



CAT[®] INTEGRATED SYSTEMS

Electric Power continuous power solutions



CATERPILLAR: YOUR SINGLE SOURCE FOR CLEAN, CONTINUOUS POWER

With a Cat® continuous power solution, you can protect your critical operations with a full range of power quality and power protection systems. From diesel- and gas-powered generator sets to the Cat UPS, ATS and Switchgear, Caterpillar has everything you need to maintain clean, uninterrupted power for your business operations.



Power Protection Systems

Business applications that benefit from Cat power protection systems include:

- Continuous process manufacturing such as plastics, chemicals and pharmaceuticals
- Information technology providers including data centers, call centers and broadcast companies
- Critical services including hospitals and emergency response systems
- Government entities including schools and universities, mass transit systems and public utilities
- Financial and retail operations such as banks, insurance groups and department stores
- Companies that would suffer operationally, financially or legally from a power disturbance of any length of time



Power Quality Systems

Continuous power isn't the only issue when it comes to electrical supply. Even when the electricity is on, the quality of the power can be compromised. Dips, sags and surges create an unstable flow of electricity that can be just as damaging as a complete outage – if not more so – making a clean power supply an equally critical priority. The most common sources of power quality issues are natural causes such as weather, technological issues involving equipment or wiring malfunctions and human error. These issues can create a myriad of problems, including:

- Loss of critical data
- Dropped sales or service calls
- Damage to manufacturing equipment
- Loss of product or a batch of materials
- Environmental safety risks
- Legal liabilities resulting from service lapses



STARTING WITH A SOLID FOUNDATION

All Cat power quality systems begin with a Cat UPS. It provides immediately available power to ride through disturbances and conditions power from the source. When integrated with other Cat products – which include generator sets, Automatic Transfer Switch (ATS) and Switchgear – you can be assured of the cleanest, most reliable source of backup power protection.

Cat Double Conversion Battery UPS

The Cat Double Conversion Battery UPS system utilizes Insulated Gate Bipolar Transistor (IGBT) based technology to provide clean, stable power to sensitive loads, ensuring reliable protection, optimum performance and extended life. The Cat UPS is also a flexible, cost-effective and user-friendly solution for ensuring uninterrupted power.

Robust digital components are used throughout the system to yield reliable and trouble-free support of your critical loads. Designed for continuous operation, the Double Conversion UPS features redundant components and cooling. And, the UPS is fault tolerant with a built-in, 100% continuous duty-rated static bypass switch.

The Cat Double Conversion UPS is also flexible. The units can be field upgraded in kVA or added on to for additional capacity. They feature an intuitive man/machine interface with a large, high-definition display and animated mimic display, and can be easily integrated into networking and monitoring systems using common protocols such as Modbus or SNMP.

This user-friendly UPS features a large, high-definition LCD front panel display, LED mimic diagram and event logging with date-time stamping of over 2,000 events. The Advanced Monitoring feature provides intelligent battery management that automatically tests the battery system and provides life cycle monitoring of remaining battery life expectancy.

Cat UPS with Flywheel Technology

The Cat Flywheel UPS provides our highest efficiency continuous power solution (>97% efficient). This technology uses a power dense integrated flywheel, which stores sufficient energy to ride through power disturbances such as dips or surges in voltage and/or current. The stored power is immediately available for delivery to a critical load during a power disturbance. This system provides ample ride-through time and allows for an orderly walk-in of the generator set to assume the load for the duration of the disturbance. The integrated flywheel design is modular, supporting easy expansion to meet future power quality/power protection requirements.

The Cat Flywheel UPS delivers lower operating costs due to several factors, including lower maintenance and replacement costs, the space savings associated with a reduced footprint (75% smaller than a battery based UPS system) and a yearly energy efficiency improvement of 4%.

With the Flywheel UPS, you also benefit from reduced upkeep and maintenance, field-proven mechanical energy storage that is predictable and fail-safe, nearly unlimited life with no fall-off in performance and a broad operating temperature range up to 104° F. And this technology is environmentally friendly, posing no safety hazards to either your personnel or the environment.

CUSTOMER VALUE SOLUTION CHART

Lowest Energy Utilization/Cost		X
Load Isolation	X	
Small Footprint		X
Frequency Regulation	X	
Low THD	X	X
Transformerless	X ¹	X
Parallel Multiple Modules	X	X
Integrated Battery Management	X	NA
IGBT-Rectifier and Inverter Technology	X	X ²
Ability to Support Extended Ride through Requirements	X	
Battery-free Energy Storage (Flywheel)		X

¹ UPS130/125 is transformerless

² Caterpillar's line Interactive UPS does utilize IGBT Technology when in discharge

Cat UPS systems are available from 150kVA to multiple MVA.

