



## **UPS 1200 SERIES, SINGLE MODULE SYSTEM**

**1000 kVA/900 kW, 50 Hz**

**3 wire**

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

### **FEATURES**

- Smallest available footprint
- 97% total system efficiency
- Harmonic cancellation
- Transient protection
- High-speed voltage regulation
- Power factor correction
- Top and bottom cable entry
- 40° C rating on entire system
- Low input current distortion
- Utilize kinetic power cell technology
- Remote monitoring
- Simple installation
- Low maintenance
- Field expandable ride-through
- Color user interface display
- Optional generator set start module

### **RELIABLE POWER PROTECTION FOR CRITICAL APPLICATIONS**

Cat® UPS systems provide constant power protection against surges, sags and power interruptions that can disrupt operations or cause loss of valuable data or system capacity. Additionally, the use of the optional generator set start module can dramatically increase generator set starting reliability in a continuous power configuration.

### **SUPERIOR DESIGN**

Superior system design and the use of robust digital components throughout the system yield the most reliable and trouble-free UPS system on the market. Protection is delivered in the industry's smallest package with the highest efficiency and superior performance.

### **GENERATOR SET INTEGRATION**

By cancelling harmonic distortion, the 1200 Series operates seamlessly with generator sets to provide a higher total electrical load capacity without over-sizing the generator set. The 1200 Series effectively insulates the generator set from block loads and transients, and can improve its fault clearing capabilities. Programmable integration with standby generator sets assures greater system reliability and improves the total system operation.

### **WORLDWIDE PRODUCT SUPPORT**

- Parts Distribution Centers are located worldwide with available service support through Caterpillar and the Cat Dealer Network.
- Factory certified service technicians are trained to support every aspect of your Cat UPS system.

## FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

| STANDARD FEATURES   | OPTIONAL FEATURES  |
|---|--|
| Full rated continuous duty static bypass switch                 | 24 volt DC, generator set starting power                 |
| Redundant control power supplies                                | Additional flywheel available for increased ride through |
| Local Emergency Power Off (EPO)                                 | Remote EPO   |
| UPS View — monitoring/communication software                    | Remote status panel                                      |
| RS232 and RS485 serial connection                               | SNMP Communication                                       |
| Feature rich 10.4" color touch screen, graphical user interface | Maintenance bypass                                       |
| Internal modem  | Output Isolation Breaker                                 |
| Programmable monitoring and alarm input and output contacts     |  |
| MODBUS Communication  |  |
| Redundant cooling fans  |  |
| Auto restart (programmable)                                     |  |
| Back feed protection  |  |
| Ethernet communication port                                     |  |
| Dual-flywheel energy storage cabinets                           |  |
| Mounting hardware – seismic rated                               |  |
| Voltage regulation and power factor correction                  |  |
| Harmonic cancellation   |  |

## SPECIFICATIONS

| INPUT                              |  |
|------------------------------------|--|
| Voltage                            | 400 VAC 3 phase, 3-wire plus ground (from grounded wye source)   |
| Voltage Range                      | +10%/-15% (programmable)   |
| Frequency                          | 50 Hz  |
| Power Factor                       | 0.99 at rated load and nominal voltage   |
| <i>Harmonic Current Distortion</i> |  |
| Linear load                        | <3% at 100% resistive load   |
| Non-linear load                    | <8% with 100% non-linear load  |
| Input frequency                    | 50 Hz  |
| Surge Withstand                    | Meets IEEE 587/ANSI C62.41   |
| Walk-in                            | 1 to 15 seconds (programmable)   |
| Bypass Source                      | Same as input source — Synchronized frequency, phase and voltage   |
| Bypass Voltage Window              | +10/-15% (programmable within range)   |
| OUTPUT                             |  |
| Voltage                            | 400 VAC 3 phase, 3-wire plus ground  |
| <i>Voltage regulation</i>          |  |
| Steady-state                       | ±1% of nominal for ±10% input balanced or unbalanced load 0.8 lag to 0.9 lead pf; 7% at -15% input voltage |
| Transient                          | ±5% of nominal for 100% load step  |
| Recovery Time                      | 50 millisecond maximum   |
| Bypass Trigger                     | Programmable up to ±10%  |

| <i>Frequency Regulation</i>                              |   |
|--|---|
| Normal Operation   | Synchronized to input   |
| Free Running   | 0.1% of nominal   |
| Synch Window   | Adjustable over a range of at least 0.3 Hz to 3 Hz  |
| Frequency Slew Rate                                      | Adjustable over a range of at least 0.2 Hz/second to 3 Hz/second  |
| Load Power Factor  | 0.8 lag to 0.9 lead for specified regulation and rating. 0.4 lag to 0.7 lead with reduced regulation or load  |
| <i>Voltage Unbalance &amp; Distortion</i>                |   |
| Balanced Load  | <1% voltage unbalance and <1° phase displacement  |
| 50% Unbalanced Load                                      | <3% voltage unbalance and <3° phase displacement  |
| Linear Load  | <3% THD <2% SHD   |
| 100% Non Linear Voltage Distortion <sup>1</sup>          | <5% THD   |
| Voltage Imbalance  | The UPS is capable of supporting any combination of unbalanced load that does not exceed the maximum phase currents and the total output limitations of the UPS |
| <i>Overload Capability (nominal line without bypass)</i> |   |
| Continuous   | 105%  |
| 1 Minute   | 125%  |
| 5 Seconds  | Up to 150%  |

