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Purpose of this Document

This document provides site planning data and information, including electrical and thermal data, conductor data, dimensions and weights, and one-line drawings and connection details.

Procedures related to the provisioning, start-up, and acceptances of associated telecom equipment are not covered in this document and are provided in the installation and user manuals: SL-71927.

Equipment Overview

The PowerUPS 9000 UL 480 V is a high-power density, energy-efficient, and compact uninterruptible power supply (UPS) system. It is designed to support IT applications from traditional computing to high-density applications, including space-constrained environments. Manage space constraint while meeting increasing data center power demands with room to prefabricated deployment. This system offers double-conversion efficiency of up to 97.5% for superior reliability. It can achieve up to 97.5% double conversion efficiency and up to 99% with dynamic online mode. It is compatible with Vertiv™ EnergyCore lithium battery cabinet, and other battery technologies, including Valve-Regulated Lead-Acid (VRLA) and Nickel-Zinc. It includes scalable 125 kVA power modules to grow with your power needs with ease. It supports large-scale data centers. It is designed to provide continuous power quality and availability and to meet the contemporary resilience benchmarks.

Electrical and Thermal Data - Single and Distributed Parallel UPS Modules Without Options (1.0 Nominal Output Power Factor)

UPS Rating		Input/Output Voltage (VAC)	Rectifier AC Input Current			Bypass AC/UPS AC Output Current		Battery			Max. Heat Dissipation Full Load (kW)	Cooling Air (m^3/h)
Apparent Power (kVA)	Real Power (kW)		Nominal (A)	Maximum (A)	External Breaker Trip (100% Rated) (A)	Nominal (A)	External Breaker Trip (100% Rated) (A)	Nominal Voltage (VDC)	Max. Current at 400.8 V EOD (A)	External Breaker Trip (100% Rated) (A)		
1250	1250	480	1545	1962	2000	1504	1600	480	3222	4000	34.7	5935
1200	1200	480	1483	1884	2000	1443	1600	480	3093	4000	33.3	5935
1125	1125	480	1391	1766	2000	1353	1400	480	2900	3000	31.2	5935
1100	1100	480	1360	1727	2000	1323	1400	480	2835	3000	30.5	5935
1000	1000	480	1236	1570	1600	1203	1400	480	2577	3000	27.7	5935
875	875	480	1082	1374	1400	1052	1200	480	2255	2500	24.3	5935
800	800	480	989	1256	1400	962	1000	480	2061	2500	22.2	5935
750	750	480	927	1177	1200	902	1000	480	1933	2000	20.8	5935
625	625	480	773	981	1000	752	800	480	1611	2000	17.3	5935

Notes:

1. Nominal rectifier AC input current (considered continuous) is based on a full rated output load. Maximum current is based on the lowest rectifier AC input voltage and full rated output load.
2. Nominal AC output current (considered continuous) is based on full rated output load.
3. Bypass AC input current (considered continuous) is based on full rated output load.
4. Vertiv recommends that feeder protection (by others) for the rectifier AC input and the bypass AC input be provided by separate overcurrent protection devices.
5. UPS output load cables must be run in separate conduit from input cables.
6. Grounding conductors and neutral conductors to be sized per NEC100 and per national wiring standards.
7. All wiring is to be in accordance with national and local electrical codes.
8. Power cable from module DC bus to battery should be sized for a total maximum 2.0 volt line drop (power cable drop plus return cable drop as measured at the module) at maximum discharge current. Nominal battery voltage is shown at 480 V and the battery discharging current is calculated based on the lowest battery voltage (at 400.8 V EOD and 100% Load).
9. **Rectifier AC Input:** 3ph + PE
   Bypass AC Input: 3ph + PE
   AC Output to Load: 3ph + PE
   Module DC Input from Battery: 2-wire (positive and negative) + PE
10. Control wiring and power cables must be run in separate conduits. Control wiring must be stranded tinned conductors.
11. Tinned lugs are required if aluminum cable is to be used. If aluminum cable is to be used, top and bottom cable entry may be required. Contact Vertiv Technical Support for more information.
12. 1250 kVA ratings offer top and bottom cable entry gland plate as standard. Remove the gland plate prior to cutting to suit conduit size and reinstall. Contact Vertiv Technical Support for more information.
13. 24 inch minimum clearance above unit required for air exhaust and service. 50 inch front access is required for service. No clearance required at sides or rear of unit if top fan kit is installed, otherwise rear clearance is 19.7 inch.
14. If the UPS is fed from an automatic transfer switch, the UPS can transfer to and from an alternate out-of-phase source in double conversion mode without applying a break-before-make delay to the automatic transfer switch operation.