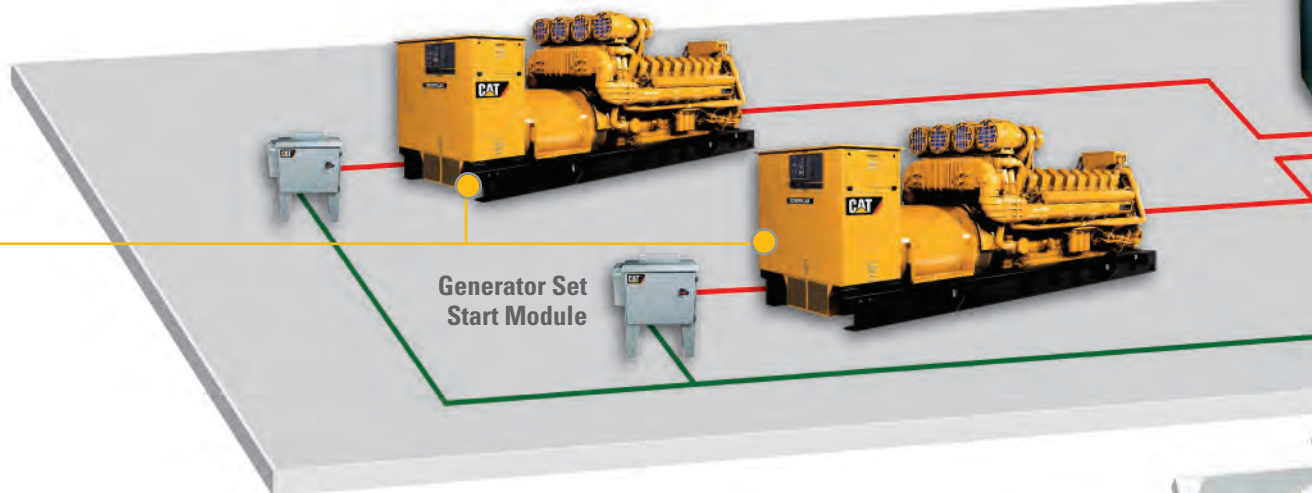


TOTAL SYSTEM INTEGRATION

All Cat products are designed to work together, with all elements relating to the generator set production, control and monitoring function integrated into a single-source package. You'll also have the benefit of a single source for parts and service. Your local Cat Dealer is always available to provide the support you need, from system design to long-term maintenance.

