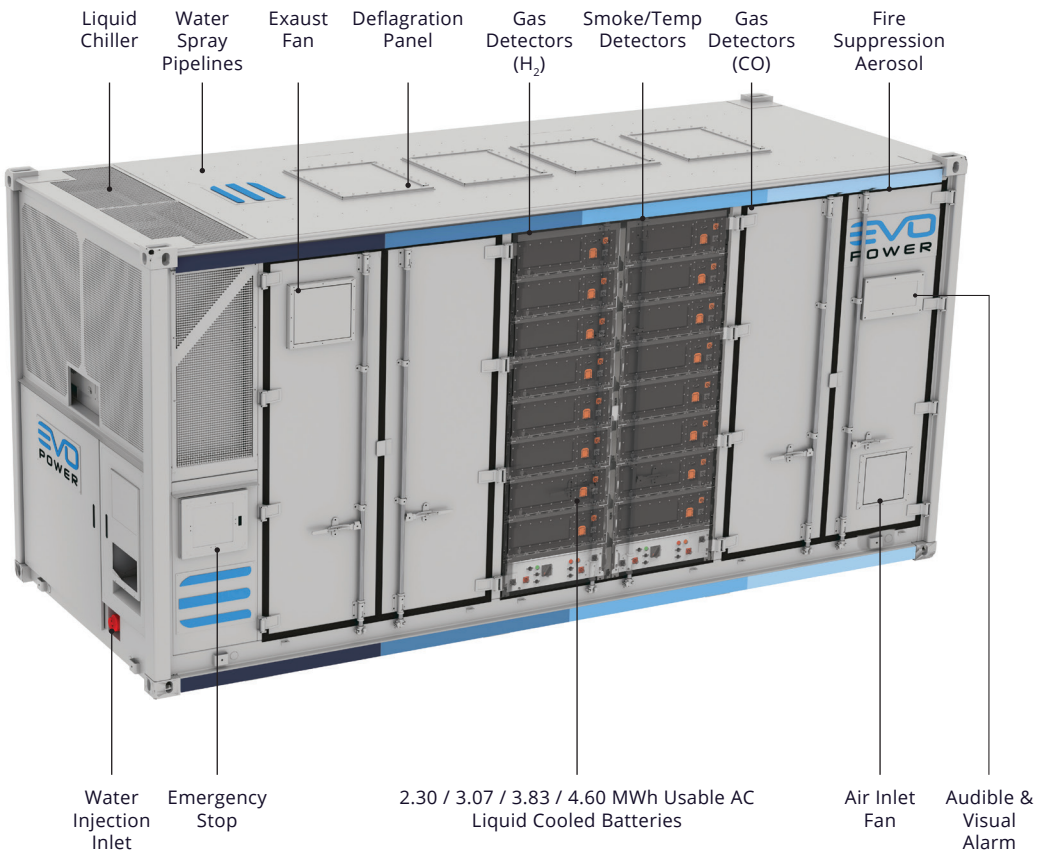
## Turnkey AC Coupled
## Battery Energy Storage Systems

- Liquid Cooled with Fire Suppression
- Scalable 2 to 4 Hour options
- Outdoor Freestanding Solution
- Integrated Power Control Software

