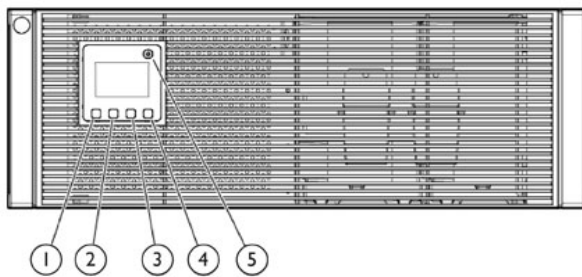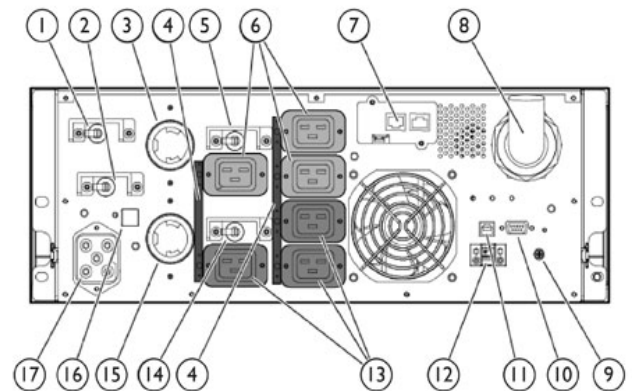## Overview

The innovative Minimally Switched Technology used in the new HP R7000 UPS improves the performance over traditional line-interactive UPS designs while reducing the cost, weight, and size of traditional double-conversion online UPS designs. The digital signal processing (DSP) enables complete digital control of the UPS resulting in increased power conditioning, lower system cost, and enhanced user interface interactivity.

DSP technology enables the practical implementation of sophisticated UPS topologies and controls. The DSP can simultaneously control multiple power converters to optimize system efficiency and other performance characteristics such as: enhanced battery management for extended battery life, and improved output voltage regulation. The result is a higher performance UPS in smaller, lighter, more reliable designs-an advantage for space-constrained equipment racks and cost conscious, co-located data center applications.



**Front View:**

1. Escape Button

2. Scroll up button

3. Scroll down button

4. Enter/Select button
5. Power button

**Rear View:**

1. Load segment 1 circuit breaker (controls L6-30R receptacle for NA/JPN, Item 3)

2. Load segment 2 circuit breaker (controls L6-30R receptacle for NA/JPN, Item 15)

3. Large output NEMA L6-30R receptacle (NA/JPN) or IEC-60309 32A receptacle on short cords (INTL) associated with load segment 1

4. Cord retention clip attachment locations

5. Load segment 1 circuit breaker (controls the C19 receptacles, but does not control the large output receptacle)

6. 3 x IEC C19 receptacles on load segment 1

7. HP UPS Network Module

8. Input power line cord with NEMA CS8265C plug (NA/JPN) or IEC-309-32A plug (INTL)

9. Ground bonding screw

10. Serial communications port

11. USB communications port

12. REPO port

13. 3 x IEC C19 receptacles on load segment 2

14. Load segment 2 circuit breaker (controls the C19 receptacles, but does not control the large output receptacle)

Overview

15. Large output NEMA L6-30R receptacle (NA/JPN) or IEC-60309 32A receptacle on short cords (INTL) associated with load segment 2
16. ERM communication port
17. ERM connector for the large plug on the split ERM cable

## Models

**NOTE:** #0D1 will appear after the part number on the sales order if HP factory integration is indicated.

| | |
|---|---|
| HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System | AF462A |
| HP R7KVA 4U IEC-32A High Voltage INTL Uninterruptible Power System | AF463A |

**Kit Contents**

- HP UPS R7000
- HP UPS Network Module
- Power Products Documentation CD
- Depth adjustable fixed rack mounting rails, mounting brackets, cord retention clips
- Communications cable
- Two 7xC13 Extension Bars