 De-energized
 Energized

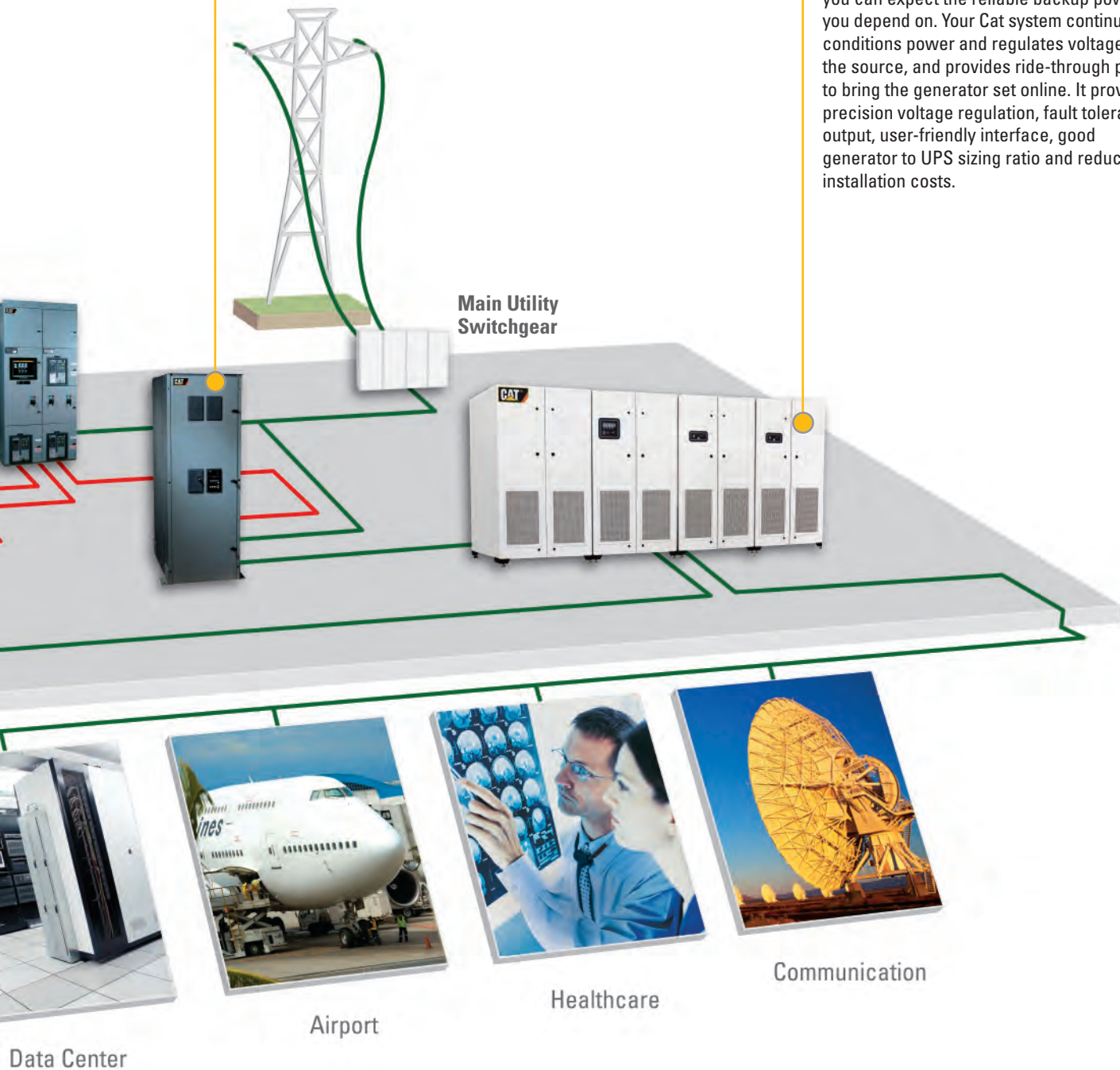
Generator Paralleling Switchgear – This advanced family of generator control switchgear products provides paralleling and load management for Cat products and is an integral part of any electric power solution. Cat switchgear provides a seamless integration with Cat generator sets and is available in single-standby to load management to multiple/utility paralleling configurations from 600-volt class through 15kV to create a harmonized system solution.



Generator Sets – Available in both diesel and gas, Cat generator sets are known for delivering consistently reliable performance in any conditions. Cat diesel engines are designed with high-strength blocks, large bearing areas, steel-backed aluminum alloy bearings and hardened crankshafts to provide thousands of hours of backup power without overhaul. Cat gas generator sets are fuel efficient and offer many of the same durable components found in their diesel counterparts. They feature a patented electronic ignition system and detonation-sensitive timing that effectively controls emissions. In addition, electric power systems, ranging from 7 to 3,000kW, provide reliable, continuous backup power.

Automatic Transfer Switch (ATS) – Caterpillar offers a broad range of ATS products, with digital microprocessor controls, to suit any application – from a single ATS installation to a complex multi-ATS/generator switchgear system. Both open and closed transition designs are available with optional bypass/isolation and delay features in sizes from 40 to 5,000 amps.

Uninterruptible Power Supply (UPS) – Whether your application is suited for Flywheel UPS or Double Conversion UPS, you can expect the reliable backup power you depend on. Your Cat system continuously conditions power and regulates voltage from the source, and provides ride-through power to bring the generator set online. It provides precision voltage regulation, fault tolerant output, user-friendly interface, good generator to UPS sizing ratio and reduced installation costs.



KEY BENEFITS INCLUDE:

Total system control at your fingertips via a touch-screen operator interface

Advanced switchgear graphics permit you to monitor, process, compare, display and transmit data

Multiple levels of built-in fault tolerance provide unrivaled reliability



Providing Continuous Support

At Caterpillar, the relationship doesn't end when the sale is final. In fact, it's just the beginning. From delivery to product support, we're with you for the long haul. As a Cat customer, you'll be on the receiving end of experience and customer service, which includes:

- Financing solutions
- Maintenance and support
- Logistics
- Equipment insurance
- Extended Service Coverage
- Training
- Capital management
- Rental

For the name and number of the Cat Dealer nearest you, visit www.catelectricpowerinfo.com, click on your region and then click on the dealer locator.



LEXE0179-00 August 2010

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