Conductor Data - Single and Distributed Parallel UPS Modules Without Options

UPS Rating		Input/Output Voltage (VAC)	Rectifier AC Input			Bypass AC Input/UPS AC Output			Battery, External +, -			Neutral	
Apparent Power (kVA)	Real Power (kW)		Max Current (A)	Max number of conductors and cross section for each phase1 (kcmil)	Screw size	Max Current (A) 400 V	Max number of conductors and cross section for each phase[1] (kcmil)	Screw size	Max Current at 400.8 V (A)	Max number of conductors and cross section[1] (kcmil)	Screw size	Max number of conductors and cross section[1] (kcmil)	Screw size
1250	1250	480	1962	6*500	M12	1504	5*500	M12	3222	9*750	M12	30*500	M12

Notes:

1. Maximum number of conductors is connectable to respective busbar.
2. The maximum battery current specified in the table above is considered non-continuous. The number and cross section of battery conductors can be sized for a maximum continuous current at 480 V, and a maximum voltage drop of 2.0 VDC at 400.8 V EOD.
3. All conductors terminated on the designated bus bar inside UPS.
4. Overload current specified in the User Manual must be considered.
5. To select the appropriate conductor cross section, refer to actual installation data and national and local codes.

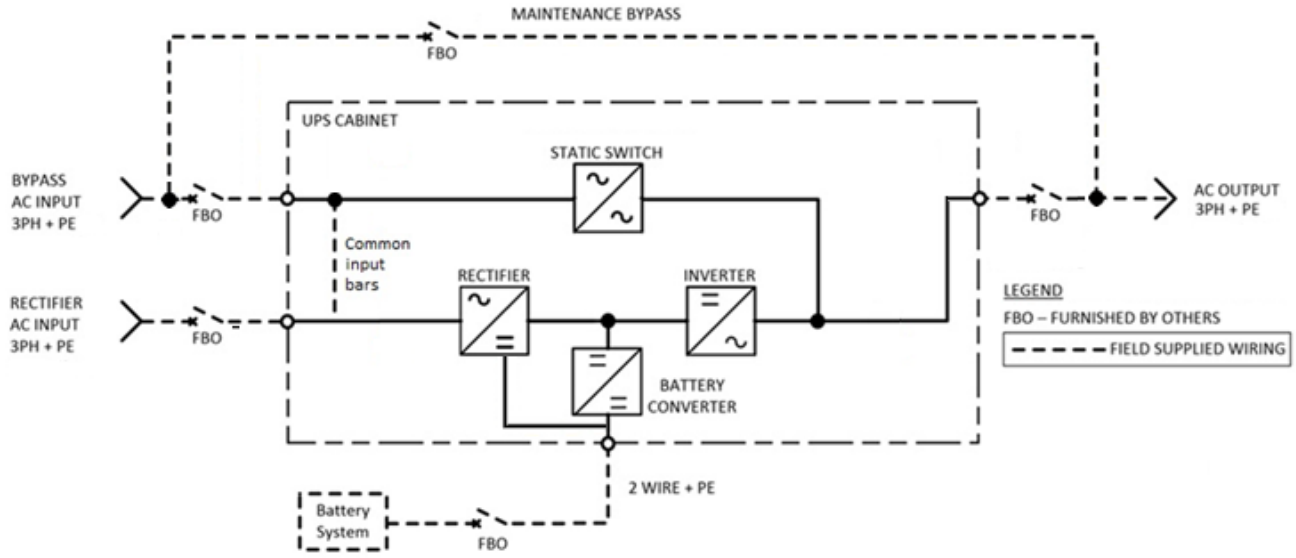
Dimensions and Weights - Single and Distributed Parallel UPS Modules Without Options

