



Continuous Power Module
Cat® CPM1000

Reliable Power protection for critical applications

The Cat® Continuous Power Module (Cat CPM) provides constant power protection against surges, sags, and power interruptions that can disrupt operations or cause loss of valuable data or system capacity. Caterpillar engineers have designed the CPM for best reliability and space utilization, and optimized all critical components such as the Generator Set, a high efficient Uninterruptible Power Supply (UPS) and an Automatic Transfer Switch (ATS) as a complete Caterpillar product. In the event of a utility power failure, the Flywheel will maintain the UPS output until the generator has started and the ATS has transferred to the generator supply.

CPM1000 Specifications		
Continuous Power Output	1000 kVA (900 kW @ PF 0.9)	
Voltage	380/400/415 VAC 3-Phase, 4 wire plus ground	
Frequency	50 Hz +/- 10% max (programmable)	
Operating Temperature	0 to 40°C	32 to 104°F
Storage Temperature	-25 to 70°C	-13 to 158°F
Dimensions (ISO 40 ft high Cube)	12192 x 2,438 x 2,896 mm	480 x 96 x 114 in
Weight	27765 kg	61212 lbs
Operating Altitude	Up to 1000 meters	Up to 3,281 feet
Noise level (Utility online)	65 dBA @ 1m	
Generator Output	1250 kVA (1000kW)	
Additional Non-critical Power Output available from Generator Set*	50 kVA*	
Noise level (Generator online)	85 dBA@1m	
Fuel tank size (approx. 5.5 hours autonomy)	1400 liters	308 imperial gallons /370 US gallons

*Based on a minimum Flywheel recharge rate, a minimum of 50kVA is required to recharge each UPS Flywheel.

Features

- Constant Power Protection system – UPS / Generator / GenStart Module
- Increased reliability – GenStart module provides battery redundancy when starting the generator set
- High system efficiency – Optimized systems integration and flywheel energy storage technology
- Easy transport and quick deployment to site – Standard ISO container designs (Typically one day crane hire)
- Easy installation on site – Simple load cable connections points
- Reduced commissioning times - Factory tested
- Scalable Investment – Expandable systems as needed
- Maximize usable space in building – CPM is an outside weatherproof solution
- Remote Monitoring available – Via Modbus
- One safe source of supply / responsibility – Engineered and factory tested by Caterpillar and fully supported by the Worldwide Caterpillar Dealer Network.
- Cat CPM fulfills the functionalities of a Diesel Rotary UPS system.

UPS Specifications	
Flywheel Type	1000iZ Series Multiple Module System (MMS)
Number of Flywheels	4
AC Input	
Maximum kVA / (kW)	1000 (900)
Input Voltage	380/400/415 VAC 3-Phase, 4 wire plus ground
Input Voltage Range	+10% / -15% (programmable), +/-10% at 380 VAC
Frequency	50 Hz +/- 10% max (programmable)
Input Power Factor	0.99 at rated load and nominal voltage
Input Current at VAC (amps)	380 (1419), 400 (1348), 415 (1299)
Maximum Continuous Input Current (amps)	1600
Maximum Non-Continuous Input Current (amps)	1680
Walk-in	1 to 15 seconds (programmable)
Harmonic Current Distortion	
Linear load	<3% at 100% load
Non-linear load	<8% with 100% load
AC Output	
Output Voltage	380/400/415 VAC 3-Phase, 4 wire plus ground
Output Current VAC (amps)	380 (1521), 400 (1445), 415 (1393)
Voltage Regulation (Steady-state)	+/- 1% of nominal for +/- 10% input
Voltage Regulation (Transient)	+/- 1% within 50 milliseconds for 100% load step
Frequency	50 Hz (mains synchronized) normal operation +/- 2% free running
Voltage Distortion (THD)	<3% linear loads and <5% 100% non-linear loads
Flywheel Mode	+/- 1% steady state
Slew Rate	Adjustable from 0.2 Hz/second to 3.0 Hz/second
Overall Efficiency	
Efficiency	98%
Standards and Approvals	
Certifications	EN59001-1-1
Approvals	CE Mark
Surge Withstand	Meets IEEE 578 / ANSI C62.41

