



HP 3 Phase Parallel Uninterruptible Power Systems

Data sheet

Efficiency, modularity, and redundancy give HP 3 Phase Parallel Uninterruptible Power Systems the ability to grow with your data centre needs, with lower energy costs and cooling needs than conventional large uninterruptible power systems.

Can you meet your power protection needs?

Power protection in your data centre has always been a critical requirement to maintain system uptime and keep a dynamic business running. Today, the increased densities in data centres drive the need for uninterruptible power with increased power density, power efficiency, and flexibility. The HP RP36000/3 Uninterruptible Power System provides all three.

This pre-racked uninterruptible power system (UPS) provides 36 kilowatts (kW) of power or 24 kW with N+1 redundancy. Housed in a single HP 10000 G2 Series 42U rack, the system can be expanded to 60 kW with N+1 simply by installing up to three additional RP12000/3 UPS Modules. Digital Signal Processing (DSP), UPS paralleling, and new Online On Demand hybrid technology answer the call for increased density, redundancy, efficiency, and flexibility.

Online On Demand combines the efficiency of a line-interactive UPS, up to 97 per cent, with the stability of a double conversion online UPS when power fluctuates beyond acceptable limits. Hot-swappable batteries and electronics modules and an automatic bypass reduce downtime for maintenance.

Key features and benefits

The new HP RP36000/3 Uninterruptible Power Systems are designed to provide high power output with industry-leading efficiency for mission-critical enterprise solutions and data centres.

Performance

- Supports up to 60,000 volt-amperes (VA)/60,000 watts in a single 42U rack
- Offers unity power factor, which means volt amperage out equals wattage output
- Delivers industry-leading 97 per cent efficiency, even at output loads as low as 40 per cent, with Online On Demand hybrid technology
- Uses UPS paralleling for redundancy and expansion
- Delivers extra long battery life with Enhanced Battery Management (EBM)
- Extends battery run time with optional Extended Runtime Modules (ERMs)
- Enables longer run time with Digital Signal Processing technology (DSP)

Management

- Includes UPS Management Module for remote configuration and graceful shutdown of critical servers without the need for a dedicated management server
- Includes hot-swappable electronics and batteries
- Is backed by a limited three-year warranty and HP pre-failure warranty on the batteries
- Offers N+1 redundancy with UPS paralleling technology
- Allows up to six UPS modules to work together to increase load capacity and N+1 fault tolerance
- In the event of a failure, the load shifts to remaining modules to provide 100 per cent UPS protection

Options

- Allows you to attach up to four 3U Extended Runtime Modules to each UPS for increased run time in the event of a power failure
- Supports output modules with dual L15-30 receptacles that can be connected to each UPS module for a total of 12 L15-30 connections
- Fully compatible with the HP Power Distribution Rack to provide power and scalability to rows of equipment

Ideal environments

Large data centres

The HP 3 Phase Parallel UPS can provide you with additional power protection for multiple racks of critical equipment in the event of a power outage, with better efficiency than many site-level UPS systems.

Small to mid-size data centres

When hundreds of kilowatts of power are not necessary, the HP 3 Phase Parallel Uninterruptible Power System provides power protection for an entire row of racks. Its unique modular design allows your system to grow with demand. Hot-swappable electronics and batteries reduce downtime.

Collocation facilities

The HP 3 Phase Parallel UPS can provide power protection to one or more racks and can be managed by administrators separately from the collocation facilities.

Recommended options

RP12000/3 UPS Module AF436 (NA) and AF437 (INTL)

Based on the R12000/3, this UPS is specially designed to attach directly to the bus bar in the RP36000/3, allowing it to expand to 60 kW with N+1 redundancy.

HP Power Distribution Rack

The HP Power Distribution Rack (PDR) improves power management in the data centre by moving power distribution to the row level. Decentralising power improves cable management, decreases diagnostic time for problems, and saves installation costs by reducing the size and number of long power feeds required to reach from large wall-mounted distribution units. Capable of high amperage inputs, the HP PDR can power several high-density racks with shorter cable runs than conventional site-level power distribution systems. Fully redundant inputs and outputs provide dependable power while protecting valuable IT equipment. Individual branch circuit monitoring and redundant management modules provide the status and power consumption of each attached rack.

HP Power Distribution Units AF504A, AF503A, AF508A, and AF507A

The monitored vertical rack-mount power distribution units (PDUs) units can connect directly to the optional UPS output modules and provide three-phase monitored power, as well as full-rack power utility ranging from 8.6 kilovolt-amperes (kVA) up to 22 kVA. Available PDUs include full-rack models with 39 receptacles or with 78 receptacles.

HP 3 Phase Modular Power Distribution Units AF512A and AF513A

These high-output, 8.6 kVA (North America/Japan) and 11 kVA (international) modular PDUs have a unique modular architecture designed specifically for data centre customers who want to increase power distribution and space efficiencies in the rack. Modular PDUs consist of two building blocks: the Control Unit (core) and the optional Extension Bars (sticks). The Control Unit is 1U/0U, and the optional Extension Bars mount directly to the frame of the rack in multiple locations.

