

Image shown may not reflect actual configuration

Cat® Power Grid Stabilization (PGS)

125 kW to 2500 kW
50 Hz 380-415 Volt
60 Hz 380-690 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 or virtual spinning reserve to optimize generator sets efficiency. This system provides temporary backup power to facilities in the event of a power outage.

- Seamless mode transfer
- Automatic anti-islanding
- Grid forming
- Grid following
- 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 good energy density, high discharge/recharge efficiency, and high cycle life.
- Optional ultra-capacitors provide short duration, high power output

Standard Equipment
- Cat® BDP250 bi-directional power inverters
- Energy storage batteries
- Color HMI touchscreen
- Remote communications via Modbus TCP
- HVAC system to maintain 15°C to 27°C (60°F to 80°F) interior temperatures
- Interior AC lighting and convenience receptacles
- Fire suppression system

Applications
- Renewable smoothing
- Grid firming/grid stabilization
- Generator set transient assist
- Facility backup
- Virtual Spinning reserve

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.

Features

Reliable, Modular and Scalable
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, including power failure, voltage sags/surges, and under/over voltage conditions.

Cat® Bi-Directional Power (BDP) Inverters
The Cat BDP inverters are 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:
- Intelligent controls for the charging and discharging of the energy storage equipment.
- 2 per unit fault current capability
- Static VAR compensator
- Full four-quadrant output power factor control
- Patented Non-Linear droop control for ultra-fast response

Microgrid
Power Grid Stabilization

Technical Data

		PGS125	PGS500	PGS830	PGS1100	PGS1225	PGS1400	PGS2130	PGS2500
System Output Power									
Continuous at 1.0 PF	kW	125	312	624	624	936	936	1248	1560
15 min Overload at 1.0 PF	kW	125	375	750	750	1125	1125	1500	1875
10 min Overload at 1.0 PF	kW	125	375	750	750	1125	1125	1500	1875
5 min Overload at 1.0 PF	kW	125	400	800	800	1200	1200	1600	2000
1 min Overload at 1.0 PF	kW	125	430	830	860	1225	1290	1720	2150
10 s Overload at 1.0 PF	kW	125	500	830	1100	1225	1400	2130	2500
Output Voltage	V	380-415 (50Hz) or 380-690 (60Hz)							
Output Voltage THD		<3%							
Energy (Nameplate Start of Life)	kWh	73	290	435	580	653	870	1160	1450
Energy type		Li-Ion							
Battery Chemistry		NMC							
Inverter Model		Cat® BDP250							
Number of inverters		1	1	2	2	3	3	4	5
Dimensions									
Length*	m (ft)	3.0 (10)	3.0 (10)	6.1 (20)	6.1 (20)	9.1 (30)	9.1 (30)	12.2 (40)	12.2 (40)
Width	m (ft)	2.4 (8)							
Height	m (ft)	2.8 (9.5)							
Weight	kg	6,997	9,360	13,905	15,480	19,348	21,711	28,335	33,464
	(lbs)	15,393	20,592	30,591	34,056	42,566	47,764	62,337	73,621
Ambient Temperature Capability	°C	-40 to +50							
Average Parasitic Load									
At 0° / 40°C in standby operation (0% load)	kW	0.45/1.1	0.6/1.25	1.27/2.28	1.37/2.38	2.03/3.05	2.18/3.5	2.99/4.64	3.92/5.71
At 0° / 40°C in continuous operation	kW	1.55/2.2	7.57/8.15	13.64/14.43	15.37/16.17	20.57/21.59	23.17/24.19	30.98/32.22	38.91/40.19
Shore Power Connection	V	230V/400V 50Hz or 208V/480V 60Hz							
Features									
Microgrid Stabilization		Yes							
Patented Non-Linear Droop Control		Yes							
Seamless mode transfer		Yes							
Islanding detection		Yes							
Grid forming		Yes							
Full 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							

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