

### Overview

#### HPE Online Double Conversion Rackmount Uninterruptible Power System

##### Does your IT workload require high availability power protection?

The HPE Online Double Conversion Rackmount Uninterruptible Power System (UPS) enables high system availability by eliminating transfer time to battery power for all connected IT equipment. HPE Enhanced Battery Management technology improves battery service life by up to 50% while monitoring battery health and providing advanced notice when replacement is required. Scale system runtime from minutes to hours by adding up to four Extended Runtime Modules.

The HPE Online Double Conversion UPS includes a 1GbE Network Management Module that provides access to the UPS and its embedded web-based user interface, allowing you to monitor and manage individual UPS systems. With Eaton® Intelligent Power Manager software, users can centralize remote monitoring and management of multiple HPE UPS systems and seamlessly integrate them into virtualization and hyperconverged platforms, such as VMware and HPE SimpliVity, to manage virtual machines and extend battery runtime.



HPE Online Double Conversion Single Phase Uninterruptible Power Systems (UPS)



Overview

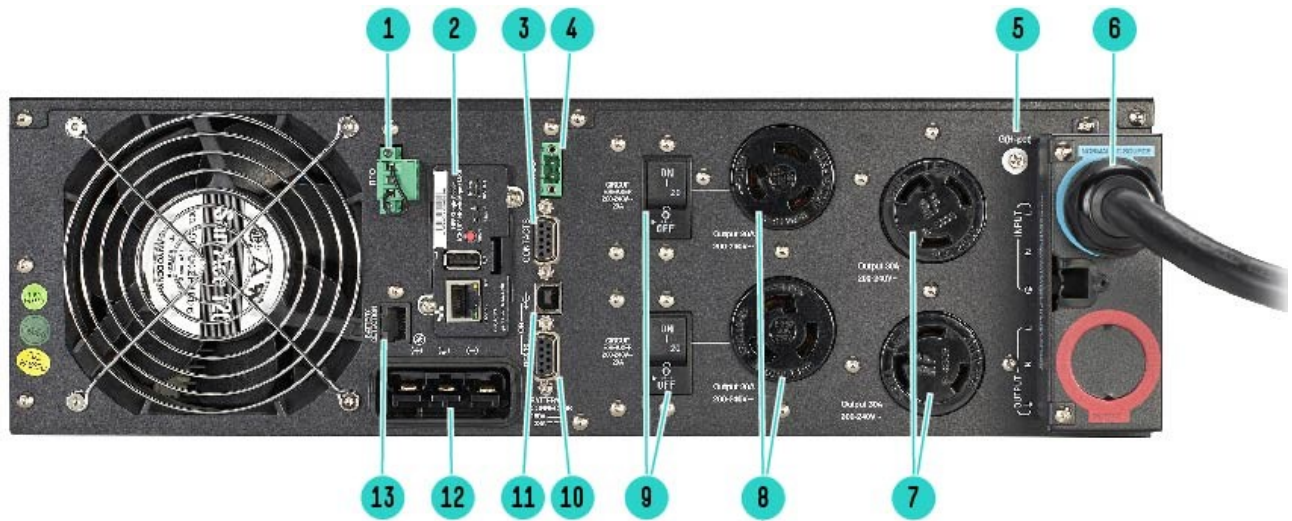
|                                                                                              |  |        |
|----------------------------------------------------------------------------------------------|--|--------|
| <b>Models</b>                                                                                |  |        |
| <b>R5000 UPS Models</b>                                                                      |  |        |
| HPE G2 R5000/L6-30P 24A/208V Outlets (2) L6-20R (2) L6-30R/3U NA/JP UPS                      |  | Q7G09A |
| HPE G2 R5000/L6-30P 24A/208V Outlets (4) C19 (1) L6-30R/3U NA/JP UPS                         |  | Q7G10A |
| <hr/>                                                                                        |  |        |
| <b>R6000 UPS Models</b>                                                                      |  |        |
| HPE G2 R6000/60309 3-wire 32A/230V Outlets (4) C13 (4) C19 (1) IEC 32A/3U Rackmount INTL UPS |  | Q7G11A |
| <hr/>                                                                                        |  |        |
| <b>R8000 UPS Models</b>                                                                      |  |        |
| HPE G2 R8000/Hardwire/208V Outlets (4) L6-20 (2) L6-30/6U Rackmount NA/JP UPS                |  | Q7G12A |
| HPE G2 R8000/Hardwire/230V Outlets (6) C19 (2) IEC 32A/6U Rackmount INTL UPS                 |  | Q7G13A |



