Microgrid
Power Grid Stabilization

Image shown may not reflect actual configuration.

Cat® Power Grid Stabilization (PGS)

767 kW | 1260 kW
448 kWh | 672 kWh
60 Hz 480 Volt
50 Hz 400 Volt & 690 Volt

The Cat® PGS Module is a scalable, rapidly deployable energy storage system. The PGS integrates with solar or other renewable sources to provide short duration power when the renewable source is not available. The PGS also provides reserve power to optimize generator set operation. The system may provide temporary backup power to facilities in the event of a power outage.

FEATURES

Reliable, Modular and Mobile

The Cat PGS module is a robust, scalable energy storage platform. The module consists of a pre- engineered container that is easily installed on site. Multiple modules may operate in parallel to provide increased power output and/or increase the energy capacity.

Renewable Integration

The modules are designed to work with an array of renewable systems, including solar and wind. Seamless integration with the Cat® Microgrid Master Controller (MMC) allows for maximum renewable penetration and full asset control.

Transient Assist

When used with a generator set, the Cat PGS module will provide power to decrease the transient voltage and frequency dips resulting from the application of large loads.

Grid Stabilization

The Cat PGS protects against many typical power problems, voltage sags/surges, and under/over frequency conditions.

Cat® Bi-Directional Energy Storage Inverter

The Cat BDP1000 inverter is the core to the energy storage system. Based on technology developed for Cat electric drive machines. The Cat BDP provides exceptional reliability, durability and features that include:

- Controls for the charging and discharging of the energy storage equipment
- 2 per unit fault current capability
- Static VAR compensator
- Four-quadrant output power factor control
- Dual parallel control of two inverter halves
- Patented nonlinear droop for tight control of voltage and frequency
- Seamless mode transfer
- Automatic anti-islanding
- Grid forming, grid firming, and grid following modes
- Autonomous mode or Remote-Control mode
- Parallel ready – multiple modules may be used in parallel to increase total output up to 100+MW

Energy Storage

- Advanced lithium-ion batteries provide energy density, high discharge/recharge efficiency, and long cycle life

Standard Equipment

- Cat BDP1000 bi-directional energy storage inverter
- Energy storage batteries
- Color HMI touchscreen
- Remote communications via Modbus TCP
- HVAC system to maintain optimal interior temperatures
- Convenience receptacles
- Fire suppression system

Applications

- Renewable smoothing
- Grid firming/grid stabilization
- Generator set transient assist
- Facility backup
- Reserve power capacity

Technical Specifications [1]

Model		PGS840	PGS1260
Nameplate Power at 1.0 PF	**KW**	**767**	**1000**
Overload Power (Only in Island Mode) [2]			
15 min Overload at 1.0 PF	kW	795	1170
10 min Overload at 1.0 PF	kW	815	1220
5 min Overload at 1.0 PF	kW	840	1260
1 min Overload at 1.0 PF	kW	840	1260
10 s Overload at 1.0 PF	kW	840	1260
Nameplate Energy Capacity [3]	DC kWh	448	672
Number of Battery Rack	qty	4	6
Battery Type		Lithium Ion	
Battery Chemistry		NMC	
Inverter Model		BDP1000	
Number of Inverters		1	
Isolation Transformer	Pri/Sec	Δ -Delta / Y-Wye	
Number of Transformers		1	
Output Voltage	(50 Hz) (60 Hz)	400 & 690 VAC 480 VAC	
Output Voltage THD		<3%	
Ambient Temperature Capability	ºC	-25 to +40 (+50 with power de-rate/rest period) [4]	
Altitude	mASL	2000 [4]	
Average Parasitic Load			
At 0º/40ºC in Standby Operation (0% Load)	kW	2.0/4.0	2.0/4.0
At 0º/40ºC in Continuous Operation	kW	33.0/36.0	33.0/36.0
Shore Power Connection	V (50 Hz) V (60 Hz)	400V 50 Hz 3 ph 4 wire 480V 60 Hz 3 ph 4 wire	
Features			
Transient Ride Thru & Stabilization		Yes	
Patented Non-Linear Droop Control		Yes	
Seamless Mode Transfer		Yes	
Islanding Detection		Yes	
Grid Forming		Yes	
Four Quadrant Power Factor Control		Yes	
Static VAR Compensator		Yes	
2 Per Unit Fault Current Capability		Yes	
Virtual Spinning Reserve (VSR) Function		Yes	
Plug-and-Play Parallel Ready		Yes	
Intelligent Energy Storage Management		Yes	
Human-Machine Interface		Yes	
Fire Suppression System		Yes	
Communications Protocols		Modbus TCP/IP	