## Standard Features

| | |
|---|---|
| **Key Features** | <ul><li>High power density with up to 7200</li><li>VA /7200 Watts of power packed in just 3U rack space</li><li>Greater system uptime with support for Extended Runtime Modules (ERM)</li><li>Easy configuration through enhanced front panel display</li><li>Enterprise-wide intelligent manageability with bundled UPS Network Module and HP Power Protector software</li><li>More efficient voltage regulation with revolutionary technology</li><li>Ultimate long-term battery reliability with HP Enhanced Battery Management</li><li>Enhanced system flexibility with two independently controlled load segments</li><li>Support for Remote Emergency Power Off (REPO) circuitry</li><li>Easy serviceability through modular design</li><li>Hot-Swappable Battery</li><li>Backed by a three year warranty with the first year including parts and labor. HP's Pre-Failure warranty, and a $250,000 load protection guarantee\*. (Certain restrictions and exclusions apply; \*Load protection guarantee available in North America only.)</li><li>Optional Extended Runtime Modules (ERM) increase batter runtime during a power failure</li></ul> |

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**4U Power Packed Design**  
Rated at unity power at 7200VA /7200W for the NA/Japan model, and 6500VA/6500W on the international model, the HP UPS R7000 packs more power in space-conserving rack-mount design, allowing you to support more critical equipment in your rack.

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**Increase System Uptime with Extended Runtime Modules**  
The Extended Runtime Modules are rack mounted battery modules that occupy 3U (5.25 inches) of rack space. The HP UPS R7000 supports up to four Extended Runtime Modules (ERM), which extend your overall battery runtime.

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**Lower Cost of Ownership with Innovative Technology**  
The HP UPS R7000 utilizes a the Digital Signal Processing industry-leading technology that continually conditions and regulates power without using the battery, thereby increasing the life of the battery. The output voltage is automatically regulated, based on the connected load and the input voltage.

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**Investment Protection with HP Enhanced Battery Management**  
HP UPS R7000 incorporates Enhanced Battery Management: an exclusive, patented technology that doubles battery service life, optimizes battery recharge time, and provides advance notice of pending battery failure. With Enhanced Battery Management, you can save 2-3 battery replacements over the life of the UPS saving hundreds of dollars giving you a lower total cost of ownership while still receiving the power protection for your critical equipment.

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**Enhanced Flexibility**  
Six C19 outlets, and two L6-30 outlet (2x 32A IEC on the International model) provide a wide range of connection options. Two included Extension Bars provide an addition 14 C13 outlets if needed. Adding additional HP PDU Extension Bars, AF500A, provides additional C13 outlets making the R7000 and extremely flexible UPS for all environments.

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## Standard Features

| | |
|---|---|
| **Remotely Monitor UPSs on the Network** | The installed UPS Network Module enables network administrators to remotely monitor UPSs and reboot network devices. It provides SNMP functionality, including power event alerts, network power diagnostics, and remote UPS reboot and testing. Used in conjunction with HP Systems Insight Manager or other SNMP capable Network Management Software, power-related problems on the network are quickly discovered and remedied. |
| **Easy Configuration via Enhanced Front Panel Display** | LCD system integrated into the front panel with five button controls (three buttons for UPS power control and one button under the front bezel for configuration) |
| **Independently Controllable Load Segments** | With two load segments, you have the flexibility to configure scheduled startups and shutdowns, in addition to independently control the separate load segments. Working in conjunction with HP UPS Network Module, the HP UPS R7000 can be configured to extend the runtime for more critical devices. |
| **Ease of Maintenance with Hot-Swappable Batteries and Electronics Modules** | The UPS R7000 is modular in design, and both the battery and the electronics modules are hot swappable. HP UPSs are designed with simple access through the front panel. Users can safely install new batteries without ever powering down connected server and server options. |
| **Extended Runtime Module (ERM), R7000** | The UPS R7000 supports up to four Extended Runtime Modules. Each module is 3U (5.25 inches), a rack mountable battery module that extends your overall battery runtime. |
| **HP Quality** | HP's hardware qualification is the toughest in the industry. Extensive evaluation, testing, product improvement, and an unsurpassed warranty guarantee the highest level of system protection, electrical performance, product quality and compatibility. |
| **Compatibility** | Compatible with all HP servers, storage, racks, rack options, and other rack mountable HP equipment. For PDU options please refer to the UPS/PDU compatibility matrix on www.hp.com/products/ups. |
| **Warranty** | The HP UPS R7000 is covered by a three year warranty, with the first year including parts and labor. Also, standard on all HP UPS units, is our exclusive Battery Pre-Failure Warning which extends the advantage of a HP three-year, limited warranty by applying it to the battery before it actually fails. This warranty is offered worldwide. Specifically, the Pre-Failure Battery Warranty ensures that when customers receive notification from the HP UPS Network Module that the battery may fail, the battery is replaced free of charge under the warranty.<br><br>All HP Rackmount UPSs are also automatically covered to the full service level of ProLiant Care Packs in the same rack so there is no need to purchase additional Care Packs for the UPSs. Batteries are not covered under Care Pack Coverage<br>**NOTE:** $250,000 Computer/Load Protection Guarantee is also provided in NA, in addition to the HP three year, limited warranty. |