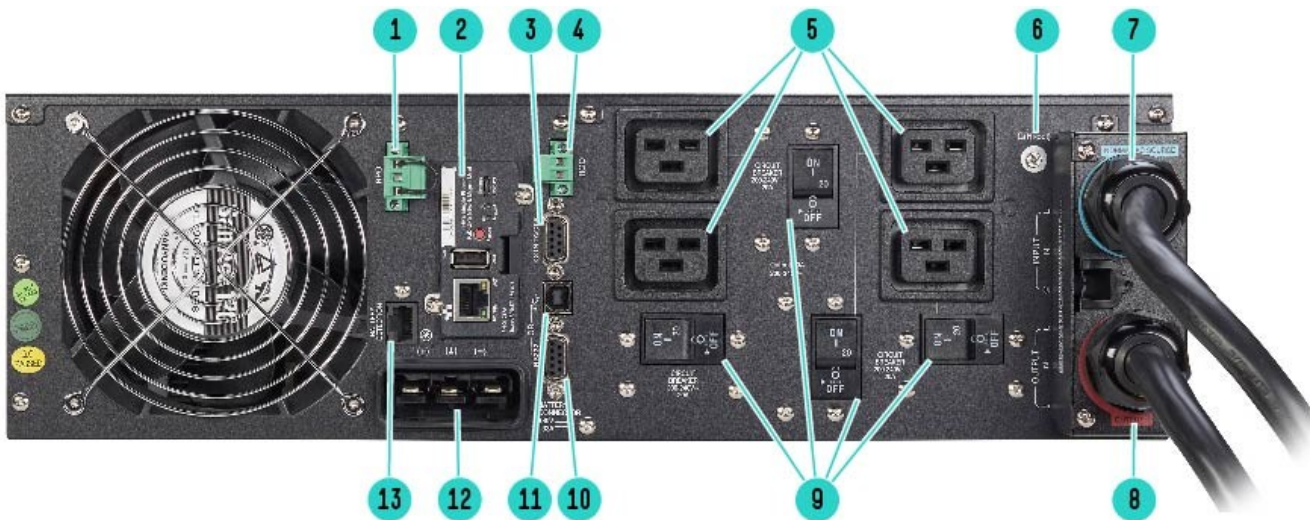
Front View R5000 UPS (Q7G09A and Q7G10A)/ R6000 UPS (Q7G11A)

- |                       |                        |
|-----------------------|------------------------|
| 1. Escape Button      | 4. Enter/Select button |
| 2. Scroll up button   | 5. Power button        |
| 3. Scroll down button |                        |

## Overview

**Rear View R5000 UPS (Q7G09A)**

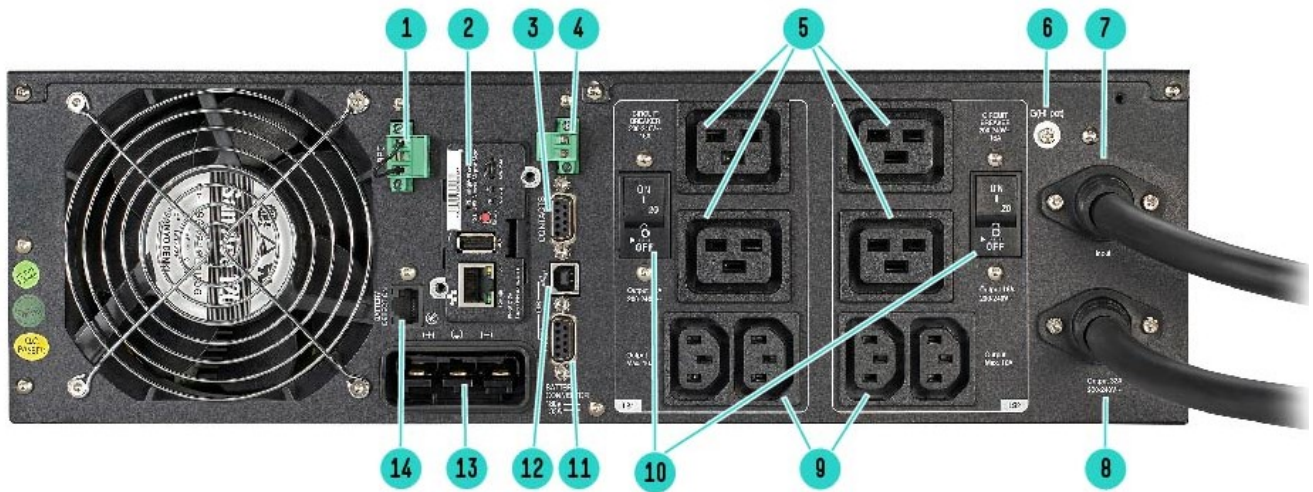
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|-----------------------------------------------|--------------------------------------------|
| 1. Remote Power Off                           | 8. 20A L6-20R receptacles                  |
| 2. 1GbE UPS Network Management Module         | 9. Circuit Breakers for L6-20R receptacles |
| 3. Contacts (for reporting status of UPS)     | 10. RS232 Serial Communications Port       |
| 4. Remote On/Off                              | 11. USB Serial Communications Port         |
| 5. Chassis ground terminal                    | 12. Power from ERM                         |
| 6. Input power line cord with NEMA L6-30 plug | 13. Battery Detection (ERM)                |
| 7. 30A L6-30R receptacles                     |                                            |