WORLD CLASS BATTERY ENERGY STORAGE TECHNOLOGY

# SYSTEM COMPONENTS




**INVERTER STATION**

**BATTERY CONTAINER**

# HARDWARE FEATURES

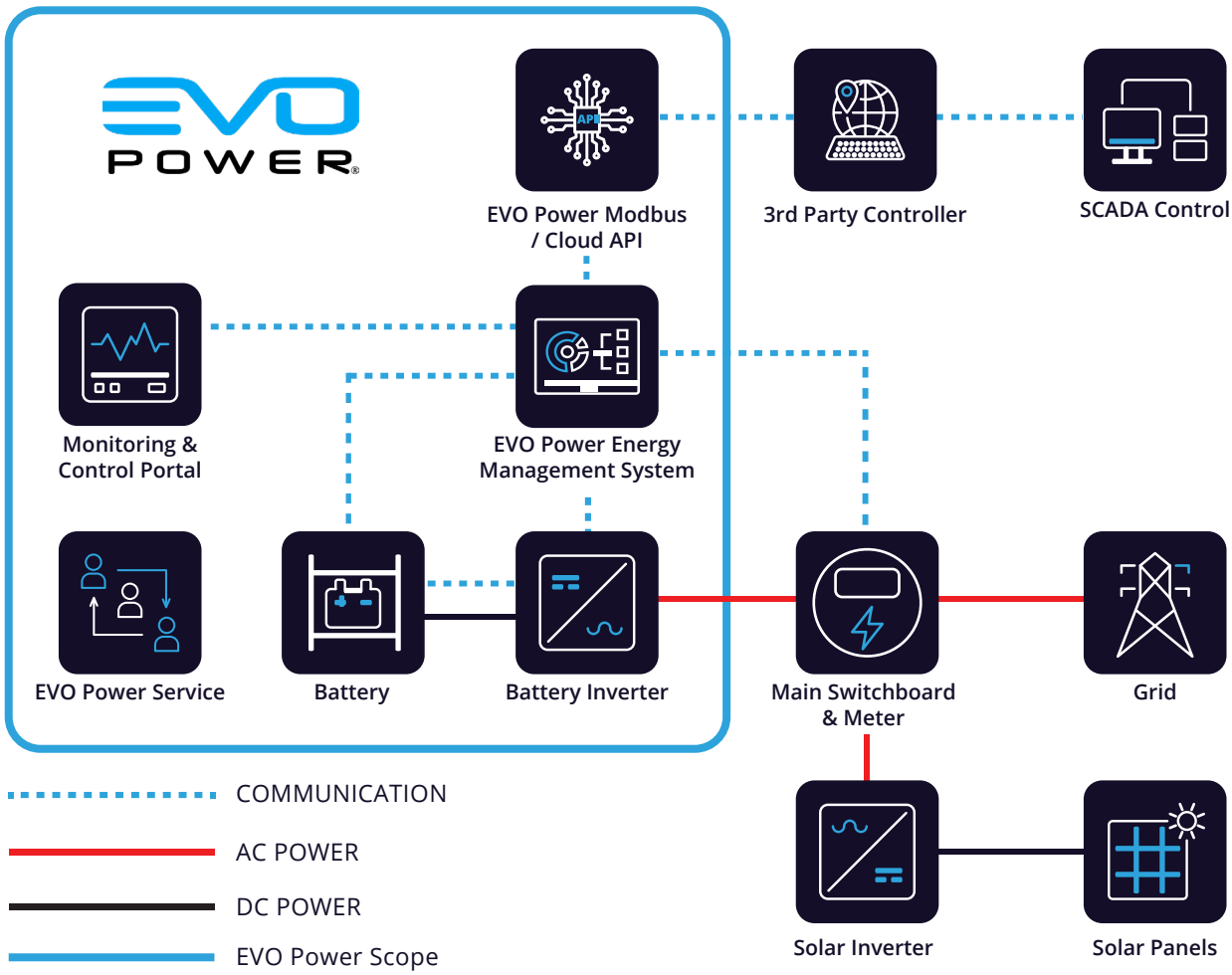
- Lithium Iron Phosphate Chemistry
- UL 9540 & UL 1741 Certified BESS
- Liquid Cooled Battery Modules
- NFPA 855, 68 & 69 Fire Suppression System

- High Efficiency
- 690 VAC 3 Phase Output (3 wire)
- Backup Power - Optional
- Fast response for Frequency Regulation Applications

- Advanced Power Control Software
- EVO API for 3rd Party VPP Control
- EVO Advanced Monitoring Platform
- Optional Monitoring of Compatible PV Systems

- Flexible Layout Options
- Scalable Power & Energy
- Built-in Compact AUX. Power Supply reducing BOS
- Easy to install Turnkey BESS

# SYSTEM SCHEMATICS




# POWER CONTROL APPLICATIONS

EVO Power Energy Management System

- Solar Self-Consumption
- Peak Shaving
- Retail Time-of-Use
- Utility Meter Reading Capability
- Optional Solar Inverter Control
- Optional Backup Power

- EVO Power Modbus / Cloud API for 3rd Party System Control for Orchestration of Grid Services

