

# DSS<sup>®</sup>

Distributed Storage Solution



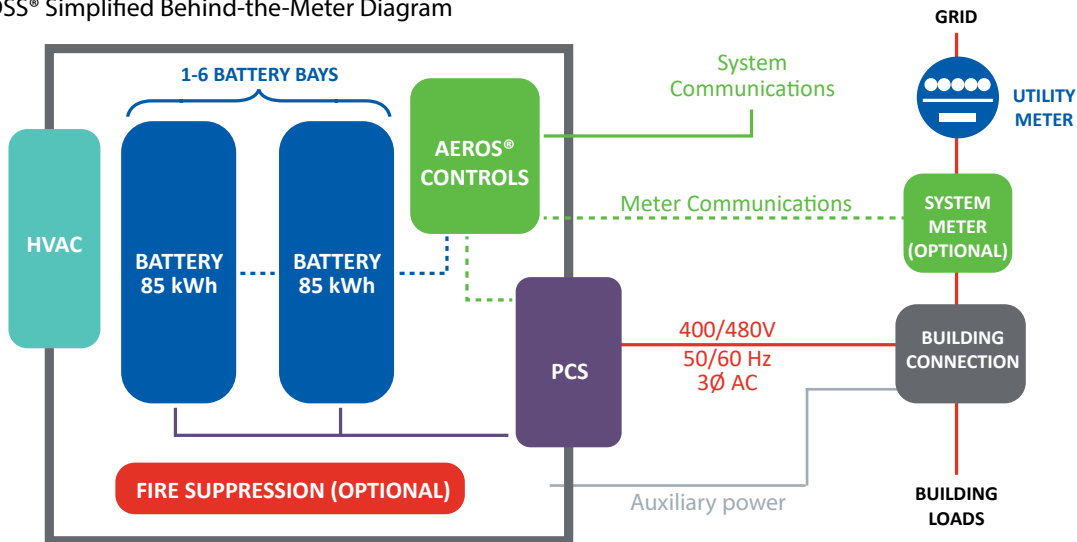
ENERGY STORAGE FOR  
THE EDGE OF THE GRID



**NEC**  
NEC ENERGY SOLUTIONS

# DSS® BEHIND-THE-METER SIMPLE DIAGRAM

DSS® Simplified Behind-the-Meter Diagram



FRONT

BACK



- 1 85 kWh battery rack per bay with independent BMS
- 2 Easily accessible controls and wiring access cabinet
- 3 AEROS® controls with integrated touch-screen HMI
- 4 Easy wiring access
- 5 Optional fire suppression system
- 6 NEMA 4 / IP65 enclosure; walls and doors R13 insulated
- 7 Top lifting points
- 8 Fork truck lift point on all four sides, and bottom lift points
- 9 Tamper-resistant, lockable doors
- 10 Solid roof pitched from center
- 11 HVAC unit



**2 BAY UNIT**



**4 BAY UNIT**



**6 BAY UNIT**

ENERGY (kWh)	POWER (kW)	ENERGY (kWh)	POWER (kW)	ENERGY (kWh)	POWER (kW)
<b>85</b>	100	<b>255</b>	100	<b>425</b>	100
	280		280		280
<b>170</b>	100	<b>340</b>	100		<b>510</b>
	280		280	280	
	710		710	710	

**DSS® CONFIGURATION OPTIONS**

Grid Interconnect	480V / 60Hz or 400V / 50Hz
Fire Suppression System	Optional, integrated with system, locally commissioned
Islanding/ Black Start	Optional, islanding / black start PCS capability

**NOTES**

- The 710kW option requires separate MV transformer (not included).
- In addition to PCS options shown above, DSS® systems are offered without a PCS enabling custom configurations. The AC interconnect is replaced by a 720V (nominal) DC bus.



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### COMMERCIAL AND INDUSTRIAL “BEHIND-THE-METER” APPLICATIONS

The DSS® system reduces enterprise energy costs by optimizing how and when energy is supplied from the grid, including:

- **Demand Charge Reduction** – As much as 50% or more of C&I electricity costs may come from utility demand charges, typically determined by the peak electricity consumption over any 15 or 30 minute period each month. Reducing these peaks, which may vary with season, daily weather, day of the week, and/or business operations, can result in major cost energy savings. AEROS® Controls offer a sophisticated demand charge management operating mode leveraging tariff-aware predictive analytics to maximize the achievable economic savings.
- **Renewables (PV) Integration** – The DSS® system further enhances local energy generation such as C&I solar PV deployments by increasing the opportunity for self-consumption, firming and smoothing intermittent generation output, reducing demand charges, and in some scenarios, simplifying the local utility interconnect requirements.
- **Enhanced Power Resiliency** – The DSS® renewable generation capacity firming and smoothing capabilities may also minimize the impacts of weak grid power, as well as enable back-up power for critical loads if grid power is lost.