**Rear View R5000 UPS (Q7G10A)**

- |                                               |                                         |
|-----------------------------------------------|-----------------------------------------|
| 1. Remote Power Off                           | 8. 30A L6-30R receptacle                |
| 2. 1GbE UPS Network Management Module         | 9. Circuit Breakers for C19 receptacles |
| 3. Contacts (for reporting status of UPS)     | 10. RS232 Serial Communications Port    |
| 4. Remote On/Off                              | 11. USB Serial Communications Port      |
| 5. IEC C19 receptacles                        | 12. Power from ERM                      |
| 6. Chassis ground terminal                    | 13. Battery Detection (ERM)             |
| 7. Input power line cord with NEMA L6-30 plug |                                         |



## Overview

**Rear View R6000 UPS (Q7G11A)**

- |                                             |                                                               |
|---------------------------------------------|---------------------------------------------------------------|
| 1. Remote Power Off                         | 8. IEC 32A receptacle                                         |
| 2. 1GbE UPS Network Management Module       | 9. IEC C13 receptacles                                        |
| 3. Contacts (for reporting status of UPS)   | 10. 20A Circuit Breaker for load segments 1 & 2, respectively |
| 4. Remote On/Off                            | 11. RS232 Serial Communications Port                          |
| 5. IEC C19 receptacles                      | 12. USB Serial Communications Port                            |
| 6. Chassis ground terminal                  | 13. Power from ERM                                            |
| 7. Input power cord with 3-pin IEC 32A plug | 14. Battery Detection (ERM)                                   |

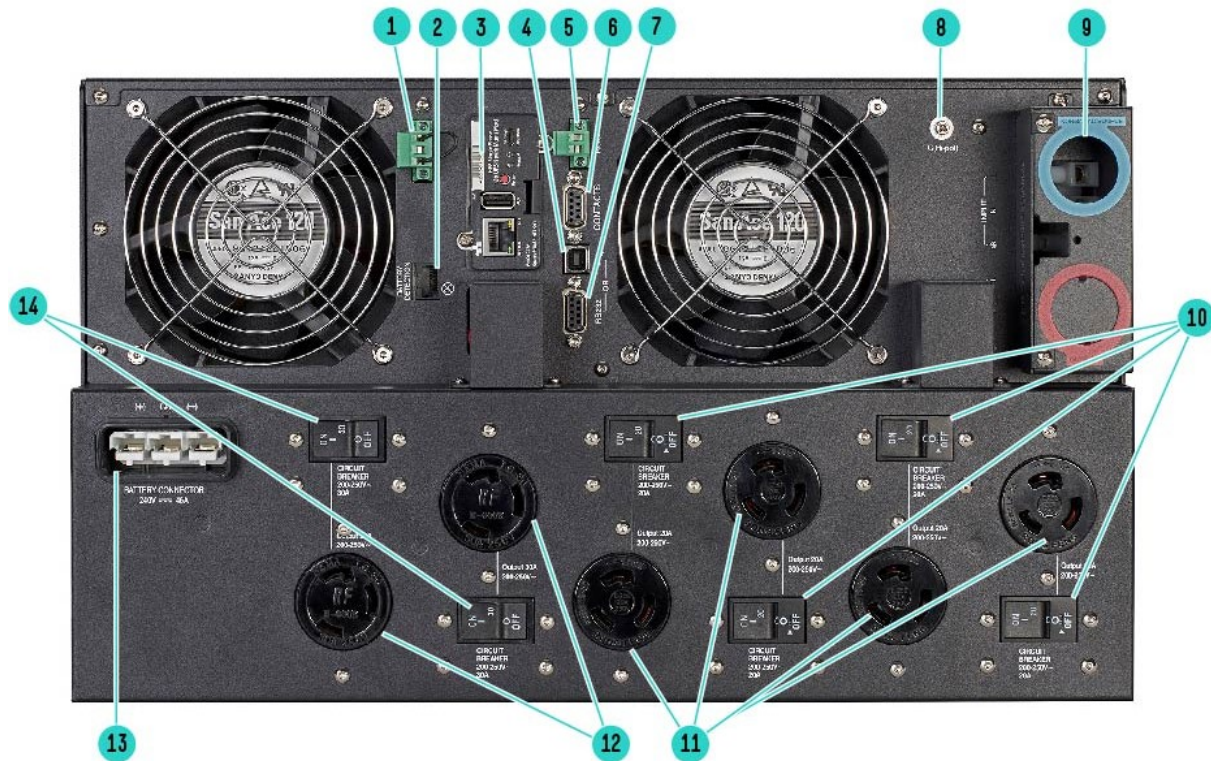
Overview



Front View R8000 UPS (Q7G12A and Q7G13A)

- |    |                    |    |                     |
|----|--------------------|----|---------------------|
| 1. | Escape Button      | 4. | Enter/Select button |
| 2. | Scroll up button   | 5. | Power button        |
| 3. | Scroll down button |    |                     |

