

Site Planning Guide

The Compaq Uninterruptible Power Supply (UPS) R12000 XR is a complex electrical device that requires the highest levels of safety awareness from installers and operators. From unpacking to installation, anyone working with this device should take all precautions to prevent personal injury or damage to the device. Appropriate precautions are noted throughout this document.

Selecting an Installation Site

Customers are strongly advised to ensure that the site is prepared for installation of the UPS R12000 XR. The customer should consider these factors in selecting a site for installation:

- Delivery and unpacking
- Physical considerations
- Access to appropriate electrical service

The UPS R12000 XR requires a single-phase 200-240VAC facility and both the input and output must be hardwired by a licensed electrician. In addition, a licensed electrician must wire any optional ERMs to the UPS. The unit requires a 100A circuit with overcurrent protection. Also, the unit weighs 420lbs (without options) so the customer should notify the facility shipping/receiving and installation teams before the unit is delivered.

Unpacking the UPS

The UPS arrives on a pallet. This pallet will be too large to fit through a standard doorway. The customer should have the pallet delivered as close to the installation site as possible. The pallet must be broken down into individual boxes to begin installation.

As you unpack the UPS, check the battery recharge date on the Battery Recharge Date Label affixed to the shipping carton. Do not use the batteries if the recharge date has passed. If the date on the Battery Recharge Date Label has passed without the batteries being recharged, contact an Authorized Compaq Service Representative.

Leave the UPS chassis in the shipping carton and transport it to the installation location. Follow the instructions on the carton to unpack the UPS near the rack where it will be assembled.

The installation kit should contain the following components:

Component	Parts
Documentation CD	<ul style="list-style-type: none"> • International Regulatory Compliance Guide • Important Safety Information Guide • Power Products Documentation CD • Rack and Power Management Pack CD
Fixed Rails	<ul style="list-style-type: none"> • Rails, with mounting hardware • Rack template tool 10U (221280-021)
UPS	<ul style="list-style-type: none"> • UPS chassis • Four electronics modules • Four battery modules • Five front bezel pieces • Hardware <ul style="list-style-type: none"> ○ M6 x 12 Hex Bolt (2) ○ M6-1 x 12.0 Cross Recessed Screw (20) ○ M6 Hex Nut with Conical Washer (3)
Cables	<ul style="list-style-type: none"> • One 12ft (3.7m) communication cable (201092-002)
Power Distribution Unit (PDU) Kit	<ul style="list-style-type: none"> • 40A 200--240V WW Model PDU • PDU installation instructions

Required Tools

Use the following tools to assemble the components:

- Torque wrench (8 to 100 in-lb capacity).
- Medium flat-bladed screwdriver.
- #1 Phillips screwdriver bit.
- #3 Phillips screwdriver bit.
- Metric wrenches, socket and flat:
 - 7mm
 - 8mm
 - 10mm
- Sheet metal hole punch tools, up to 1¾ inches (44.45 mm) in diameter.
- The following Items are supplied with the Compaq Rack:
 - Screws
 - Cage nuts
 - Cage nut-fitting tool

Physical Considerations

As part of the site evaluation, the customer should have a facilities engineer evaluate floor loading before installation. The floor should have a commercial floor uniform load capacity of at least 250 pounds per square foot, with a concentrated load capacity of 1000 pounds. The UPS alone weighs over 400 lbs; addition of one or more ERMs, as well as other electronics in the rack can produce up to 800 pounds. In addition, the customer should evaluate the site for access space requirements.

Weight Requirements

The UPS R12000 XR is a very heavy device. Observe guidelines for manual material handling. Note the safety cautions throughout this document and be sure to obtain assistance to lift the device components during installation or removal. Before moving the unit, remove all pluggable modules to reduce the overall weight of the product.

The following table lists the weight of the major components.

Component	Weight	Material Handling Considerations
Chassis	95 lb (43kg)	Two people are required to lift, transport, and install the chassis into the rack.
Electronics Module	21 lb (9.5kg)	Wear static protection and handle the electronics module by the solid metal bottom only. Do not touch components.
Battery Module	60 lb (27kg)	Two people are required to lift, transport, and install the battery module into the chassis.
Maximum Weight	420 lb (190kg)	The device is unstable until it is installed in fixed rails on the rack. Do not attempt to move a fully assembled device.