Standard Factory Installed & Tested Equipment

Features	Description
Flywheel Energy Storage	Compact, battery free, low cost maintenance / operation Generator friendly Harmonic Cancellation, Voltage regulation and power factor improvement
Starting System	GenStart module provides up to 1725 cold cranking amps @ 24 VDC and is redundant to the generator set starting batteries for highest system reliability. Battery charger integrated.
Control system	LCD monitor/control HMI panel installed on UPS/ATS/Generator set. Monitoring and alarms for critical components with self-diagnostics. Two (2) warning tower lights installed on exterior of container.
Communication with Integrated System	Integral modem for remote communication. MODBUS (RTU or TCP/IP). Remote notification and monitoring via Ethernet and e-mail. RS232 or RS485 serial connection. Real-time monitoring software available (UPS View / EMCP Monitoring Software).
Cooling System	Louvers installed on input and output of the container. Redundant cooling fans on UPS with speed regulation by temperature control unit.
Engine Coolant System	Jacket water heater. Coolant level sight gauge.
Heat Recovery System	UPS heat discharged to engine compartment to enhance generator starting capability.
Switchgear Integration	Automatic Transfer Switch (ATS) – controlled by microprocessor-based unit. Integrated maintenance bypass. Convenient customer connection for continuous load and non-critical load output.
Fuel System	Integrated fuel system with optional fuel tank, primary fuel filter with integral water separator, secondary fuel filters and fuel priming pump.
Lube oil	Fumes disposal. Gear lube oil pump.
Service	Coolant drain line with valve terminated at edge of base. Oil drain line. Weather hood at rear doors for UPS maintenance. Container doors location designed for easy access. Connection points for load bank testing or rental generator connection.
Container Packaging	Entire system is packaged in industrial type ISO container prepared for quick handling, transport and installation on site.
Emergency Power Off (EPO)	Local Emergency Power Off button installed on UPS and generator control panel. Two (2) installed on the exterior of the container at each access door.
Certifications and Standards	<ul style="list-style-type: none"> • EU Certificate of Conformance • 2006/42/EC Machinery Directive (MD) • 2006/95/EC Low Voltage Directive (LV) • 89/336/EEC EMC Directive • EN 12601 Reciprocating internal combustion engine driven generating sets • EN 61439 Low voltage switchgear and control gear assemblies • EN 62040-1 Uninterruptible Power Systems (UPS) – General and safety requirements for UPS • EN 60204 Safety of machinery – Electrical equipment of machines • 2000/14/EC Noise emission by outdoor equipment • CSC plated via Lloyd's register of shipping

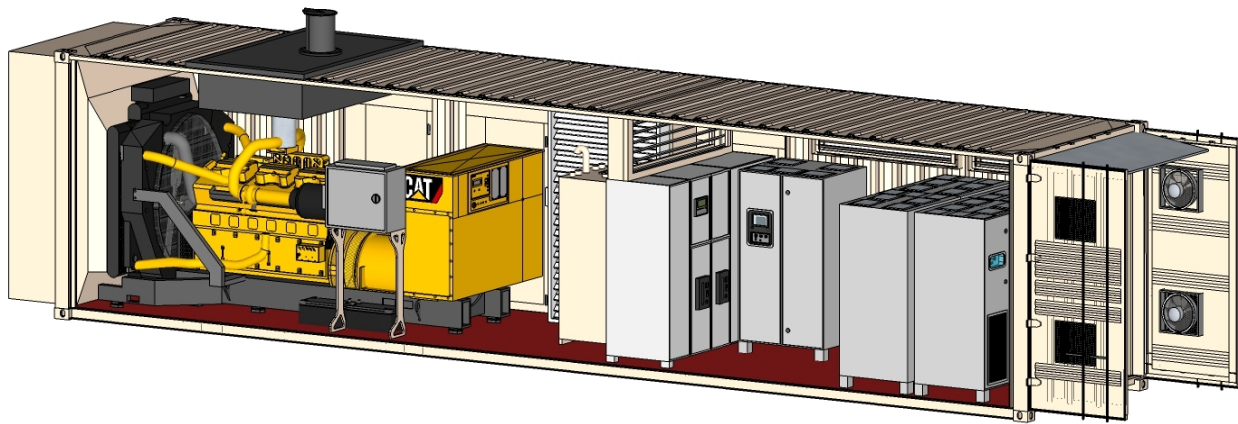
CPM1000

Optional Equipment & Service

- Non-critical load power output breakers
- Switchgear for customized projects
- Integrated Load Bank circuit breaker for generator load testing
- Fire-fighting system
- Automatic fuel transfer pumps
- Lower noise level
- Arctic (-30 °C) and tropical (+50 °C) ambient temperature conditions
- Factory witness test