## Overview

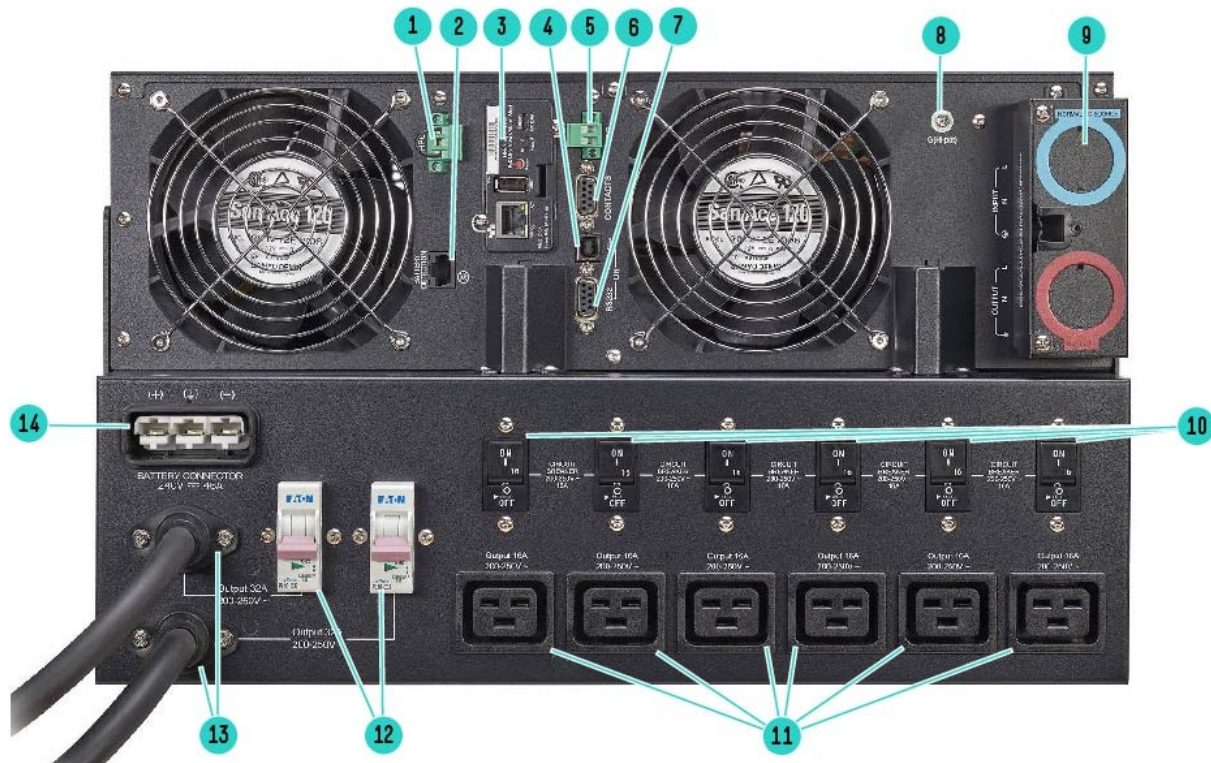


Rear View R8000 UPS (Q7G12A)

- |                                           |                                             |
|-------------------------------------------|---------------------------------------------|
| 1. Remote Power Off                       | 8. Chassis ground terminal                  |
| 2. Battery Detection (ERM)                | 9. Hardwire input power                     |
| 3. 1GbE UPS Network Management Module     | 10. Circuit Breakers for L6-20R receptacles |
| 4. USB Serial Communications Port         | 11. 20A L6-20R receptacles                  |
| 5. Remote On/Off                          | 12. 30A L6-30R receptacles                  |
| 6. Contacts (for reporting status of UPS) | 13. Power from ERM                          |
| 7. RS232 Serial Communications Port       | 14. Circuit Breakers for L6-30R receptacles |



## Overview



Rear View R8000 UPS (Q7G13A)

- |                                           |                                           |
|-------------------------------------------|-------------------------------------------|
| 1. Remote Power Off                       | 8. Chassis ground terminal                |
| 2. Battery Detection (ERM)                | 9. Hardwire input power                   |
| 3. 1GbE UPS Network Management Module     | 10. Circuit Breakers for C19R receptacles |
| 4. USB Serial Communications Port         | 11. 16A C19R receptacles                  |
| 5. Remote On/Off                          | 12. Circuit Breakers for IEC receptacles  |
| 6. Contacts (for reporting status of UPS) | 13. 32A IEC receptacles                   |
| 7. RS232 Serial Communications Port       | 14. Power from ERM                        |

## Standard Features

### HPE Online Double Conversion UPS Technology

The HPE Online Double Conversion UPS operates by using online double conversion technology that converts incoming AC power to DC power, and then back to AC power when exiting the UPS. The conversion to DC power supports a constant interface with the UPS battery, isolating output power from input power 100% of the time and ensuring zero transfer time to battery power.

