



UPS 500

500 kVA/400 kW
50 Hz

Caterpillar is leading the power generation marketplace with Quality Power Solutions engineered to deliver unmatched flexibility, expandability, reliability and cost-effectiveness.

FEATURES

- Battery-free energy storage
- High reliability
- Redundant gen set start option
- Smallest available footprint
- 96.4% efficiency
- Harmonic cancellation
- Transient protection
- High-speed voltage regulation
- Power factor improvement
- 40° C rating on entire system
- Remote monitoring
- Minimal input current distortion
- Simple installation
- Low maintenance
- Quiet operation
- High overload capability

WORLDWIDE PRODUCT SUPPORT

- Parts and service are available worldwide through the Caterpillar dealer network.
- With over 1200 dealer outlets operating in 166 countries, you're assured of the responsive Caterpillar support you want.
- Caterpillar dealer service technicians are trained to service every aspect of your electrical power requirements.
- Maintenance agreements are available to accommodate any customer needs.

ULTRA-RELIABLE POWER PROTECTION FOR CRITICAL APPLICATIONS

The CAT UPS provides constant power protection against surges, sags and power interruptions that can disrupt operations or cause loss of valuable data. Additionally, the use of the optional gen set start feature can dramatically increase gen set start reliability in a continuous power configuration.

SUPERIOR DESIGN

The use of robust digital components throughout the system and elimination of lead-acid batteries yield the most reliable and trouble-free UPS system on the market. This protection is delivered in the industry's smallest package with the highest efficiency and superior performance.

LOWER TOTAL COST

The 96.4% efficiency means thousands of dollars in yearly savings over traditional battery UPS products. In addition, lower Cat UPS heat generation limits up-front HVAC costs and large electrical consumption during the life of the product.

GEN SET INTEGRATION

By canceling harmonic distortion, the Cat systems are designed to work seamlessly with generator set systems to provide higher total electrical load capacity without over sizing the standby generator. The Cat UPS effectively insulates the generator set from block loads and transients, and can improve its fault clearing capabilities. Programmed integration with standby generator sets assures greater system reliability and improves the total system operation.



FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

Standard
Flywheel energy storage for standby power
Less than 150 second recharge
Automatic bypass
Bi-directional converter
Local Emergency Power Off (EPO)
RS232 or RS485 serial connection
LCD monitor/control panel
Programmable input and output contacts
Redundant cooling fans
Auto restart (programmable)
Back feed protection
Self-diagnostics
Monitoring and alarms for all critical components
Voltage regulation and power factor improvement
Harmonic cancellation

Optional
24 volt gen set start power
Remote notification and monitoring via modem and paging, and/or Ethernet and e-mail
UPS View — real-time monitoring software
Remote EPO
Remote status panel
Static bypass switch
Separate bypass input
Maintenance bypass
3-Wire input and output
Redundant flywheel and power stage
Upgrade capability to 750 kVA

SPECIFICATIONS

INPUT

Voltage 380/400/415 VAC, 3 phase, 4-wire plus ground
(from grounded wye source);
3-wire optional

Voltage range +10%/–15% (programmable)
Except ±10% max at 380 VAC

Power factor 0.99 at rated load and nominal voltage

Harmonic current distortion

Linear load 3% max at 100% resistive load

Non-linear load Less than 10% with
100% non-linear load

Input frequency 50 Hz ± 10% max (programmable),
±3% (default)*

Surge withstand Meets IEEE 587/ANSI C62.41

Walk-in 1 to 15 seconds (programmable)

OUTPUT

Voltage Same as input VAC, 3 phase, 4-wire plus ground
(3-wire with optional 3-wire input)

Voltage regulation

Steady-state ±2% of nominal for ±10% input and
balanced or unbalanced load

Flywheel mode ±2% of nominal for steady-state
balanced or unbalanced load

Transient ±5% of nominal for 100% load step;
4 ms recovery time

Voltage distortion 3%, full linear load
5%, full non-linear load

Output frequency 50 Hz
(utility synchronized — normal operation)*
±0.2% free running

Slew rate 1 Hz per sec. max

Overload capability — normal operation without bypass

10 milliseconds 1000%

1 second 500%

30 seconds 200%

10 minutes 125%

ENVIRONMENTAL

Audible noise Less than 70 dBA at 1 m (3.28 ft)

Temperature

Operating –20° C to 40° C (–4° F to 104° F)

Storage –25° C to 70° C (–13° F to 150° F)

Humidity 5% to 95% (non-condensing)

Altitude Up to 914.4 m (3,000 ft)
(derate operating temperature range for higher elevation)