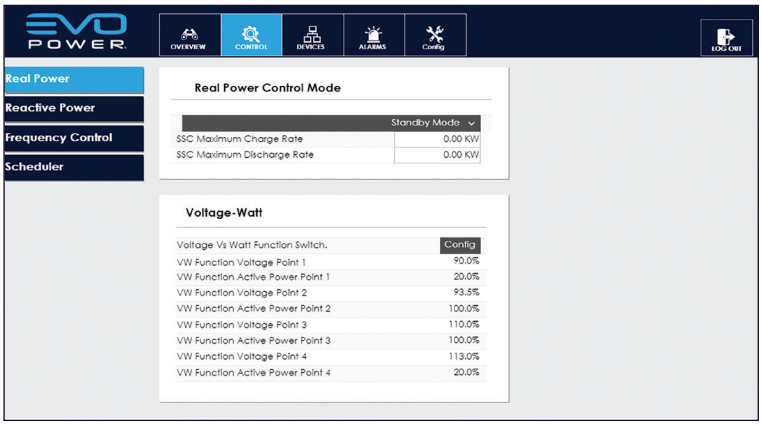
EVO POWER CONTROL SERVER

- Frequency Regulation / Grid Services
- Energy Arbitrage
- Virtual Power Plant
- Integration with other platforms

# EVO EMS (Energy Management System)

## EVO MONITORING PLATFORM

- Dashboard for a System-Specific Overview
- Individual Configuration of Alarm Criteria
- Mobile Monitoring with iOS and Android App
- Calendar for Coordinating Service Deployments
- Individual Reporting, CSV Export of all Measurement Data
- Fleet Review - Tabular Display of the Key Performance Indicators for all Systems

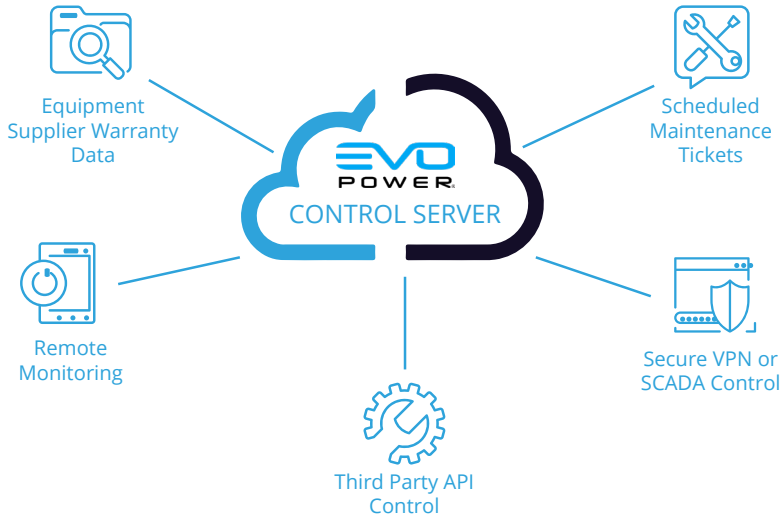




## EVO REMOTE CONTROL PLATFORM

- Graphical User Interface for Configuration
- Programmable Peak Shaving Fixed Value and Characteristic Curve Control
- Active Power and Reactive Power Control
- Ramp Rate Control

## EVO CONTROL SERVER PLATFORM

- Optional Control via Third Party Optimization / VPP Aggregator
- Agnostic API Control Commands
- Open Platform
- Optional Secure VPN or SCADA Control
- Single Asset or Fleet Management