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### Availability

- Enhanced Battery Management technology that uses an advanced, three-stage charging technique that increases battery service life by up to 50%
  - Scale system runtime from hours to minutes by adding up to 4 Extended Runtime Modules (ERM) per UPS
  - Internal bypass guarantees that connected loads will continue to have access to utility power in the event a system overload or fault has occurred.
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### Manageability

- Access the embedded UPS user interface using the HPE 1GbE Network Management Module that ships standard with each model
  - Use HPE Power Protector to manage individual UPS systems and communicate shutdown protocols with all connected servers
  - Next-generation intuitive LCD interface that provides a graphical display of all critical UPS information in a single view
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### Serviceability

- Enhanced Battery Management closely monitors battery health to provide advanced notice (up to 30 days) when batteries need replacement
  - Hot-swappable batteries allow trained users to perform upgrades and replacements of the batteries reducing Mean Time to Repair while improving system uptime and access to power when battery maintenance is required
  - Flash upgradeable firmware allow users to conveniently install firmware maintenance releases remotely using FTP
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### Consolidate and Centralize UPS Management with Eaton Intelligent Power Manager

HPE and Eaton are collaborating to bring increased value. Lab-tested for interoperability, Eaton's Intelligent Power Manager® (IPM) software provides the tools needed to monitor and manage power equipment in your physical or virtual environment, keeping IT devices up and running during a power or environmental event.

- Remotely monitor and manage multiple HPE power devices across your network from a single interface
- Ensure availability and data integrity of HPE SimpliVity hyperconverged systems
  - Provides a complete view of both the IT and power infrastructure in a single console
  - Dynamically move VMs with automated policies based on environmental conditions
- Recover VMs in the correct sequence based on criticality
- Mitigate equipment overheating and power anomalies through integration with HPE OneView:
  - Communicate actions to the HPE server via HPE iLO
  - Trigger preventive actions such as power capping based on environmental conditions
- Seamlessly integrate with VMware®, and other leading virtualization platforms
  - Initiate live migration of virtual machines (VMs) to automatically and transparently migrate them during power disruptions to unaffected devices
  - Suspend non-critical virtual machines, consolidate critical virtual machines, and shut down unused servers to extend battery runtime
  - Gracefully shutdown computers, VMs and host servers during an extended power outage

Eaton IPM offers three levels of licenses: Monitor, Basic and Gold. IPM Gold provides the most complete set of capabilities to enhance HPE solution performance.

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Standard Features

| Features                                      | IPM Monitor | IPM Basic | IPM Gold  |
|-----------------------------------------------|-------------|-----------|-----------|
| Supported UPS nodes                           | Up to 500   | Up to 500 | Up to 500 |
| Supported rack PDU nodes                      | Up to 200   | Up to 200 | Up to 200 |
| Auto discovery                                | ■           | ■         | ■         |
| Mass firmware upgrade tool                    | ■           | ■         | ■         |
| Mass node-settings configuration tool         | ■           | ■         | ■         |
| Send email notifications                      | ■           | ■         | ■         |
| Monitor third-party devices                   | ■           | ■         | ■         |
| Event-based PDU outlet control                |             | ■         | ■         |
| Virtualized host shutdown                     |             | ■         | ■         |
| Power capping of HPE servers                  |             | ■         | ■         |
| Targeted VM migration                         |             |           | ■         |
| Targeted VM graceful shutdown                 |             |           | ■         |
| Shares data with VMware's vRealize Operations |             |           | ■         |
| Trigger actions from third-party devices      |             |           | ■         |

The Eaton IPM Monitor is available via free download:  
<https://powerquality.eaton.com/products-services/power-management/software-drivers/intelligent-pm.asp>

## Configuration Information

### UPS Network Module

All HPE G2 Online Double Conversion UPS models include the 1GbE UPS Network Module as standard.

The HPE UPS Network Module enables you to monitor and manage power environments through comprehensive control of HPE UPSs. The HPE UPS Management Module can support either a single UPS configuration or provide additional power protection with support for dual redundant UPS configuration for no-single-point-of-failure. The additional serial ports will provide greater power management control and flexible monitoring.

The management module can be configured to send alert traps to HPE Systems Insight Manager and other SNMP management programs or used as a standalone management system. This flexibility enables you to monitor and manage UPSs through the network. To facilitate day-to-day maintenance tasks, the embedded management software provides detailed system logs.

The HPE UPS Network Module provides remote management of a UPS by connecting the UPS directly to the network. Configuration & Management of the UPS from anywhere and at any time via a standard web browser.

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### Extended Runtime Modules (ERM)

|                                                           |        |
|-----------------------------------------------------------|--------|
| HPE G2 R5000/6000 3U Rackmount WW Extended Runtime Module | Q7G14A |
|-----------------------------------------------------------|--------|

|                                                      |        |
|------------------------------------------------------|--------|
| HPE G2 R8000 3U Rackmount WW Extended Runtime Module | Q7G15A |
|------------------------------------------------------|--------|

Extended Runtime Modules increase the available runtime for the larger rack mounted UPS units to allow customers to ensure all of their applications can be gracefully shutdown in the event of a power failure.

