



Image shown may not reflect actual configuration

Cat® Grid Stability Module

375 kW to 1875 kW

50 Hz 380-400 Volt

60 Hz 380-480 Volt

The Cat® grid stability module is a scalable, rapidly deployable energy storage system. Energy storage systems can integrate with solar or other renewable sources to provide short duration power when the renewable source is not available. Cat energy storage systems can also provide temporary backup power to facilities in the event of a power outage.

Features

Reliable and Scalable

The Cat Grid Stability Module (GSM) is a robust, scalable energy storage platform. The energy storage module consists of a pre-engineered container that can be easily installed on site. Multiple energy storage modules can be operated in parallel to provide increased power output and/or increase the battery kWh capacity.

Renewable Integration

The energy storage 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 grid stability module will provide power to decrease the transient voltage and frequency dips resulting from the application of large loads.

Grid Stabilization

The grid stabilization module protects against many typical power problems, including power failure, voltage sags/surges, and under/over voltage conditions.

BDP Bi-Directional Power Inverters

Cat BDP Bi-Directional Power inverters are the core to the energy storage module. Based on technology developed for Cat electric drive machines, the Cat BDP provides exceptional reliability and durability. The BDP features:

- Intelligent controls for the charging and discharging of the energy storage equipment.

- Static VAR compensator
- Full four-quadrant output power factor control
- Automatic anti-islanding
- Grid forming
- Parallel-ready – multiple modules may be used in parallel to increase total output

Energy Storage

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

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
- 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.

Technical Data

| | | PGS375 | PGS750 | PGS860 | PGS1125 | PGS1290 | PGS1875 |
|---|-----------------|------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| System Output Power | | | | | | | |
| Continuous at 0.8 PF | kW | 250 | 500 | 500 | 750 | 750 | 1250 |
| 15 min Overload at 1.0 PF | kW | 350 | 700 | 700 | 1050 | 1050 | 1750 |
| 1 min Overload at 1.0 PF | kW | 375 | 750 | 860 | 1125 | 1290 | 1875 |
| 10 s Overload at 1.0 PF | kW | 375 | 750 | 935 | 1125 | 1400 | 1875 |
| Output Voltage | V | 380 - 600 | | | | | |
| Output Voltage THD | | <3% | | | | | |
| Energy (Nameplate Start of Life) | kWh | 145 | 290 | 363 | 435 | 544 | 725 |
| Energy Type | | Li-Ion (Power) | | | | | |
| Battery Chemistry | | NMC | | | | | |
| Inverter (PCS) Model | | BDP250 | | | | | |
| Number of Inverters | | 1 | 2 | 2 | 3 | 3 | 5 |
| Dimensions | | | | | | | |
| Length | m (ft) | 3.0 (10) | 6.1 (20) | 6.1 (20) | 9.1 (30) | 9.1 (30) | 12.2 (40) |
| Width | m (ft) | 2.4 (8) | | | | | |
| Height | m (ft) | 2.8 (9.5) | | | | | |
| Weight | kg (lbs) | 6524 (14,380) | 12,135 (26,750) | 13,025 (28,710) | 18,092 (39,890) | 19,427 (42,380) | 27,221 (60,010) |
| Ambient Temperature Capability | °C | -40 to +50 | | | | | |
| Average Parasitic Load | | | | | | | |
| At 40°C and 0 load | kW | 1.5 | 3 | 3 | 4 | 4.5 | 7 |
| At 40°C and 100% load | kW | 7 | 14 | 15 | 20.5 | 23 | 34 |
| Features | | | | | | | |
| Microgrid Stabilization | | Yes | | | | | |
| Seamless Mode Transfer | | Yes | | | | | |
| Islanding Detection | | Yes | | | | | |
| Grid Forming | | Yes | | | | | |
| Virtual Spinning Reserve Function | | Yes | | | | | |
| Plug-and-Play Parallel Ready | | Yes | | | | | |
| Intelligent Energy Storage Management | | Yes | | | | | |
| Human-Machine Interface | | Yes | | | | | |
| Communications Protocols | | Modbus TCP/IP | | | | | |
| Fire Suppression System | | Yes | | | | | |

www.cat.com/powergeneration

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