# EXCEL PLUS BUILDING BLOCK SPECIFICATIONS

| INVERTER SPECIFICATIONS | | | | |
|---|---|---|---|---|
| Nominal AC Voltage | 690 VAC | | | |
| AC Export/Import Capacity | Single inverter | | Dual inverters | |
| | 500 kW ~ 1.5 MW | | 1 MW ~ 2.3 MW | |
| Max. Fault Current Allowed From AC Source | 180 kA (AC RMS) | | 100 kA (AC RMS) | |
| Reactive Power Capacity | Power Factor 0.8 ~ 1 leading / lagging | | | |
| Nominal Frequency | 60 Hz | | | |
| Total Harmonic Distortion (IEEE 519) | ≤ 2% THD of rated power per IEEE 519 | | | |
| Temperature Control | Hybrid liquid / air cooled | | | |
| Efficiency (@ 690 VAC) : Peak | 98.80% | | | |
| AC Connection Max Cables Per Phase | 3-wire (3P3W) \| 6 x 600 kcmil or 6 x 300 $mm^2$ | | | |
| **ENERGY STORAGE** | 2.30 MWh | 3.07 MWh | 3.83 MWh | 4.60 MWh |
| Usable AC Energy At BOL | 2,300 kWh | 3,067 kWh | 3,833 kWh | 4,600 kWh |
| Nominal DC Energy At BOL | 2,507 kWh | 3,343 kWh | 4,179 kWh | 5,015 kWh |
| Voltage Range | 1,164.8 ~ 1,497.6 VDC | | | |
| Nominal Voltage | 1,331.2 VDC | | | |
| Chemistry | Lithium Iron Phosphate (LFP) | | | |
| Temperature Control | Liquid Cooled | | | |
| Maximum Discharge Rate | 0.5 CP | | | |
| **ENVIRONMENTAL** | | | | |
| Operating Temperature Range | -4 °F ~ 131 °F \| -20 °C ~ 55 °C * | | | |
| Storage Temperature Range | -4 °F ~ 113 °F \| -20 °C ~ 45 °C | | | |
| Operating / Storage Humidity | 5 ~ 95% RH, Non-Condensing | | | |
| IP Ratings | IP 55 / NEMA 3 | | | |
| Airborne Noise | < 85 dBA @ 1 meter | | | |
| Maximum Altitude | 9,842 ft \| 3,000 m ** | | | |
| **COMPLIANCE** | | | | |
| Inverter Related Standards | UL 1741 (SB), IEEE 1547-2003, CA Rule 21, Hawaii Rule 14, EN50549 -2, IEC 62477-1, IEC 62909-1 | | | |
| Battery Related Standards and Tests | UL 1973, UL 9540A, NFPA 855, NFPA 68, NFPA 69, UN38.3 | | | |
| System Related Standards | UL 9540 | | | |
| **DIMENSIONS** [W x D x H] | | | | |
| Inverter Station | Single inverter | | Dual inverters | |
| | 80.9 x 47.4 x 91.5 in / 2,056 x 1,205 x 2,325 mm | | 135.3 x 47.4 x 91.5 in / 3,437 x 1,205 x 2,325 mm | |
| Battery Container | 238.5 x 96.0 x 114.0 in \| 6,058 x 2,438 x 2,896 mm | | | |
| **WEIGHT** | | | | |
| Inverter Station | Single inverter | | Dual inverters | |
| | 4,012 lb / 1,820 kg | | 7,209 lb / 3,270 kg | |
| Battery Container | 2.30 MWh | 3.07 MWh | 3.83 MWh | 4.6 MWh |
| | 59,525 lb / 27,000 kg | 72,753 lb / 33,000 kg | 85,980 lb / 39,000 kg | 99,208 lb / 45,000 kg |

Specifications are subject to change, please contact EVO Power sales for the latest datasheets.
* Polar option available (-22 °F ~ -4 °F | -30 °C ~ -20 °C)
Systems derate above 104 °F | 40 °C
** Systems derate above 1,000 m

# EXCEL PLUS SCALABLE OPTIONS

| AC BESS PRODUCT | PART NUMBER | CHARGE / DISCHARGE POWER (AC KW) * | USABLE ENERGY (BOL, AC KWH) ** | NOMINAL ENERGY (BOL, DC KWH) | # OF INVERTER(S) | # OF BATTERY CONTAINER |
|---|---|---|---|---|---|---|
| EXCEL Plus 1,200 kW / 2,300 kWh | EVO-US-1200 | 1,200 | 2,300 | 2,507 | 1 | 1 |
| EXCEL Plus 1,500 kW / 3,067 kWh | EVO-US-1201 | 1,500 | 3,067 | 3,343 | 1 | 1 |
| EXCEL Plus 1,500 kW / 3,833 kWh | EVO-US-1202 | 1,500 | 3,833 | 4,179 | 1 | 1 |
| EXCEL Plus 2,000 kW / 3,833 kWh | EVO-US-1203 | 2,000 | 3,833 | 4,179 | 2 | 1 |
| EXCEL Plus 1,100 kW / 4,600 kWh | EVO-US-1204 | 1,100 | 4,600 | 5,015 | 1 | 1 |
| EXCEL Plus 1,500 kW / 4,600 kWh | EVO-US-1205 | 1,500 | 4,600 | 5,015 | 1 | 1 |
| EXCEL Plus 2,300 kW / 4,600 kWh | EVO-US-1206 | 2,300 | 4,600 | 5,015 | 2 | 1 |

**EXCEL Plus Single Inverter Station**

**EXCEL Plus Dual Inverter Station**

* AC rating power exclude the auxiliary power. All auxiliary circuits are powered by Inverter when in resiliency or microgrid mode (selectable).
** AC KWH is based on measuring at BESS terminal and excludes auxiliary power consumption, <30ft distance from Battery to Inverter for DC cable loss.