**NOTE:** #0D1 will appear after the part number on the sales order if HPE factory integration is indicated. (Up to 4 ERMs can be chosen)

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### 3U/6U UPS ERM Shipping Kit

|                                                 |        |
|-------------------------------------------------|--------|
| HPE 3U 6U G2 Rackmount UPS and ERM Shipping Kit | Q9Z44A |
|-------------------------------------------------|--------|

HPE G2 Online Double Conversion UPS models require

**NOTE:** The shipping kit consists of a heavy duty shelf and required mounting hardware for attaching the UPS or ERM to the rack. This kit is an option that is only required if the UPS and or ERM are going to be mounted into a rack that will be shipped via transport. One of these kits is required per unit, whether UPS or ERM.

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### Jumper Cord Options

|                                                         |        |
|---------------------------------------------------------|--------|
| HPE C19 - C20 WW 250V 16Amp Flint Gray 2.0m Jumper Cord | AF574A |
|---------------------------------------------------------|--------|

|                                                          |        |
|----------------------------------------------------------|--------|
| HPE C19 - C20 WW 250V 16Amp Flint Gray 1.20m Jumper Cord | AF575A |
|----------------------------------------------------------|--------|

**NOTE:** Standard, non-locking IEC jumper cable for worldwide use.

|                                                           |        |
|-----------------------------------------------------------|--------|
| HPE C19 - C20 WW 250V 16Amp 0.7m Black Locking Power Cord | Q0R19A |
|-----------------------------------------------------------|--------|

|                                                           |        |
|-----------------------------------------------------------|--------|
| HPE C19 - C20 WW 250V 16Amp 1.2m Black Locking Power Cord | Q0P71A |
|-----------------------------------------------------------|--------|

|                                                         |        |
|---------------------------------------------------------|--------|
| HPE C19 - C20 WW 250V 16Amp 2m Black Locking Power Cord | Q0P72A |
|---------------------------------------------------------|--------|

|                                                           |        |
|-----------------------------------------------------------|--------|
| HPE C19 - C20 WW 250V 16Amp 2.5m Black Locking Power Cord | Q0P73A |
|-----------------------------------------------------------|--------|

|                                                                  |        |
|------------------------------------------------------------------|--------|
| HPE C19 - C20 WW 250V 16Amp 0.7m 6-pack Black Locking Power Cord | Q0R15A |
|------------------------------------------------------------------|--------|

|                                                                  |        |
|------------------------------------------------------------------|--------|
| HPE C19 - C20 WW 250V 16Amp 1.2m 6-pack Black Locking Power Cord | Q0R16A |
|------------------------------------------------------------------|--------|

|                                                                |        |
|----------------------------------------------------------------|--------|
| HPE C19 - C20 WW 250V 16Amp 2m 6-pack Black Locking Power Cord | Q0R17A |
|----------------------------------------------------------------|--------|

|                                                                  |        |
|------------------------------------------------------------------|--------|
| HPE C19 - C20 WW 250V 16Amp 2.5m 6-pack Black Locking Power Cord | Q0R18A |
|------------------------------------------------------------------|--------|

**NOTE:** Locking IEC jumper cable that will lock to server, switch, or PDU input power outlet. Compatible, but will not lock to UPS.

|                                                                     |        |
|---------------------------------------------------------------------|--------|
| HPE C19 - Nema L6-20P NA/JP 250V 20Amp High Voltage 3.6m Power Cord | AF593A |
|---------------------------------------------------------------------|--------|

**NOTE:** NEMA to IEC jumper cord that can connect to L6-20 receptacles on NA/JPN models.

## Service and Support

### Warranty

When you need it, use outstanding HPE support services for your whole data center environment. With HPE Pointnext operational services, have the security of knowing that your HPE UPS will be covered at the same service level and coverage period as your HPE server. HPE G2 Online Double Conversion UPSs are backed by a 3-year warranty, which covers depot repair of the UPS, or direct replacement of the UPS. Also, standard on all HPE UPS units is our exclusive 30-day Battery Pre-Failure Warranty, which ensures that when customers receive notification from HPE Power Manager Software that the battery may fail, the battery is replaced free of charge under the warranty. This warranty is offered worldwide.

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### Service and Support

#### HPE Technology Services

HPE 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.

#### Protect your business beyond warranty with HPE Pointnext operational services

When you buy HPE Options, it's also a good time to think about what level of service you may need. HPE Pointnext operational services provide total care and support expertise with committed response choices designed to meet your IT and business need.

For ProLiant servers and storage systems, this service covers HPE-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, also including PDU, ITAC, and UPS products (less than 12 kVA). 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.

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#### For more information

To learn more on services for HPE Options, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Or visit: <https://www.hpe.com/us/en/support.html> or <https://www.hpe.com/us/en/services/operational.html>

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#### Parts and Materials

Hewlett Packard Enterprise will provide HPE-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.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.