Emissions and immunity EN50091-2

SAFETY

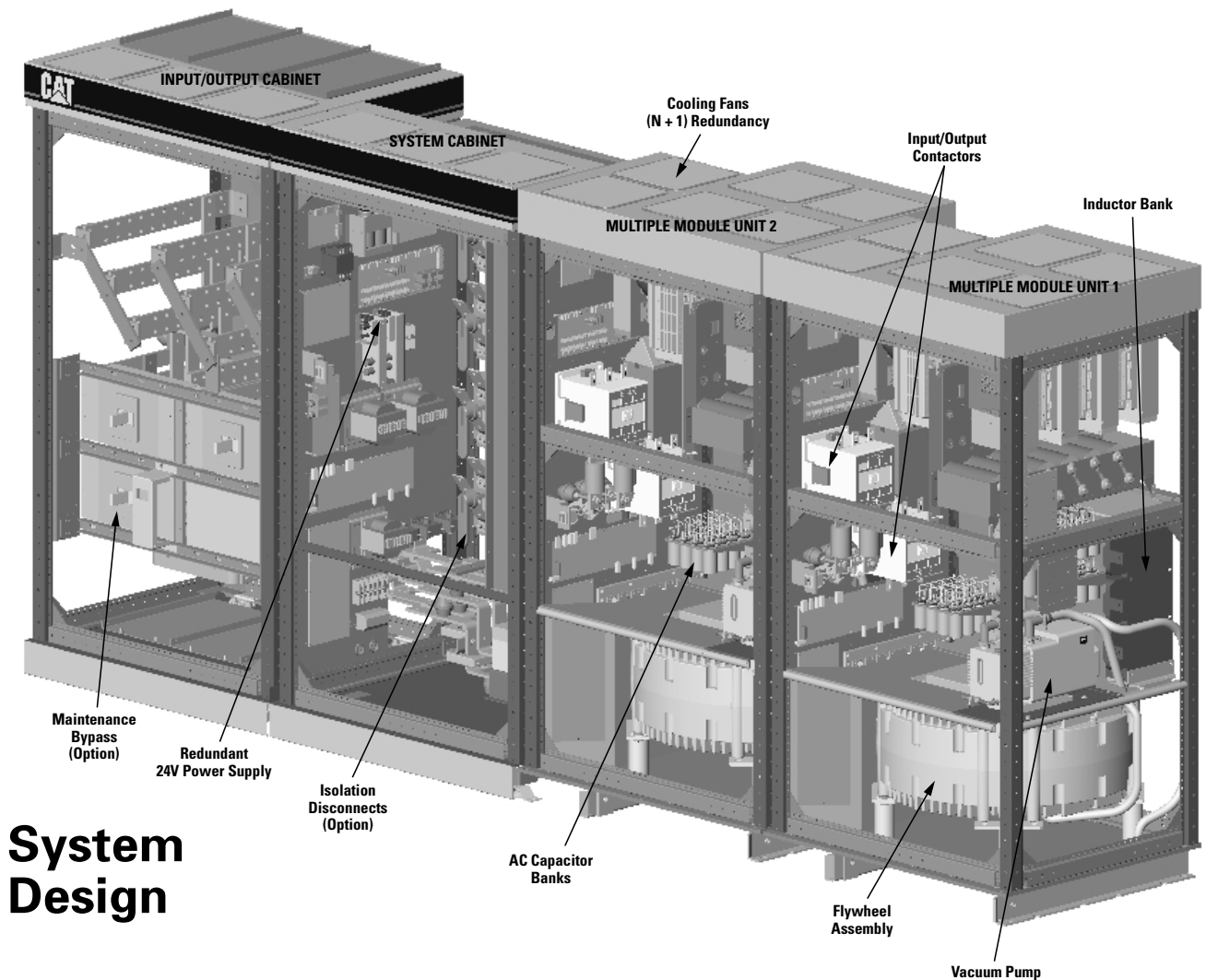
EN50091-1-1
CE mark

* 60 Hz units also available at 380/400/415 volts

TECHNICAL DATA

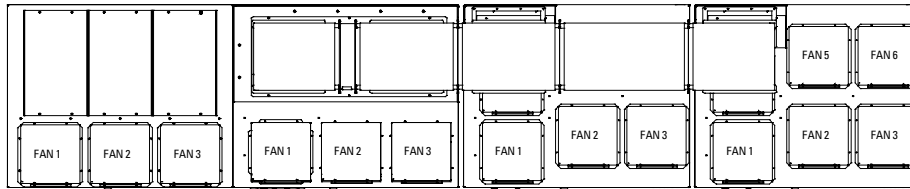
Maximum	kVA	500
Maximum	ekW	400
Input Voltage		380/400/415
Output Voltage		380/400/415
AC Input Current		
Nominal amps		631/599/578
Maximum amps incl. recharge		880
AC Output Current		
Nominal full load amps		761/723/696
System Efficiency		
Nominal at rated load		96.4%
Heat Rejection Nominal/Max	50,900/96,400 BTU/Hr	14.9/28.3 kW