Space Requirements

The installation site must provide at least 12 inches (30.5cm) of space behind the rack containing the UPS R12000 XR for airflow, and at least 48 inches (122cm) in front of the rack for access to the front panel and to install the electronic and battery modules.

The dimensions of the product (w x d x h) are 17.5 x 17.5 x 28.6 inches (44.45cm x 44.45cm x 72.64cm). In a rack, the product is 10U.

Environmental Specifications

Feature	Specification
Operating temperature	10° C - 40° C (50° F - 104° F) UL tested at 25° C (77° F)
Relative humidity	0% to 95%, non-condensing
Operating altitude	Up to 2,000m (6562 ft) above sea level
Audible noise	Typically 60dBA
Transit temperature	-25° C to +55° C (-13° F to +131° F)
Transit altitude	15,000m (49212 ft) above sea level

Electrical Service Requirements

The following information provides the requirements for the input wiring, output wiring, REPO switch wiring, and REPO cable specifications.

Input Wiring

The UPS R12000 XR requires a dedicated branch circuit meeting the following requirements:

- 100A circuit with overcurrent protection
- An appropriate disconnect device in the same room as the UPS, incorporated into the fixed wiring
- 200-240V
- Single phase
- 50-60Hz

It is recommended that the licensed electrician use flexible cord or metal conduit when hardwiring the UPS R12000 XR. This provides ease of service and system maintenance.

WARNING! To avoid the risk of electric shock due to high leakage current, earth connection (grounding) is essential before connecting the unit to an AC supply. Make sure AC mains are turned off at the service panel before wiring the UPS R12000 XR.

To reduce the risk of fire, connect the UPS R12000 XR only to a circuit provided with 80A maximum branch circuit rated overcurrent protection device in accordance with the National Electrical Code (NFPA 70) and Canadian Electrical Code, C22.1.

Output Wiring

The R12000 XR outputs 12000VA and features a nominal power rating of 12000W. The number and type of output receptacles will depend on geography.

The input voltage range is 200-240 VAC +/-20%. The available nominal output voltage is 200, 208, 220, 230 or 240 VAC.

The following table specifies output regulation:

Source of Power	Output Regulation
Utility power (normal range)	±3% of nominal output voltage rating (within the guidelines of the Computer Business Equipment Manufacturers Association)
Battery power	±3% of nominal output voltage rating

REPO Switch Wiring

The UPS R12000 XR includes a REPO port. When properly wired, the REPO port allows the power at the UPS output receptacles to be switched off from a remote location. Local or national wiring regulations may require REPO capabilities.

The REPO port meets the requirements of NFPA Articles 645-10 and 645-11 for a Disconnecting Means.

REPO Cable Specifications

The cable that connects the R12000 XR to the REPO switch must be UL Listed and of one of the following types, depending on the requirements of the local installation:

- CL2: Class 2 cable for general-purpose use
- CL2P: Class 2 plenum cable for ducts, plenums, and similar spaces
- CL2R: Class 2 riser cable for vertical shafts or floor-to-floor
- CL2X: Class 2 limited-use cable for dwellings and raceways

For installation in Canada, the cable should be CSA Certified, type ELC (Extra-Low-Voltage Control Cable).

Site Preparation Checklist

The following checklist may be helpful to you before and during the installation process.

1.	Determine the power requirements in the data center, including power load and run time requirements. Select the appropriate UPS and extended run time (ERM) modules.	<input type="checkbox"/>
2.	Choose from available Compaq services.	<input type="checkbox"/>
3.	Notify building and maintenance departments to expect delivery of the UPS R12000 XR.	<input type="checkbox"/>
4.	Decide where to install the UPS R12000 XR, bearing in mind the availability of electrical connections and the weight and space requirements for the UPS.	<input type="checkbox"/>
5.	Determine that the installation site meets minimum environmental requirements.	<input type="checkbox"/>
6.	Check that the required input voltage is available.	<input type="checkbox"/>
7.	Determine the output wiring configurations to be installed.	<input type="checkbox"/>
8.	Schedule an electrician to install the R12000 XR. Ensure that the electrician has access to a copy of the Compaq UPS R12000 XR Operation and Reference Guide for installation instructions.	<input type="checkbox"/>