## Technical Specifications

### Model Matrix - HPE G2 R5000, R6000, and R8000 UPS Models

| Model  | Part Number | Operating Voltage Settings | Power Out (VA/Watts) | Input Connection             | Output Connection                | Breaker Amp Rating/ Single of Double Pole            |
|--------|-------------|----------------------------|----------------------|------------------------------|----------------------------------|------------------------------------------------------|
| R5000  | Q7G09A      | 200                        | 5000VA / 4500W       | L6-30P<br>(10ft power cord)  | 2x L6-20R<br>2x L6-30R           | 20A / Double Pole                                    |
|        |             | 208                        | 5000VA / 4500W       |                              |                                  |                                                      |
| R5000  | Q7G10A      | 200                        | 5000VA / 4500W       | L6-30P<br>(10ft power cord)  | 4x C-19<br>1x L6-30R             | 20A / Double Pole                                    |
|        |             | 208                        | 5000VA / 4500W       |                              |                                  |                                                      |
| R6000* | Q7G11A      | 230V                       | 6000VA / 5400W       | IEC 32A<br>(10ft power cord) | 4x C-13<br>4x C-19<br>1x IEC 32A | 16A / Single Pole                                    |
| R8000  | Q7G12A      | 200                        | 8000VA / 7200W       | Terminal Block<br>(Hardwire) | 4x L6-20R<br>2x L6-30R           | 20A/2 pole for 4x L6-20R<br>30A/2 pole for 2x L6-30R |
|        |             | 208                        | 8000VA / 7200W       |                              |                                  |                                                      |
| R8000  | Q7G13A      | 230V                       | 8000VA / 7200W       | Terminal Block<br>(Hardwire) | 6x C-19<br>2x IEC 32A            | 16A/1pole for 6x C19<br>32A/1pole for 2x IEC 32A     |

• Supports switchable load segments: LS1: 2x C-13, 2x C-19; LS2: 2x C-13, 2x C-19

### Runtime Tables

#### R5000 UPS – Models Q7G09A, Q7G10A

| Load             | 25%<br>(Minutes) | 50%<br>(Minutes) | 75%<br>(Minutes) | 100%<br>(Minutes) |
|------------------|------------------|------------------|------------------|-------------------|
| Internal Battery | 27               | 11               | 5.3              | 3.2               |
| + 1 ERM          | 103              | 48               | 27               | 20                |
| + 2 ERM          | 175              | 88               | 53               | 38                |
| + 3 ERM          | 262              | 123              | 83               | 54                |
| + 4 ERM          | 377              | 167              | 109              | 80                |

**NOTE:** Backup times are estimated for typical applications. Actual performance will depend on load and battery conditions. Runtime given in minutes. Assumes 0.9 PF.

#### R6000 UPS – Model Q7G11A

| Load             | 25%<br>(Minutes) | 50%<br>(Minutes) | 75%<br>(Minutes) | 100%<br>(Minutes) |
|------------------|------------------|------------------|------------------|-------------------|
| Internal Battery | 22               | 8.5              | 4.5              | 3                 |
| + 1 ERM          | 85               | 38               | 24               | 16                |
| + 2 ERM          | 147              | 71               | 45               | 28                |
| + 3 ERM          | 214              | 104              | 62               | 47                |
| + 4 ERM          | 287              | 133              | 90               | 58                |

**NOTE:** Backup times are estimated for typical applications. Actual performance will depend on load and battery conditions. Runtime given in minutes. Assumes 0.9 PF.

## Technical Specifications

### R8000 UPS – Model Q7G12A

| Load             | 25%<br>(Minutes) | 50%<br>(Minutes) | 75%<br>(Minutes) | 100%<br>(Minutes) |
|------------------|------------------|------------------|------------------|-------------------|
| Internal Battery | 35               | 16               | 9                | 5                 |
| + 1 ERM          | 85               | 36               | 23               | 16                |
| + 2 ERM          | 140              | 65               | 36               | 27                |
| + 3 ERM          | 173              | 86               | 53               | 36                |
| + 4 ERM          | 220              | 118              | 72               | 50                |

**NOTE:** Backup times are estimated for typical applications. Actual performance will depend on load and battery conditions. Runtime given in minutes. Assumes 0.9 PF.

### R8000 UPS – Model Q7G13A

| Load             | 25%<br>(Minutes) | 50%<br>(Minutes) | 75%<br>(Minutes) | 100%<br>(Minutes) |
|------------------|------------------|------------------|------------------|-------------------|
| Internal Battery | 28               | 12               | 6.5              | 3.5               |
| + 1 ERM          | 72               | 29               | 18               | 12                |
| + 2 ERM          | 112              | 51               | 29               | 21                |
| + 3 ERM          | 151              | 73               | 46               | 29                |
| + 4 ERM          | 185              | 95               | 58               | 42                |

**NOTE:** Backup times are estimated for typical applications. Actual performance will depend on load and battery conditions. Runtime given in minutes. Assumes 0.9 PF.