UPS Rating		Input/Output Voltage (VAC)	Dimensions WxDxH (inch)	Approx. Weight Unpackaged (lbs)
Apparent Power (kVA)	Real Power (kW)			
1250	1250	480	82.7 x 40.8 x 79.5	3756

Notes:

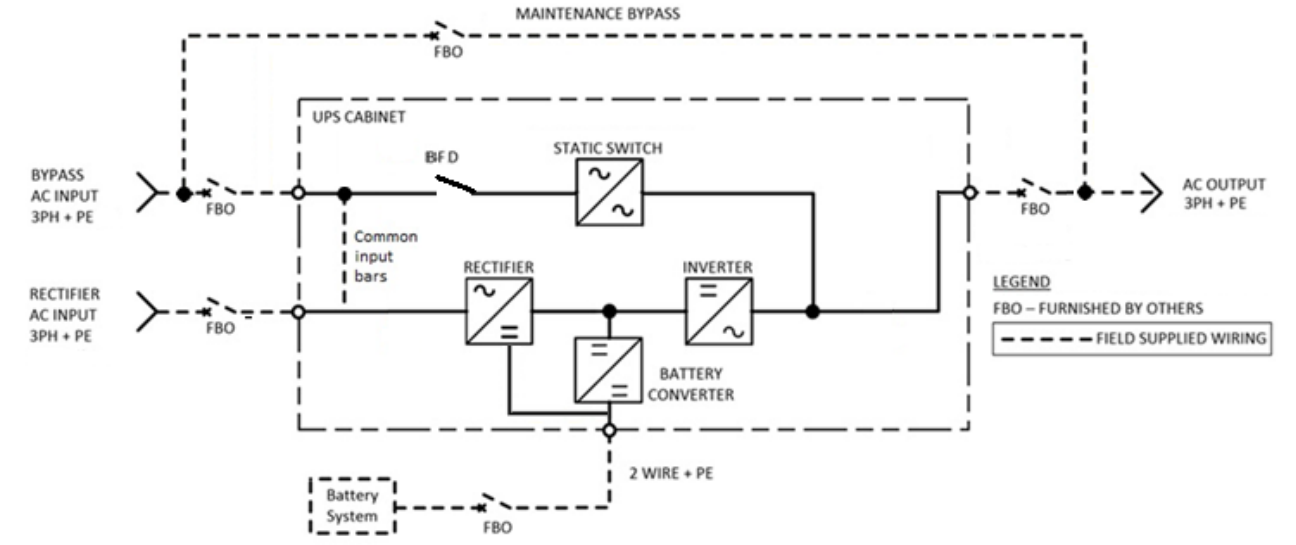
1. 24 inch minimum clearance above unit required for air exhaust and service. 50 inch front access is required for service. No clearance required at sides or rear of unit if top fan kit installed, otherwise the rear clearance is 19.7 inch.
2. 1250 kVA ratings offer top or bottom cable entry gland plate as standard. Remove the gland plate prior to cutting to suit conduit size and reinstall. Contact Vertiv Technical Support for more information.
3. Control wiring and power cables must be run in separate conduits. Control wiring must be stranded tinned conductors.

One-line Diagram – PowerUPS 9000, 1250 KVA, 480 V UL



Note: *1250 kVA ratings are shipped without single input links connecting the rectifier and bypass AC input phase bus bars. Links can be ordered if needed.*

One-line Diagram – PowerUPS 9000, 1250 KVA, 480 V UL, with Backfeed Contactor Option



Note: *1250 kVA ratings are shipped without single input links connecting the rectifier and bypass AC input phase bus bars. Links can be ordered if needed.*