### UTILITY “FRONT-OF-THE-METER” APPLICATIONS

In addition, the full suite of utility-related operating modes, which have been delivering reliable energy storage services on the larger GSS® systems for years, are available on the DSS™ platform, including:

- Distributed ancillary services, including frequency response / regulation
- Local grid congestion relief and infrastructure upgrade deferral
- Voltage/VAR support
- Distributed generation capacity firming/ramp management



### MICROGRID / OFF-GRID APPLICATIONS

The DSS platform may also be integrated within off-grid and microgrid power systems to deliver many of the same services outlined above.



### AGGREGATED SYSTEMS

The DSS system also enables ‘stacking’ multiple applications, including a mixture of C&I energy management and grid-services operating modes, to empower operators to derive the greatest value from individual or aggregated DSS® system deployments.

# EMPOWERING THE GRID EDGE

## NEW SERVICE CREATION OPPORTUNITIES

The relationship between utilities and their commercial & industrial (C&I) customers is rapidly changing: C&I enterprises are becoming electricity producers as well as consumers, and profit from actively managing the shape and timing of their energy use. Distributed energy storage is empowering next-

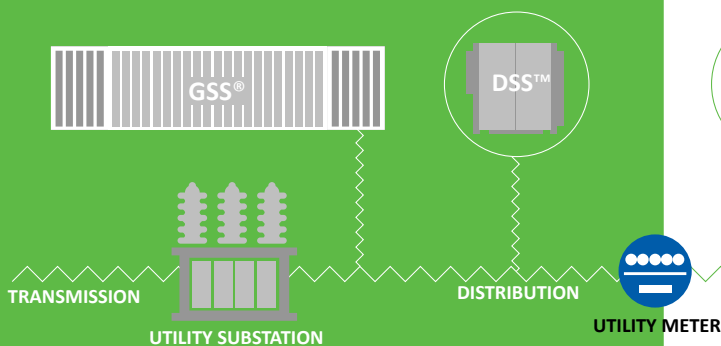
generation energy storage-based services on both sides of the electricity meter: reducing energy costs and increasing resiliency for C&I enterprises, while improving efficiency, predictability, and dispatch-ability of distributed assets for utilities that serve them.

## DSS® DISTRIBUTED STORAGE SOLUTION

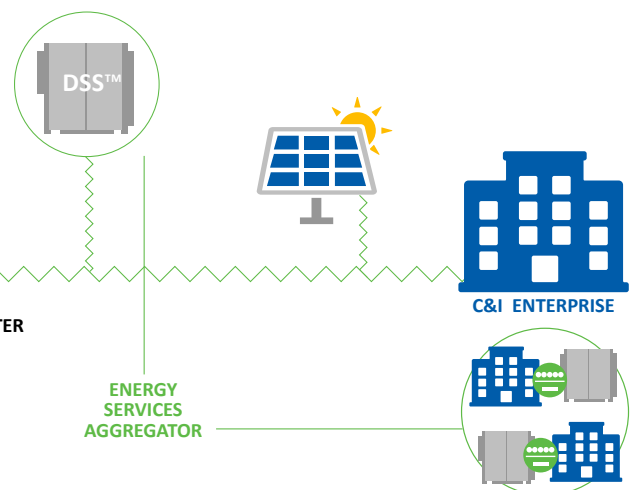
The DSS® Distributed Storage Solution is a pre-configured, fully-integrated AC energy storage platform enabling new advanced energy services near the grid edge. For commercial and industrial (C&I) enterprises, the DSS® platform simplifies “behind-the-meter” deployment of energy storage-based services that reduce energy costs and increase resiliency. For distribution utilities, “front-of-the-meter” DSS® deployments smooth intermittent renewable generation, shave demand peaks, improve system utilization, and help manage distributed assets.

The DSS® platform integrates advanced battery, power conversion and controls technologies into a family of pre-engineered systems that are simple to design-in, install, commission, operate, and maintain. The DSS® family is scalable in both energy (85 kWh to 510 kWh) and power (30 kW to 710kW), packaged in robust outdoor-rated cabinets including full environmental control and safety technology, and designed to the most demanding global regulatory and environmental compliance requirements.

### FRONT OF THE METER



### BEHIND THE METER





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