## Technical Specifications

|                                 |                           |                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Electrical Input</b>         | Voltage Range             | 200 – 250VAC                                                                                                                                                                                                                                                                                                                             |
|                                 | Frequency                 | 40/60 Hz (if 50Hz input)                                                                                                                                                                                                                                                                                                                 |
|                                 | Online Efficiency Mode    | 92.8% (R5000 models)<br>94.5% (R6000, R8000 models)                                                                                                                                                                                                                                                                                      |
|                                 | High Efficiency Mode      | 98% all models                                                                                                                                                                                                                                                                                                                           |
| <b>Electrical Output</b>        | On battery Regulation     | -10% to +6% of nominal voltage                                                                                                                                                                                                                                                                                                           |
|                                 | Voltage Wave Form         | Sinusoidal                                                                                                                                                                                                                                                                                                                               |
|                                 | Connections               | See Model Matrix                                                                                                                                                                                                                                                                                                                         |
|                                 | Output protection         | Firmware overload sensing and control                                                                                                                                                                                                                                                                                                    |
| <b>Battery</b>                  | Type                      | Maintenance-free, rechargeable, valve regulated lead-acid batteries                                                                                                                                                                                                                                                                      |
|                                 | Extended Runtime Modules  | Add up to 4 ERM's per UPS model                                                                                                                                                                                                                                                                                                          |
|                                 | Backup Time               | See Runtime Tables                                                                                                                                                                                                                                                                                                                       |
|                                 | Recharge Time             | <4 hours to charge 90% usable capacity. <24 hours for complete recharge                                                                                                                                                                                                                                                                  |
|                                 | Voltage                   | R5KVA, R6KVA = 180VDC<br>R8KVA = 240VDC                                                                                                                                                                                                                                                                                                  |
| <b>Communications</b>           | Serial Ports              | RS232 (via RJ45 connector to DB9) and USB ports (ships with communication cables)                                                                                                                                                                                                                                                        |
|                                 | Network Communication     | Includes HPE 1GbE Network Management Module                                                                                                                                                                                                                                                                                              |
|                                 | LCD Interface             | LCD Display and Button Interface on front panel                                                                                                                                                                                                                                                                                          |
|                                 | Management Software       | HPE Power Protector and HPE Intelligent Power Manager included via free download                                                                                                                                                                                                                                                         |
| <b>Environmental and Safety</b> | Operating Temperature     | 0°C to 40°C (32°F to 104°F)                                                                                                                                                                                                                                                                                                              |
|                                 | Non-operating Temperature | -15°C to 40°C (5°F to 104°F) (with battery)<br>-15°C to 50°C (5°F to 122°F) (without battery)                                                                                                                                                                                                                                            |
|                                 | Operating Humidity        | 0% to 95% (non-condensing)                                                                                                                                                                                                                                                                                                               |
|                                 | Storage Humidity          | 5% to 90% (non-condensing)                                                                                                                                                                                                                                                                                                               |
|                                 | Operating Altitude        | Up to 1500 m above sea level                                                                                                                                                                                                                                                                                                             |
|                                 | Audible Noise             | <45dB at 1m (MX ref.) for R5000/6000 models<br><48dB at 1m (EXRT ref.) for R8000 models                                                                                                                                                                                                                                                  |
|                                 | Safety Markings           | NA/JPN: UL/cUL, FCC Class A, NOM,VCCI<br>INTL: CE, TUV, C-tick, EAC, KCC, BSMI                                                                                                                                                                                                                                                           |
|                                 | Safety Certifications     | UL1778, UL60950-1; CSA22.2 No.107.3-05;; EN609501-, EN62040-1 IEC62040-1-1, IEC 60950-1                                                                                                                                                                                                                                                  |
|                                 | EMC Markings              | FCC-A; CISPR 22; VCCI A; CE, BSMI, C-TICK                                                                                                                                                                                                                                                                                                |
|                                 | Emissions                 | FCC CFR 47, Part 15 Class A, EN50091-2                                                                                                                                                                                                                                                                                                   |
|                                 | Immunity                  | EN 55024; EN 50091-2 consisting of IEC 61000-4-2 thru IEC 61000-4-6; IEC 61000-4-11                                                                                                                                                                                                                                                      |
|                                 | Surge Suppression         | Conforms to IEEE 587B and ANSI C62.41                                                                                                                                                                                                                                                                                                    |
|                                 | RPO/ROO                   | The Normally Closed (NC) RPO shuts off power to all UPS outlets when opened. The UPS must be manually restarted once the terminals are closed again. There is a preinstalled jumper in the RPO terminals.<br>The Normally Open (NO) ROO initiates a UPS Power On function when closed. Opening the terminals again will shut off the UPS |

## Technical Specifications

### **Environment-friendly Products and Approach - End-of-life Management and Recycling**

Hewlett Packard Enterprise offers end-of-life **product return, trade-in, and recycling programs**, in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner. The EU WEEE Directive (2012/19/EU) 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 Enterprise web site**. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

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## Summary of Changes

| Date        | Version History | Action  | Description of Change                         |
|-------------|-----------------|---------|-----------------------------------------------|
| 06-May-2019 | Version 2       | Changed | Configuration Information Section was updated |
| 02-Apr-2019 | Version 1       | New     | New QuickSpecs.                               |

     
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