Notes
2 to 4hr system configurations are available. Combinations of systems above can be controlled in parallel.
Please contact EVO Power for the detailed Warranty Statement.
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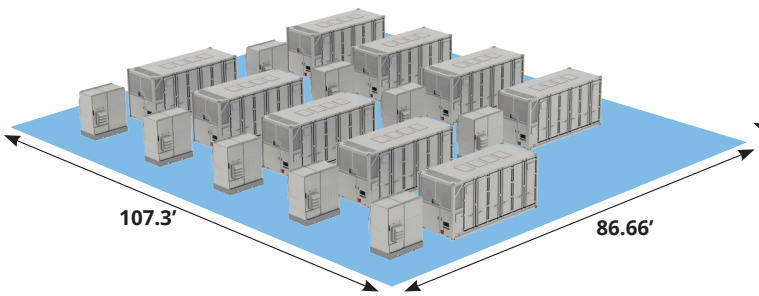
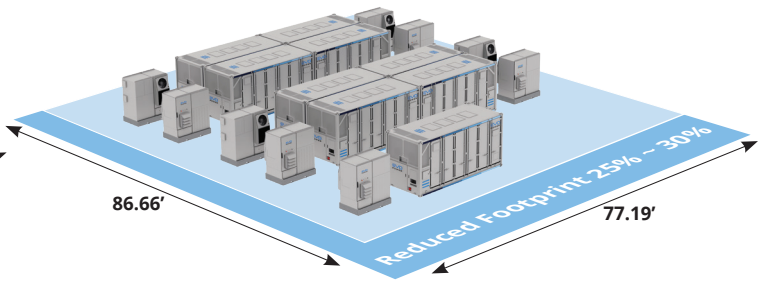
# SCALABILITY CONFIGURATIONS

## Example of System Installation Configuration

### Required Size: 10 MW / 46 MWh *

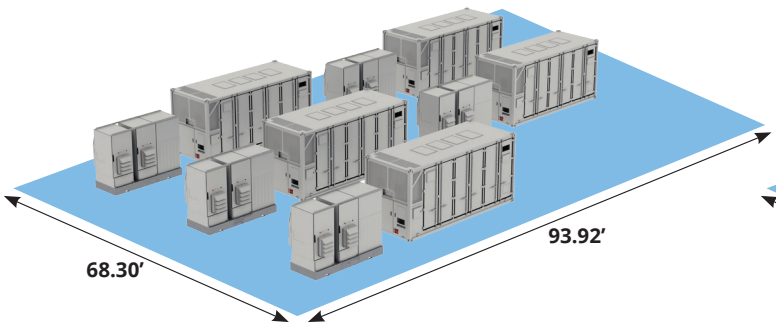



Conventional Layout

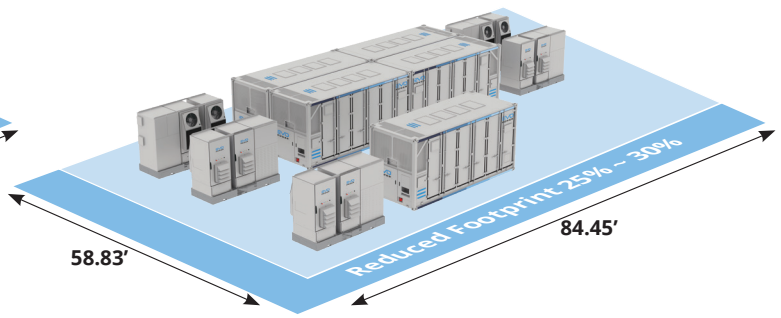



EXCEL Plus Layout **

### Required Size: 9.9 MW / 23 MWh *




Conventional Layout




EXCEL Plus Layout **

* Power is derated to required system power.
** The EXCEL Plus layout (back to back mirror) can reduce the installation area by 25% to 30% compared to the conventional layout.

Note
Dimensions include product maintenance clearance only. Client needs to follow regulatory installation guideline.

EVO POWER®

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