Ride-Through	
% Load	Ride-Through Time
100%	15 sec
75%	20 sec
50%	30 sec
25%	60 sec

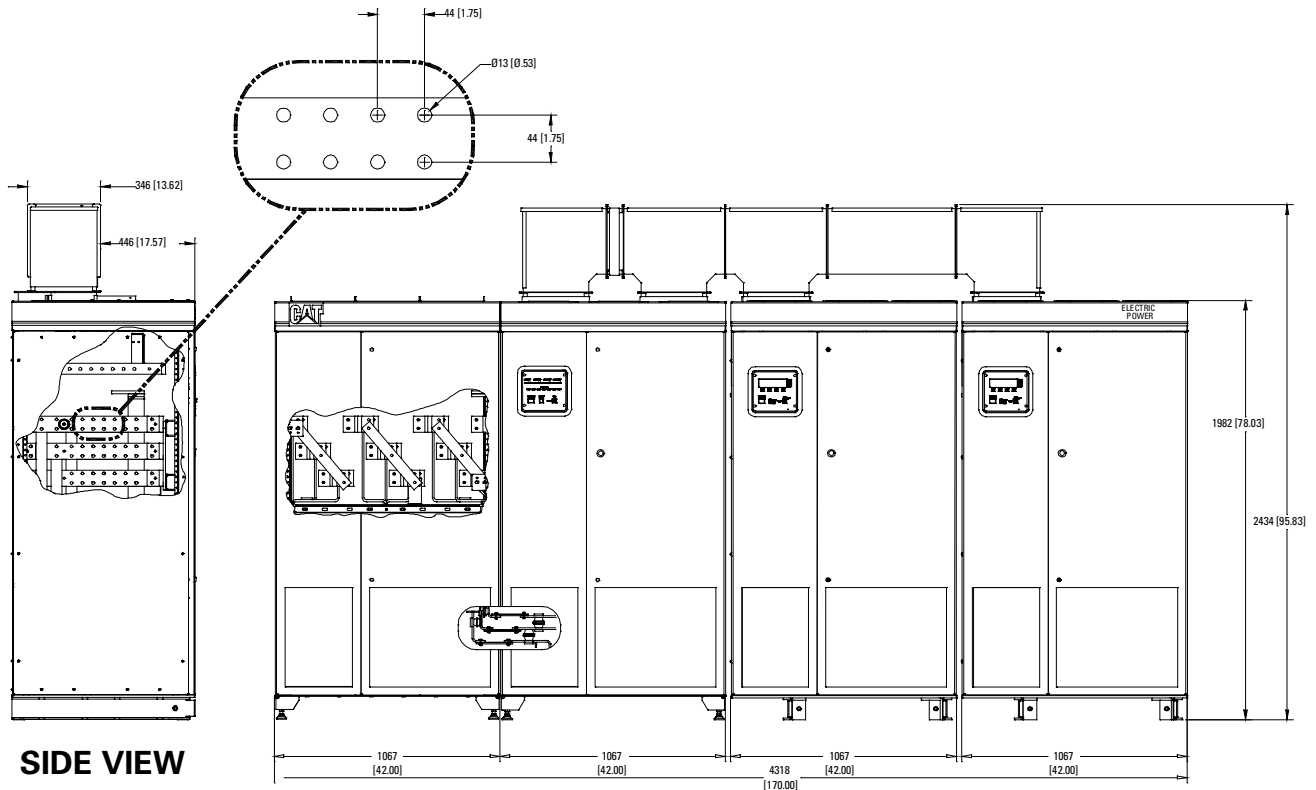


System Design

500 kVA UPS SYSTEM



TOP VIEW



SIDE VIEW

FRONT VIEW

Dimensions & Weight		
Depth	865 mm	34.0 in
Width	4,318 mm	170.0 in
Height		
Height (Excl. wire way)	1,982 mm	78.0 in
Wire Way Height	452 mm	17.8 in
Weight	5,322 kg	11,730 lb
Cable Access	Top or bottom	

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Materials and specifications are subject to change without notice.
The International System of Units (SI) is used in this publication.