

Picture shown may not reflect actual configuration.

Cat® BDP250 Energy Storage Inverter

The Cat® BDP250 (Bi-directional Power) energy storage inverter provides reliable control of the Energy Storage System (ESS). Integrated controls provide complete control of the charge and discharge of the ESS. The BDP250 is compatible with a range of storage solutions, including traditional battery systems, lithium-ion batteries, and ultra-capacitors and can be packaged with the ESS for a complete solution. The patented Cat non-linear droop control system allows ultra-fast response for smooth reliable power. This makes the BDP250 an excellent technology for creating an uninterruptable power supply (UPS), due to the very high response speed of the BDP250 none of the loads (even highly sensitive loads) connected to the system will be affected.

Features

Microgrid Stabilization
Stabilizes a microgrid against transient events caused by step loads and renewable power sources.

Tractor-grade Reliability
Uses same proven power electronics technology and controller platform as the revolutionary D7E electric drive track-type tractor.

Seamless Mode Transfer
Interruption-free power transfer to the load during power flow reversal from energy storage system.

Flexibility
Designed for a wide range of applications and compatible with virtually any power source.

Lower Fuel Consumption
Integration with generator sets minimizes fuel consumption and emissions.

Patented Non-Linear Droop Control
- Ultra-fast response with reduced dead bands.
- Nonlinear droop maximizes ESS early contribution while maintaining grid stability.
- Overall lower freq. deviation and improved power quality.

Grid Support
- Frequency Ride-through (FRT)
- Low Voltage Ride-through (LVRT)
- High Voltage Ride-through (HVRT)
- Zero Voltage Ride-through (ZVRT)
- 2 per unit fault current capability
- Grid forming, Grid firming and Grid following

Parallel Ready
Plug-and-play paralleling with other power sources.

Energy Storage Management
Built-in intelligent controls for charging, discharging, equalization, and state-of-charge estimation for energy storage elements.
Operational in Autonomous or Remote-Control modes (works in conjunction with supervisory controller).

STATCOM
Configurable as a static VAR compensator up to system full capacity.

Touch Screen
User friendly touch-screen display offers real-time system information, configurable data logging, remote access, and more.

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Microgrid
Energy Storage Inverter

Technical Specifications

Configuration	
Input Voltage	300 VDC to 650 VDC
Max. DC Input Current	900A
DC Isolating Switch	Contactor and Manual Isolation Switch with Lockout Feature
Rated Output Power	312.5 kVA (312.5 kW @ 1.0 PF)
Overload Capacity	125% for 10 mins/150% for 10 sec
*Output Voltage Range (L-L)	380 - 415V (50 Hz) or 380 - 690V (60 Hz)
Output Frequency Range	50 or 60 Hz
Output Power Factor	Full Four-quadrant Controllable from Supervisory Controller
Harmonic Distortion	< 3%
AC Disconnect and Protection	Electrically Operated Breaker with LSIG Trip Unit
Peak Efficiency (excluding transformer)	> 96.5%
Communication and Control Interface	Modbus TCP, Others Configurable on Request
HMI Interface	Color HMI Touchscreen (password controlled for write access)
Features	Frequency Ride-through (± 5 Hz) Low Voltage Ride-through (20% voltage dip and up to 200 kVar) High Voltage Ride-through (10%) Zero Voltage (fault) Ride-through
Seamless Transfer Between Charging and Discharging	Yes
Transition from Grid follow to Grid form	within 5 ms
Output Voltage	± 10% Adjustable
AC Voltage Regulation	± 1%
Black Start Capability	Yes (built-in UPS module for control power)
Ambient Temperature	-40°C to + 40°C
Protection	NEMA 1/NEMA 3R
Vibration	3G
Humidity	0-95%
Cooling	Close Loop Liquid Cooling

* Requires Isolation Transformer

Materials and specifications are subject to change without notice.
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