RP36000/3 (base unit)



RP12000/3 (optional UPS expansion module)



General characteristics		
Power rating (non-redundant)	36 kW / 36 kVA	12 kW / 12 kVA
Power rating N+1	24 kW / 24 kVA	60 kW / 60 kVA maximum configuration
Efficiency	>97%	>97%
Heat dissipation	<1113 W / 3800 BTU/hr at 100% rated load	<371 W / 1266 BTU/hr at 100% rated load
Cooling	Fan-cooled, temperature microprocessor monitored; front air entry, rear exhaust	Fan-cooled, temperature microprocessor monitored; front air entry, rear exhaust
Altitude before derating	1000 meters (3300 ft ASL)	1000 meters (3300 ft ASL)
Input characteristics		
Input connection	Hard-wired from facility power	Connects to power bus bar
Input voltage	208 VAC and 400 VAC models	208 VAC and 400 VAC models
Voltage range	208V model: 180 to 265 VAC (N.A.) 400V model: 311 to 519 VAC (Intl.)	208V model: 180 to 265 VAC (N.A.) 400V model: 311 to 519 VAC (Intl.)
Frequency range	50 or 60 Hz, ±5 Hz (auto-sensing)	50 or 60 Hz, ±5 Hz (auto-sensing)
Input current distortion	<5% with IT loads (PFC power supplies)	<5% with IT loads (PFC power supplies)
Input power factor	>.99 with IT loads (PFC power supplies)	>.99 with IT loads (PFC power supplies)
Inrush current	Load dependent	Load dependent
Input requirements	Hard-wired, three-phase, wye (5 wire, 4 pole)	Hard-wired, three-phase, wye (5 wire, 4 pole)
Bypass source	Same as input (single-feed)	Same as input (single-feed)
Generator compatibility	Fast sync slew rate for generator synchronisation	Fast sync slew rate for generator synchronisation
Output connection	Hard-wired from power bus bar or uses optional output modules	Hard-wired from power bus bar or uses optional output modules
Rated output voltage	208V model: 180 to 255 VAC, Ph to Ph 400V model: 180 to 240 VAC, Ph to N	208V model: 180 to 255 VAC, Ph to Ph 400V model: 180 to 240 VAC, Ph to N
Output configuration	Three-phase, wye. Three-phase Delta can be provided by optional output modules	Three-phase, wye. Three-phase Delta can be provided by optional output modules
Output frequency (nominal)	50 or 60 Hz auto-detection on startup	50 or 60 Hz auto-detection on startup
Frequency regulation	0.1 Hz free-running	0.1 Hz free-running
Load power factor range	Lagging: 0.7 Leading: 0.9	Lagging: 0.7 Leading: 0.9
Total output voltage distortion	<3% with IT loads (PFC power supplies) <5% with non-linear or non-PFC power supplies	<3% with IT loads (PFC power supplies) <5% with non-linear or non-PFC power supplies
Battery characteristics		
Battery type	Maintenance-free, sealed, valve-regulated lead acid (VRLA)	Maintenance-free, sealed, valve-regulated lead acid (VRLA)
Battery run time (internal)	>5 minutes at 100% load	>5 minutes at 100% load
Battery string voltage	240 VDC	240 VDC
Battery test	Automatic battery test standard Manual battery test from front display	Automatic battery test standard Manual battery test from front display
Battery recharge profile	Enhanced Battery Management three-stage charging technology	Enhanced Battery Management three-stage charging technology
Battery cut-off voltage	Variable from 1.67 VPC at <5 min run time to 1.75 VPC at >90 min run time	Variable from 1.67 VPC at <5 min run time to 1.75 VPC at >90 min run time
Battery low condition	Announced with alarm	Announced with alarm
Extended battery capability	Yes, add up to four additional 3U battery enclosures per RP12000/3 UPS Module	Yes, add up to four additional 3U battery enclosures per RP12000/3 UPS Module

Technical specifications (continued)

	RP36000/3 (base unit)	RP12000/3 (optional UPS expansion module)
Physical characteristics		
Dimensions (HxDxW) UPS	78.7 x 39.7 x 24 inches 2,000 x 1,015 x 597 mm (HP 10000 G2 42U Rack)	10.3 (6U) x 17.4 x 26.0 inches 267 x 442 x 660 mm
Total chassis weight without batteries or electronics	653 lb (296 kg)	100 lb (46 kg)
Total chassis weight with batteries or electronics	1274 lb (578 kg)	307 lb (140 kg)
ERM weight	170 lb (77 kg)	170 lb (77 kg)
Communications and user interface		
Software compatibility	UPS ships with HP UPS Management Module	UPS ships with HP UPS Management Module
Control panel LCD	Two lines by 20 characters, four menu-driven interface buttons, four status-at-a-glance LEDs 1 per UPS Module	Two lines by 20 characters, four menu-driven interface buttons, four status-at-a-glance LEDs 1 per UPS Module
Multi-language	English standard	English standard
Configuration changes	User-capable, firmware auto-configures	User-capable, firmware auto-configures
REPO port	Yes	Yes
Warranty and serviceability		
Warranty (parts/labour/onsite)	3-year/1-year/1-year (Power bus bar is 3-year parts only)	3-year/1-year/1-year (Power bus bar is 3-year parts only)
Serviceability features	Hot-swappable batteries, hot-swappable electronics module, Automated internal maintenance bypass, auto-configure firmware, Flash firmware upgradeable	Hot-swappable batteries, hot-swappable electronics module, Automated internal maintenance bypass, auto-configure firmware, Flash firmware upgradeable
HP Care Packs	Installation Care Packs available for additional RP12000/3 UPS Modules	Installation Care Packs available for additional RP12000/3 UPS Modules
Certifications		
Safety	208V model: UL1778, cUL 400V model: CE	208V model: UL1778, cUL 400V model: CE
EMI	208V model: FCC Part 15 Class A 400V model: EN62040-2 Class A	208V model: FCC Part 15 Class A 400V model: EN62040-2 Class A
Surge protection	ANSI C62.41, Cat B-3	ANSI C62.41, Cat B-3
Hazardous materials (RoHS)	EU Directive 2002/95/EC Category 3 (4 of 5)	EU Directive 2002/95/EC Category 3 (4 of 5)

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4AA1-5885EEW Rev. 1, February 2010

