



Brochure

Vertiv™ DynaFlex

Providing utility-scale energy storage for mission-critical businesses seeking to improve operational stability, increase use of renewables, reduce costs, and generate revenues.



Vertiv™ DynaFlex provides energy storage building blocks to provide grid flexibility and energy reliability for the most demanding industry and utility application.

Bringing Greater Control to Mission-Critical Power Operations

Mission-critical businesses need continuous power flow to support vital operations. These organizations include hyperscalers and cloud services companies, digital service providers, hospital systems, manufacturers, utilities, and more. Facilities and power management teams at these organizations would like to increase their clarity into – and control over – their power network and energy usage, increasing operational reliability.

Vertiv™ DynaFlex uses UL9540A certified LFP batteries to provide utility-scale energy storage that can be used as an always-on power supply. As a result, facilities and power management teams can use this battery energy storage system to smooth out power usage and seamlessly transition to always-on battery-enabled power supply whenever needed. By doing so, organizations can reduce OpEx costs, such as peak demand charges, on an ongoing basis. They can also participate in energy arbitrage and other services, enhancing profitability.

Vertiv DynaFlex is available with an optional integrated energy management system, Vertiv DynaFlex EMS, that provides intelligent controls, enabling grid services. Organizations gain greater control over how traditional and renewable energy sources are captured, stored, and used. As a result, they can sell energy back to the grid, creating new revenue streams.

Common applications include:

- Gaining flexible peaking capacity
- Regulating power voltage and frequency
- Integrating renewable energy sources
- Enabling new grid services
- Enhancing utility transmission and distribution reliability

Vertiv DynaFlex Solution Benefits

Easily configure the solution:

Vertiv DynaFlex has a flexible architecture that enables customers to configure components from prequalified Tier 1 suppliers to meet their requirements. Teams can tailor their system for specific applications by purchasing the optional Vertiv™ EMS and optimizing its dispatch algorithms.

Gain a highly scalable design for energy storage:

Vertiv DynaFlex brings repeatability and predictability to large energy storage deployments. The scalable design makes it more efficient to permit projects and delivery and deploy systems, reducing implementation risk. Maintaining consistency across project locations also simplifies worker training, daily operations, and solution maintenance.

Reduce risks with safety features:

Vertiv DynaFlex comes equipped with comprehensive safety features. The factory-built design brings consistent quality controls to the battery energy storage system to ensure worker safety.

Vertiv DynaFlex BESS is built at one of our state-of-the-art facilities and later integrated with our Vertiv EMS to enhance the applications associated with Vertiv DynaFlex BESS. We are the partner of choice for mission-critical businesses seeking to architect their power continuity by developing energy storage for the grid capabilities.



Vertiv offers:

- Scalable energy storage building blocks: 1.0 MW and 1.5 MW (1.5unit x 4 = 6MW)
- Intelligent energy controls
- In-house manufacturing processes for maximum quality control
- Fast procurement and contracting process
- Simple system design, engineering, and permitting
- Rapid delivery, construction, and commissioning
- The latest safety features



Technical specifications

System Specifications

Rated AC Power (50°C)	Project sizes 1 -1.5 MW Building blocks scalable up to 1,000+ MW
Discharge Duration	1 – 4 hours, typical for Li-Ion due to costs
Grid Frequency	50Hz and 60Hz
Reactive Power (reactive capability available over full real power range)*	Four-quadrant control, 0.9 leading to 0.9 lagging at rated power (reactive capability available over full real power range)*
Availability	>99%
Altitude	up to 2000 m without Derating
Seismic Rating	Seismic options available
System Response Time	Max capacity change in 2 ms
Standard Temperature Range	-30°C to 55°C

Smart Li-Ion Battery

Battery	Rack	Container
Cube Dimensions (H x W x D)	2348mm x 1390mm x 1344.1mm to 2450 mm x 1700 mm x 1500 mm	2896mm x 6058mm x 2438mm
Weight (total) lb/kg	~ 3.65 - 6.5 tons ±3%	~ 36- 45 tons ±5%
IP Rating	IP56	IP55
Cooling	Liquid-cooled	
Battery Chemistry	Lithium Iron Phosphate (LiFePO4)	
Safety Features	State-of-the-art safety features, including a fast stop, fire detection and suppression system (aerosol), gas detection (carbon monoxide), deflagration panels, lockable disconnect switch, open door sensor, gas spring damper, and sliding door lock.	

Vertiv™ DynaFlex DERMS

Fully scalable onsite control system for comprehensive control of Hybrid Power Assets

Operations Modes

Automatic Dispatch, Manual Dispatch and HMI interface

System KPI's

- Real/Reactive Power, State of Charge, Battery Voltage, E-Stop, Node Status, and more
- External Control Interface
- SCADA and EMS integrated, DNP, Modbus, Canbus, and Native Modbus TCP/IP

Market Dispatch

Frequency dispatch, Demand Response, Peak Shaving, Black Start, and more

Vertiv™ EMS

Vertiv EMS integrates power and energy into one common usable system

Forecasting

System can help achieve improved operations and energy efficiency

Optimization

Automatically control DER onsite assets to achieve the best possible outcome from grid services to renewable integration

Market Interface and Bidding

Work with System Aggregators and local markets to determine best possible times to perform grid interactions.