<sup>1</sup> In accordance with EN50091-3

## DIMENSIONS & WEIGHTS

|   |         |         |
|---|---------|---------|
| <i>All Cabinets</i>                                       |         |         |
| Depth   | 1016 mm | 40.0 in |
| Cabinet height (w/out DC bus)                             | 1981 mm | 78.0 in |
| System height (w/DC bus)                                  | 2319 mm | 91.3 in |
| <i>Maintenance By-pass (option)</i>                       |         |         |
| Width   | 533 mm  | 21.0 in |
| Weight  | 907 kg  | 2000 lb |
| <i>Bottom Entry (option)</i>                              |         |         |
| Width   | 1067 mm | 42.0 in |
| Weight  | 817 kg  | 1800 lb |
| <i>Input/Output</i>                                       |         |         |
| Width   | 1067 mm | 42.0 in |
| Weight  | 1134 kg | 2500 lb |
| <i>Static Switch</i>                                      |         |         |
| Width   | 1067 mm | 42.0 in |
| Weight  | 923 kg  | 2035 lb |
| <i>Control (Note: ships attached to Inverter Cabinet)</i> |         |         |
| Width   | 914 mm  | 36.0 in |
| Weight  | 907 kg  | 2000 lb |
| <i>Inverter (Note: ships attached to Control Cabinet)</i> |         |         |
| Width   | 1067 mm | 42.0 in |
| Weight  | 771 kg  | 1700 lb |
| <i>Energy Storage/each — 2 per standard system</i>        |         |         |
| Width   | 1067 mm | 42.0 in |
| Weight  | 3040 kg | 6700 lb |

## TECHNICAL DATA

|  |                               |
|--|-------------------------------|
| Maximum kVA  | 1000                          |
| Maximum kW   | 900                           |
| Input voltage  | 400                           |
| Output voltage   | 400                           |
| AC input current<br>Nominal amps                                     | 400                           |
| Maximum amps incl. recharge  | 1750                          |
| AC output current nominal amps                                       | 1445                          |
| System efficiency (3-wire)   | 97%                           |
| Heat rejection   |                               |
| *UPS 1200 Series 3W<br>Nominal BTU/hr (kW)<br>Worst Case BTU/hr (kW) | 92,150 (27)<br>109,898 (32.2) |

## ENVIRONMENTAL

|                        |   |
|------------------------|---|
| Acoustical noise       | <77 dBA at 1.524 m (5 ft)   |
| <i>Temperature</i>     |   |
| Operating              | 0° C to 40° C (32° F to 104° F)   |
| Storage                | -25° C to 70° C (-13° F to 158° F)  |
| Humidity               | 5% to 95% (non-condensing)  |
| Altitude               | Up to 914.4 m (3000 ft);<br>(derate operating temperature range for higher elevation) |
| Emissions and Immunity | EN 50091-2  |

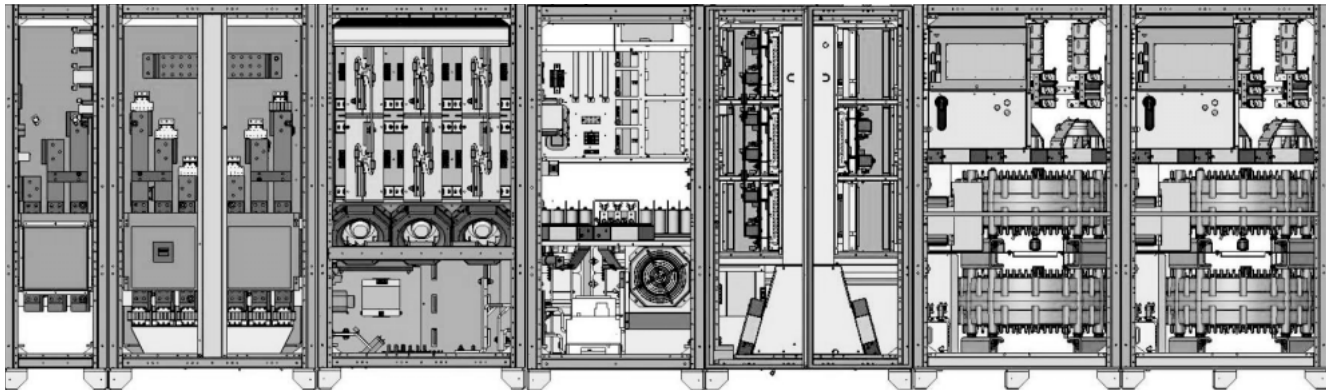
## CERTIFICATIONS

|                         |
|-------------------------|
| EN 50091-1-1, 50091-1-2 |
| CE Mark                 |

