

NEC Energy Solutions DSS[®] Distributed Storage Solution

The relationship between utilities and commercial and industrial customers is being transformed as enterprises produce as well as consume electricity and actively manage the amount and timing of their energy use. The fully integrated DSS[®] platform enables next-generation energy storage-based services on both sides of the electricity meter: reducing energy costs and increasing resiliency, while improving efficiency, predictability, and distributed resource dispatchability for utilities.

The DSS[®] platform integrates energy storage with power conversion and Trimark T1-S BESS controls. NEC offers a range of flexible outdoor-rated configurations that are simpler, smarter, and safer than similar products. DSS[®] systems may operate autonomously, within an enterprise energy management system, under utility or local SCADA control, or as part of a virtual power plant or microgrid.



EXAMPLE APPLICATIONS

The DSS[®] platform offers advanced energy management services to enterprises and/or utilities.

For commercial & industrial enterprises, DSS[®] systems support emerging 'behind-the-meter' services including:

- Demand charge management
- Demand response
- Power quality and resiliency
- Distributed/renewable generation integration
- Time-of-use management

For utilities, DSS[®] systems deliver distribution grid in 'front-of-the-meter' services including:

- Dispatchable load and demand management
- T&D congestion relief and upgrade deferral
- Voltage support
- Renewable capacity firming / ramp management
- Distributed ancillary services

A SOLUTION FOR ANY NEED

NEC offers a wide range of standard equipment arrangements which, when combined with Trimark T1-S BESS Controller, will answer any need you may have.



2 Bay Unit



4 Bay Unit



6 Bay Unit

Energy (kWh)	Power (kW)	Energy (kWh)	Power (kW)	Energy (kWh)	Power (kW)
85	100	255	100	425	100
170	100		280		280
	280	100	710		
		340	280	510	100
			710		280
					710

Proven Battery Technology

The DSS® platform uses proven industry-leading lithium-ion battery storage technologies, leveraging years of operational experience of NEC Energy Solution's leading GSS® product lines. In the DSS® system, NEC Energy Solutions offers the optimal technology for typical demand charge management and similar peak shaving applications.

Flexible Power Conversion

Pre-integrated, 4 quadrant, bi-directional inverters are available within the DSS® systems. Choose from remote-mounted 100kW, 280kW, or 710W component PCS options, all provided as fully integrated, ready-to-install systems.

Integrated AEROS® Battery Management with T1-S BESS Controls

NEC Energy Solution's AEROS® Controls, with C&I optimized Demand Charge Reduction, Peak Shaving, and Load Limiting applications, is provided with every DSS system. Trimark's T1-S suite, including functions for grid ancillary services, volt/VAR control, ramp rate management, and other applications is also available.

Pre-Engineered Environmental Control

Mechanical system optimization and serviceability is key to maximizing overall system life and availability. DSS pre-engineered systems leverage NEC Energy's years of experience developing systems used in harsh environments around the world.

Robust Safety

System safety can never be compromised, and DSS® systems use the same multi-level safety approach — at the cell, module, rack, and system level — for which NEC Energy Solutions is known. Integrated fire suppression is available as an option.

Installation Simplicity

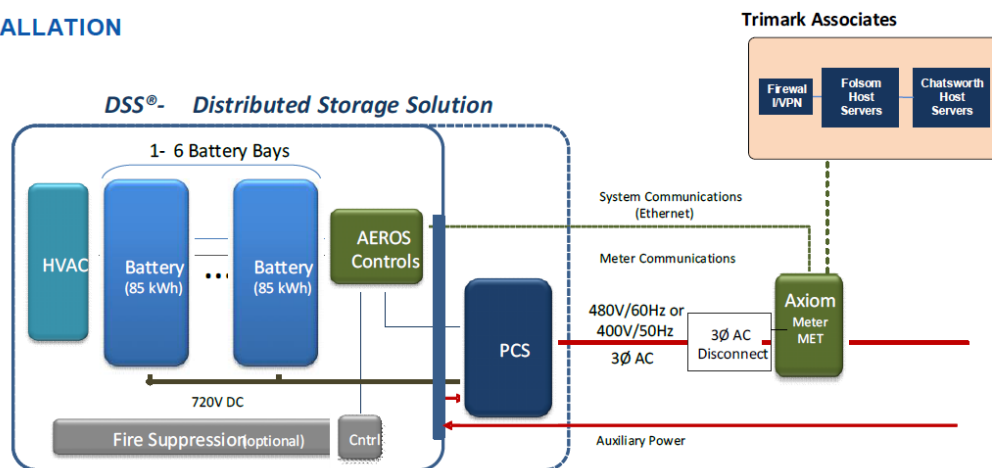
DSS® systems are designed for fast, straightforward installation by licensed commercial electrical contractors. Power and communications connections are conventional and common to standard industrial grade facility products.

System Characteristics

Energy Options	85, 170, 255, 340, 425 and 510 kWh
Power Conversion Options	100, 280, and 710 kW ¹
DC Voltage	720 V
Controls	AEROS® Applications Suite
AC Interfaces	480V / 60Hz or 400VAC / 50Hz 3Ø, 4 wire
Communications	Ethernet/IP HTTP/HTTPS Modbus (TCP/IP) Options for DNP3.0, IEC61850
Enclosures	NEMA 4 / IP65, in 2, 4 and 6 bay configurations Separate PCS cabinets rated IP54
Operating Temp	-25°C to 50°C
Standards and Compliance (partial list)	UL 9540, 1973, 1642 IEC 61508, 62040-1; UN 38.3, CE, NFPA 70 FCC CPR Part 15, Class A IEC 61000-6-2,4,5 & -7 PCS: UL 1741(SA), G59/3, IEEE 1547 Seismic: IEEE 693-2005

1. 100, 280 and 710 kW PCS options provided in separate, pre-integrated, remotely mounted cabinets.

EXAMPLE INSTALLATION



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