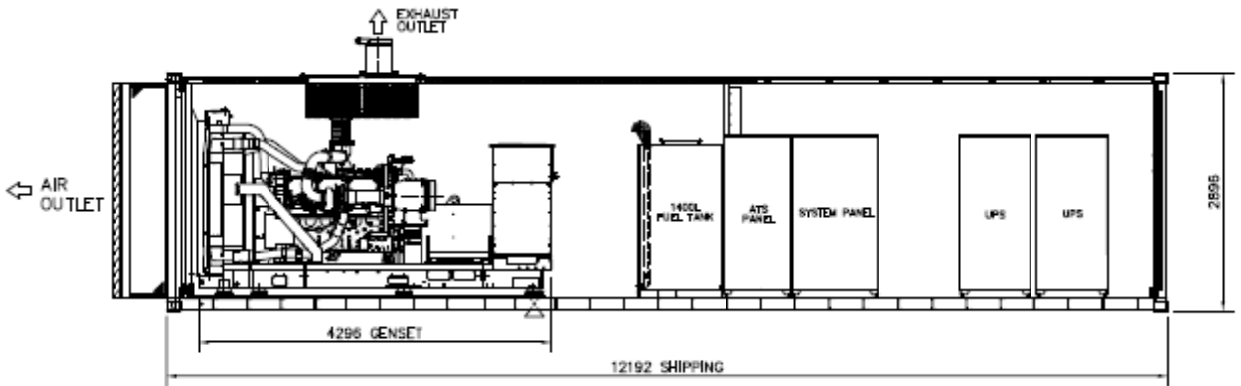
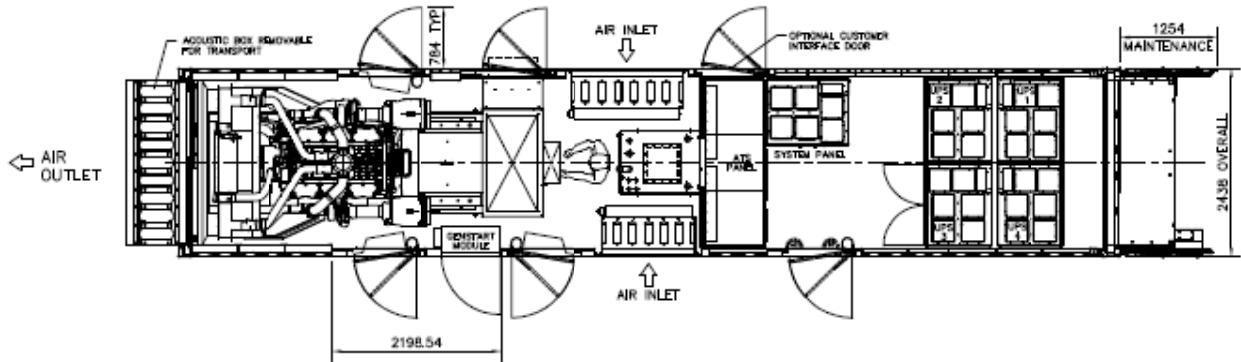
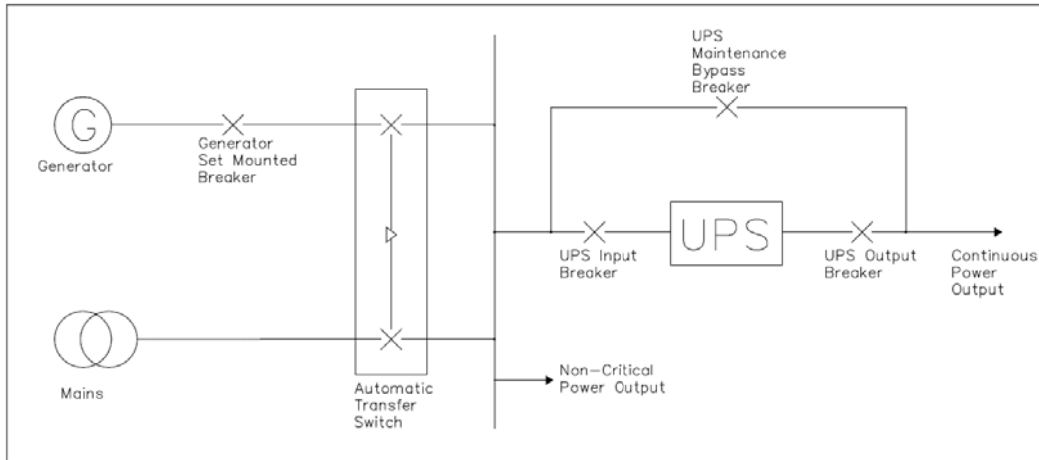
World Wide Product Support

- Caterpillar dealers provide extensive post sale support including maintenance and repair agreements.
- One single service contract for the complete Cat CPM
- Caterpillar dealers have over 1,800 dealer branch stores operating in 200 countries.
- The Cat S•O•SSM program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products.



¹ Standby Generator Set Rating definition

Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.



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