



Picture shown may not reflect actual configuration

Cat[®] Energy Storage Systems **Small Scale**

- 1 Phase: 6kW to 24 kW
50/60 Hz, 220-240V
- 3 Phase: 18 kW to 96 kW
50/60 Hz, 380-415V

Caterpillar offers a market leading modular range of small-scale energy storage solutions, optimized for deployment in mini/nano-grid hybrid power system applications such as rural electrification, remote pumping or communication sites.

Features

Scalable and Field Proven

The Cat Microgrid small scale energy storage product line incorporates field-proven range of battery inverters coupled with an industry leading range of Li-Ion batteries. The systems are modular and scalable, for both increased power output and/or battery kWh capacity.

Bi-Directional Battery Inverter

The Bi-directional battery inverter is a modular family of power converters, available in a selection of ratings, configurable to meet the broad range of system voltages and frequencies used throughout the world. The control system features:

- Flexible single or three phase configurations
- Intelligent controls for charging and discharging of the energy storage equipment
- Robust and reliable, including high motor starting/overload capabilities required in off-grid applications
- System control and monitoring via connected laptop, smart phone, or tablet

Energy Storage

The energy storage options offered include advanced lithium-ion batteries that provide good energy density, high discharge/recharge efficiency and high cycle life.

Renewable Integration

The systems are designed and configured to work with an array of renewable systems, including solar and wind, seamlessly integrating conventional diesel and gas powered generator sets in hybrid power solutions.

Grid Forming

The grid forming bi-directional inverter can form a stable source for the photovoltaic array. This allows the generator sets to be completely switched off, substantially reducing O & M costs.

Cat Connect

Integration with Cat Connect, offering remote control, monitoring and system performance management via Ethernet and Cellular WAN.

Applications

High penetration solar power generation in grid or off-grid energy storage systems:

- Rural electrification
- Smart power microgrid systems
- Time shifting of renewable energy

Generator and battery hybrid power systems:

- Telecom sites
- Emergency or site lighting systems
- Remote water pumping

Model	Output Voltage @ 50/60 Hz AC (V)	Output Voltage THD	Continuous System Output Power @ -1 to +1 PF at 25°C (kW)	Overload Power (30 minutes) (kW)	Overload Power (5 minutes) (kW)	Peak power (3 seconds) (kW)	Number of Inverters	ESS Capacity (kW-hr)	Number of Modules	Module Rating (A-hr)	Continuous Current (DC) (A)	Optional Enclosure (L x W x H)					
Single Phase Systems																	
ES13H6-S	220 - 240	<4%	4.6	6	7	11	1x SI6.0H	13	4	63	252	L: 2000 mm W: 750 mm H: 2100 mm					
ES26H6-S								26	4	126	252						
ES39H6-S								39	6	126	378						
ES52H6-S								52	8	126	504						
ES65H6-S								65	10	126	630						
ES13H8-S			6	8	9	11	1x SI8.0H	13	4	63	252						
ES26H8-S								26	4	126	252						
ES39H8-S								39	6	126	378						
ES52H8-S								52	8	126	504						
ES65H8-S								65	10	126	630						
ES26H12-S			9.2	12	14	22	2x SI6.0H	26	8	63	504						
ES33H12-S								33	10	63	630						
ES52H12-S								52	8	126	504						
ES65H12-S								65	10	126	630						
ES26H16-S								12	16	18	22		2x SI8.0H	26	8	63	504
ES33H16-S			33	10	63	630											
ES52H16-S			52	8	126	504											
ES65H16-S			65	10	126	630											
ES33H18-S			13.8	18	20	33	3x SI6.0H							33	10	63	630
ES65H18-S								65	10	126	630						
ES33H24-S	18	24						27	33	3x SI8.0H	33	10	63	630			
ES65H24-S			65	10	126	630											
Three Phase Systems																	
ES33H18	380 - 415	<4%	13.8	18	20	33	3x SI6.0H	33	10	63	630	L: 2000 mm W: 750 mm H: 2100 mm					
ESS65H18								65	10	126	630						
ESS33H24								18	24	27	33		3x SI8.0H	33	10	63	630
ES65H24														65	10	126	630
ES33H18			27.6	36	41	66	6x SI6.0H	65	20	63	1260	L: 3000 mm W: 2400 mm H: 2600 mm					
ESS65H18								130	20	126	1260						
ESS33H24								36	48	55	66		6x SI8.0H	65	20	63	1260
ES65H24														130	20	126	1260
ES33H18			41.4	54	61	99	9x SI6.0H	98	30	63	1890	L: 6100 mm W: 2400 mm H: 2600 mm					
ESS65H18								196	30	126	1890						
ESS33H24								54	72	82	99		9x SI8.0H	98	30	63	1890
ES65H24														196	30	126	1890
ES33H18	72	96	109	132	12x SI8.0H	130	40	63	2520								
ESS65H18						260	40	126	2520								

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