[1] Ensure compatibility of all microgrid equipment by referring to A&I guides (or equivalent) for generator sets, BDP inverters, PV inverters, switchgear, controls, and loads. Contact your local Cat dealer for assistance selecting compatible equipment. Consult factory for additional options such as additional voltages and cold weather operation.
[2] For discharge events starting at 95% State of Charge (SoC).
[3] Beginning of Life (BoL) nameplate energy
[4] Consult factory for power de-rate and rest period recommendation.

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Applicable Codes and Standards

- UL 1973
- UL 9540 Ed2
- CSC Certified
- 2014/35/EU LVD
- 2014/30/EU EMCD
- 2011/65/EU RohS
- UN38.3
- IEC60204-1
- Marking: $_{C}UL_{US}$, CE

Note: Reference component spec sheets for additional codes. Codes may not be available in all model configurations. Please consult your local Cat Dealer for availability.

Registration

- California Energy Commission (CEC) Solar Equipment List

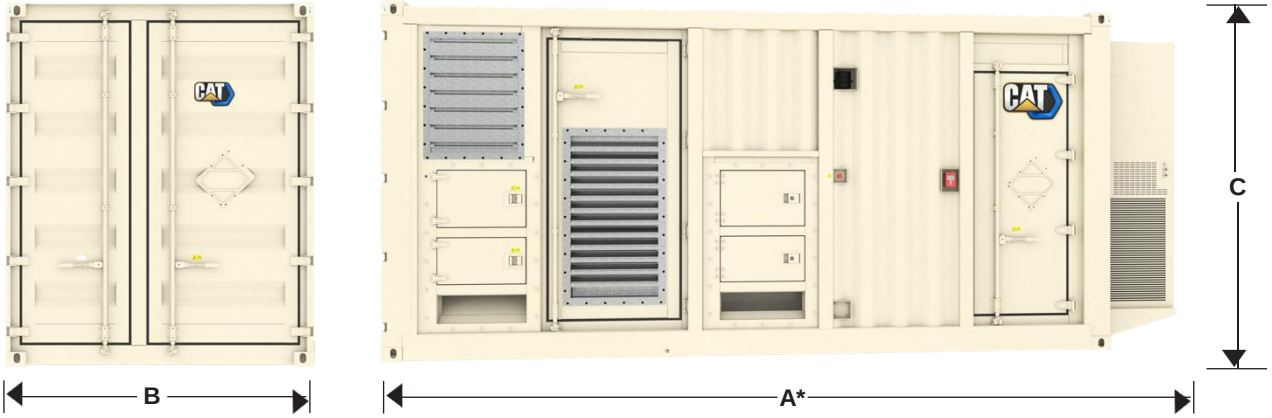
Remote Monitoring (Sold Separately)

The Cat® Connect telematic device and an active subscription to Cat Connect are available. The internet connection provides real time monitoring of the performance and health of the battery and installation. If an issue is detected, local technicians can be dispatched to resolve the problem.

Worldwide Product Support

- Cat dealers provide extensive post-sale support including maintenance and repair agreements.
- Cat dealers have over 1,800 dealer branch stores operating in 200 countries.

Weights and Dimensions



	PGS840	PGS1260
A – Length, m (ft)	6.75 (22.13)	6.75 (22.13)
B – Width, m (ft)	2.4 (8.0)	2.4 (8.0)
C – Height, m (ft)	2.8 (9.5)	2.8 (9.5)
Weight (Approximate), kg (lbs)	15,357 (33,856)	18,725 (41,282)

Note: Do not use for installation design. See general dimension drawings for detail. Dimensions are dependent on selected options.

* Without A/C module length 6.06 (19.87), m (ft).

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