## Service and Support

| | |
|---|---|
| **Service and Support** | **HP Technology Services**<br>HP Technology Services offers you consultants and support experts to solve your most complex infrastructure problems. We help keep your business running, boost availability and avoid downtime.<br><br>**Protect your business beyond warranty with HP Care Pack Services**<br>When you buy HP Options, it's also a good time to think about what level of service you may need. HP Care Pack services provide total care and support expertise with committed response choices designed to meet your IT and business need. |

**Recommended HP Care Pack Services for optimal satisfaction with your HP product**

| | |
|---|---|
| **Recommended Services** | **3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service**<br>Provides you with rapid remote support and if required an HP authorized representative who will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged.<br>http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE<br><br>**HP ProLiant Server Hardware Installation**<br>Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner<br>http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN |

**Related HP Care Pack Services to enhance your HP product experience**

| | |
|---|---|
| **Related Services** | **3-Year HP 6 hour Hardware Support Onsite Call-to-Repair Service**<br>Provides an IT manager with a team of support specialists who will quickly begin troubleshooting the system to help return the hardware to operating condition within 6 hours of the initial service request to the HP Global Solution Center<br>http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EN<br><br>**HP Proactive Select Service**<br>Provides a flexible way to purchase HP best-in-class consultancy and technical services. You can buy Proactive Select Service Credits when you purchase your hardware and then use the credits over the next 12 months. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN |
| **Insight Remote Support** | Delivers secure remote monitoring and support for HP servers and storage, 24x7 at no additional cost. Available as part of HP Warranty, Care Pack and Service Contract offers. |
| **Parts and materials** | HP will provide HP-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements. Supplies and consumable parts will not be provided as part of this service; standard warranty terms and conditions apply. Parts and components that have exceeded their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual or the technical product data sheet will not be provided, repaired or replaced as part of this service. |
| **Coverage** | For ProLiant servers and storage systems, this service covers HP-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as external monitors up to 22" and tower UPS products; these items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been exceeded. Coverage of the UPS battery is not included; standard warranty terms and conditions apply.<br><br>The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction. It does not apply to any exchange of Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by HP as consumable parts and/or that have exceeded maximum supported lifetime and/or the maximum usage limit as set forth in the manufacturer's operating |

## Service and Support

**For more information**
manual or the technical data sheet are not eligible for the defective media retention service feature option. To learn more on services for HP ESSN Options, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: http://www.hp.com/services/proliant or www.hp.com/services/bladesystem

## Related Options

| | | |
|---|---|---|
| **HP UPS Options** | HP R5KVA and R7KVA 3U Extended Runtime Module | AF464A |
| | **NOTE:** #0D1 will appear after the part number on the sales order if HP factory integration is indicated. | |
| **HP Care Pack** | HP Install Universal Power Supply 3KVA to Below 6KVA Service | U4693E |

UPS Model Matrix

## High Voltage Models

| Part Number | Operating Voltage Settings | Power Out (VA/Watts) | Input Connection | Output Connection |
|---|---|---|---|---|
| AF462A (NA/JPN) | 200/208* | 7200VA/7200W | Hubble CS8265C, 3m cord | LS1: 15A CB - 3 x C19 + 1 x L6-30R<br>LS2: 15A CB - 3 x C19 + 1 x L6-30R |
| AF463A (International) | 220, 230*, 240 | 6300VA/ 6300W @230V input | IEC-309 32Amp, 3m cord | LS1: 15A CB - 3 x C19 + + one pigtailed receptacle IEC-309 32Amp<br>LS2: 15A CB - 3 x C19 + + one pigtailed receptacle IEC-309 32Amp |

* Factory default setting.