## RIDE THROUGH TIMES (SEC)

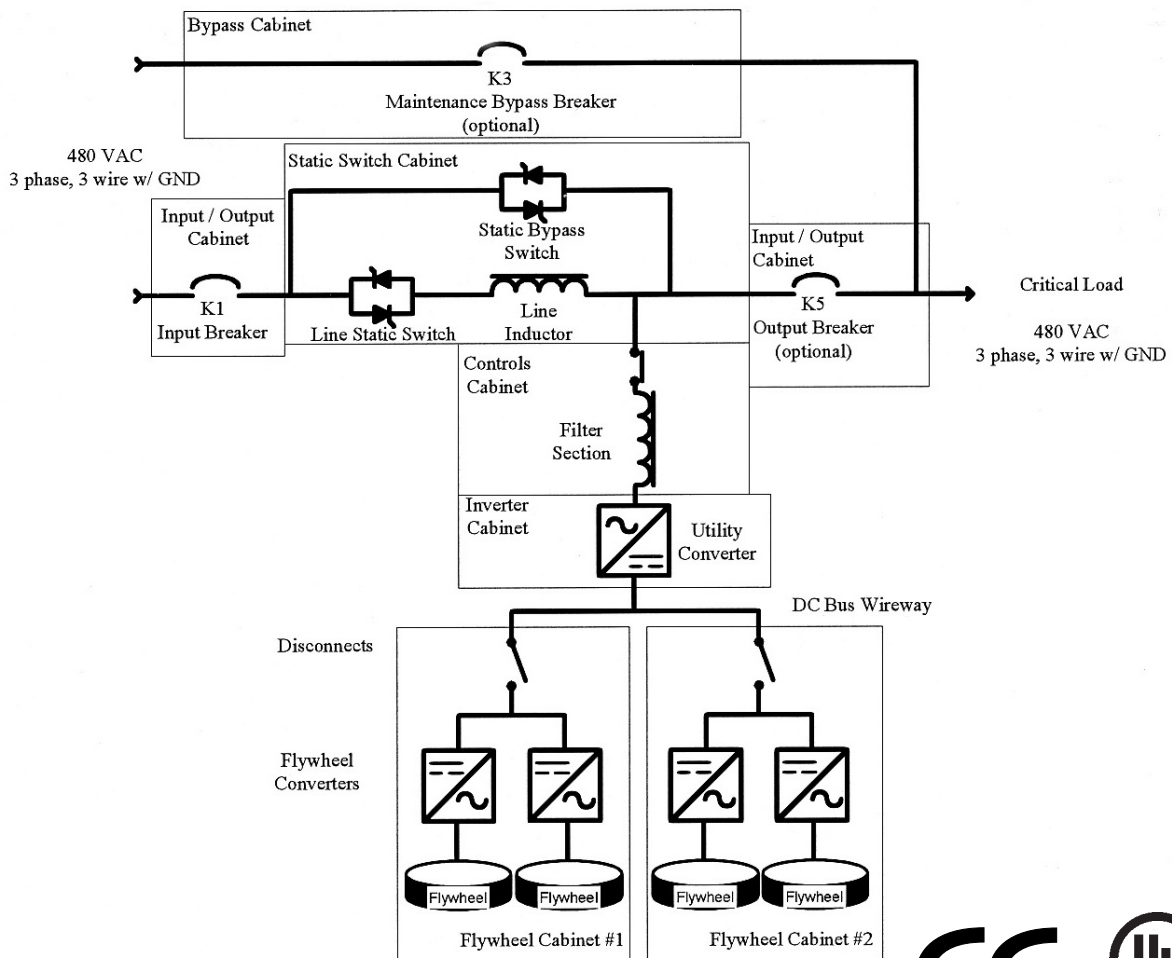
| Number of Flywheel Cabinets | 100% load | 75% load | 50% load | 25% load |
|-----------------------------|-----------|----------|----------|----------|
| 2                           | 13.5      | 17       | 26       | 50       |
| 3                           | 20        | 25       | 39       | 75       |
| 4                           | 27        | 34       | 52       | 100      |

UPS1200S SYSTEM FRONT ELEVATION (3 WIRE)



Bypass    Input / Output    Static Switches    Controls    Inverter    Energy Storage

UPS1200S SYSTEM ONE LINE DIAGRAM (3 WIRE)



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