# QuickSpecs

## Estimated Backup Times Chart (Minutes)

**All Models**

| Load (Percent*) | Estimated battery runtime (minutes) | | With One Extended Runtime Module (Minutes) | | With Four Extended Runtime Modules (Minutes) | |
|---|---|---|---|---|---|---|
| | NA/JPN | INTL | NA/JPN | INTL | NA/JPN | INTL |
| 20 | 52 | 62 | 98 | 117 | 301 | 359 |
| 50 | 13 | 15 | 33 | 37 | 103 | 115 |
| 80 | 6 | 7 | 18 | 21 | 57 | 66 |
| 100 | 4 | 5 | 13 | 15 | 39 | 50 |
| **NOTE:** Backup times are estimated for typical applications. Actual performance will depend on load and battery conditions. | | | | | | |

## Technical Specifications

| | | |
|---|---|---|
| **Unit Dimensions** (HxWxD) | 6.75 in (17.1 cm) x 17.2 in (43.7 cm) x 28.9 in (73.4 cm) | |
| **Unit Weight** | 165 lbs/75 kg | |
| **Shipping Weight** | 210 lbs/100 kg | |
| **BTU Break Down** | **BTU On Line** | 649 INTL, 581 NA/JPN |
| | **BTU On Battery** | 1290 INTL, 1501 NA/JPN |
| | **Battery String Voltage** | 216V |
| | **Battery Type** | 12V 45W |
| | **Battery Quantity** | 18 |
| **Electrical Input** | **Voltage Range** | 160-253V at 200/208V nominal; 160-253V at 220, 230, and 240V nominal |
| | **Frequency** | 50/60 Hz |
| | **Input Plug** | Part number AF462A: Hubble CS6285C, 3m cord<br>Part number AF463A: IEC-309 32Amp, 3m cord |
| | **Online Efficiency** | 95% |
| | **REPO** | Remote Emergency Power-Off disables AC power to load |
| **Electrical Output** | **Online Regulation** | -10% to +6% of nominal voltage |
| | **On battery Regulation** | ±5% of nominal voltage |
| | **Voltage Wave Form** | Sine wave |
| | **Connections** | See Model Selection Matrix; divided into 2 Load Segments |
| | **Output Protection** | Re-settable circuit protectors |
| **Battery** | **Type** | Maintenance-free, sealed, valve-regulated lead acid (VRLA) |
| | **Extended Batteries** | Up to four ERMs supported |
| | **Backup Time** | See Backup Times Chart |
| | **Recharge Time** | <3 hours to 80% usable capacity; <48 hours for complete recharge |
| | **Battery String Voltage** | 216V |
| | **Battery Type** | 12V 45W |
| | **Battery Quantity** | 18 |
| **Maximum wattage based on voltage input** | **AF426A NA/JPN** | 200-240V: 7200VA/7200W |
| | **AF463A INTL** | 220V: 6100VA/6100W<br>230V: 6300VA/6300W<br>240V: 6500VA/6500W |
| **Communications** | **Serial Ports** | Standard DB-9 ports (ships with communication cable) |
| | **Included** | HP UPS Network Module |
| | **LED Indicators** | LED and switch membrane integrated into the front panel; with four-button control (three buttons for UPS power control and one button under the front bezel for configuration). |
| **Environmental and Safety** | **Operating Temperature** | 50° to 104° F (10° to 40° C ) |
| | **Transit Temperature** | -13° to 131° F (-25° to 55° C) |
| | **Storage Temperature** | 32° to 77° F (0° to 25° C ) |
| | **Operating Humidity** | 20% to 80% (non-condensing) |

## Technical Specifications

| | |
|---|---|
| **Storage Humidity** | 5% to 95% |
| **Operating Altitude** | Up to 6,562 ft (2000 m) above sea level |
| **Transit Altitude** | 49,212 ft (15,000 m) above sea level |
| **Audible Noise** | <46db (at 1m from surface of unit) |
| **Safety Markings** | NA/JPN: UL, cUL<br>Int'l: GS, CE, GOST |
| **Safety Certifications** | UL1778, UL60950-1; CSA22.2 No.107.3, No.60-1950; EN50091-1-1; EN60950-1 IEC62040-1-1 |
| **EMC Markings** | NA/JPN: FCC, VCCI, ICES, CISPR<br>Int'l: BSMI, C-Tick, CISPR |
| **Emissions** | FCC CFR 47, Part 15 Class A, EN50091-2 |
| **Immunity** | IEC 801-2, IEC 801-3, IEC 801-4, IEC 801-5 |
| **REPO Port** | Meets NEC code 645-11 intent and UL requirements |

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**Environment-friendly Products and Approach**

**End-of-life Management and Recycling**

Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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